FORT MCKAY FIRST NATION TRADITIONAL LAND USE STUDY

Regarding Suncor Energy Inc.'s Proposed Base Mine Expansion Project

Submitted to Fort McKay First Nation:
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CREDITS

Project Director:

Ryan Abel
Manager – Regulatory & Technical,
Fort McKay Sustainability Department

Report Authors:

Towagh Behr, M.A.
Kwusen Research & Media Ltd.

Stella Spak, Ph.D.
Kwusen Research & Media Ltd

Alissa Cartwright, M.Phil.
Kwusen Research & Media Ltd.

Map Figures:

Pano Skrivanos, M.Sc.,
Senior Manager, Mapper
Inlailawatash Limited Partnership

Allison Hunt, B.Sc., MCPM,
GIS Analyst,
Inlailawatash Limited Partnership

Cover Photo:
Aostra Road near Fort McKay. Photo by Stella Spak.

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The report authors wish to express gratitude to ethnobotanist Ann Garibaldi who has conducted years of Traditional Ecological Knowledge (TEK) research with community members from Fort McKay. Her understanding of Fort McKay TEK has been influential and informs the following report. The authors have also benefited from prior collaborations with Dr. Patricia McCormack, whose influential writing and understanding of the Indigenous history of north-eastern Alberta is also reflected in the current report. The background section of this report is reprinted, with minor edits, from Kwusen's previous TLUS reports written for Fort McKay (Behr, Bennett, and Stella Spak 2014a; Behr, Bennett, and S. Spak 2014b; Behr et al. 2018).

EXECUTIVE SUMMARY

The Fort McKay First Nation (Fort McKay) is a Cree and Dene (Chipewyan) First Nation located in north-eastern Alberta, approximately 58 km north of Fort McMurray with Reserve Lands at the Hamlet of Fort McKay, Moose (Gardiner), and Buffalo (Namur) Lakes, as well as on the east side of the Athabasca River (see Figure 1). Fort McKay's Traditional Territory encompasses much of the oil sands region. Fort McKay First Nation has legally protected Rights that extend throughout their Traditional Territory and Treaty No. 8. Fort McKay has a long history of living a land-based way of life. It is out on the land where the community's social, cultural, and spiritual values and practices are learned and passed on through generations. Fort McKay's right to the continuity of their way of life is recognized and affirmed by both Treaty No.8 and s.35 of the *Constitution Act*, 1982.

Suncor Energy Inc. (Suncor; the Proponent) is a publicly traded Alberta based petroleum company that has proposed to develop the Base Mine Expansion Project (BMX; the Project). The BMX Project footprint is 28, 916 ha. The Project is located approximately 37 km south of Fort McKay First Nation reserve 174 and the Hamlet of Fort McKay. The Project is on the west side of the Athabasca River, located within the Athabasca River watershed, and at the centre of Fort McKay's Traditional Territory. The Project footprint intersects one Fort McKay member-held trapline and is in close proximity to several others. The location of the Project has been used by Fort McKay for the exercise of its Treaty and Aboriginal Rights to hunt, fish, trap and gather traditional resources, and to engage in related Traditional Land Use (TLU) practices, including cultural, spiritual and social activities. However, TLU within and near the Project footprint has already been impacted by the cumulative effects of existing nearby development, including the nearby Suncor Base Plant and the Suncor Millennium Mine. The Project is also in close vicinity to Syncrude Mildred Lake Mine.

The objectives of this Traditional Land Use Study (TLUS) are to:

- Identify past, current (within living memory), and planned future Traditional Use (TU) Values[1] in the Local Study Area (LSA) and to assist the Fort McKay Sustainability Department (FMSD) and Suncor in assessing the potential effects of the proposed Project on both these values and the broader Rights and interests of Fort McKay.
- Collect current and prior TU research, oral history and historical documents in a spatial database.
- Identify potential Project-specific effects and the Project's contribution to cumulative effects on TU Values, traditional land use opportunities, and on the Treaty and Aboriginal Rights and interests of Fort McKay.

The Local Study Area (LSA) for this TLUS is a moderate estimation of the area where direct and secondary (indirect) Project effects on Traditional Land Use are likely to be experienced. If built, the Project will directly disturb lands within the Project footprint and cause additional indirect effects on the surrounding environment through air emissions, noise, traffic, water, and other Project-related environmental effects. Figure 1 and Figure 2 depict the Project area plus a 5 km buffer[2]. Based on professional experience, this buffer is a conservative distance within which TU Values have the potential to be directly impacted by industrial development. The Project LSA covers 71,746 ha.

[1] Traditional Use Value refers to a specific place, resource or interest reported by a First Nations member during the study and considered important to the ongoing practice of the community's interests and use, including Aboriginal and Treaty Rights, in the Region.

[2] A buffer is an area (a shape) on a map created by GIS software that is a specified maximum distance away from a mapped line, point (a site), or polygon.

This report is based on indoor interviews and groundtruthing with Fort McKay Elders and knowledge holders and on a review of existing land-use information relevant to the study area. In total, there were 313 Site-Specific TU Values that intersect the BMX Project Local Study Area (LSA). Intangible TU Values, including Traditional Ecological Knowledge (TEK), family history and stories, and industry concerns related to Project-specific and cumulative effects were also documented for the LSA. Interview Respondents identified specific concerns with the potential effects of the Project on Fort McKay's TU Values and Treaty or Aboriginal Rights. The discussion of Project effects is based on Fort McKay concerns, potential impacts to TU Values, and on a broader understanding of the effects of oil sands development in the region as understood through a review of relevant literature.

This TLUS documents Fort McKay's Traditional Use through the identification of past, current (within living memory[3]), and planned future Traditional Use (TU) Values. TU Values from seven categories are intersected by the LSA. Of particular concern among these TU Values are wildlife habitats (Wildlife/Ecological Values)[4] and currently utilized Transportation Values, which allow Fort McKay members to access some community-held traplines (Trapping Values), including RMFA #587, and other TLU resources located in the western portion of their Territory. Respondents interviewed for this TLUS also identified that the LSA intersects previously utilized Habitation Values (historic trapping cabins and camping sites) and Subsistence Values (berry-gathering, hunting, and fishing sites). It is important to note that while TU Values within living memory are defined as "current," many of the TU Values reported in the LSA are not presently utilized due to the existing and cumulative effects of oil sands development. Respondents interviewed for this TLUS reported a decline in TLU in the LSA between the 1980s and the early 2000s, reflecting the direct and cumulative impacts of large-scale oil sands development on Fort McKay's drinking water, fisheries, and other resources during this time (see Longley 2015; FMTA 1983; Surrendi & Associates 1998; Fort McKay Industry Relations Corporation 2010).[5] Current TU practices in the LSA, therefore, do not represent historical pre-development or planned future levels of seasonal land use.

The proposed Project will directly affect existing and previously utilized Fort McKay TU Values in the LSA and as a result impact Fort McKay Aboriginal and Treaty Rights. Within the current context of the rapid growth of oil sands development, Fort McKay members are already experiencing a diminished number of areas where they can access an intact and healthy environment for TLU activities. An assessment of the cumulative effects of industrial development in the region indicates that as a result of existing, approved, and planned industrial projects in Fort McKay's

[3] The Voisey's Bay Mine and Mill Environmental Assessment Panel Report (Canadian Environmental Assessment Agency 1999) provided the following definition of current use: "In its broadest sense, [current use] means land use within "living memory" as recorded by the map biography method typically used to establish Aboriginal title or site-specific Aboriginal rights. This method produces a comprehensive record of the last 30 to 40 years and, for more limited purposes, a record as long as 60 to 70 years" (CEAA 1999).

[4] During the groundtruthing and interviews conducted for this TLUS, Fort McKay members indicated that they believe there are still whooping crane, bear, moose, beaver, and muskrat populations within the LSA.

[5] As documented by Hereward Longley, the large-scale expansion of oil-sands development in Fort McKay's Traditional Territory was facilitated by deregulation and federal/provincial investment in the oil sands industry. In the mid-1970s, the Albertan government invested in Syncrude and provided further research funding and loans to the oil sands industry, becoming both the "developer and regulator" of the Albertan oil sands (Longley 2019:5). These changes set the stage for the 1980s, when the Ontario government invested in Suncor and the federal government deregulated oil prices (Longley 2019:16). Large-scale expansion continued in the 1990s, with Syncrude opening the Steepbank Mine and Suncor beginning construction on the Millennium Mine (Fort McKay Industry Relations Corporation 2010:1). By 1998, about 259 hectares of Fort McKay's Territory had been cleared and mined and the oil sands industry was producing over two million barrels per day (Surrendi & Associates 1998:i).

Traditional Territory, 307,762 hectares (ha) of land was unavailable for traditional land use practices as of 2017 (Lagimodiere 2017:8).[6] The LSA, which represents a moderate estimate of the area upon which direct and indirect Project effects may be experienced, is 71,746 ha. If constructed, the anticipated effects of the Project would add to the cumulative effects of other oil sands developments in an area that is already under significant stress. Fort McKay is highly concerned that the additional impacts of the proposed Project will further limit areas where TLU activities may be conducted.

The overall assessment of impacts in this study is that the proposed Project and cumulative effects will significantly and negatively impact FMFN culture and rights, including meaningful opportunities to use the land in the LSA. The assessment was based on information gathered from secondary sources and interviews with FMFN members about the potential effects of the proposed Project. A summary of the overall assessment is as follows:

1. Project effects on the Aboriginal and Treaty Rights of the Fort McKay First Nation will continue to be clearly distinguishable for the duration of the construction and operation of the Project as well as decades after the start of reclamation.

2. While Fort McKay continues to exercise their Aboriginal and Treaty Rights in their Traditional Territory, if available and relatively undisturbed by industrial or recreational activities, the Fort McKay First Nation is facing a highly disturbed and fragmented landscape that has experienced recent and dramatic environmental change, as well as a significant increase in competition (hunting and fishing pressure) from increased recreational hunting, fishing, and trapping. Areas where Fort McKay First Nation members can access an intact and healthy environment suitable for TLU activities, and where they can avoid hunting competition and other recreational land users, are becoming increasingly limited. The impacts of the proposed Project area within Fort McKay's Traditional Territory, which is already under considerable stress, would work in conjunction with other oil sands developments to create substantial changes to Fort McKay land use. As a result, the Project-related changes to Fort McKay's overall use of lands or resources is considered substantial for the Fort McKay First Nation.

The degree to which Fort McKay First Nation members are concerned about the effects of the Project relates to the successful completion of detailed scientific studies by the Proponent that incorporate the results of Fort McKay-led studies such as this TLUS, Proponent adoption of best management practices developed in consideration of Fort McKay's traditional knowledge and concerns, the adequacy of Proponent and Crown mitigation measures, and continued Environmental Monitoring that engages Fort McKay, including community-based monitoring, substantive adaptive management responses, and the clear and regular communication of all of these activities with Fort McKay. As the Project is in the early planning stages, most of these measures have not been met. Based on the results of this TLUS, it is clear that Fort McKay First Nation members have strong concerns about the Project.

3. According to the assessment criteria selected in this study, preliminary assessment results indicate that the Project related effects are (1) clearly distinguishable (2) will result in substantial changes in Fort McKay First Nation member's overall use of lands and resources, and (3) have already resulted in strong concern by Fort McKay members. Therefore, preliminary assessment results indicate that in the absence of appropriate mitigation measures, the Project-related effects

[6] This is a conservative estimate based on a 183 m buffer on existing, approved, and planned oil sands projects. Project Effects, including noise, pollution, contamination, and noxious odours may extend beyond a distance of 183 m.

on the Traditional Land Use and, as a result, the Aboriginal and Treaty Rights of Fort McKay First Nation are anticipated to be adverse and significant.

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GLOSSARY OF TERMS

Aboriginal Rights: "Aboriginal rights refer to practices, traditions and customs that distinguish the unique culture of each First Nation and were practiced prior to European contact. These are rights that some Aboriginal peoples of Canada hold as a result of their ancestors' longstanding use and occupancy of the land. The rights of certain peoples to hunt, trap and fish on ancestral lands are examples of Aboriginal rights. Aboriginal rights vary from group to group depending on the customs, practices and traditions that have formed part of their distinctive cultures. Aboriginal rights are protected under s.35 of the Constitution Act, 1982." (Government of Canada 2010).

Cultural Heritage: Cultural Heritage is the legacy of physical artifacts and intangible attributes of a group or society that are inherited from past generations, maintained in the present, and bestowed for the benefit of future generations. Cultural Heritage includes tangible culture (such as buildings, monuments, landscapes, books, works of art, and artifacts), intangible culture (such as folklore, traditions, language, and knowledge), and natural heritage (including culturally significant landscapes, and biodiversity).

Culture: Defined in this report as "a way of life, a system of knowledge, beliefs, values and behaviours passed down to each generation" (MVEIRB 2009:6).

Cumulative Effects: A Cumulative Effect includes the total impact on a natural resource, ecosystem, or human community due to past, present, and future activities or actions of Federal, non-Federal, public, and private entities. Cumulative Effects may also include the effects of natural processes and events. Accordingly, there may be different Cumulative Effects on different environmental resources.

Environmental Impact Assessment (EIA): "A systematic analysis of the potential impacts of proposed development projects on the natural and human environment, for identifying measures to prevent or minimize impacts prior to major decisions being taken and project commitments made" (Noble 2013). In Alberta, an EIA report must be prepared in accordance of the final terms of reference issued by the Director under section 48(3) of the *Alberta Environmental Protection and Enhancement Act*, RSA 2000, c E-12. As described in section 49 of the *Act*, the report must include:

> (d) a description of potential positive and negative environmental, social, economic and cultural impacts of the proposed activity, including cumulative, regional, temporal and spatial considerations;
> (e) an analysis of the significance of the potential impacts identified under clause (d);
> (f) the plans that have been or will be developed to mitigate the potential negative impacts identified under clause (d).

Environmental Monitoring: A component of environmental assessment; a process to monitor possible environmental effects before, during, and after a project is initiated. In general, monitoring means to observe a place or situation for changes over time, usually with tools and indicators to measure these changes. Monitoring programs may be set up to measure change in the bio-physical environments of land, water, and air, and also changes in the human environments.

Indigenous Knowledge (IK): A cumulative body of knowledge, know-how, practices and representations maintained and developed by people with extended histories of interaction with the natural environment. These sophisticated sets of understandings, interpretations and meanings are part and parcel of a cultural complex that encompasses land use, resource use practices and includes management that is based on Indigenous laws, values and principles,

language, naming and classification systems, ceremony, spirituality and worldview (International Council for Science and The United Nations Educational, Scientific, and Cultural Organization 2002).

Oral History: Historical and Traditional Ecological Knowledge that is remembered and transmitted through oral storytelling, which may or may not be represented in narrative form.

Traditional Ecological Knowledge (TEK): "[T]he cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment" (Berkes 1999:8). TEK is a component of the larger body of knowledge known as Indigenous Knowledge.

Traditional Territory: (Also, Traditional Lands) An area used by a specific Indigenous group of people over time, as related to their history, culture, economy, political organization, and kinship network.

Traditional Land Use (TLU) (activity): Indigenous people's use of the land for harvesting plants and animals, and for other cultural and spiritual aspects that are an integral part of such practices, based on knowledge, culture, and experience passed on through generations of long-term residence in a particular place/area. We define Traditional Land Use as an Aboriginal and Treaty Right, and as the expression of practising Indigenous culture, and Fort McKay's unique traditional way of life.

Traditional Land Use Study (TLUS): A type of social science investigation that brings together ethnographic, archival and sometimes archaeological techniques with oral histories held by members of an Indigenous community to identify places and values of cultural, economic, heritage or community importance for the maintenance and reproduction of an Indigenous community or society. Traditional Land Use Studies can provide a baseline from which to understand and assess the potential adverse impacts of a proposed industrial development on Traditional Land Use, Aboriginal, and Treaty Rights.

Traditional Use Value (what is impacted): In the context of Traditional Land Use Studies, a 'Value' is defined as a specific place, resource, or interest reported by First Nation members during the study that is considered important to the First Nation's cultural security and continuity, identity, and land use. TU Values include practices and interests critical to the exercise of Fort McKay's Aboriginal and Treaty Rights.

A Site-Specific Value is one that can be mapped by researchers because it can be associated with a location mapped through interviews or other means. Site-Specific TU Values, such as placenames, cabins, trails and hunting areas, represent specific instances of regular use that illustrate the wider practice of kinship, livelihood, and cultural continuity within First Nation's Traditional Territory. An Intangible TU Value may be specific to a resource or other concern but is spatially indistinct or difficult to map. Intangible TU Values include critical conditions or elements that must be present for the continued practices, such as the hunting and gathering of wild foods. As such, Intangible TU Values range from the direct presence of traditionally hunted animals and other wild foods on the land to continued access to traditional hunting areas and non-contaminated sources of wild foods. Intangible TU Values also include cultural resources, such as the transmission of cultural knowledge, which includes ecological and phenological knowledge across generations and the continued use of traditional placenames.

Treaty No. 8: Treaty No. 8, signed in 1899, is an agreement that involved a solemn exchange of promises between Canada and Fort McKay, which included the condition that Fort McKay's traditional way of life would be protected, and that they would not be restricted to their reserve lands.

Treaty Right: Constitutionally protected Rights collectively held by Fort McKay pursuant to the oral and written terms of Treaty No. 8, including the right to hunt, fish, and trap for livelihood purposes and generally to continue to use the land in the future in the same manner as before Treaty; and the right to the use and benefit of Reserve Land.

LIST OF ACRONYMS

CKK: Community KnowledgeKeeper
FMSD: Fort McKay Sustainability Department
LSA: Local Study Area
RSA: Regional Study Area
TEK: Traditional Ecological Knowledge
TLU: Traditional Land Use
TLUS: Traditional Land Use Study
TU: Traditional Use
FMFN: Fort McKay First Nation

1. INTRODUCTION

This Traditional Land Use Study (TLUS) was completed as a part of Fort McKay First Nation's (Fort McKay) participation in the consultation process for Suncor Energy Inc.'s (Suncor; the Proponent) proposed Base Mine Expansion Project (BMX; the Project). The purpose of this TLUS is to document Fort McKay's Traditional Use through the identification of past, current (within living memory[7]), and planned future Traditional Use (TU) Values that could be potentially impacted by the Project, and to record oral history. Anticipated Project effects were also recorded.

This report opens with an overview of the Fort McKay First Nation and Suncor's proposed Project and is followed by an ethno-historical background that includes relevant previously documented information on the history and Traditional Land Use (TLU) practices of Fort McKay. The background is followed by a description of TLUS research methods and a discussion of the research results, including anticipated Project effects on Fort McKay's TU Values, traditional land use opportunities, and the Treaty and Aboriginal Rights and interests of Fort McKay. The report concludes with an assessment of both the anticipated Project effects on Fort McKay's TU Values, traditional land use opportunities, and on the Treaty and Aboriginal Rights and interests of Fort McKay. Further work is contemplated by Fort McKay on the development of mitigation and accommodation options.

Fort McKay is a Cree and Dene (Chipewyan) First Nation located north of Fort McMurray in northeastern Alberta with Reserve Lands at the Hamlet of Fort McKay, Moose (Gardiner) and Buffalo (Namur) Lakes, as well as on the east side of the Athabasca River (see Figure 1). Fort McKay's Traditional Territory encompasses much of the oil sands region. Fort McKay First Nation has legally protected Rights that extend throughout their Traditional Territory. Fort McKay has a long history of living a land-based way of life. It is out on the land where core spiritual and social structures are formed and cultural values are passed down and reinforced through hunting, trapping, fishing, and the gathering of berries and plants. Fort McKay's Aboriginal and Treaty Rights protect its ability to continue with these Traditional Land Use activities into the future. Members of Fort McKay wish to continue to practice Traditional Land Use, and exercise their Rights, Indigenous culture, and way of life.

The Project is located in north-eastern Alberta, approximately 37 km south of Fort McKay First Nation reserve 174 at the Hamlet of Fort McKay, in Suncor's lease in Townships 90, 91, and 92, Ranges 9 to 12, W4M. The Project LSA intersects RMFA (Registered Fur Management Area) #587 and #2297, which are both Fort McKay-held traplines. The Project is also in close proximity to other community-held traplines and may affect access to RMFA #2894 and RMFA #772. Traplines have historically been and continue to be areas where members pass cultural values and traditions down to future generations. Although some Traditional Land Use activities are currently practiced within the Project LSA, the level of existing disturbance and contamination in this area reduces the ability of Fort McKay members to safely and consistently access TU sites. Current TU practices in the LSA, therefore, do not represent historical pre-development or planned future levels of seasonal land use. For a finer scale map figure showing the Project location and Local Study Area (LSA), see Figure 2.

[7] The Voisey's Bay Mine and Mill Environmental Assessment Panel Report (Canadian Environmental Assessment Agency 1999) provided the following definition of current use: "In its broadest sense, [current use] means land use within "living memory" as recorded by the map biography method typically used to establish Aboriginal title or site-specific Aboriginal rights. This method produces a comprehensive record of the last 30 to 40 years and, for more limited purposes, a record as long as 60 to 70 years" (Canadian Environmental Assessment Agency 1999).

The Project area borders and is near multiple other oil sands projects, including the Syncrude Mildred Lake Mine, the Suncor MacKay River Expansion, Suncor Millennium Mine, and the Suncor Base Plant.

Suncor has planned the proposed Project to sustain existing levels of bitumen production at the Suncor Base Plant, which is located on the north-eastern corner of the proposed Project footprint and within the LSA. This TLUS is being conducted in the early stages of the Project's development and no further Project information is currently available. An Alberta Energy Regulator application for the Project has not yet been submitted, and the proposed Project has yet to undergo an Environmental Impact Assessment. Fort McKay agrees with early consultation on the TLUS so that the results can be properly and adequately incorporated into the Environmental Impact Assessment results and early consultation and accommodation can occur.

The purpose of the TLUS is to identify past, current (within living memory), and planned future Fort McKay Traditional Use Values that could be affected by the Project, as well as to identify the Project's contribution to these existing and cumulative effects. The Project is of interest and concern to Fort McKay First Nation because if the Project is permitted and constructed it would directly and adversely affect Fort McKay Treaty and Aboriginal Rights. If built, the activities and features related to the Project would directly disturb land within Fort McKay's shrinking land base in its Traditional Territory, with additional indirect effects on the surrounding environment through air emissions, noise, traffic, water, and other Project-related environmental effects that will damage or diminish the surrounding lands for the exercise of Treaty and Aboriginal Rights. By exacerbating the level of existing disturbance and pollution in this area, which already reduces the ability of Fort McKay members to safely and consistently access TU sites, the Project is anticipated to contribute to the cumulative effects of existing oil sands development within Fort McKay's Territory. Figure 2, below, shows the existing developments that already intersect or are in close proximity to the Project Location and Local Study Area.

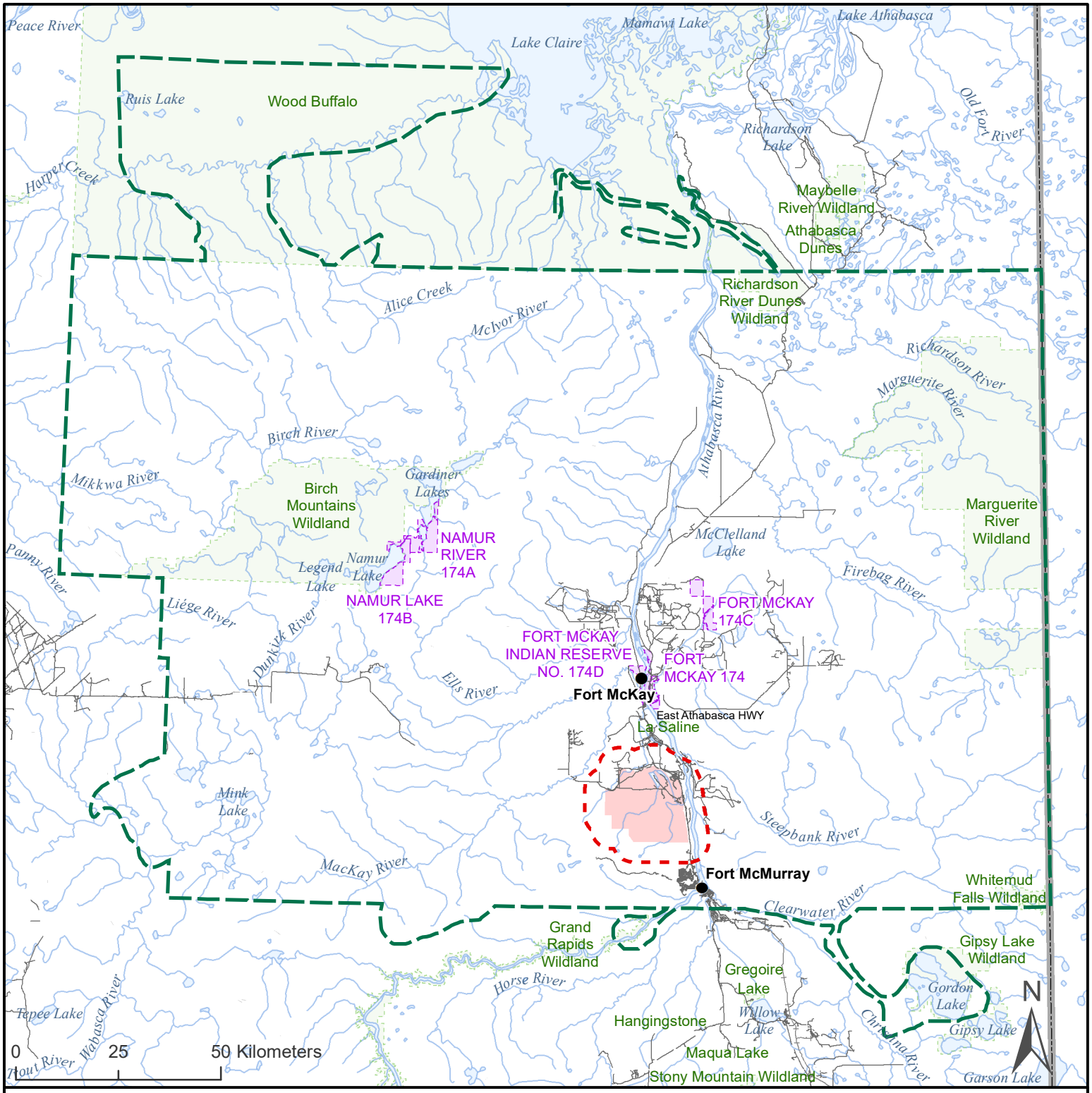

Figure 1: Project Location and Study Areas

- Suncor Basemine Expansion Project Area
- Traditional Land Use Local Study Area
- Regional Study Area
- Fort McKay Reserve Land
- Park
- Road
- City, Town, or Village

Created: February 2019; Coordinate System: NAD 1983 UTM Zone 12N; Map Scale: 1:1,300,000; Overview Map Scale: 1:30,000,000
Data Sources: Fort McKay First Nation, AtlasLIS Ltd., Province of Alberta, Government of Canada.

FORT MCKAY FIRST NATION

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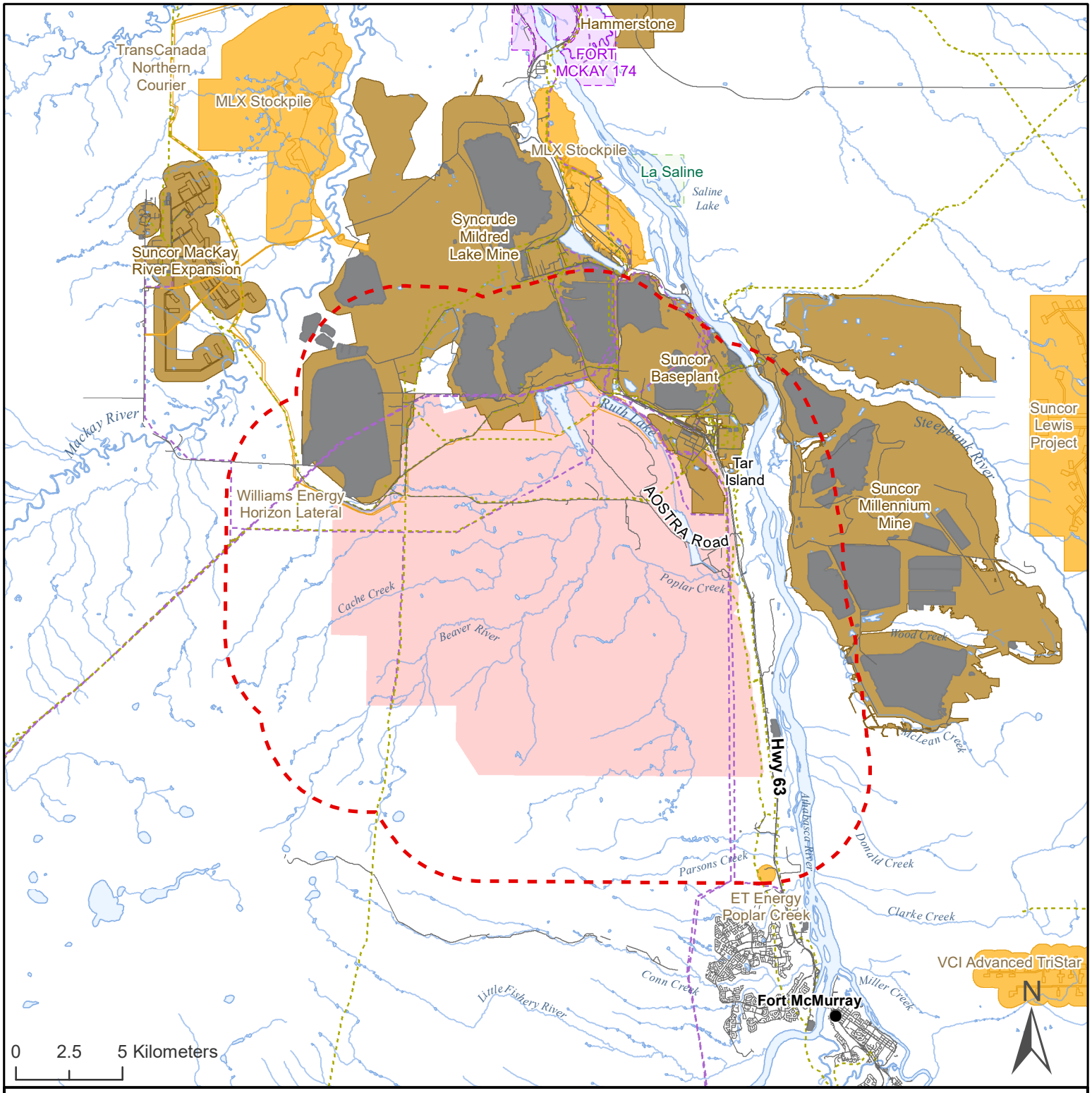

Figure 2: Project Location and Local Study Area

- Suncor Basemine Expansion Project Area
- Traditional Land Use Local Study Area
- Existing Development
- Planned Development
- Fort McKay Reserve Land
- Tailings Pond
- City, Town, or Village
- Road
- Pipeline
- Transmission Line
- Park
- Water Feature

Created: February 2019; Coordinate System: NAD 1983 UTM Zone 12N; Map Scale: 1:250,000; Overview Map Scale: 1:30,000,000
Data Sources: Fort McKay First Nation, AtlasLIS Ltd., Province of Alberta, Government of Canada.

This map is a living document and is intended to be amended and refined over time.

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2. BACKGROUND

This background section provides an overview of the history of the Fort McKay First Nation (Fort McKay), including its engagement in the fur trade, the signing of Treaty No. 8, and its enduring connection to its Traditional Territory and *sense of place* as demonstrated through Traditional Ecological Knowledge (TEK) and the Seasonal Round. This cultural and historical context informs Fort McKay's present-day situation as a First Nation community in northern Alberta surrounded by large-scale industrial oil sands developments and how the community experiences the impacts of this development. The large-scale taking up of land by industrial development, the associated air and water pollution, and the influx of non-Indigenous people to the region have resulted in adverse effects on Fort McKay's rights, culture, TEK, and traditional land use activities. As this report documents, these adverse effects, as well other significant changes to Fort McKay's Traditional Territory, including access restrictions to the land, declining wildlife and fish populations, and declining quality of environment, have adversely impacted Fort McKay's Aboriginal and Treaty Rights. This background section is based on a review of key ethnographic and historical literature as well as a review of the Fort McKay Sustainability Department's currently available TLUS data (from previous TLUS studies). Please see Appendix A: Ethnographic Literature Review, for a description of key literature reviewed.

The following background information is critical in the context of conducting an Environmental Impact Assessment. An understanding of the social and cultural context and the affected community's perspective of environmental impacts is necessary for understanding Project-specific impacts on the Aboriginal and Treaty Rights of the Fort McKay First Nation (Johannes 1993; Sallenave 1994; Baker and Rappaport 2005).

2.1. THE HISTORY OF FORT MCKAY

The Fort McKay First Nation as a legal entity came about through the creation of Indian Bands after the signing of Treaty No. 8 in 1899. In order to understand the origin of the peoples making up Fort McKay, it is important to consider the beginning of the fur trade, when a number of different Indigenous and European groups came into contact with one another along the lower Athabasca River. As a result of this contact, the ancestry of the members of the community of Fort McKay is comprised of not only of Dene (Chipewyan), but also of Western Woods Cree (McCormack 2013:6) and their mixed-ancestry descendants. The people of the Dene Nation have made their home in the taiga, barren lands, and boreal forests of north-central Canada since time immemorial. Because of the cultural and economic importance of caribou, Dene people traditionally travelled great distances as they followed migrating herds. Participation in the fur trade did not change this practice; however, the new economic opportunities provided by the fur trade shifted seasonal migration patterns to areas within Dene Territory (such as the boreal forest) that would allow them to supply more products to the fur trade (Gillespie 1976). With the establishment of a fur trade post near the current location of the village of Fort McKay in 1820, both Dene and Cree people came to trade and comingle. Over time, Dene, Cree, and the children of Dene and Cree unions with European fur traders came to form the Fort McKay First Nation.

The Dene and Cree ancestors of Fort McKay members did not live in year-round permanent locations, but followed their *Seasonal Round,* sometimes changing the broader areas they used. The Seasonal Round is a land use and management pattern involving a strategic movement on the land that promotes sustainability and prevents depletion of resources. A Seasonal Round includes travelling over land and water to access well-established hunting, fishing, plant harvesting, ceremonial, gathering, and trading areas. The Seasonal Round is a planned rotational use of seasonally available resources based on in-depth Indigenous ecological and phenological

knowledge of a Territory. It is not a random or "nomadic" practice. The concept of the Seasonal Round has not been well understood by non-Indigenous people. As Fort McKay has observed, "Our systems of using the land and our economy were not seen, understood, and least of all respected by the 'outsiders'" (Fort McKay Tribal Association (FMTA) 1983:31). An overview of the historical Fort McKay Seasonal Round and connection to Fort McKay Traditional Ecological Knowledge (TEK) is explored in detail below in Section 2.2.

Critical to the Seasonal Round was an extensive network of trails located throughout Fort McKay's Traditional Territory (Fort McKay First Nation 1994:16). These trails, originally cut by hand, provided all-season access to important resource harvesting areas and connected key cultural nodes on the landscape. As an indication of the vast network that these trails represented, within the Forty Township Study Area used in the Fort McKay Specific Assessment (2010),[8] there were 1,343 km of traditional trails identified prior to oil sands development (Fort McKay Industry Relations Corporation 2010:57). Generally speaking, trails followed the path of least resistance, using creeks, river valleys, lakeshores, and high ground within muskeg areas where possible. In the summer, people often travelled via canoe or other boats on the rivers to fishing and gathering grounds, while upland areas were accessed by foot and horseback. In the winter, people were able to travel across the expansive frozen creeks and muskeg by foot and dog team, and, more recently, by snowmobile (Fort McKay First Nation 1994:16).

Historically, Cree and Dene (Chipewyan) people travelled and lived on the land as members of small family groups. Each of these groups were related through kinship ties, either living together as a co-residential unit or in close proximity to one another. With the exception of the very young and the very old, the members of these groups were self-sufficient. While these family groups were egalitarian, they did usually have individuals whose knowledge and decisions were respected and followed by others. These leaders tended to be very knowledgeable individuals and experienced hunters whose day-to-day actions showed how one should relate to the land and to other people. Leaders tended to lead quietly by example rather than by coercive power. The political, social, and economic organizations of both Dene and Cree culture hold respect and the autonomy of the individual as central values. Equal access to all necessary resources and the presumed ability of all to learn the skills that facilitate a reciprocal and self-sufficient way of life, based on values like kinship and the interconnectedness of all inhabitants of the land, made this egalitarian way of life possible (Goulet 1998).

The multiple kinship ties that connected each individual to a larger web of relations further served to create a social safety net in case of variations in resource availability. The larger regional group would come together from time to time for particular activities such as fishing and hunting camps. As such, the overall group, or "regional band" as it came to be called by the administrative system created after the signing of Treaty No. 8, can be seen as loosely corresponding to the current Fort McKay First Nation. It should be noted, however, that living together permanently in such a large group was not part of Fort McKay's traditional way of life. The area historically known as the "Traditional Lands" or "Traditional Territory" of Fort McKay was defined by social networks rather than by geographic boundaries. Since any person was allowed to join a group to which he or she could establish a primary kinship relation, the potential areas utilized by an individual for Traditional Land Use were fluid (McCormack 2013:9–10).

As explored below, the highly successful participation of the ancestors of Fort McKay in the fur

[8] This Study Area includes a smaller area than the Fort McKay Traditional Territory and the Regional Study Area (RSA) considered in this report.

trade was based on these flexible and expansive kinship relations and on unrestricted access to all of their Traditional Territory. What the newcomers saw as a "wilderness" was the Cree and Dene peoples' intimate home and faithful provider. It should be noted that concepts such as "wilderness" are European constructs that have no Dene or Cree equivalence, since they are a foreign way of viewing the land. Rather, Indigenous people had, and continue to have, an intimate personal knowledge of the land that includes a network of water routes and trails managed through stewardship practices like controlled burning (Spak 2001; Goulet 1998; McCormack 2013:10). Further, as McCormack points out:

> While most Cree and Dene (Chipewyans) did not have permanent, year-round settlements until after World War II, that does not mean that they were "nomads" in the "random use" sense of that term. They used the land and its resources in an orderly and methodical manner, based on their highly detailed knowledge of plant and animal behaviour and interaction, their ability to predict ecosystem dynamics, and their practices of controlled burning (2013:10-11).

Today, this knowledge is often referred to as "Traditional Ecological Knowledge (TEK)," "Traditional Environmental Knowledge (TEK)," "Indigenous Knowledge (IK)," or "local knowledge". This deep understanding of and connection to the land and animals is embodied in the practices of Traditional Land Use and the Seasonal Round, as discussed below.

2.2. FORT MCKAY SEASONAL ROUND

Fort McKay's Seasonal Round is informed by TEK, which is defined as follows:

> A cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment (Berkes 1999:8).

Indigenous people decided which areas to use based on the annual cycle of resource availability. Along with social needs, the Seasonal Round was very much influenced by a deep spiritual connection to the land. The land and its plants and animals were and are seen to contain a spiritual presence that can help those who maintain appropriate respectful relationships with their surroundings. In the same vein, individuals can acquire special spiritual connections that will assist them in the success of their resource harvesting. Accordingly, leaders were often individuals with great spiritual power. That there is more to the land than what the newcomers could/can see is reflected to this day. Dene often make reference to the "land as the best teacher". Elders often see real knowledge as knowledge gained through personal experience on the land. Book-based knowledge, on the other hand, may be seen as only secondary knowledge and thus inferior to, or at least less reliable than, real knowledge (Goulet 1998; Coutu and Hoffman-Mercredi 1999; Sharp 2004; McCormack 2013, Personal Communication with Elders by Stella Spak in Tadoule Lake and Lac Broche)

In what became known by the Government of Canada as the Athabasca District, the Dene and Cree lived self-reliant and independent lives. As discussed in Section 2.1, their social organization typically consisted of small family groups who followed a seasonal rotation around a recognized territory to gather resources as they became abundant in an annual cycle (Smith 1981). In reference to the significance of this lifeway, Fort McKay members describe themselves as "people of the land

– hunters and gatherers. Without the land we feel lost. Without the land we are nothing" (Fort McKay Industry Relations Corporation 2010:6).

Following the pattern of the Seasonal Round, the people of Fort McKay hunted and trapped a wide variety of animals throughout their Traditional Territory, including moose, caribou, bear, lynx, wolf, fisher, muskrat, ermine, fox, beaver, and mink (see Appendix B for a detailed list of culturally important mammal species). Beginning in the 1940s with the imposition of the registered trapline system, Fort McKay members began to carry out hunting and trapping more intensively on family trapline areas. From these areas, families worked as a unit to prepare for the fall hunting season and the spring hunt (Fort McKay Tribal Association (FMTA) 1983:88–91). In the 1960s, as the fur trade dwindled, Fort McKay members began to settle in Fort McKay more permanently. As the Fort Mckay Tribal Association describes:

> [The 1960s] is the approximate time period in which year-round settlement and living patterns began to centre more permanently in Fort McKay –allowing band members to get supplies and trade, so their children could attend mandatory school, and receive family allowance payments (qtd in Fort McKay Industry Relations Corporation 2010:2)

It is important to note that while traditional activities are currently practiced by many people from Fort McKay whenever possible, the cumulative effects of the provincial regulatory system and oil sands development have limited the ability of Fort McKay members to carry out cultural activities within their Traditional Territory. Community members practicing TLU are increasingly confined to areas that are relatively undeveloped, such as Moose (Gardiner) Lake, Buffalo (Namur) Lake, and surrounding areas. These limitations have had significant adverse effects on the maintenance of Fort McKay's Traditional Knowledge and social and cultural well-being (Behr and Garibaldi 2010:17). As a result, the overview of traditional resource harvesting activities below represents the traditional seasonal activities of Fort McKay First Nation members prior to large-scale oil sands developments in their Traditional Territory

FALL (SEPTEMBER - DECEMBER)

Fall was a time for hunting big game such as moose (but also deer, caribou, and bison when available), building meat caches, and drying meat. Productive moose hunts have typically occurred on the Clearwater River, the Firebag River, around Muskeg Mountain, McClelland Lake, Birch River, Marguerite River, in the areas south of Legend Lake, and near Ruth and Mildred Lake. Productive hunting of woodland caribou generally occurred west of the Athabasca River from the Thickwood Hills and Dunkirk River to the south, and to the Chipewyan River, Snipe Creek, and Mikkawa River in the north. Moose also frequented this range, but deer were generally only found in the southern part of this range, such as along the McKay River. Moose and deer were also well established in the Buffalo (Namur) and Moose (Gardiner) Lakes area (Fort McKay First Nation 1994:22).

Other important fall activities included getting ready for the trapping season by repairing and making equipment, picking berries and drying them for winter use, making jams and jellies, fishing, and gathering and drying medicinal plants (Tanner, Gates, and Ganter 2001:46–47). The bulk supply of fish was caught and preserved during the spring and fall fish runs, but fishing was a year-round activity. In the fall, a winter supply of dried fish was put away. Species included whitefish, jackfish, perch, goldeye, lake trout, pickerel, grayling, and brook trout. Chub and ling cod were primarily used as dog food. Fish camps were also important social events, providing time to gather and socialize. Important fishing areas include the Athabasca River corridor, the Clearwater River, the Firebag River, the Richardson River, the Buffalo (Namur), Moose (Gardiner), Sand, and Eaglenest Lakes, and the Chelsea River and Chipewyan Lake (Fort McKay First Nation 1994:23).

Fall was also the time of year to replenish one's grease supply. The main sources for grease were moose or bear fat. The grease, or tallow, was rendered by first boiling and then pouring the warm and still liquid grease into cleaned and prepared moose bladders for storage. Among other uses (such as for medicinal purposes when mixed with castor oil), this rendered grease was mixed with ashes to make soap (Fort McKay First Nation 1994:40–41). Further fall activities included tanning moose hides, hanging fish for winter dog food, gathering vegetables from gardens, hunting waterfowl for winter use, making or mending fish nets, building smoke frames, collecting duck and geese that would be washed, dried, and then used for pillows and blankets, snaring rabbits for their meat, and tanning pelts for clothing, bedding, and decoration (Fort McKay Environment Services (FMES) 1995; Tanner, Gates, and Ganter 2001:46–49; Athabasca Chipewyan First Nation (AFCN) 2003:72).

From September to October, relatives often set up camp in hunting areas that their family had seasonally inhabited for many generations. While individual family hunting area boundaries sometimes overlapped, there is a general understanding and respect for the primary family that hunts in each area year after year. According to a traditional economic resource study conducted on behalf of Fort McKay in 2001, in order to put away enough moose meat for the year each family needed a productive moose hunting area that was at minimum approximately 375 km^2 (37, 500 ha) (Tanner, Gates, and Ganter 2001)[9]. Generally, small groups of men would spread out over a hunting territory in search of moose while women and young children would stay at a centrally located camp to process the harvest. Through drying meat on racks over slow smouldering fires, and more recently by filling freezers, each family would preserve eight to ten (8-10) moose in the autumn to last throughout the year. The fall was also a time to build or repair trapline cabins, cut firewood for the winter, and make general preparations for the winter months on the trapline. This includes taking supplies out to cabins, preparing food, storing supplies etc. (Tanner, Gates, and Ganter 2001).

> Trappers with traplines on the east side of the Athabasca River left around September 15 and returned around December 15. Those with traplines on the west side of the river started on October 15 and were able to return to Fort McKay for provisions about every three weeks. The trapping season started in early October for longhaired animals and October 15 for other animals (Tanner, Gates, and Ganter 2001:46).

Additionally, it was common to hunt "chickens" (grouse and ptarmigan) throughout the year, particularly when people desired fresh meat or when larger game were scarce.

WINTER (JANUARY - MARCH)

In the recent past, Fort McKay families would leave the hamlet and disperse to areas where furbearing animals were abundant. Even before the fur trade, small mammals were an important source of food, furs for clothing, tools, and in some cases medicine. While the fur trade undoubtedly transformed the local economy and supplemented family incomes, few people today see trapping as an income-producing occupation in and of itself. In fact, in most cases, what is "earned" in the bush is rarely treated as "income" (Fort McKay Tribal Association (FMTA) 1983). Fort McKay's 1994 TLUS calls traplines "trapping homesteads," as the winter seasons spent on the traplines

[9] Tanner *et al.* have estimated a pre-development per family subsistence annual moose harvest of 8.2 – 10.4 moose per year (2001:61), a moose density of 0.24 per km^2 (2001:29), and an annual harvest rate of 10% of moose in a given area. Thus, at a harvest rate of 0.024 moose per km^2 a family would need exclusive hunting rights to 375 km^2 in order to harvest an average of nine (9) moose per year.

emphasized subsistence activities, or bush life. However, commercial trapping has also been undertaken both historically and presently on traplines. Most animals trapped for fur were eaten, providing fresh meat in the winter as well as income from the fur. As anthropologist Claudia Notzke states in her book on the challenges and opportunities that Indigenous people in Canada encounter in their efforts to use renewable and non-renewable resources, the income and subsistence provided by trapping was substantial:

> In such subsistence oriented lifestyle, a little income from trapping can go a long way. While living and working on the trapline, trappers often obtain other wild game as well as fur-bearers for food. The economic importance of meat of fur-bearing animals for human consumption is great among Aboriginal trappers . . . meat obtained this way is also used as bait and dog food. Fur and leather goods are made for commercial and personal use (Notzke 1994:123).

Traplines and "trapping homesteads" provide evidence of intensive TLU. It was and is on the traplines that a number of wintertime TLU activities were centred, including camping, constructing and maintaining cabins, and all TLU related to hunting, trapping, fishing, and gathering. Fort McKay First Nation describes the social, cultural, and economic significance of the trapline as follows:

> . . . [T]he territory where people hunted, fished, picked berries, gathered duck eggs and trapped for local domestic consumption and trade. The trapline was the community food supply for the people . . . it was and is synonymous with meat for the table; with socialization of children; with the role of the elders as carriers and teachers of traditional environmental knowledge; and with cultural sustainability (Fort McKay First Nation 1994:2).

Registered Fur Management Areas (RFMA) overlap with Fort McKay's historical and current Land Use. If available and relatively undisturbed, For McKay members intensively exercise their Treaty and Aboriginal Rights on these traplines, which are considered homesteads. In addition to their constitutionally-protected Treaty Rights, the RFMA grants a statutory right to commercial trapping.

In addition to trapping, hunting and ice fishing were also winter pursuits. Ice fishing could be done either with individual fishing lines or by setting a net under the ice. The latter method was effective but required great skill since the net (often 45-60 feet in length) had to be manoeuvred under the ice between holes approximately 15 feet apart from each other (Fort McKay First Nation 1994:45).

Winter was also a time for skinning, stretching, and sewing hides into hand-crafted garments, drying pelts, and repairing and making clothing and equipment such as snow shoes, tanning frames, fish hooks, fish nets, birch bark baskets, and other tools. Other important activities in the winter included hauling water and wood and making dog food (Tanner, Gates, and Ganter 2001). The trapping season came to a close in mid-March for longhaired animals and in late May for beaver and muskrats (Tanner, Gates, and Ganter 2001).

SPRING (APRIL – MAY)

Springtime activities included trapping muskrats and beaver, which were important for food as well as for their marketable hides. Net fishing and small and big game hunting were also important spring activities (Tanner, Gates, and Ganter 2001; McCormack 2013). Duck, gull, and goose eggs were prime delicacies and were either boiled and eaten or added to the making of bannock or other foods. After May 15th, the trapping season was usually over and the annual spring hunt for migrating birds began. Apart from providing delicious meat and feathers used in the making of

pillows and blankets, waterfowl were also used to make waterproof loon and pelican bags. For this purpose, the loon (or other duck or goose) was skinned with the feathers left intact. The skin was then stretched by stuffing the cavity with dry moss and then leaving it to dry. The legs were cut off at the first joint to avoid leg holes in the body of the hide, leaving the only opening at the neck, which was rimmed with moose hide that could be pulled tight with a leather thong. This bag protected its contents from moisture and dust and could be used to store food, sewing materials, or other small items.

Other springtime activities included snaring rabbits and collecting birch sap, moss, medicinal plants, and berries that had remained on the bushes since fall and were a good source of early spring vitamins. Rose hip and cranberries, for example, will simply freeze on the branches in the winter and are available to be eaten year-round (Fort McKay Industry Relations Corporation 2010; Fort McKay First Nation 1994).

Early spring was also a common time for controlled burning, a formal practice of extensive land management that served to maintain habitat for animals, edible berries, and other plants upon which people relied (McCormack 2012) At this time, people also began making preparations for summer activities, including repairing fishnets, making hide stretchers, and building meat caches. This short transitional season was quite busy as people prepared to move from winter harvesting locations to summer gathering places. Because more than half of Fort McKay's Traditional Territory is comprised of muskeg (peatlands), spring breakup makes travel difficult. In the recent past when people spent the winter on the traplines, most people waited until the rivers were free of ice before travelling long distances. After spring break up they often visited trading posts to sell the rest of their fur and visit with friends and relatives (Tanner, Gates, and Ganter 2001; McCormack 2013).

SUMMER (JUNE - AUGUST)

> Summertime activities included hunting, fishing, berry picking, drying meat and fish, preparing hides and tools, building canoes and drying frames (racks), and gathering wood products and medicinal plants (Tanner, Gates, and Ganter 2001:46).

Fishing is an important summer activity that starts in May and can continue until freeze-up in October. Fishing activities included travel to fishing sites, preparing fishing gear, setting nets, picking fish from nets, cutting and cleaning fish, and then smoking and drying fish on racks (Tanner, Gates, and Ganter 2001). Fishing camps were set up at traditional locations to prepare fish for human consumption and provide stores of dog food and bait for trapping furbearers (Stanislawski 1998). Gatherings at summer fish camps along places such as the Athabasca River, Moose (Gardiner) Lake, and Buffalo (Namur) Lake became hubs of social interaction and a place to pass on traditional skills and knowledge and discuss where the next year's harvest activities would be located.

In the 1960s, fishing was still a widespread activity and played an important role in the community's culture and economy (Stanislawski 1998). However, the industrial pollution of Fort McKay's Traditional Territory changed these seasonal practices. Some people in Fort McKay continued to fish, but to a more limited extent due to the industrial uptake of land and people's perception of the health risks caused by pollution. In a community-supported report published in 1998, some Fort McKay members indicated that, due to health concerns, they had stopped eating fish out of the previously substantial fisheries on the Athabasca River. As one elder stated, "we can't eat fish out of the river (Athabasca) anymore" (Stanislawski 1998:55). Today, most Fort McKay members

consider fish from the Athabasca River too contaminated by oil sands pollution to safely consume (Fort McKay Tribal Association (FMTA) 1983:91; Stanislawski 1998:1). The majority of current fishing activities occur at the Buffalo (Namur) and Moose (Gardiner) Lakes area.

In addition to fishing, the Cree and Dene peoples of the Athabasca region gathered and preserved berries during the summer. Scholars across Canada have documented the role of berry picking in Indigenous culture (McAvoy and Shirilla 2005; Parlee, Berkes, and the Teetl'itGwich'in 2005; Thornton 2005; Emery 1998; Turner 1997), and there is substantial evidence that berry picking and the harvesting of other boreal forest plants has been an important summer activity in Fort McKay (Fort McKay First Nation 1994; Tanner, Gates, and Ganter 2001; BG-TEK Consulting 2003; Behr and Garibaldi 2010; Dersch and Bush 2008; Baker 2014). In a Fort McKay TLUS (1994), one Elder identified several harvested berries as important berries: "the berries were cranberry, blueberry, raspberry (ekhoszea), chokecherry, strawberry (engeazae), Saskatoon (kheesgea) in early summer" (Fort McKay First Nation 1994:111). The Fort McKay Berry Focus Group and the Wood Buffalo Environmental Association also conducted a recently concluded study incorporating the traditional knowledge and concerns of Fort McKay members into the scientific monitoring of local berry patches (Baker 2014).

The nutritional and cultural importance of berry picking is exemplified by the fact that during the annual traditional harvest, each Fort McKay family spent on average about 34 days picking and drying approximately 202 pounds of berries (Tanner, Gates, and Ganter 2001:61, 75). One elder explained that "sometimes berries are dried on tarps for three days if the days are hot. They shrink and dry, and when you boil and cook them they are just like when they were fresh" (Fort McKay First Nation 1994:108). In more recent times, people have preserved berries through canning or freezing. While important in terms of their medicinal and nutritional value, Fort McKay First Nation members also associate many social and cultural values with berries and berry harvesting. It should also be noted that Dene and Cree people in the region have traditionally managed berry patches by selecting areas for harvesting, limiting harvest quantities, and using fire to increase long term yields (Human Environmental Group (HEG) 2009:37).

The seasonal practices described above are informed by the same cultural values and connection to the land that have guided community members for millennia and continue to guide and inform the Traditional Land Use of Fort McKay members today. Fort McKay traditional harvesting activities provide sustenance, reaffirm the continuing vitality of Fort McKay's culture, and strengthen the kinship links through which harvesting is organized and wild food is distributed (Fort McKay Tribal Association (FMTA) 1983; Fort McKay First Nation 1994). As discussed below, however, the economic and social shifts stimulated by the fur trade, the subsequent influx of prospectors and settlers, the signing of Treaty No.8, and the eventual creation of Reserves altered the lifeways and Seasonal Round of the Cree and Dene peoples who would eventually settle in Fort McKay. These events hindered their ability to continue to freely practice land management strategies and seasonal movement within their Territory.

2.3. THE FUR TRADE

Europeans entered Fort McKay First Nation's Traditional Territory in the early 1700s to search for fur resources. In 1778, Peter Pond established a fur trading post on the Athabasca River south of present-day Fort Chipewyan, while Fort Chipewyan in its present location was founded in 1788 (Parker 1987:1). By the late 1700s, Peter Pond's fur trading business was a major economic success and the area began to attract other European traders (Parker 1987:10). In 1820, the Hudson's Bay Company established a fur trade post at what is today Fort McKay. Historical records

indicate that the Dene were not dependent on the fur trade initially and it was difficult for fur traders to secure their interests. As Samuel Hearne noted in the 1770s:

> "[T]he real wants of these people are few, and easily supplied; a hatchet, an ice chisel a file and a knife, are all that is required to enable them, with a little industry, to procure a comfortable livelihood." Hearne also noted that the Dene "live generally in a state of plenty, without trouble of risk; and consequently, must be the most happy, and in truth the most independent also"] (Gillespie 1975)

The participation of the Cree and Dene in the fur trade during this period was uneven. While the Cree were drawn into the fur trade economy at a more rapid pace than the Dene, over time the Dene also began to rely more and more on the fur trade. This economic motivation necessitated moving their seasonal round closer to the trading post and thus into boreal forests where furbearing populations were more abundant (Gillespie 1976). The connection of the Dene to caribou was not interrupted and reliance upon seasonal caribou hunts (and the economic independence this provided) never ceased. Participation in the fur trade did provide the Cree and Dene with new materials that they used to improve upon traditional technology. Access to these materials did not change their Traditional Knowledge-based and land-centered way of life. These new materials also did not alter Cree and Dene cultural values that centred on respect for the personal autonomy and decision-making capabilities of others. This manifested in behaviour that is framed as "not telling someone else what to do" or "not interfering with someone else" (McCormack 2013; Goulet 1998).

Thus, although Dene and Cree involvement in the fur trade did not change their overall way of life, Fort McKay did gradually become part of the annual Seasonal Round. This led to the establishment of permanent structures and garden plots in the community. These houses and gardens were used during their stay at the Fort but did not necessitate permanent residence (McCormack 2013).

By the early 20th century, the seasonal round of the Dene and Cree, which now included spending part of their time living in proximity to Fort McKay, continued to consist of hunting, trapping, fishing, and gathering, and the processing of these harvests into fuel, food, clothing, and other materials for household needs. These same activities also generated cash, such as from the sale of furs and fish, which at times was supplemented by occasional or seasonal paid work. As anthropologist Claudia Notzke observes, "this type of economy [as a whole] is subsistence rather than market-oriented and has a distinctive resource and cultural base" (1994:123). The importance of these traditional activities extends beyond strict economic value. As Notzke further posits in her book on Indigenous people and natural resources in Canada:

> It is the relations among people that hunting and fishing generate, not simply the relations between man and wildlife, which are important to Aboriginal people. Despite the continued northward advance of industrial society, most Aboriginal northerners continue to regard traditional activities as essential to the maintenance of their social structure and institutions, their culture and cohesion of their community and family lives (Notzke 1994:112).[10]

[10] It should be noted that being able to spend time on the land pursuing traditional resource harvesting activities is still of vital importance to many community members. To this end, participation in the wage economy is often used to generate funds to buy the equipment necessary to access areas where the land is still considered safe for Traditional Land Use activities.

The fur trade wrought substantial changes to Fort McKay's economic practices and began to alter Fort McKay's seasonal movement patterns within their Territory. As discussed below, subsequent government policies like the signing of Treaty No. 8, reserve creation, and large-scale industrial development further altered these patterns, restricting Fort McKay members to smaller and smaller portions of their Territory as the twentieth century wore on.

2.4. TREATY NO. 8 AND RESERVE CREATION

The people of Fort McKay entered into Treaty No. 8 in 1899 under the leadership of their headman, Adam Boucher. For a map showing the land encompassed under Treaty No. 8, see Figure 3. The treaty was agreed to only after the First Nations (including Fort McKay) had been assured by representatives of the Federal Government that their traditional way of life would not be interfered with. This assurance is reflected in the text of Treaty No. 8:

> . . . And Her Majesty the Queen HEREBY AGREES with the said Indians that they shall have right to pursue their usual vocations of hunting, trapping and fishing throughout the tract surrendered as heretofore described, subject to such regulations as may from time to time be made by the Government of the country, acting under the authority of Her Majesty. . . (Government of Canada 1966).

It is critical to note that at the time of these treaty negotiations, all of the First Nations leaders maintained strong oral traditions and were unable to read. Given this context, the record of what was *said* at these negotiations is more salient than the text of Treaty No. 8. Landmark Supreme Court decisions, including *R. v. Badger* (1996), reiterate this point. Excerpts from recordings of oral promises clearly indicate that the continuation of their Rights to hunt, fish, and trap, and to be able to practice their traditional way of life was of great concern to the First Nations who signed Treaty No. 8, including the Fort McKay First Nation. As cited in *R. v. Badger* (1996) 1 S.C.R. 771 at para 39:

> It is clear that for the Indians the guarantee that hunting, fishing and trapping rights would continue was the essential element which led to their signing the treaties. The report of the Commissioners who negotiated Treaty No. 8 on behalf of the government underscored the importance to the Indians of the right to hunt, fish and trap.

Further, the Commissioners who negotiated Treaty No. 8 wrote:

> Our chief difficulty was the apprehension that the hunting and fishing privileges were to be curtailed. The provision in the treaty under which ammunition and twine is to be furnished went far in the direction of quieting the fears of the Indians . . . But over and above the provision, we had to solemnly assure them that only such laws as to hunting and fishing as were in the interest of the Indians and were found necessary in order to protect the fish and fur-bearing animals would be made, and that they would be as free to hunt and fish after the treaty as they would be if they never entered into it (*R. v. Badger* (1996)1 S.C.R. 771 at para 39).

As records further indicate, ancestors of the Fort McKay First Nation agreed to sign Treaty No. 8 to ensure that that they were protecting their traditional livelihood from disturbance by settlers (Berger 1977; McCormack 2013). Historian Kerry Abel reports that among the concerns raised during the visits of the treaty commissioners to the Treaty No. 8 area of northern Alberta were assurances that the northern First Nations were not to be confined to reserves (Abel 1993:170–171).

With regard to the motivations and priorities of the Indigenous negotiators of Treaty No. 8, Father Breynat (a witness to the negotiations) noted that:

> Discussions were long enough but sincere; Crees and Chipewyans refused to be treated like prairie Indians and to be parked on reserves . . . It was essential to them to retain complete freedom to move around (qtd in Fumoleau 2004:79).

Being able to continue with a land-based way of life entails more than just being able to hunt, trap and fish. All aspects – social, spiritual, economic, linguistic, and political – of the traditional way of life, including the ability to move about the land freely and seasonally, are also included in the maintenance of traditional lifeways. These aspects, protected under Treaty No. 8, were soon adversely affected by outside intrusions, and continue to be adversely affected by oil sands development, including the proposed BMX Project. A 2013 historical report of Fort McKay's Treaty No. 8 Rights confirmed that:

> There is no evidence in the historical record that anyone at the time of treaty envisioned the kind of vast, industrial exploitation of resources that began much later in the 20th century and that today characterizes the Fort McKay region. Neither the First Nations nor the treaty commissioners or their Department of Indian Affairs superiors ever contemplated the possibility that First Nations could be dispossessed from their lands (McCormack 2013:26).

In 1915, three reserves were surveyed for Fort McKay First Nation (who, at that time, were still members of the Cree-Chipewyan Band). They selected the largest Reserve lands that were in the heart of their homeland, adjacent to Moose (Gardiner) and Buffalo (Namur) Lakes. They also selected some reserve land along the east side of the Athabasca River across from the Fort McKay settlement (McCormack 2013). While many members did have houses at Fort McKay in which they periodically resided at the time of reserve creation, it was not until the 1960s that some Fort McKay members began to settle more permanently in Fort McKay. Mandatory school attendance, as stipulated by the *Indian Act*, contributed to this increasing permanence, as did the availability of industrial jobs in light of the collapse of the fur trade (Fort McKay First Nation 1994). As discussed further below, these economic shifts and the restrictions imposed on land use by reserve creation, along with oil sands development. reduced opportunities for seasonal land movement.

Figure 3: Map Showing the Territory Ceded under Treaty No. 8, 1900

2.5. OVERVIEW OF CHANGES: 1960S TO THE PRESENT

Fort McKay members continued to access their traplines and practice seasonal movement between Fort McKay and surrounding areas during the early years of oil sands development. The figure below shows some of the traplines that intersected the Project area in the late 1950s and early 1960s. The northernmost historic trapline map is Figure 4, which is from 1963 and shows the trapline of Gilbert Ducharme and Archie Cardinal, RMFA #2565, intersecting the LSA. The southernmost historic trapline map, from 1957, shows traplines intersecting the LSA that were owned by William Louther (RMFA #2156), Joe Cookie (RMFA #1351), Jean Paulin (RMFA #1790), Garnet J. Ross (RMFA #2676), Walter Loutitt (RMFA #1675), Walter McDonald and Tom Tourangeau (RMFA #2453), Billy MacDonald and Joe Huger (RMFA #2233), and Charlie Cooper (RMFA #2125). At the community data verification and mitigation development workshop held for this TLUS, community members were able to confirm that Archie Cardinal, Walter Loutitt, and Joe Cookie were members of Fort McKay or related to present-day members of Fort McKay. Workshop

attendees also confirmed that Alphonse Powder, the owner of RMFA #2324 (which is in the immediate vicinity of the LSA), is the father of a current Fort McKay member and trapline holder. Alphonse Powder has numerous other descendants living in the Fort McKay community.

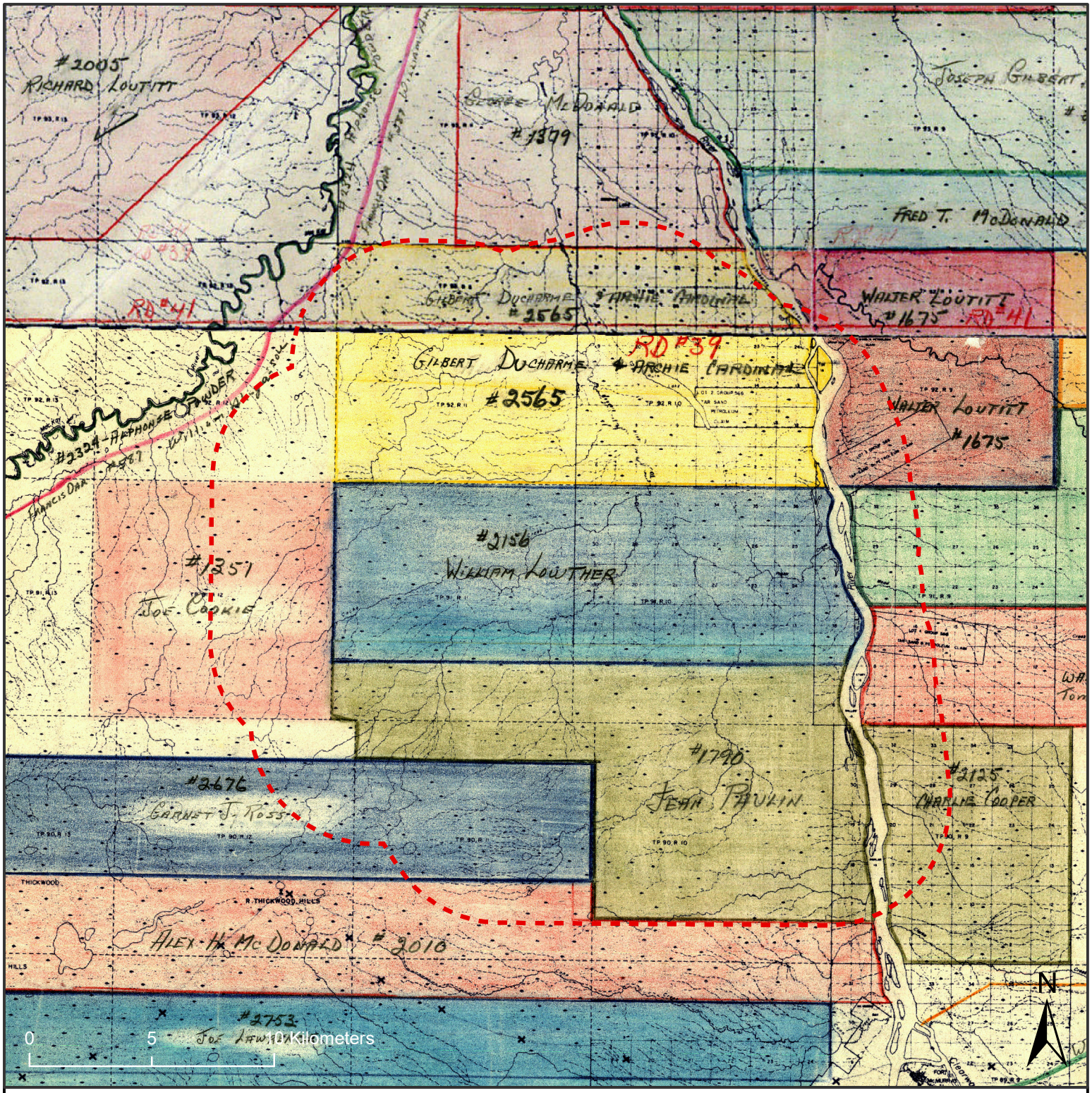

Figure 4: Historical Trapline Maps Intersecting the LSA (Upper Map 1963; Lower Map 1957)

Traditional Land Use Local Study Area

Created: February 2019; Coordinate System: NAD 1983 UTM Zone 12N; Map Scale: 1:218,000; Overview Map Scale: 1:30,000,000
Data Sources: Fort McKay First Nation, AtlasLIS Ltd., Province of Alberta, Government of Canada.

FORT McKAY FIRST NATION

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In their report on the impacts of industrial development on Fort McKay's traditional economy, authors James Tanner, C. Gates, and Bertha Ganter observe that "the economy of the Fort McKay peoples was almost entirely derived from the natural resources of their traditional lands" well into the 1960s (Tanner, Gates, and Ganter 2001:1). In addition to providing food and income, this traditional economy also provided cultural values that are not quantifiable:

> The value of a moose, for example, is greater to the . . . community that the value of an equivalent amount of meat brought in a Canadian grocery store. In addition to meat, a harvested moose provided materials for tools, hides, and other products . . . Livelihood, knowledge, life skills and spirituality revolve around the use of these resources (Tanner, Gates, and Ganter 2001:3).

Species like white-tailed deer, moose, grouse, duck, and loon were trapped and hunted within the LSA prior to major oil sands development. Trapline-based activities in the LSA prior to major oil sands development also included berry and medicinal plant harvesting, fishing, and camping. For example, in RMFA #587 (see Figure 8, Fort McKay Traplines in Proximity to Project), which today intersects the Project Footprint and the LSA, the area around what is now the Poplar Creek spillway once offered plentiful opportunities for blueberry gathering (Golder Associates Ltd. 2005:27). Trapline #587 was also traversed with traditional trails on both sides of the MacKay and Ells rivers (Golder Associates Ltd. 2005:29). Similarly, in RMFA #2297 (which intersects the LSA), trapline holders harvested blueberries and cranberries (including high-bush and bog); fished for pike and whitefish in the Athabasca River; trapped and hunted species including moose; and utilized traditional trails until cutlines and industry-built access routes made them less accessible or less useful (Golder Associates Ltd: 2005: 33-36). Both RMFA #587 and RMFA #2297 are currently held by Fort McKay members.

A trapping survey completed in 1979 reported that "trapping is still an important source of income in the . . . village of Fort McKay" (Fox and Ross 1979:xv). The survey also noted, however, that trappers at the time were already using roads and access routes maintained by oil companies for reaching their traplines. Twelve of the trappers interviewed for the survey (who may or may not have been from Fort McKay, as the survey covered the entire Fort McMurray trapping area) reported "problems with seismic crews" on their traplines, while five more reported "loss or damage to trapping equipment, or the theft of trapped animals" (Fox and Ross 1979:91). As a report produced by Fort McKay in the early 1980s stated,

> The majority of our traplines have been infringed upon in a variety of ways, including: direct destruction of habitat by forestry roads, logging, seismic or truck trails, oil sands exploration and drill sites, campsites, airstrips, helipads, rights of way for pipeline or electric transmission and the like. These render portions of our hunting and trapping areas unusable or less useful and we are forced again to change our ways of harvesting (FMTA 1983: 100-101).

By the mid-1980s, the environmental effects of oil-sands related pollution were increasingly being reported by Fort McKay members (Longley 2015; see also FMTA 1983). They observed that the quality of berries, fish (particularly from the Athabasca River), and vegetation in their Territory was declining (Longley 2015:213). Nevertheless, oil production grew exponentially, with a large-scale wave of expansion commencing in the 1990s:

> The first wave of development included the Suncor Tar Island Project and the Syncrude Mildred Lake Project, which were constructed in the late-1960s and the 1970s,

> respectively. A second wave of development began in the mid-1990s, and included the expansion of the original Suncor and Syncrude projects. The second wave also included development of new projects including: the Albian (Shell) Muskeg River Mine, the Syncrude Aurora Mine, the CNRL Horizon Mine and Upgrader, the Shell Jackpine Mine, and some in situ oil sands projects (e.g. Suncor MacKay River and Firebag Projects) (Fort McKay Industry Relations Corporation 2010:1).

At the same time, and as a direct result of this industrial development, the number of people living in the region has grown from about 2,000 in the mid-1960s to over 125,000 in 2015, including work camps and other communities in the Regional Municipality of Wood Buffalo (RMWB) (Regional Municipality of Wood Buffalo (RMWB) 2007; 2008; 2015a; 2015b)).

Today, approximately 70% of Fort McKay's Territory is covered by oil sands-related leases Lagimodiere 2017:3; see also LARP Review Panel 2015:6). Fort McKay First Nation members "believe that it has been the large scale taking up of lands by industrial development since the 1960s, the associated air and water pollution, and the influx of non-Indigenous people to the region that have had the most significant effects on their culture" (Fort McKay Industry Relations Corporation 2010:15). As documented by Lagimodiere (2013), significant changes to Fort McKay's Traditional Territory (whether directly by industrial footprints and restricted access; indirectly by effects on wildlife and fish habitat and populations; or by the increased presence of non-Indigenous people) have given the people of Fort McKay no choice but to shift from a mixed economy (traditional activities plus wage work) to a predominantly wage-based economy (see also Fort McKay Industry Relations Corporation 2010:66). This is not to say that everyone in Fort McKay wishes to get a wage job or that everyone wishes to continue traditional activities and live on the land, but rather that the choice between these options has been removed. Because their land base is no longer accessible or sufficiently productive, the people of Fort McKay have been denied the opportunity and ability to enjoy the promises made to them in Treaty No. 8, namely "that they would be free to hunt and fish after the treaty as they would be if they never entered into it. [And] . . . that the treaty would not lead to any forced interference with their mode of life" (Fumoleau 2004:88). As stated by the Supreme Court of Canada:

> If the time comes that in the case of a particular Treaty 8 First Nation "no meaningful right to hunt" remains over its traditional territories, the significance of the oral promise that "the same means of earning a livelihood would continue after the treaty as existed before it" would clearly be in question, and a potential for treaty 8 infringement (R v. Badger [SCC] 1996).

The large scale taking up of land by oil sands development in Fort McKay's Traditional Territory since the 1960s, along with the cumulative pollution and environmental impacts of development, has led to the loss of suitable areas for practicing TLU. By allowing much of Fort McKay Territory to become encumbered by industrial land tenure — from leases to rights-of-way to access roads — the Government of Alberta has severely circumscribed the ability of Fort McKay members to practice land-based cultural activities. As discussed below, the cumulative impacts of these restrictions have resulted in a loss of opportunities and resources to practice Traditional Use.

2.6. THE CUMULATIVE IMPACTS OF EXISTING AND PLANNED DEVELOPMENT ON FORT MCKAY FIRST NATION

Fort McKay members practice TLU and exercise their Aboriginal and Treaty Rights across their Traditional Territory. As a result, Fort McKay members experience environmental impacts and changes to the landscape resulting from industrial development not only on a project-by-project basis, but in a cumulative fashion. Within the context of the proposed Project, Fort McKay is concerned that, if approved without appropriate mitigation and accommodation measures in place, the Project will add to the cumulative effects of oil sands development on their Traditional Territory, which are already considered significant and adverse.

The additional impacts of the proposed Project on the TU Values of Fort McKay, when they are already experiencing a shortage of suitable lands and resources to conduct TLU, is of great concern to the Fort McKay First Nation. The proposed Project will add to the cumulative impacts already experienced by the Fort McKay First Nation, directly or indirectly impacting 71,746 ha for the practice of TLU and the exercise of Aboriginal and Treaty Rights.

Figure 5 illustrates this loss of land within the context of areas already or anticipated to be taken up by existing and planned oil sands developments[11] in proximity to the proposed Project area. Figure 6 shows these same existing and planned oil sand developments shaded in dark grey and the area taken up by Fort McMurray in a lighter grey. The large swaths of dark grey land provide a visual indication of the amount of land that is already, or is anticipated to become, less valuable or less accessible to Traditional Land Use and the exercise of Aboriginal and Treaty Rights in proximity to the Project. As explored in more detail below in Section 4.1.5.2, Fort McKay members are concerned that the proposed Project may affect their access to traplines or other TLU areas in the southwest portion of their Territory (via Aostra Road). Figure 5 and Figure 6 show that members travelling from the Hamlet of Fort McKay will not be able to access traplines located in the southwest of their Territory without travelling through oil sands developments.

More broadly, the Project's removal of land from Fort McKay's Traditional Territory is the latest addition to a long and ongoing history of dispossession caused by industrial development. Between 1955 and 2017, the amount of direct disturbance from existing oil sands development and its accompanying infrastructure increased from 776 ha to 209,779 ha (Lagimodiere 2017:10). And yet even this staggering growth represents only a fraction of the indirect disturbance caused by industrial development. In 2017, Marie Lagimodiere added a 183 m buffer to existing, approved, and planned oil sands projects in Fort McKay's Traditional Territory. This buffer represents a minimum regulatory distance for the use of firearms in proximity to occupied areas, and therefore the distance in which hunting—a vital TU practice—would be prohibited or considered unsafe. Including this buffer, the amount of land considered completely unavailable for TLU activities in Fort McKay's Traditional Territory rose to 307,762 ha.

Though useful, the 183 m buffer zone does not capture the indirect and cumulative effects caused by oil sands development. Noise, dust, air quality, odours, and personal safety, as well as the resultant threats to health, adversely impact the quality of resources and the experience for Fort McKay land users exercising Aboriginal and Treaty Rights. These indirect disturbances take up more land available for TLU than just the buffered Project footprints. To capture how this indirect

[11] In situ project footprints on this map were buffered on all sides by 500m, except where they were contiguous to other projects. Note that if a project's buffered boundaries did not meet internally, the space remaining was filled in. Existing and proposed mines were not buffered.

disturbance amplifies the impacts of industrial development, in an earlier study Lagimodiere also applied larger buffer zones to existing developments within Fort McKay's Traditional Territory. Two key traditional-use species, fisher and moose, require buffer zones that range — depending on the type of industrial disturbance in question — from 100 m to 500 m. By using a merged buffer zone that encompassed the largest required buffer zone for each of these species, Lagimodiere (2013:14) demonstrated that the disturbance area of *existing industrial developments* in 2013 was 1,140,991 ha. This amounts to approximately 31% of Fort McKay's Traditional Territory. Lagimodiere concluded that "the indirect influence of landscape disturbance is substantial, even when examining only two indicator wildlife species" (2013:14).

To further show the wide-ranging effects of indirect and direct industrial disturbance, Lagimodiere (2013) also added 100 m, 200 m, and 300 m buffer zones to both existing and planned industrial developments. Her findings demonstrate that disturbance radiuses expand exponentially when even conservative buffer zones are used to account for indirect impacts. When a 100 m buffer was added to all existing and planned project footprints, for example, the area of disturbance represented by these footprints was magnified seven times. At 300 m, the amount of disturbed area rose to 1,547,683 ha (almost half, or 41%, of the total 3,625,037 ha Traditional Territory study area used by Lagimodiere). As Lagimodiere (2013) observes, this demonstrates that the combined and buffered footprint of existing and planned developments impacts most of Fort McKay's core Territory.

Even the buffers used in Lagimodiere's 2013 study offer only conservative representations of industrial disturbance. A 10-kilometer (km) buffer may be more appropriate in order to avoid experiencing noise, odours, and visual disturbance (and their associated effects on wildlife) (D. Spink pers comm., 2011), should one wish to hunt or practice spiritual or cultural activities without hearing, seeing or smelling industrial development. A 1 km buffer applied to roads may also be more appropriate (due to the dust from heavy traffic). Moreover, for big game hunting, high-powered moose hunting rifle ballistics (such as a 30-06 calibre rifle) can travel up to 4.8 km, which can result in safety concerns when hunting near roads or buildings (SAAMI 2004:7). Air and water (downstream) pollutants may travel much further than all of these buffer distances and have the potential to adversely affect Fort McKay Territory. Overall, Lagimodiere's buffer distances of 100m and 300 m are useful but conservative representations of the effects of industrial development on Traditional Land Use.

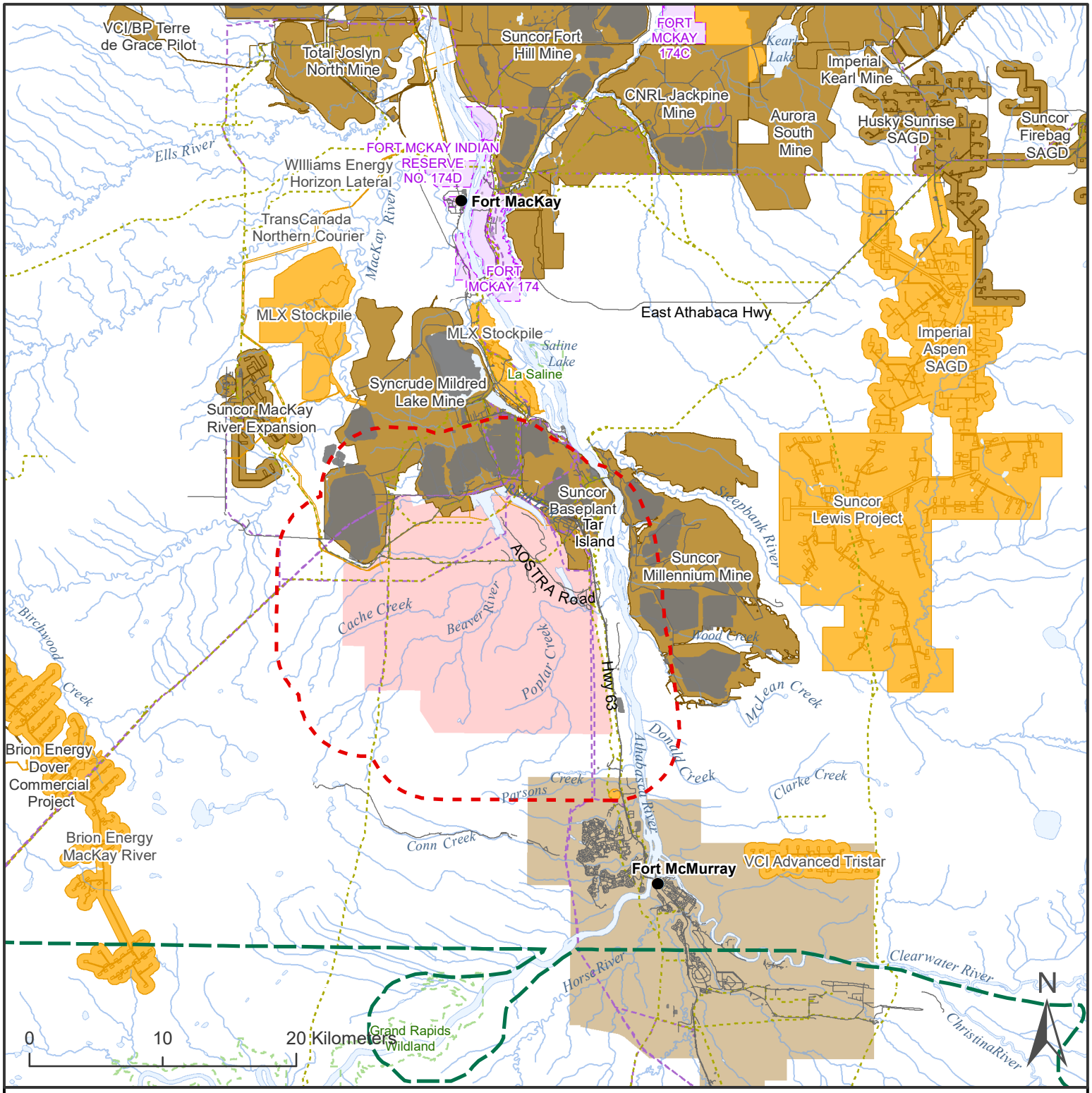

Figure 5: Existing and Planned Development Context Map

- Suncor Basemine Expansion Project Area
- Traditional Land Use Local Study Area
- Regional Study Area
- Existing Development
- Planned Development
- Fort McKay Reserve Land
- Park
- Fort McMurray
- Tailings Pond
- Road
- Pipeline
- Transmission Line
- City, Town, or Village

Created: February 2019; Coordinate System: NAD 1983 UTM Zone 12N; Map Scale: 1:400,000; Overview Map Scale: 1:30,000,000
Data Sources: Fort McKay First Nation, AtlasLIS Ltd., Province of Alberta, Government of Canada.

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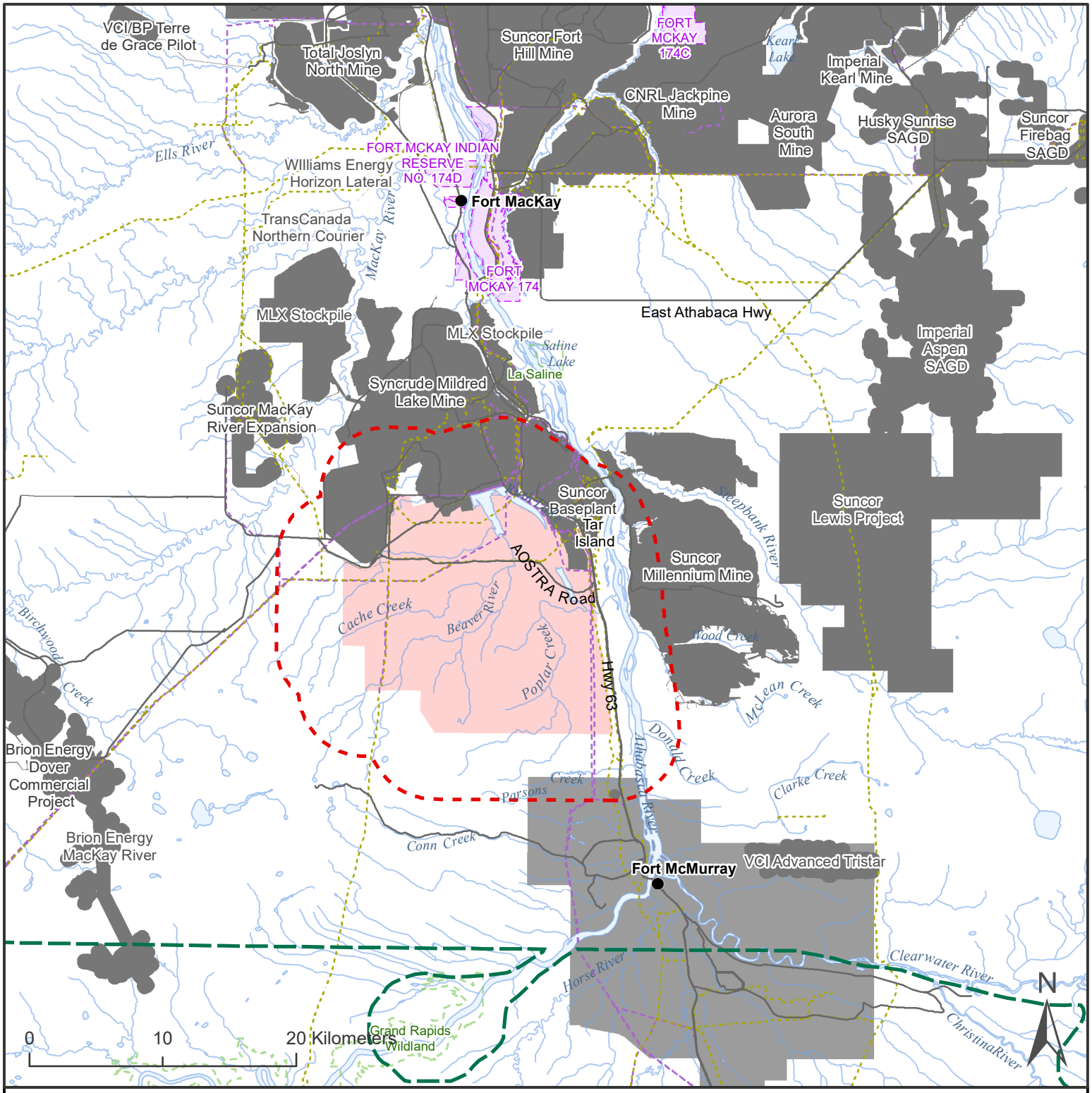

Figure 6: Encumbrances Preventing Traditional Use in Proximity to the Project

- Suncor Basemine Expansion Project Area
- Traditional Land Use Local Study Area
- Regional Study Area
- Existing or Planned Development
- Fort McKay Reserve Land
- Park
- Fort McMurray
- City, Town, or Village
- Road
- Pipeline
- Transmission Line

Created: February 2019; Coordinate System: NAD 1983 UTM Zone 12N; Map Scale: 1:400,000; Overview Map Scale: 1:30,000,000
Data Sources: Fort McKay First Nation, AtlasLIS Ltd., Province of Alberta, Government of Canada.

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Fort McKay's concerns regarding the cumulative effects of developments are supported by the assessment of current inaccessibility to and fragmentation of Fort McKay's Traditional Territory (see LARP Review Panel 2010; Athabasca Region First Nations 2018). As of 2017, approximately 70% of the Territory is subject to oil sands leases (Lagimodiere 2017:3; see also LARP Review Panel 2015:6). These existing and planned industrial developments inhibit the ability of Fort McKay community members to exercise their Aboriginal and Treaty Rights in an unimpeded manner. It is telling, for instance, that approximately 97% of Fort McKay-held traplines are already covered by oil sands leases (Lagimodiere 2017).

The taking up of land by existing and planned development has socio-economic, cultural, and health impacts on the Fort McKay community (see Section 4.1.5 for further discussion). As explored in Section 6.4, Fort McKay has indicated that these cumulative impacts have not been adequately addressed by the Government of Alberta. The specific concerns recorded in the interviews conducted for this TLUS and discussed below should be considered in the context of ongoing cumulative impacts on Fort McKay's TU Values, traditional land use opportunities, and on the Treaty and Aboriginal Rights and interests of Fort McKay.

2.7. CONCLUSIONS OF BACKGROUND

The history and background section of this report is intended to highlight the unique way of life, culture, Traditional Land Use, and Traditional Ecological Knowledge held by members of the Fort McKay First Nation, and their interdependent relationship with a healthy and intact ecosystem. This section has explored the ways in which the conditions that were agreed upon and concerns that were raised between the Cree and Dene First Nations and the Crown during the negotiation and signing of Treaty No. 8 assured Fort McKay that their traditional way of life would be protected. This section concludes with a discussion of the Cumulative Effects caused by the proposed and existing developments already affecting Fort McKay's TLU within their Territory (discussed further in Section 6.4). The ethnographic background and historical and contextual information presented in this section is intended to provide a basis for understanding the proposed Project's potential effects on the FMFN's Traditional Land Use.

3. RESEARCH METHODS

3.1. TRADITIONAL LAND USE RESEARCH METHODS

This section provides an overview of the methodology employed for this study as well as background to the development of this methodology. Following the presentation of the research objectives and the history of Traditional Land Use Studies, and the context in which these studies arose, the scale and scope of the present study is provided. Detailed below are also the TLUS interview methods, including a description of the Traditional Use (TU) Value Categories. Furthermore, this section provides a discussion of the information sharing protocol, informed consent, data management and verification processes employed, and the Local Study Area (LSA) under consideration. The TLUS research methods outlined in this section provide the reader with the background information required to understand how the researchers conducted this study and how the research results were obtained.

3.1.1. OBJECTIVES

The objectives of this Traditional Land Use Study (TLUS) are to:

- Identify past, current (within living memory), and planned future Traditional Use (TU) Values [12] in the Local Study Area (LSA) and to assist the Fort McKay Sustainability Department (FMSD) in assessing the potential effects of the proposed Project on both these values and the broader Rights and interests of the Fort McKay First Nation.
- Collect current and prior TU research, oral history and historical documents in a spatial database.
- Identify potential Project-specific effects and the Project's contribution to cumulative effects on TU Values, traditional land use opportunities, and on the Treaty and Aboriginal Rights and interests of Fort McKay.

3.1.2. TRADITIONAL LAND USE STUDIES

TLUS, also known as "Traditional Use Studies" (TUS) or "Use and Occupancy Map Surveys" (UOM), are a form of social science investigation that brings together community knowledge with ethnographic, archival, and sometimes archaeological information to provide clarity on places and values of cultural, economic, heritage, or community importance. This is usually accomplished through the recording of oral history and map biographies in interviews with community Elders, knowledgeable land users, and sometimes a larger representative sample of the community. Land use and occupancy mapping started in the 1970s with a number of First Nations and Inuit organizations preparing for land claims negotiations with the federal government. In the 1990's, in response to the 1993 *Delgamuukw v. British Columbia* court decision, the governments of both Alberta and British Columbia developed "Traditional Use Study Programs". Alberta's program was associated with the Arctic Institute and helped fund *There is Still Survival Out There*, the first TLUS completed with Fort McKay (Fort McKay First Nation 1994)[13]. The *Delgamuukw v. British Columbia* decision "directed the government to determine whether or not specific Aboriginal Rights would potentially be infringed upon by provincially authorized activities such as the issuing of forest licenses or mining and land development permits" (Markey 1996:7). The use of the term "traditional" in TLUS (and TUS) is a reference to the Court's understanding of Aboriginal Rights but has been

[12] Traditional Use Value refers to a specific place, resource or interest reported by a First Nations member during the study and considered important to the ongoing practice of the community's interests and use, including Aboriginal and Treaty Rights, in the Region.

[13] The authors are not aware of any provincially-funded TLUS with Fort McKay subsequent to this study completed in 1994.

considered problematic by many people. In Living Proof, a UOM methods textbook, Terry Tobias explains,

> The governments' choice of the word "traditional" when naming their programs was unfortunate, because it inadvertently supports stereotypes . . . Governments often approach negotiations and litigations with Aboriginal parties from the perspective of traditionalism, which means "the upholding or maintenance of tradition, especially so as to resist change." . . . [Whereas] "Tradition" is the "transmission of customs or beliefs from generation to generation." The word does not imply cultures are static. Adaptive change is inherent in every tradition. Still, people often mistakenly confuse traditionalism and tradition, to the detriment of Aboriginal peoples (Tobias 2009:33).

3.1.3. SCALE & SCOPE OF THE TRADITIONAL LAND USE STUDY

TLUS research methods may be customized to fit the objectives of a particular research process, community, or project. They can be categorized as either "Regional" or "Project-specific" and "Overview-level" (Planning-level) or "Operational-level". A Regional TLUS is often conducted at a wider scale than a Project-specific TLUS, with the study area for the Regional TLUS encompassing an entire Traditional Territory, geographic region, or geographic extent of a governmental jurisdiction. In contrast, a Project-specific TLUS usually has a study area that encompasses a more limited geographic area, such as an area potentially affected by a development, a tenure area, or a confined area of importance to a community (such as a village site).

The objective of an Operational-level Project-specific TLUS is detailed documentation of Traditional Use sites and Values within the study area. The objective for this TLUS was to follow the methodology for an Operational-level study, including groundtruthing. A TLU community data verification and mitigation development workshop was also completed.

3.1.4. TRADITIONAL LAND USE STUDY INTERVIEW METHODS AND GROUNDTRUTHING

Prior TLU data was reviewed, and Knowledgeable Elders and active land users were consulted to determine which Fort McKay members have the most detailed knowledge and experience of the Local Study Area (LSA). The FMSD coordinated and planned the TLU interviews. The Fort McKay members interviewed for the TLUS hold a depth of knowledge and are experienced land users. As such, they are ideal interviewees for the research objectives of this study and are not selected as a statistically representative sample of the community. The interviews and data collection process were conducted using social scientific research protocols. The interviews were conducted by two Kwusen TLU researchers. Three days of interviews were planned between October 23 and 25, 2018.

The interviews ranged from two (2) to three (3) hours in length and were conducted indoors using a projection of Google Earth. Video files (in .MOV format) were recorded using one Zoom Q4n video camera and one Zoom Q8 video camera during each interview, with the Respondents' permission. Interviews followed a semi-formal format, using a standardized list of TLU interview questions[14] (see Appendix C: Traditional Land Use Study Interview Methods and Interview Guide for more detail on the interview format and questions) and mapping conventions: for example, a high-resolution screen with a projection of Google Earth was visible to the Respondents and interviewers during the mapping interview.

[14] The Fort McKay interview guide follows a format similar to the interview guide presented in Living Proof (Tobias, 2009:200-201).

In total, eight (8) office-based interviews were completed with ten (10) Fort McKay members. The number of interviews was limited by the budget available and the number of land users available to participate in the study. This is a reasonable number of interviews for the study given the large amount of prior research conducted and stored in Fort McKay's CKK. Themes covered during the TLUS interviews included past use, current use (within living memory[15]), and planned future Traditional Use (TU) Values in seven (7) broad categories. In this context, a "Value" is defined as a specific place, resource, or interest reported by First Nation members during the study that is considered important to the First Nation's cultural security, continuity, identity, and land use. TU Values include practices and interests critical to the exercise of Fort McKay's Aboriginal and Treaty Rights. A Site-Specific TU Value is one that is reported as specific and spatially distinct and may be mapped (although locations may be considered confidential). Site-Specific TU Values, such as placenames, cabins, trails and hunting areas, represent specific instances of regular use that illustrate the wider practice of kinship, livelihood, and cultural continuity within Fort McKay Traditional Territory. An Intangible TU Value may be specific to a resource or other concern but is spatially indistinct or difficult to map. Intangible Values include critical conditions or elements that must be present for continued traditional practices, such as the hunting and gathering of wild foods. As such, Intangible Values range from the direct presence of traditionally hunted animals and other wild foods on the land to continued access to traditional hunting areas and non-contaminated sources of wild foods. Intangible Values also include cultural resources, such as the transmission of cultural knowledge — including ecological and phenological knowledge—across generations, and the continued use of traditional placenames.

The seven (7) Site-Specific TU Value categories, with examples, are as follows:

[15] The Voisey's Bay Mine and Mill Environmental Assessment Panel Report (Canadian Environmental Assessment Agency 1999) provided the following definition of current use: "In its broadest sense, [current use] means land use within "living memory" as recorded by the map biography method topically used to establish Aboriginal title or site-specific Aboriginal rights. This method reduces a comprehensive record of the last 30 to 40 years and, for more limited purposes, a record as long as 60 to 70 years" (Canadian Environmental Assessment Agency 1999)

Table 1: Traditional Use Value Category Definitions

Traditional Use Value Category	Definition
Spiritual Values	Past, Current (within living memory), and Planned Future Spiritual Values (gathering places, burial places, ceremonial areas, story places, teaching areas, medicinal and sacred plants, etc.).
Habitation Values	Past, Current (within living memory), and Planned Future Habitation Values (cabins, camps, village sites, etc.).
Subsistence Values	Past, Current (within living memory), and Planned Future Subsistence Values (procurement of moose, caribou, other game, furbearers, fish, birds and eggs, berries, food plants, water sources, etc., and locations where specific tasks related to processing these resources took place.).
Trapping Values	Past, Current (within living memory), and Planned Future Trapping Values
Wildlife/ Ecological Values	Past, Current (within living memory), and Planned Future Wildlife/Ecological Values (mineral licks, special habitats, calving areas, etc.).
Transportation Values	Past, Current (within living memory), and Planned Future Transportation Values (trails, water transport corridors, historical migration routes, etc.).
Indigenous Landscape Values	Place Names and Indigenous Landscape Values (placenames, boundary markers, orientation points, mnemonic values, etc.).

Sites identified during the interviews and prior data review within the BMX Project area were groundtruthed by one Kwusen researcher and five Fort McKay community members. Groundtruthing data (site forms, spatial data and photos) were recorded using the GeoKeeper App,[16] with all data and media uploaded to the CKK.

3.1.5. INFORMATION SHARING AND INFORMED CONSENT

The specific methods for mapping, documentation, and intellectual property rights regarding the information gathered in the study were reviewed by the FMSD prior to the collection of information. Kwusen Research & Media Ltd. signed an agreement with the FMSD that includes an intellectual property rights clause stating that all Traditional Knowledge and interview recordings will remain the property of Fort McKay and that all interview data will be treated as confidential and can only be released by Fort McKay. Participation of the interview Respondents in the TLUS was contingent upon a documented indication of prior informed consent.

[16] Kwusen has developed GeoKeeper, an app designed to support Indigenous communities conducting Community Based Monitoring programs by providing for offline and remote data collection on hand-held devices.

3.1.6. DATA MANAGEMENT AND VERIFICATION

Google Earth software was used during the interviews to map TU Values as points, wherever possible and appropriate, and as polygons where necessary. Lines were used to indicate trails and transportation corridors. Handwritten notes and video recordings were kept. The mapping interview protocol was designed to maintain data integrity so that data could be traced to specific individuals. All recorded Land Use information was confirmed with interview participants during the interview process. Each mapped location or Value was associated with a letter code (or codes), followed by a site sequence number and a TLUS identification code indicating the source Respondent.

Upon the completion of each interview, information that was recorded in handwritten interview notes was scanned into a digital format. Video recordings of interviews were compressed and exported as mp4 videos, transcribed, and entered into a secure data-management website and organized according to Site-Specific and Intangible Traditional Use codes. All of the information collected through the TLU interviews, along with previous TLU data and archival information, was compiled for use and storage in the Fort McKay First Nation Community KnowledgeKeeper (CKK). The CKK is a confidential web-based system for data management, mapping, and archiving Traditional Land Use information. The research team used a series of data entry forms in the CKK to enter Traditional Use data.

Following interview and groundtruthing data management and review, a TLU data verification and mitigation development workshop was held in the community of Fort McKay. All TLUS interview Respondents were provided with interview packages, which included a printed copy of their interview transcript, a map of all their TU sites within the LSA recorded in the interviews, and digital copies of their interview video on a USB flash drive. This workshop provided an opportunity for a TLU researcher to return and verify interview data with interview Respondents, as well as to discuss effects, impacts and concerns, and potential mitigation measures related to the proposed Project.

During the workshop, an active discussion took place concerning the Project and its potential effects. Participant comments and concerns covered a wide-range of topics and included a discussion of safety concerns, changes in plant, wildlife, and fish health, loss of access to the land, concerns with contaminated foods and medicines, and other impacts to Fort McKay's culture, Traditional Use, and knowledge transmission. The workshop was recorded using handwritten notes and two video cameras. The workshop notes, video recording, and transcriptions were saved to the CKK.

3.1.7. TRADITIONAL LAND USE STUDY AREAS

THE REGIONAL STUDY AREA

The Regional Study Area (RSA) for the TLUS is defined as Fort McKay First Nation's Traditional Territory (see Figure 1). The RSA shown in Figure 1 includes 3,896,193 hectares (a subsection) of the Fort McKay First Nation Treaty No. 8 Lands.

THE LOCAL STUDY AREA

The Local Study Area (LSA) for this TLUS is a moderate estimation of the area where direct and secondary Project effects on Traditional Land Use may be experienced. If built, the Project will directly disturb lands within the Project footprint and cause additional indirect effects on the surrounding environment through air emissions, noise, traffic, water, and other Project-related environmental effects. Figure 1 and Figure 2 depict the Project area plus a buffer to account for direct and indirect effects of development that may occur both within and outside of the BMX Project. A 5 km buffer[17] was applied to the Project footprint. Based on professional experience, both buffer distances are a conservative distance within which TU Values have the potential to be directly impacted by industrial development.

The Project LSA covers 71,746 ha. If Fort McKay members can see, smell, or hear an industrial development from the location of a TU Value, such an impact will often diminish or even destroy the value of the site. For example, quiet is important for both spiritual sites and hunting sites. Industry-related noise may make a spiritual site unusable or diminish the value of the site to Fort McKay, and noise from industry can drive wildlife away from a hunting area, rendering it useless or less valuable. It also follows from these examples that a cabin that is utilized because of its proximity to a spiritual site or hunting site would also be rendered useless or have diminished value if the associated spiritual or hunting sites become unsuitable or less valued for Traditional Land Use.

It is important to note that while TU Values within living memory are defined as "current," many of the TU Values reported in the LSA are not presently utilized due to the existing and cumulative effects of oil sands development. Respondents interviewed for this TLUS reported a decline in TLU in the LSA between the 1980s and the early 2000s, reflecting the direct and cumulative impacts of large-scale oil sands development on Fort McKay's drinking water, fisheries, and other resources during that time (see Longley 2015:208; FMTA 1983; Surrendi & Associates 1998; Fort McKay Industry Relations Corporation 2010). Present-day TU practices in the LSA, therefore, do not represent historical pre-development or planned future levels of seasonal land use.

[17] A buffer is an area (a shape) on a map created by GIS software that is a specified maximum distance away from a mapped line, point (a site), or polygon.

4. RESULTS

4.1. TRADITIONAL LAND USE STUDY RESULTS

The following section provides a summary of the Site-Specific Traditional Use (TU) Values and a detailed discussion of Intangible TU Values and community concerns regarding the anticipated effects of the proposed BMX Project. The Site-Specific TU Values presented below represent all TU Values recorded during the Project-specific TLUS interviews and groundtruthing, as well as available prior TU data, that are intersected by the BMX Project Local Study Area (LSA). Prior to the presentation of TLUS results below, there is a discussion of the limitations of Site-Specific mapping in relation to embedded understandings of Indigenous land use. This discussion is provided as a caveat to the presentation of Site-Specific results.

4.1.1. FORT MCKAY SENSE OF PLACE: PROBLEMATIZING SITE-SPECIFIC MAPPING OF TRADITIONAL LAND USE

A salient theme that emerged during interviews conducted in relation to the Project and review of prior Fort McKay ethnographic literature and research projects is the distinct way in which Fort McKay members understand and are in relationship with the land. This relationship is critical to their well-being and identity. Although this study reports on specific instances of Site-Specific Traditional Use within a small portion of the Fort McKay Traditional Territory, the authors recognize that this approach has limited application for a holistic understanding of Fort McKay land use. Indeed, none of the Site-Specific TU Values presented below can be understood without recognizing their "function as parts of culturally significant wholes" (McIlwraith and Cormier 2015:45)

The critique of site-specific mapping and a non-territorial approach to TLUS expressed by Fort McKay members is echoed by legal scholars Woodward, Hutchings, and Baker (2008) who propose a "cultural security and continuity approach to land use research that regards a land base as necessary to cultural identity and survival" (cited by McIlwraith and Cormier 2015:45). This approach is echoed by Cuerrier et al. (2015) who draw on the concept of *sense of place* to argue for the recognition of *Cultural Keystone Places*. Through this framework, the authors work to unsettle the emphasis on land use "site" and instead foreground the connections that indigenous peoples hold to their Territory and to their place-based knowledge. In Fort McKay's case, these connections are the result of the community's long history and ongoing practice of land use, practices of landscape management, and reciprocal relationships with family and the land, as well the ecological diversity of their Territory.

Fort McKay members consistently emphasized the broader context in which their Site-Specific Traditional Use activities fit with their long history of use and its attendant knowledge within the Territory. Moreover, they emphasized the historic and continuing abuse and abandonment of their Aboriginal and Treaty Rights by the Government of Alberta and Canada.

The following results are presented from this more holistic understanding and recognition of Fort McKay cultural practices and ideological connections to the land and all living things. Fort McKay conceptions of the land cannot be wholly understood through the identification of site-specific examples of current land use from a small study cohort of interview participants. Thus, the Site-Specific Results presented in Section 4.1.2 cannot be divorced from Fort McKay's history and background (Section 2), and Intangible TU Values and Project Effects (presented in Section 4.1.5).

4.1.2. OVERVIEW OF FORT MCKAY SITE-SPECIFIC TRADITIONAL LAND USE RESEARCH RESULTS

In the context of Traditional Land Use Studies, a 'Value' is defined as a specific place, resource, or interest reported by First Nation members during the study that is considered important to the First Nation's cultural security and continuity, identity, and land use. TU Values include practices and interests critical to the exercise of Fort McKay's Aboriginal and Treaty Rights.

A Site-Specific Value is one that can be mapped by researchers because it can be associated with a location mapped through interviews or other means. Site-Specific TU Values, such as placenames, cabins, trails and hunting areas, represent specific instances of regular use that illustrate the wider practice of kinship, livelihood, and cultural continuity within a First Nation's Traditional Territory.

Respondents were asked during their interviews to indicate important areas on a Google Earth map projection, including areas used in the past, current (in living memory), and sites intended for planned future use. Site-Specific TU Values recorded within the LSA of the Project are described below, divided into seven TU Value categories. Although the number of TU Values intersected by the LSA is presented below, these numbers under-represent Site-Specific TU Values, because areas mapped as polygons tend to represent multiple uses by groups of community members over decades. For example, rather than mapping multiple moose kill sites, it has been the research teams' preference to map an area where a family hunts year after year as a single polygon instead of multiple kill sites. Also, a single spiritual site may be considered in greater need of protection than multiple mapped sites from another category. The numbers of TU Values in each category below do not represent all TU Values that may be present in the LSA. The number of TU Values indicated below are presented for descriptive purposes only.

4.1.3. SITE-SPECIFIC TRADITIONAL USE VALUES INTERSECTED BY THE BMX PROJECT LOCAL STUDY AREA

Figure 7 (below) presents the Site-Specific TU Values by category that are intersected by the BMX Project LSA. The Site-Specific TU Values have been buffered[18] to protect confidentiality and to allow for the margin of error in office-based mapping.[19] Where the buffers are based on point data, the centre point has also been randomized within the buffer to further protect confidentiality. The intent of the following Figure 7 is to depict the locations and diversity of TU Values that are anticipated to be affected by the proposed Project. Of the reviewed Site-Specific TU Values within Fort McKay's Territory (recorded during this Project as well as previous projects), 313[20] Site-Specific TU Values are intersected by the BMX Project LSA. Site-Specific TU Values cover 77% of the BMX Project LSA.

These results demonstrate that Fort McKay land users currently hold important Site-Specific TU Values in the LSA. Of particular significance to users are access routes to traplines, which facilitate TU activities, as well as existing wildlife habitats. The LSA has been and in some cases continues to be used by Fort McKay members for practicing Traditional Land Use activities, although the cumulative effects of existing industrial development in the area have impeded many of these activities. The results presented below describe the interrelated TU Values that are necessary for the ongoing practice of Fort McKay Aboriginal Rights and provide extensive evidence of current use by Fort McKay members.

The proposed Project will adversely affect 313 Site-Specific TU Values directly and, as a result, adversely affect Fort McKay's Aboriginal and Treaty Rights. The Project footprint will render many of these TU Values unusable or eliminate them because Fort McKay members will not have access to their lands within the footprint, and the Project may further have indirect effects, including noise and air pollution, on areas in proximity to the footprint. Each of these development-driven changes will reduce or eliminate the available areas where TLU can be practiced within the LSA, as well as contribute to the existing and cumulative effects that are already limiting TLU within the LSA.

[18] Buffering applied to Site-Specific TU Values is as follows. Points: randomized by 25 m, buffered by 1000 m; Lines and Polygons: buffered by 500 m. After randomizing and buffering, all sites within each TU Value categories are merged and dissolved.

[19] Although ground truthing was undertaken to verify the results of office-based mapping, it is difficult to reliably ground truth areas that have undergone extensive oil sands development. As such, not every site that was mapped during the office-based TLUS interviews was possible to ground truth.

[20] Note that some of the Transportation Values reviewed for this report were recorded prior to the creation of online mapping tools such as Google Earth. Because of the limitations of older mapping techniques, in some cases it is difficult to determine whether several segments of a trail should be considered as separate routes or as one continuous transportation route. As such, the number of Transportation Values in the LSA (60) is presented as an estimate based on a review of the available data by Kwusen's mapping sub-consultant, Inlailawatash (see Section 4.1.3.5., below, for further information). This figure is included in the overall Mapped TU Value total of 313 Site-Specific TU Values.

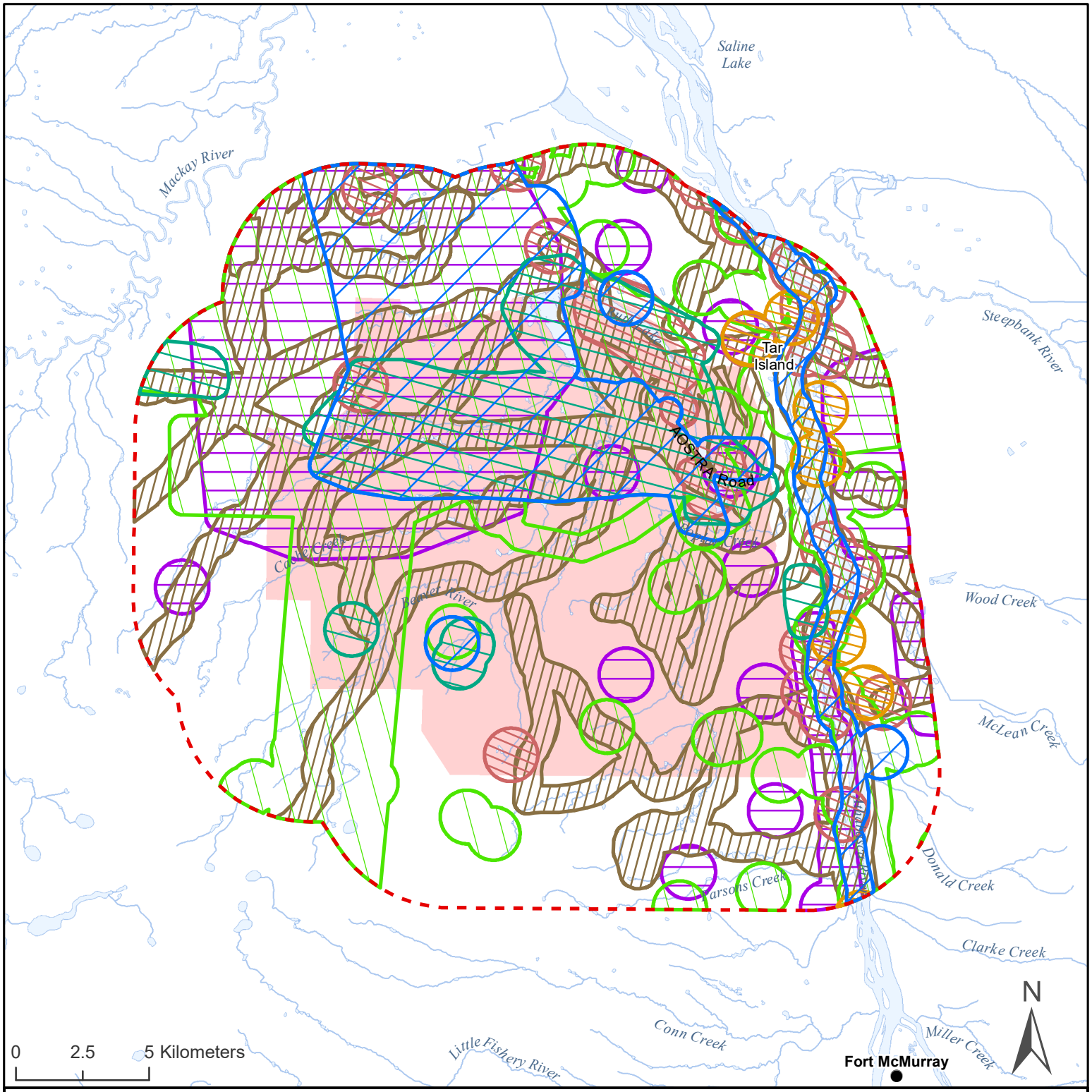

Figure 7: Site-Specific TU Values Intersecting the LSA

- Spiritual Values
- Wildlife/Ecological; Wildlife / Ecological Values
- Indigenous Landscape Values
- Subsistence Values
- Habitation Values
- Transportation Values
- Trapping Values
- Suncor Basemine Expansion Project Area
- Traditional Land Use Local Study Area
- City, Town, or Village

Created: June 2019; Coordinate System: NAD 1983 UTM Zone 12N; Map Scale: 1:200,000; Overview Map Scale: 1:30,000,000
Data Sources: Fort McKay First Nation, AtlasLIS Ltd., Province of Alberta, Government of Canada.

This map is a living document and is intended to be amended and refined over time.

FORT McKAY FIRST NATION

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4.1.3.1. SITE - SPECIFIC SPIRITUAL VALUES

Respondents were asked during their interviews to indicate areas of spiritual importance, including burial sites, ceremonial areas, and medicinal plant harvesting places throughout the Project area.[21]As Spiritual Values are often considered to be unique sites of critical importance for spiritual or cultural reasons, interviewers attempted to establish an accurate record of the location, the reason for the area's importance, the Fort McKay members or ancestors involved, and the timeframe for stories, activities, and burials.

These unique and vital cultural landscapes serve as mnemonic devices that remind Fort McKay members of their history and culture by tying oral histories and traditional stories to their Territory. As landscapes become increasingly disturbed and fragmented through oil sands development and settlement, these cultural and spiritual sites may no longer be accessible, and may even cease to exist in the areas where development has encroached. As discussed further in Section 4.1.5.1, the alteration of Site-Specific Spiritual Values disrupts the spiritual and cultural connections that are embedded in Fort McKay members' relationship to their surroundings

Through the eight (8) TLUS interviews, one (1) day of groundtruthing, and review of previous TU data, there were 14 Site-Specific Spiritual Values described within the BMX Project LSA. These polygons represent areas where medicinal plants, including pitcher plants, rat root, and mint have been harvested for medicinal and spiritual purposes, as well as teaching sites and an ancestral gathering site where hunting and camping took place.

The Spiritual Values represented in Figure 7 have been buffered and are represented with a royal blue crosshatch pattern.

4.1.3.2. SITE - SPECIFIC SUBSISTENCE VALUES

Respondents were asked during their interviews to indicate areas where food, plants, or animal resources are gathered or processed throughout the Project area. Subsistence Values include hunting and fishing activities, food plant gathering, berry gathering, firewood harvesting, and plant, berry, meat, and fish drying. Subsistence sites were mapped as points when identifying an individual kill site or small fishing, gathering, or processing areas, and as polygons when identifying larger areas utilized for food or resource gathering. In all cases, the interviewers attempted to establish an accurate record of the location, the type of activity, the species being harvested, the community members involved, and the timeframe for the activity being recorded.

Subsistence activities are a fundamental aspect of Fort McKay TLU practices. Moose hunting specifically is closely linked to Fort McKay First Nation identity. Hunting moose and eating moose meat, trapping, and harvesting plants and berries for subsistence purposes are frequently practiced, talked about as an essential part of the culture, and often identified as highly valued activities by Fort McKay members.

Through the eight (8) BMX Project TLUS interviews, one (1) day of groundtruthing, and review of previous TU data, there were 142 Subsistence Values identified in the LSA. Site-Specific Subsistence Values intersected by the LSA include historically important berry picking areas (blueberries, chokecherries, raspberries, high bush and low bush cranberries, pin cherries, strawberries, kinnickinnick [bearberry], and saskatoon berries); fishing areas (pickerel, jackfish, northern pike, artic grayling, lingcod, cisco, longnose sucker, lake trout, burbot, white sucker, yellow

[21] It is the preference of the TLUS research teams not to display the LSA during the TU Value mapping portion of a TLUS interview.

perch, chub); hunting areas (caribou, beaver, muskrat, moose, bear, duck, loon, geese, elk, grouse, owl, and deer); food processing areas (meat drying, jam, preserves, and bear grease), and plant gathering areas (including balsam poplar, green alder, birch tree, black spruce, jackpine, muskeg moss, hazelnut, and red willow). Although some of these Subsistence Values have been used in the recent past, Respondents reported that the majority have been rendered unusable due to pollution from existing oil sands developments. As discussed further in Section 4.1.5.6, Respondents are concerned that the Project will further contribute the cumulative pollution and alteration of Subsistence resources within the LSA.

Subsistence Values have been buffered and are represented in Figure 7 in a light green crosshatch pattern.

4.1.3.3. SITE - SPECIFIC TRAPPING VALUES

Respondents were asked during their interviews to indicate areas where they trap in the LSA. Trapping Values were mapped as lines where activities were focused on a narrow linear land feature and as polygons when identifying larger areas utilized for trapping. In all cases, the interviewers attempted to establish an accurate record of the location, the type of trapping, the species being harvested, the community members involved, the season, and the years in which the activity was conducted.

While trapping is a practice relied upon by some Fort McKay members for income and sustenance, its significance extends far beyond economic benefits. For many Fort McKay trappers, the trapline represents a "homestead," a place of cultural and historical significance as well as a source of subsistence. Further, since traplines are passed down through families, they provide an inter-generational connection to ancestors and family traditions. As discussed in Section 2, traplines are important places on the land where Fort McKay members practice Traditional Land Use activities as they connect to family, community, culture, and history.

Through the eight (8) BMX Project TLUS interviews, one (1) day of groundtruthing, and review of previous TU data, there were 36 Site-Specific Trapping Values associated with past land use activities described in the BMX Project LSA. Site-Specific Trapping Values intersecting the LSA include family traplines and otter, weasel, squirrel, black bear, coyote, bobcat, muskrat, marten, rabbit, lynx, mink, fisher, wolverine, and beaver trapping areas.

These sites have been buffered and are represented in Figure 7 in a purple crosshatch pattern.

The following figure offers a visualization of the contemporary traplines that may become less accessible or less valuable if the Project is approved. The LSA intersects Trapline Registered Fur Management Area (RFMA) RMFA #587 and RMFA #2297. The Project may also impact access via Aostra Road to traplines such as RMFA #2894 or RMFA #772, and to the west side of the Territory more broadly. This map also shows how fragmented and inaccessible some traplines in Fort McKay's Territory already are as result of existing and planned development.

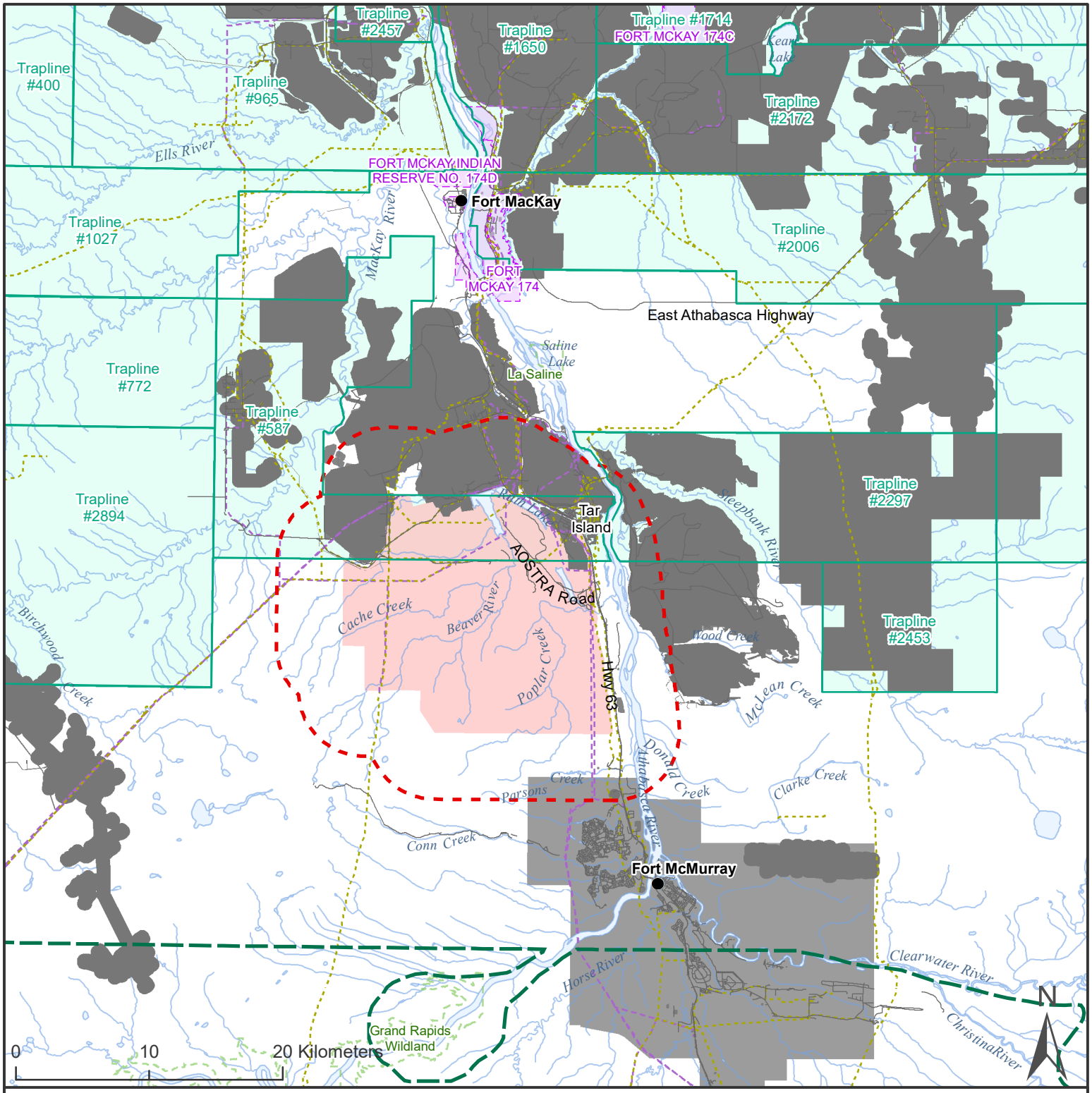

Figure 8: Fort McKay Traplines in Proximity to Project

- Suncor Basemine Expansion Project Area
- Traditional Land Use Local Study Area
- Regional Study Area
- Contemporary Trapline
- Existing or Planned Development
- Fort McKay Reserve Land
- Park
- Fort McMurray
- City, Town, or Village
- Road
- Pipeline
- Transmission Line

Created: February 2019; Coordinate System: NAD 1983 UTM Zone 12N; Map Scale: 1:400,000; Overview Map Scale: 1:30,000,000
Data Sources: Fort McKay First Nation, AtlasLIS Ltd., Province of Alberta, Government of Canada.

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4.1.3.4. SITE - SPECIFIC WILDLIFE/ECOLOGICAL VALUES

Respondents were asked during their interviews to indicate current and historical Wildlife/Ecological Values including locations of animal and fish habitat, fish spawning areas, nesting sites, mineral licks, sensitive ecosystems, and specific environmental concerns in the Project area. Wildlife/Ecological Values were mapped as points when possible and as polygons when appropriate. In all cases, the interviewers attempted to establish an accurate record of the location, the type of Wildlife/Ecological Value observed, and the time period of observance.

Through the eight (8) BMX Project TLUS interviews, one (1) day of groundtruthing, and review of previous TU data, there were 15 Wildlife/Ecological Values described in the LSA. The LSA includes past and present beaver, caribou, black and brown bear, moose, muskrat, whooping crane, ptarmigan, and deer habitats.

The Wildlife/Ecological Values have been buffered and are represented in Figure 7 with a dark green crosshatch pattern.

During groundtruthing and interviews, Respondents reported that there are still beaver, whooping crane, moose, and muskrat populations within the LSA. Since much of Fort McKay's Traditional Territory has been taken up or affected by oil sands development, these existing wildlife habitats are particularly important.

4.1.3.5. SITE - SPECIFIC TRANSPORTATION VALUES

Respondents were asked during their interviews to indicate current and historical Transportation Values including locations of roads, water transportation routes, trails, and footpaths in the Project area. Transportation Values are mapped as lines. In all cases, the interviewers attempted to establish an accurate record of the location, the type of transportation activity, and the time period of use.

Transportation Values provide access to valued subsistence and culturally-significant sites, including sacred sites, hunting and fishing sites, and berry picking and plant gathering areas. Transportation Values reinforce and maintain kinship relationships and trade networks within a landscape and provide opportunities for cultural knowledge transmission through activities like hunting and fishing. As shown in Figure 7, the LSA is intersected by and in close proximity to multiple traditional trails and transportation routes.

Any Project-related barrier to Transportation Values will result in multiple negative impacts on Fort McKay. These impacts include, but are not limited to, the following:

- Any barriers to accessing the LSA reduce or prevent Fort McKay members from both harvesting resources within the LSA and also accessing areas that require travel through the LSA;
- Blocked access on a transportation route can result in a cascading effect of lost access to other transportation routes and, as a result, to larger areas within the Traditional Territory. Losing access to large areas of the Territory would have a correspondingly adverse effect on the ability of Fort McKay members to continue to practice their TLU; and,
- If access to the LSA is disrupted, the intergenerational sharing of place-based TEK about the LSA (and areas accessed through the LSA) is also disrupted because this type of knowledge is shared when conducting TLU in specific harvesting locations. If access to these locations is limited for longer than one generation (20 years), this knowledge may

be permanently lost.

The above listed effects work in combination to reduce the opportunities for TLU and disrupt the intergenerational transmission of Traditional Knowledge. Barriers that for a non-Indigenous person may seem like a small nuisance (such as the disruption of access along a trail) can result in large adverse impacts to Fort McKay TLU and cultural continuity. Members expressed a great deal of concern regarding the potential access barriers the Project may create to community-held traplines on the western side of Fort McKay. In addition to the mapped trails and access routes, Respondents also described locations where their access to parts of the LSA is limited because of gates that have been built without community consultation. More detail about these concerns is provided in below is Section 4.1.5, Summary of Intangible TU Values and Anticipated Project Effects.

Through the eight (8) BMX Project TLUS interviews, one (1) day of groundtruthing, and review of previous TU data, there were approximately 60[22] Transportation Values associated with past and current land use activities described in the LSA. These Site-Specific Transportation Values include historical trails and currently used trails, walking routes, water routes, and access roads used to travel to and from traplines, hunting sites, campsites, and harvesting and gathering areas. The historical trails included in this data form a web of transportation corridors that indicate extensive use of the LSA. Some of these transportation routes have become less accessible due to access restrictions (including gates, signs, and security personnel) and the impacts of oil sands development.

The Transportation Values have been buffered and are represented in Figure 7 with a brown crosshatch pattern.

4.1.3.6. SITE - SPECIFIC HABITATION VALUES

Respondents were asked during their interviews to indicate Habitation Values including locations of homes, cabins, camps, and gathering places throughout the Project area. Habitation Values were mapped as points when possible and as small polygons when the precise location could not be identified in the interview setting. In all cases, the interviewers attempted to establish an accurate record of the location, the type of habitation, the time period of use, year of construction, and the community members who built and use the habitation.

Cabins and other dwelling structures are important staging grounds for practicing TLU activities, from hunting to gathering to maintaining traplines. Habitation sites can further act as conduits for intergenerational knowledge transfer, or as access points for spiritual and cultural communion with Fort McKay's Traditional Territory. Like traplines, they are passed down through families and serve as anchors to place, culture, tradition, and history.

The loss of access to habitation sites will inhibit Fort McKay members' ability to engage in TLU activities, which will in turn reduce their ability to practice their Aboriginal and Treaty Rights. Like Transportation Values, Habitation is integral to the practice of many related TU Values. If government-authorized industrial developments like the Project continue to be built, the already limited availability of habitation sites will further decline. Fort McKay members expressed concern that their ability to access existing cabins and plan future ones for new generations has already

[22] Some of the data reviewed for this report was recorded prior to the creation of online mapping tools such as Google Earth. Because of the limitations of older mapping techniques, in some cases it is difficult to determine whether several segments of a trail should be considered as separate routes or as one continuous transportation route. As such, the number of Transportation Values in the LSA is presented as an estimate based on a review of the available data by Kwusen's mapping sub-consultant, Inlailawatash.

been adversely affected as result of industrial development. More discussion regarding community concerns about loss of TLU opportunities and barriers to access is provided in Section 4.1.5 below.

Through the eight (8) BMX Project TLUS interviews, one (1) day of groundtruthing, and review of previous TU data, there were historically important 39 Habitation Values described in the BMX Project LSA. Site-Specific Habitation Values intersecting the LSA include cabin sites, campsites, and community gathering places. Many of these locations represent areas that were once used extensively for trapping and resource harvesting but have become increasingly inaccessible or unusable due to existing oil sands developments.

Habitation Values represented in Figure 7 have been buffered and are indicated by a dark red crosshatch pattern.

4.1.3.7. SITE-SPECIFIC INDIGENOUS LANDSCAPE VALUES

Respondents were asked during their interviews to identify Indigenous Landscape Values throughout the Project LSA. Indigenous Landscape Values refer to knowledge about significant geographic or spatial features, including placenames. These significant locations represent layers of Fort McKay's cultural and historical knowledge and memory tied to the land.

Placenames, as with Cultural and Spiritual Values, situate people in their Territory. They frequently identify key resources and contain descriptive features for orientation that have assisted Fort McKay members and their ancestors in managing their Territory for millennia. The continued use of Cree and Dene placenames assists in language retention and learning and reaffirms other aspects of language that are important for identity. These landscape features signify the continuous and ongoing relationship between the land and Fort McKay members.

Through the eight (8) BMX Project TLUS interviews, one (1) day of groundtruthing, and review of previous TU data, 7 Indigenous Landscape Values were described in the BMX LSA. Site-Specific Indigenous Landscape Values in the LSA include placenames and burial and historical sites.

Indigenous Landscape Values displayed in Figure 7 have been buffered and are represented with an orange crosshatch pattern.

4.1.4. SUMMARY OF SITE-SPECIFIC TRADITIONAL USE VALUES INTERSECTED BY THE BMX PROJECT LOCAL STUDY AREA

Of the combined 4,830 Site-Specific TU Values recorded and reviewed during this TLUS, 313 TU Values from seven TU Value categories are intersected by the BMX Project LSA. These Site-Specific TU Values cover 77% of the LSA.

Each TU Value category discussed above is part of the interrelated practices of Fort McKay Traditional Use. For Fort McKay members to gather resources from the land, hunt, and fish (Subsistence Values and Trapping Values), they need to have knowledge of the land through names and stories (Cultural/Spiritual Values), uninhibited access to the land (Transportation Values) and the opportunity to spend the night on the land (Habitation Values). The ecosystems they rely on must be healthy (Wildlife/Ecological Values). The LSA has been and continues to be used heavily by Fort McKay members for practicing Traditional Land Use activities. This summary of results demonstrates the interrelated TU Values that are necessary for the ongoing practice of Fort McKay Aboriginal Rights and provides evidence of current use by Fort McKay members. These Site-Specific TU results also demonstrate that the proposed BMX Project will have direct adverse impacts on the TLU of the Fort McKay First Nation.

The proposed BMX Project cannot be viewed in isolation. Rather, it must be understood and contextualized within the historic and ongoing legacy of unrestrained industrial development within Fort McKay's Traditional Territory without adequate accommodation measures put in place by the Government of Alberta. By facilitating extensive oil sands development without adequate protective measures in place, both proposed and existing, the Government of Alberta has contributed to the erosion of the Fort McKay First Nation's Aboriginal and Treaty Rights (see Section 6.4 for further discussion of Fort McKay's concerns with the Government of Alberta's approach to regional planning and oil sands development within Fort McKay's Territory). The Respondents interviewed for this TLUS expressed deep concerns about their ability to continue their way of life within this context. They identified a number of negative impacts — from limited access to traplines to pollution of resources to the destruction of berry-gathering areas — that have already circumscribed their opportunities to practice Traditional Use activities. Their concerns extended to the anticipated BMX Project, which is poised to exacerbate these existing issues. Community concerns regarding anticipated Project-specific effects and the Project's anticipated contribution to cumulative effects are provided in the following section.

4.1.5. SUMMARY OF INTANGIBLE TRADITIONAL USE VALUES AND ANTICIPATED PROJECT EFFECTS

Intangible Traditional Use (TU) Values are those Values associated with traditional activities that were reported in relation to the Project during interviews, but were not easily demarcated, or values that Fort McKay members were not able to map within the interview setting. Intangible Values include critical conditions or elements that must be present for the continued practice of Aboriginal and Treaty Rights and Traditional Use activities, such as the hunting and gathering of wild foods. Intangible TU Values range from the direct presence of traditionally-hunted animals as well as other wild foods harvestable from the land, to uninterrupted access to traditional hunting, fishing, and trapping areas. Intangible Values also depend on Fort McKay members' stewardship of, and access to, non-contaminated sources of culturally appropriate wild foods.

Intangible Values also include cultural resources, such as the transmission of cultural knowledge — including ecological and phenological knowledge — across generations, the maintenance of ecological and cultural sustainability, and the continued use of traditional placenames. Of particular importance to this report are the perceptions, descriptions, and statements verbalized by Fort McKay members during interviews and the workshop that are related to Fort McKay culture and TU activities. Respondents emphasized that they believe it is crucial to have access to an intact and healthy environment and that this access is required in order to practice and maintain Traditional Land Use. Others identified the interconnectedness of Fort McKay First Nation's values of self-reliance and determination, cultural and spiritual traditions, and sense of community cohesion.

This discussion must be understood within the context of the cumulative effects of industrial development on Fort McKay. As presented in Section 2.6, Fort McKay is experiencing the large-scale taking up of land by industrial development. The cumulative environmental impacts caused by this development have already led to the loss of numerous suitable areas for practicing TLU. Industrial development and impacts to land, plants, and animals in particular areas, as well as the direct loss of land, have diminished Fort McKay's access to intact, safe and culturally appropriate resources. The anticipated effects shown below are understood by the Fort McKay members who were interviewed as being in addition to the cumulative effects of industrial developments on their land, water, wildlife and vegetation, which all have negative impacts on their ability to practice TLU and exercise their Aboriginal and Treaty Rights.

Through the interviews and workshop with Fort McKay members, the following seven (7) anticipated Project effects were identified:

1. *Forced Acculturation and Culture Loss*
2. *Access Restrictions*
3. *Impacts on Air Quality*
4. *Impacts on Water Quality, Water Level, and Fish*
5. *Habitat Fragmentation and Impacts to Wildlife*
6. *Pollution/Alteration of Resources*
7. *Inadequate Reclamation*

These effects are listed below with selected quotes from the interviews and workshop used to illustrate each concern.

4.1.5.1. FORCED ACCULTURATION AND CULTURE LOSS

Respondents interviewed for this TLUS emphasized that intact and accessible Traditional Use areas are required to transmit cultural knowledge to younger generations. Community members stressed that this knowledge is dependent upon land-based experiential learning:

> But when our parents teach us how, long time ago, we actually shoot an animal, we shoot a chicken. The teacher's there, teaching us the reality, not a cartoon or something. This is real. You're actually doing it out in the wilderness, out in the bush.
> And when you kill something for the first time, you're so proud of it. You've got that hunting spirit in you. You're proud to kill a chicken, you're proud to kill a rabbit, or you're proud to kill deer or moose or beaver. How to hunt and trap. You're in a hurry to get up in the morning to go and check out your snares. Or you're in a hurry to go hunting.
> That's the spirit that we have, we Aboriginal people, because that's what we were taught. Our parents live off the land.
> FMSD BMX TLUS ID110

These Traditional Use practices acted and continue to act as conduits for the transmission of cultural knowledge and skills. However, as discussed in Section 2.6, the taking up of land by industrial development has already susbstantially reduced the availability of intact Traditional Use areas. Respondents are concerned that the Project will further diminish this availability, and therefore their opportunities for cultural knowledge transmission. Community members reported that they are already experiencing a multigenerational loss of Traditional Use practices:

> They [my grandsons] just finished their trapping course. So, they need to go out in the bush and see the real teacher. It's not something that they're going to take behind the school. It's more like survival training. You teach them how to make fire to survive.
> When I first take them out, and I tell them to make fires, just checking them out what they know, they were starting to cut some greens . . . that's no way to make a fire. There's a special wood you have to use [it has to] be nice and dry.
> Those are the things that we teach them in survival. Then you go out with them and put a snare, traps, with them. When we're out in the cabin, I used to teach my kids, trapping squirrels, putting snares for the squirrels. Because there were so many squirrels around where my cabin is.
> I would just put snares not far from my cabin where the kids can see, the squirrel would get caught. And everybody's just clapping hands and proud cause the squirrel was caught.

> But that's the fun part of being a trapper, is enjoying your life out there in the bush. With no disturbance. You can stand outside and hear the birds singing. Or at night, you're lying down in your bed, and owl is singing for you. Or you hear the foxes, or coyotes. That's our traditional life. And that's gone. Unless you sit around the TV and hear that. It's just not the same.
> FMSD BMX TLUS ID110

> Like I've said, you take the land, we're lost without our land. Our younger generation, in order to train them, in order to take them [you need land].
> FMSD BMX TLUS ID110

> You're actually not doing it, when you should be doing it. But where? Where's our land? It's not there anymore . . . So, we have beautiful tents these days, we've got beautiful knives, we've got all the equipment. Skidoos, and everything. We have all that. But where's the land? Where are we going to go?
> FMSD BMX TLUS ID11

Respondents correlated the loss of culturally-important areas with the increased prevalence of industrial development, and expressed worry that if development continues unchecked, their Territory will become completely unavailable for the Traditional Use of future generations:

> It's sad because I have kids, I'm not much of a hunter but my dad, my brothers, my grandsons, they all do it. They love going out there. But yet, what's the point of going and hunting now if you can't eat what we were taught and raised to do? Like even with the berries, we can't, I'm scared to.
> FMSD BMX TLUS ID153

> I don't think there will be very much left now. There is, since they won't . . . Trees are gone . . . industries, they are all over. So, there is not too much out there yet. But eventually it will be all over. They are coming from the other way too. Chip Lake they got oil companies all over, moving in from that way and they are moving towards this way. While right now it's not too bad, there is hardly anything there. Just Sunshine. Now they are going to go to Namur [Buffalo] Lake, you know that will be in the middle there, Namur Lake just not far from there. Eventually it will be all over and I don't think there will be any animals to trap. Nowhere to go. Logging trucks that all over the place, leave a little part there and nowhere to go for animals.
> FMSD BMX TLUS ID21

4.1.5.2. ACCESS RESTRICTIONS

Fort McKay members reported that they face a number of access restrictions when going out on the land. As discussed in Section 4.1.3.5, the Respondents interviewed for the TLUS are particularly concerned that the Project may block access to Aostra Road, which is used by Fort McKay members to access traplines to the west of Fort McKay, as well as western portions of Fort McKay Territory more generally. They reported that they are already experiencing access restrictions at Aostra Road:

> Security and gates [at Aostra Road]. One place, it's you go through security and then you into another gate and its locked…Sometimes it takes 2 or 3 days before they let you through.

FMSD BMX TLUS ID19 & ID74

> You're supposed to keep so far from the plants and they got the roads going right to the plants. And all the rest is bush, there is no way to get access. Then you are not allowed on the lease, trails around the plants. So, like on Aostra Road, [the] company will give you permission, but then you will go past that company and going farther, there is another gate, and that company won't give you permission to cross.
> FMSD BMX TLUS ID19 & ID74

Respondents interviewed for this TLUS identified gates and no hunting signs as barriers to access that prevent them from hunting and trapping.

> Yeah, they have gates and everything so people can't get through. It used to be that you could just go to your trapline, no problem.
> FMSD BMX TLUS ID16

> We go different places where there's no signs there. But if there's no hunting sign, we won't go.
> FMSD BMX TLUS ID110

When groundtruthing the Project area, Respondents also noted that they are no longer able to access some medicinal plant sites due to industrial disturbance and the presence of gates:

> And we used to come pick…Frog's Pants. And Pitcher plant…We used to pick quite a bit, but now, coming out here today. I just can't recognize where we used to go. It's just, been disturbed a lot. It's been disturbed too much and can't find where we used to go…Either the gates are closed or not allowed in, or the land's been so disturbed, we can't find where we used to go.
> FMSD BMX TLUS ID74

4.1.5.3. IMPACTS ON AIR QUALITY

Fort McKay members are extremely concerned about the Project's contribution to their already compromised air quality. Air quality in the Fort McKay area often exceeds Alberta's Ambient Air Quality Objectives (AAAQOs) (Fort McKay First Nation 2018a:9), which Fort McKay has advised Alberta on a number of occasions are not protective of human health. Respondents who attended the community data verification and mitigation development workshop conducted for this TLUS identified air pollution as their primary health-related concern.

> Like I said, health-wise, a lot of people are getting sick. Like with their lungs and everything. Nowadays, a lot of babies are being born with asthma. I find myself pretty healthy, I've never done drugs in my life, never, nothing. And my daughter is ten years old, my youngest, and she was born with asthma. And I have a middle daughter, and she uses puffers now. Cause they're making people sick. People are dying left and right. My mom passed away at 63 years old, and that's young. She shouldn't have. There're so many people now. You hear all these elders, they're always coughing and hacking and stuff, you know? The kids too.
> FMSD BMX TLUS ID153

> Like right now, we have Petcoke that enters our house. Day after, day after, day after day. And it's a brown looking little round thing that's on your floors, your washers your

> dryer. Looks like a light brown dust . . . From where they traced that Petcoke, is way up north and they traced it all the way to Syncrude . . . And if you go and ask Syncrude they would tell you to go to Health Canada, because they don't want to answer our questions because the last time I asked, what is Syncrude doing about that Petcoke that enters our house? And, what that does, is that black dust that soot that comes these plants here, it gets stuck in our windows, our doors, and . . . and you know what it cracks the steel siding of our houses. So, what is it doing to human beings, and you don't have to be a scientist to see that. So, that's where we are at.
> FMSD BMX TLUS ID74

In addition to their concerns about the health effects of air pollution, many Respondents reported experiencing headaches when they are in Fort McKay. They find that they can only get relief from these headaches by travelling to areas like Fort McMurray or Buffalo (Namur) Lake, and are concerned that the air quality in Fort McKay will worsen if the Project proceeds:

> Cause when I go to Namur Lake, it's higher and a little bit further, I don't feel as sick as I feel when I come to McKay. And if I leave McKay, for a weekend or short time, I don't feel as sick as I do when I am here.
> FMSD BMX TLUS ID74

> Every summer for the past six years I go and live in my cabin at Buffalo Lake. When I'm there, I feel good. I'm a cancer survivor, I have been for 11 years, I had cancer of both kidneys. I am a diabetic. Also, I have COPD. I have a real shortness of breath when I'm in McKay. I can't go outside and sit outside, I just can't. When I'm in Namur or Buffalo Lake, I spend my time outside all day long from morning until evening, and I breathe good. And I don't need a doctor or scientist to tell me what's happening to me, it has to do with the air that we have to breathe when we're in McKay.
> At one point in time my doctor told me: the best prescription I can give you, would be to leave the community at least every two weeks for a weekend. That will do you good.
> FMSD BMX TLUS ID74

> It [the Project] will be more pollution, it will be. You know some days you can't even, the smell is so bad your head just pounds, oh god. My head just pounds. My husband takes me to town once in a while when it gets like that. I feel better when I get to McMurray, I am not so you know. I know [what] it's from and it's smell like skunk or stinks. Oh, god, it's a really bad smell. It's not all, not everyday, not everyday, it's just like once in a while it's . . . like they are burning something rotten or something, you know like it's gas I guess, you know [. . .] That's what we smell and it's just a terrible smell, you know? I noticed that myself because after living in McMurray for years, when we came back here every time I smell that, I just get awful headache. Even when you pass the camp you can smell it. When you pass that ponds, on towards the river. I don't like that smell.
> FMSD BMX TLUS ID16

> I'm sure that there'll be more pollution in the air. More dust. More traffic. More disturbing the land. More noise. More chemicals coming out. There will be more sickness.
> FMSD BMX TLUS ID110

4.1.5.4. IMPACTS ON WATER QUALITY, WATER LEVEL, AND FISH

A concern frequently mentioned during interviews and the workshop was the Project's anticipated effect on water quality, the overall water level within the Territory, and aquatic ecosystems. Community members expressed a high level of concern regarding the potential contamination of both ground and surface water as a result of the proposed Project. As identified in the discussion of Site-Specific Results, Section 4.1.3, within the LSA there are documented berry and medicinal plant gathering areas, wildlife habitats, and culturally sensitive areas that have already been significantly and negatively affected by industrial encroachment. Respondents are concerned that these important Values will be (further) diminished or destroyed through Project-related contamination concerns of ground water.

> . . . it's just the matter of the creeks. Once you contaminate the creeks and everything's all going downhill, might as well kiss us goodbye . . . It'll go into any creek. Creeks on the ground are like this. So, once you get one creek contaminated, all the creeks are going to be contaminated.
> FMSD BMX TLUS ID81

> I know they can't now because there's not enough water in the river . . . I don't know, I blame it on Syncrude and Suncor . . . The last time I went on the boat was, I'd say about a month ago. I go with my cousin . . . and her husband. And that was the last time . . . Like, we got stuck. Yeah, the water's really low.
> FMSD BMX TLUS ID153

> Water impact. Water, they cut the sources, everything dries. Diseased trees. Animals. Human health impact.
> FMSD BMX TLUS ID110

In a related concern, access to clean water while out on the land was also mentioned by Respondents. As a result of real or perceived contamination of water, Respondents must carry bottled water with them while engaging in TLU on the land.

> No, you cannot trust these waters anymore. Because you know, there's just too many [industrial] plant sites. We're inside the bowl here, you know? . . . I don't even really trust the tap water. I don't use tap water for drinking. I buy the water . . . But I usually take my water even if I go there. I buy my water.
> FMSD BMX TLUS ID110.

Respondents also raised concerns regarding the potential for the Project to reduce water levels in the water system within the LSA. Fort McKay members emphasized concerns regarding the McKay and Athabasca Rivers, which have provided important travel routes for Fort McKay members, as well as the potential regional impacts on traditional fisheries and culturally important fish species. A Respondent described the Athabasca as a former "food basket", although many community members now consider the fish taken from the river too contaminated to safely consume:

> Long time ago, people used to call that the food basket. They would go trapping all winter out in the bush. In the summertime they don't come to McKay, they come to Athabasca River. Which they called . . . food basket. Where they set their fishnets to fish up there.
> FMSD BMX TLUS ID17

> Athabasca River. The water then was drinkable. The fish was eatable. They are not anymore . . . Absolutely not, you can't go fishing and ask, "hey fish do you have cancer or are you okay?"
> FMSD BMX TLUS ID74

> We still fish there [Athabasca], but it's just game fishing now. You catch and you throw back, right? Cause you can't eat the fish.
> FMSD BMX TLUS ID153

As referred to above, Fort McKay members are also concerned about the diminishing water levels of the rivers in their Traditional Territory:

> McKay River was a river. When I was a kid, at the end of school that's where we used to go swimming . . . to celebrate our year end of school. Everybody from McKay used to go to McKay river to go swimming. It was a river, very deep and very swift. Horses had a hard time crossing the river. Now you can walk across with just your running shoes on, just trickling down the road. That's where my dad used to go fishing up there and catch fish in the summer and the spring. Now I don't know if canoes can go up there at all. I doubt if there is any fish, they can't.
> FMSD BMX TLUS ID74.

> Where is the water going to come from? Our Athabasca River is drying up. Now in the summer all we see, the sandbars which was never there. That is one of the concerns all the community members have.
> FMSD BMX TLUS ID74

4.1.5.5. HABITAT FRAGMENTATION AND IMPACTS TO WILDLIFE

In addition to their worries about water levels and the health of aquatic ecosystems, interview Respondents are concerned that the BMX Project will further reduce and degrade critical animal habitats. As outlined in the Site-Specific TU Value Results, Section 4.1.3.4, whooping crane, bear, moose, beaver, and muskrat habitats were reported by Respondents as still existing within the LSA. Respondents are concerned that these and other wildlife habitats may be affected directly or indirectly by the Project's contribution to current habitat fragmentation:

> Just maybe thinking, you know I cannot go back to the past the way our land is now. It's all sliced up, all over the place. Sometimes I flew from Fort McMurray to go down to Chipewyan Lake, that whole place is sliced up! When you're up in the air. Before the land never used to be like that. Cause I used to fly in and out. I could see moose, and I'm flying there on the river — you can see moose, you can see caribou from up in the air before. Nothing like that anymore . . . Well we could say that it's disturbing the land, big time! Vegetation and biodiversity.
> FMSD BMX TLUS ID110

Fort McKay members are also concerned about the effects of industrial noise and air pollution on wildlife. They observed that once animals flee an area because of poor air quality or noise, they are unlikely to return:

> But the animals will not come back in that area, they don't like noise. The habitat's not there for them. That formation is not doing anything for them. Whatever it was in there

> was taken away. Animals are smart, they won't eat leftovers. Caribou and moose, they don't.
> FMSD BMX TLUS ID110

> It's all clear. Too much activity, too much noise! They scared everything away! You know, you've got to be quiet to an animal, you don't start making noise up there, all the heavy traffic and everything, and the smell of the carbon dioxide, the petroleum smell, the oil. As soon as the animals smell that, they take off! They run away.
> FMSD BMX TLUS ID17

The Respondents interviewed for this TLUS further observed that key cultural species like moose, which are currently in decline due to altered habitat and hunting and predation pressure (Morgan and Powell 2009; Dover Operating Corp 2010; Gould 2013; Berryman et al. 2013), are increasingly diseased and unhealthy.

> Because we Aboriginal people know if moose is healthy when you skin them. . . they'll have like lumps and humps, and they'll have worms and different scars if they're not healthy.
> FMSD BMX TLUS ID110

> You…look at the animals and you can tell they're not healthy. A few years ago, I was driving into McMurray and just passed Syncrude there just before the buffalos, they have that open area, there was a wolf there and everybody stopped to take pictures because it had no hair. It was walking across the road and there was no fur on it at all. It was just patches and stuff. That's not healthy. And it was around Syncrude.
> FMSD BMX TLUS ID153

Respondents associated the decline of healthy animal populations with the expansion of oil sands developments in their Territory. They emphasized that any addition to existing development will exacerbate these issues:

> So yes like, they are affecting the animals on the ground, the birds, everything. And, you see how all those oil companies are and Fort McKay is sitting right in the middle, that is where we are at. So, that's always been our concern. No matter how small they are now, they are still adding on.
> FMSD BMX TLUS ID74

The impacts of industrial developments have already made some species inaccessible and unavailable for TU. Recognizing the threatened and declining state of local caribou populations, for example, Fort McKay members have largely stopped hunting caribou or using them for other TU activities, such as cultural knowledge transmission (Fort McKay First Nation 2018b:6-7; Fort McKay First Nation 2017:2). The lack of healthy and sustainable caribou populations in the Fort McKay area is therefore inhibiting the ability of Fort McKay members to practice their Aboriginal and Treaty Rights. As Fort McKay has repeatedly expressed, the critical relationship between these Rights and the availability of viable caribou populations has not been properly acknowledged or addressed by the Government of Alberta (Fort McKay First Nation 2017).

In addition to caribou, Fort McKay members have noted that other species, including rabbits and porcupines, are disappearing from their Territory:

> That's why we don't even, years back we used to have frogs, we used to have lots of birds, I never see one robin anymore. I don't see the whiskey jacks [grey jays], there is no more chickens in the bush around, you know? And rabbits, lots, we used to go and set snares all over.
> FMSD BMX TLUS ID16

> Yeah. I don't know where they went, they are gone anyways. There is hardly anything, even skunks, there's nothing, there used to be lots. Porcupines used to be, see them all over. None of that or I don't know when the last time I've seen a porcupine in Athabasca, I don't know when, 20 years ago maybe.
> FMSD BMX TLUS ID21

> Respondent 1: Because that's the way it is. It's just been loss, loss, loss. Loss of this, loss of that, loss of everything. Birds, berries, animals, you name it. Even frogs . . . you know? Since I moved back from Fort McMurray, in the last 20 years now, I've seen one robin in 20 years in McKay. Before that when we used to live here there were lots of robins.
> […]
> Respondent 2: So, these are the things that are happening. These are the things we've been trying to deal with for the past 20-25 years. And we're always thinking the same thing, saying the same thing.
> FMSD BMX TLUS ID16 & ID74

Without viable and self-sustaining traditional resource wildlife populations, Fort McKay members are unable to exercise Treaty and Aboriginal rights of hunting and trapping.

4.1.5.6. POLLUTION/ALTERATION OF RESOURCES

Fort McKay members reported that increasing levels of industry-related pollution are altering or degrading the quality of Traditional Use resources. For example, Respondents interviewed for this TLUS feel that industry-related pollutants are causing acid rain and creating dust, which in turn render some resources, including medicinal plants, less valuable and/or unsafe to consume:

> Anything will grow, but they said it's contaminated. Acid rain, all kinds of dust, sand on them. They're no good. All the water up there…in the creeks, some yellow stuff on the top, sulphur. Acid rain, they called it.
> And it always rains at Syncrude. We call that the Syncrude rain. Or Syncrude snow. In the wintertime you see some snow in Syncrude, once you pass it by Supertest, no more snow. It's just that area, it's from that smoke, all that up there, it makes the rain. Always rain there.
> FMSD BMX TLUS ID17

> [I]f you ever step out the bush there somewhere it's all full of…dust. Trees and everything, even the plants it's all full of dust. Dust from the roads and they water it and put chemicals on the road.
> FMSD BMX TLUS ID03 & ID04

> And as far as our medicinal uses goes, everything is polluted. We cannot use our medicines. We cannot eat our berries, they're all polluted. Everything's polluted. Even the fish are polluted, the animals are polluted.
> FMSD BMX TLUS ID74

If the Project proceeds, Respondents are concerned that it will contribute to these existing issues. Respondents reported that the impacts of industry-related pollution are already altering the taste and texture of key species like bears and moose. This makes consuming harvested meat unsafe:

> Bears were good to eat long time [ago], but not anymore. None of us eat bears now. Unless you get it from far away in the wilderness.
> FMSD BMX TLUS ID110

> I remember . . . my husband [and] I killed one moose and it was no good, we didn't even, that moose just stunk it was sick, I guess. We didn't even bother with it, we just left it like that for the wolves.
> FMSD BMX TLUS ID16

Respondents are particularly concerned about the impacts of pollution on berries, including cranberries, chokecherries, blueberries, and raspberries. Some of the Fort McKay members interviewed for this TLUS recall canning berries and using them to make jams and preserves in the past. However, they are no longer comfortable consuming berries in the area around Fort McKay:

> People used to pick berries in July, September, all kinds of cranberries, blueberries, raspberries. Canned it all, make jam, you know . . . And now people are scared to eat berries around here. I'm on a berry picking route, so they check the berries out here, along here, up in the university, they were no good. Not good enough around McKay. But over here, Gardiner [Moose] Lakes, the berries are good out there.
> FMSD BMX TLUS ID17.

> Like for instance we used to have lots of berries years back. And we used to put lots and lots of berries away. Now because of the stacks and all that, it kills everything, right? And so now the berries we used to live on, we had lots and lots of berries for the winter, we don't have any more of that. It's all wiped out. Every kind of berry. There used to be chokecherries, any kind of berry, cranberries, everything like that.
> FMSD BMX TLUS ID16

Fort McKay community members further noted that instead of picking berries in their Territory, they must now buy them from supermarkets at high prices:

> Yeah. Good old days. Like so much berries, now I buy blueberries. From the store, there are 14 dollars just bag like this, 15 dollars, 14.95 whatever. …I grew up in Moose Lake, and there it's just cranberries, all over.
> FMSD BMX TLUS ID16

As discussed below, Fort McKay members are concerned that existing damage to berry gathering sites, as well as other types of Traditional Use resources, may be permanent.

4.1.5.7. INADEQUATE RECLAMATION

Respondents are skeptical about the possibility of reclaiming lands to pre-development conditions and described observing inadequate reclamation attempts of existing developments. In particular, the Fort McKay members interviewed for this TLUS felt that medicinal and other plants cannot be restored to pre-development conditions once they have been disturbed. As one Respondent observes:

> They just finished a job and they're doing reclamation there. Right about . . . As soon as you tear it up, there's no way you're going to replace that ground. No way. Not reclamation. You can put it back the way it was, trees and all that, grass, but the plants they never grow. And once you get into the creeks, well. It's just toast, right there. I've seen a lot of land developed and reclaimed…It'll never be the way it was. Never. That area, Syncrude, was pretty much all the main site for picking medicines.
> FMSD BMX TLUS ID81

> Oh yeah. You can destroy the land, but you'll never reclaim it back the way it was. Never. You'll put your trees back, your grass and all that, whatever you want to put there, but you'll never make it the way it was before.
> Certain plants grow in certain places, they're not always in the same place, you got to always utilize where all the plants are, all the main plants, and that's where they're sitting is on the plant sites.
> FMSD BMX TLUS 81

Fort McKay members feel that the harvesting of medicinal plants is important to the transmission of cultural knowledge and the maintenance of community wellbeing, making concerns about permanent damage to plant habitats particularly salient:

> My grandfather was such a powerful medicine man that from stories people told me, there was someone who was so sick that he stopped breathing and my grandfather brought him back. And that's from just land and picked medicine and stuff, you know? That's not stuff you get from the doctor. And that's what I mean, when they take away, they take away the stuff that means a lot to us. Cause there's things, like medicine and stuff, that they can use out there that once they start digging and then replanting, it takes the powerfulness away from it. I don't know how to explain it.
> FMSD BMX TLUS ID153

Respondents also expressed concern that reclamation is not taking place in areas that are accessible to community members:

> They talk of reclamation and stuff like that, but you know what? It's not right. Like with Suncor, they said that they have one area that's already finished and reclaimed and stuff. But yet that's in the middle of it. Why do it there? Why not start at the end where we, the people, can go and enjoy it? Why do it in the middle when nobody can see it? And then they can sit there and say that, 'Yeah we're putting back after we take.'
> But that's not right. Once they've taken it, and did all the work on it, they could talk till they're blue in the face, nobody's going to make me believe that it's healthy and it's normal. Because you don't play with Mother Earth like that.
> FMSD BMX TLUS ID153

Most reclamation can occur only decades after an industrial project has ceased operating, meaning the effects of development will be multi-generational (Lagomidiere 2017:11; Fort McKay Industry Relations Corporation 2010:108). This, in turn, results in a loss of Traditional Knowledge, since reclamation will be completed after several generations have already lost access to the LSA. Respondents interviewed for this TLUS are concerned about the impact of this loss on future TLU opportunities, noting that future generations may inherit land that has been permanently altered:

> And no man can ever put our land back together the way it was. No matter if they try. It is not going to happen. Because once you disturb the land you cannot put it back together. So, that's always been our concern. We say it over and over again, but what happens, happens. And we just try to live with it. But it does affect our health, the air that we breath, the water is all polluted, our plants are polluted. And I am not, I am affected now, but can you imagine our future generations? In 50 years from now what is our land going to look like where we live now?
> FMSD BMX TLUS ID74

5. TRADITIONAL LAND USE STUDY CONCLUSION

This report is based on indoor interviews and groundtruthing with Fort McKay Elders and knowledge holders and on a review of existing land-use information relevant to the study areas. In total, there were 313 site-specific Traditional Use (TU) Values that intersect the LSA. These TU Values were grouped together within categories to indicate their importance as Spiritual Values, Subsistence Values, Trapping Values, Critical Wildlife and Ecological Values, Transportation Values, Indigenous Landscape Values, and Habitation Values. Intangible Values were also documented for the LSA. Interview Respondents and other Fort McKay members discussed specific concerns about the potential effects of the Project on their Traditional Use practices and their Treaty and Aboriginal Rights. The potential effects of the Project were assessed based on Fort McKay concerns, potential impacts to TU Values, and a broader understanding of the effects of oil sands in the region as understood through a review of relevant literature.

TU Values from seven categories were found to intersect the LSA. Of particular concern among the TU Values are currently utilized transportation routes that provide access to trapping areas. The TLU interviews also revealed that the LSA intersects important Wildlife/Ecological Values and historically important Habitation sites. The proposed Project will directly affect these Fort McKay TU Values in the LSA and as a result impact Fort McKay Aboriginal and Treaty Rights. Within the current context of the rapid growth of oil sands development, Fort McKay members are already experiencing a diminished number of areas where they can access an intact and healthy environment for traditional land use activities.

The review of Site-Specific TU Values reported by Fort McKay members demonstrates that the proposed Project will have direct adverse impacts on Fort McKay Traditional Use within the LSA. In addition to the direct impacts to Site-Specific TU Values, Fort McKay Respondents also reported seven (7) concerns related the Project's effects on the surrounding environment through impacts to cultural knowledge transmission, degradation of water and air quality, plant and animal habitat loss, and other Project-related environmental effects. It was repeated throughout the interviews and workshop that Fort McKay members are very concerned about the Project's contribution to the Cumulative Effects of oil sands development and the ongoing infringement upon their Aboriginal and Treaty Rights.

6. IMPACT ASSESSMENT METHODOLOGY

In our TLU Assessment of Project effects, we were guided by the methodological criteria set out by the Canadian Environmental Assessment Agency (CEAA). In particular, this TLUS considers the following criteria in the Project-Specific Effects Assessment:

Direction: Indicates whether an effect is considered positive (a benefit), negative or neutral. Some effects may have both positive and negative (adverse) dimensions.

Geographic Extent: In regard to Geographic Extent, the CEAA points out that:

> Localized adverse environmental effects may not be significant. Alternatively, widespread effects may be significant. When considering this criterion, it will be important to take into account the extent to which adverse environmental effects caused by the project may occur in areas far removed from it (e.g., acid rain and the long-range transportation of atmospheric pollutants), as well as contribute to any cumulative environmental effects (CEAA 2016).

For the purposes of this assessment, Geographic Extent is defined as: The geographic area within which an environmental effect of a defined magnitude occurs (Site-Specific, local, regional) or is assumed to occur.[23]

Duration: CEAA further refers to "Duration" (and Frequency) as:

> Long term and/or frequent adverse environmental effects may be significant. Future adverse environmental effects should also be taken into account. For example, many human cancers associated with exposure to ionizing radiation have long latency periods of up to 30 years. Obviously when considering future adverse environmental effects, the question of their likelihood becomes very important (CEAA 2016).

CEAA also considers the degree to which the Effects are Reversible or Irreversible:

> Reversible adverse environmental effects may be less significant than adverse environmental effects that are irreversible. In practice, it can be difficult to know whether the adverse environmental effects of a project will be irreversible or not. It will be important to consider any planned decommissioning activities that may influence the degree to which the adverse environmental effects are reversible or irreversible (CEAA 2016).

We simplify and adapt this to Duration, which refers to the length of time over which an impact affects the Fort McKay First Nation. In this case, 'short' refers to the construction phase of the Project (under 5 years), 'medium' refers to a period of time that extends beyond the construction phase but is less than a human generation (6-20 years), and 'long' refers to a period beyond 20 years. It is noted that many effects on Traditional Use are understood as long-term and are therefore permanent and irreversible, as an effect is expected to permanently change the use and cultural knowledge of the area if it continues for longer than one generation (20 years).

Magnitude: The CEA Agency provides additional guidance regarding these criteria as follows: Magnitude of the Impact:

> Magnitude refers to the severity of the adverse environmental effects. Minor or inconsequential effects may not be significant. On the other hand, if the effects are major or catastrophic, the adverse environmental effects will be significant. When

[23] It has been determined that for natural resource-based societies, real or even only perceived dangers to the peoples' health posed by environmental pollutants have measurable effects on cultural continuity and the ability to continue exercising their Treaty and Aboriginal Rights to a land-based way of life (Alfred, McCarthy and Spak 2006).

> using this criterion, it is important to consider the extent to which the project could trigger or contribute to any cumulative environmental effects (CEAA 2016).

For the purposes of this assessment, Magnitude refers to the degree of change on Fort McKay's Traditional Land Use and way of life that an effect may produce. Magnitude may be low, medium, or high, and is qualitatively assigned based on the value of the affected use area and the availability of alternate use locations. In the case of Fort McKay, alterative use locations are limited because areas utilized for TLU are often unique within the Traditional Territory, other locations are already harvested by others, and the cumulative nature of existing development has rendered much of Fort McKay's Territory unavailable for TLU.

Ecological Context is also important for understanding the Magnitude of Project effects. The Canadian Environmental Assessment Agency has defined Ecological Context as "the adverse environmental effects of projects [that] may be significant if they occur in regions that:

1. Have already been adversely affected by human activities; and/or
2. Are ecologically fragile and have little resilience to imposed stresses" (CEAA 2016).

It is therefore important to consider the impacts on Fort McKay due to the cumulative nature of all industrial activities in their Traditional Territory. In regard to cumulative effects, the CEAA guidelines state that:

> Beyond examining changes to the environment (such as fish under subsection 5(1)(a)), practitioners also need to consider effects of changes to the environment (such as changes to Aboriginal peoples use of lands and resources for traditional purposes, subsection 5(1)(c)). For example, while there may be no biophysical cumulative effects on a species, there could be cumulative effects on individuals that depend on that species in a particular locale (CEAA 2018:12).

The CEAA guidelines for assessing cumulative environmental effects further state that:

> With complex interactions, the whole does not necessarily correspond to the sum of the parts. Continuing environmental changes associated with past and existing activities may result in a worsening or improvement of VC conditions. Where there is evidence that effects are not simply additive, it should be noted (CEAA 2012).

In regard to establishing the proper scale for analysis for an affected area, the CEAA guidelines on cumulative effects point out that:

> The assessment area for cumulative effects may be larger than required for the assessment of the project related environmental effects to capture the greater extent of overlapping cumulative effects of other physical activities (CEAA 2012).

Thus, given the level of industrial development present in the Traditional Territory of the Fort McKay First Nation (see Section 2.6), it is becoming increasingly difficult to determine the exact nature of a proposed Project effect on Fort McKay members Aboriginal and Treaty rights and overall health and well-being without also considering the Project's contribution to the cumulative impact of development.

In determining the impacts of the proposed Project on the Fort McKay First Nation, our assessment is also informed by the principle of free, prior, and informed consent (FPIC) outlined in Article 32 of the United Nation Declaration of the Rights of Indigenous Peoples (UNDRIP), which states that "States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free and informed consent prior to the approval of any project affecting their lands or territories and other resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources" (Office of the High Commissioner for Human Rights 2008:12).

6.1. STANDARDS OR THRESHOLDS FOR DETERMINING SIGNIFICANCE

In their discussion of the different methods for determining the significance of an impact, Baker and Rapaport point out that:

> Determining the significance of an impact presents a variety of challenges at both the scientific and social levels. Evaluation of thresholds based strictly on scientific data is inadequate in many cases because resources and ecosystems are linked with human values and cultural meaning . . . The business of determining an impact's significance entails both understanding the social and ecological context of the impact and proposing the appropriate mitigation measures (Baker and Rappaport in Hanna ed.: 2009:42).

Thus, the social and cultural context of environmental impacts are fundamentally important when trying to understand the significance of an impact. Similarly, the affected community's perspective must drive the assessment. Addressing this issue specifically for Indigenous communities, John Sallenave observes that:

> There is a distinct difference between what aboriginal peoples interpret as "significant" impacts and what policy makers and proponents of development projects perceive as significant impacts. This poses an obstacle to both the effective monitoring of impacts and the possible incorporation of TEK into the EIA process. The chasm between the two perceptions is understandable since the reactions of a society or culture to development cannot be understood outside the context of its particular history (Sallenave 1994:2).

Thus, we include in this report Section 2 on the history of the community and its long-term relationship with the land, as an understanding of this history is required to grasp the impact of industrial development on Fort McKay.

Johannes (1993) further points out that when undertaking an EIA, researchers must identify and understand the significance of wildlife and plants to the inhabitants of the affected region. As Johannes correctly observes, this can only be done by involving the affected Indigenous communities in the planning and research stages of an EIA (1993).

We therefore focus on Traditional Land Use and the wildlife, plants and ecosystems that Fort McKay members identify as being of particular cultural, social, spiritual and economic significance.[24]

[24] Although we focus on some species more than others and provide a list of culturally important species in Appendix B, it should be noted that a simplistic ranking of plants and animals by levels of importance would conflict with Fort McKay members' values and knowledge of ecosystem interconnectedness, and the sacredness and importance of providing

Significance ratings for effects on Traditional Use Values, which for this assessment are considered representative of the Aboriginal and Treaty Rights of the Fort McKay First Nation, are determined according to the criteria listed below. After consideration of Project-related effects according to these criteria, a determination of effects as being either "Significant" or "Moderate" or "Minor" in the context of Aboriginal and Treaty Rights has been completed according to the following definitions:

Significant: Effects are clearly distinguishable, likely to result in strong concern in the Community and substantial changes in the overall use of lands or resources.

Moderate: Effects are not clearly distinguishable, are unlikely to result in strong concern, or will not result in substantial changes in the overall use of lands or resources.

Minor: Only low-level effects are distinguishable.

appropriate respect to all components of an ecosystem. From the perspective of TEK, all plants, animals, and their supporting environments are equally important.

Table 2 Criteria for the Assessment of Traditional Use Baseline Conditions

Attributes	Definition
Direction	
Positive	Effect is positive (a benefit)
Neutral	Effect is neutral
Negative	Effect is negative (adverse)
Magnitude	
High	Major change from local baseline conditions
Medium	Moderate change from local baseline conditions
Low	Minor change from local baseline conditions
Geographic Extent	
Regional	Project effects extend beyond the Local Study Area and are measurable and perceived by stakeholders within the Regional Study Area
Local	Project effects are experienced within the Local Study Area
Duration	
Long-term/Permanent	Effect continues throughout the life of the Project (>20 years) or longer; for cultural knowledge and practices any duration longer than a generation (20 years) can be considered permanent
Medium-term	Effect continue for less than a generation (<20 years)
Short-term	Effect continues during construction only (<5 years)
Ecological Context	
Prior Regional Adverse Effects	Adverse environmental effects of the Project may be significant if they occur in a region that has already been adversely affected by human activities
Ecological Fragility	The adverse environmental effects of the Project may be significant if they occur in a region that is ecologically fragile and has little resilience to imposed stresses.
Effects Rating	
Significant	Effects are clearly distinguishable, likely to result in strong concern in the Community, and substantial changes in the overall use of lands or resources.
Moderate	Effects are not clearly distinguishable, are unlikely to result in strong concern, or will not result in substantial changes in the overall use of lands or resources.
Minor	Only low-level effects are distinguishable

6.2. PRELIMINARY TU VALUES PROJECT-SPECIFIC ASSESSMENT RESULTS

The Fort McKay First Nation is a Cree and Dene (Chipewyan) community located in north-eastern Alberta 58km north of Fort McMurray. Their Traditional Territory encompasses much of the oil sands. The Fort McKay First Nation has legally protected rights that extend throughout their Traditional Territory as outlined in Treaty 8. Fort McKay members have a history of living a land-based way of life, procuring much of their food and other basic amenities through hunting, trapping, and the gathering of berries and plants. Their Treaty and Aboriginal Rights protect their ability to continue with these traditional resource harvesting activities.

The Base Mine Expansion Project (the Project) is located on Suncor's (the Proponent) lease in Townships 90, 91, and 92, Range 9 to 12, W4M. The proposed Project is also:

- within the Rural Municipality of Wood Buffalo (RMWB);
- on the western side of the Athabasca River;
- in the centre of Fort McKay's Traditional Territory and in an area that is important to the community for trapping, fishing, plant harvesting and hunting; and
- in northern Alberta, approximately 37 km south of Fort McKay First Nation reserve 174 and the Hamlet of Fort McKay

The Project footprint intersects RMFA (Registered Fur Management Area) #587, a Fort McKay-held trapline. The Project is also in close proximity to other community-held traplines and may affect access to RMFA #2894, RMFA #772, and other traplines located in the western portion of Fort McKay's Territory. Traplines have historically been and continue to be where members can pass cultural values and traditions down to future generations. The Project is also in an area where Fort McKay First Nation has exercised its Treaty and Aboriginal Rights to fishing, gathering, and hunting for consumptive, cultural, and spiritual purposes, and desires to continue to conduct these Treaty and Aboriginal Rights into the future. For a finer scale map figure showing the Project location and Local Study Area (LSA), see Figure 2.

The Project area borders and is near multiple other oil sands developments, including the Syncrude Mildred Lake Mine, the Suncor MacKay River Expansion, Suncor Millennium Mine, and the Suncor Base Plant.

The Project is anticipated to sustain existing levels of bitumen production at the Suncor Base Plant, which is located on the north-eastern corner of the proposed Project footprint and within the LSA. This TLUS is being conducted in the early stages of the Project's development and no further Project information is currently available. An Alberta Energy Regulator application for the Project has not yet been submitted, and the proposed Project has yet to undergo an Environmental Impact Assessment.

The Project is of interest and concern to Fort McKay First Nation because FMFN members will be directly and adversely affected by the Project and associated development. If built, the activities and features related to the Project will directly disturb land within the footprint of the Project and have additional direct effects on the surrounding environment through air emissions, noise, traffic, water, and other Project-related environmental effects. The purpose of this TLUS is to identify past, current (within living memory), and planned future Fort McKay Traditional Land Use that could be affected by the Project.

The Fort McKay Sustainability Department (FMSD) retained Kwusen Research & Media Ltd. (Kwusen) to provide technical support in TLU research methods, as well as to provide support through the collection, analysis, and reporting phases of the research program related to the proposed Project. This TLUS report reviews relevant previously documented information, explains the research methods and objectives for this TLUS, gives an overview of the history and Traditional Land Use practices of Fort McKay, considers the cumulative effects of industrial development on the Fort McKay First Nation, discusses the TLUS results and provides the following Project-specific effects assessment on Fort McKay Traditional Use Values, which are considered representative of Fort McKay's Aboriginal and Treaty Rights. Further work is contemplated by Fort McKay on the development of mitigation and accommodation options.

6.3. PROJECT EFFECTS ON TRADITIONAL USE VALUES

The proposed Project will adversely affect 313 Site-Specific TU Values directly and, as a result, infringe upon Fort McKay's Aboriginal and Treaty Rights. In the areas directly taken up by the Project footprint, land will be disturbed; wildlife and plants will be damaged and altered; and there will be noise, light and other sensory disturbances as well as the increased presence of workers (among others) in the Project area. The Project will also indirectly affect areas outside the Project footprint and within the LSA by contributing to existing air pollution, water pollution, and other industry-related environmental effects. These development-driven changes will further reduce or eliminate the available areas where TLU can be practiced within the LSA, which is already disturbed by existing industrial developments. The Project will contribute to cumulative effects that have already significantly reduced the availability of land use opportunities within the LSA.

Within the current context of the rapid growth of oil sands development, Fort McKay First Nation members are already experiencing a diminished number of areas where they can access an intact and healthy environment for Traditional Use activities. As noted in Section 2.6, an assessment of the Cumulative Effects of industrial development in the region indicates that by 307, 762 ha were already unavailable for Traditional Land Use practices as of 2017 (this is a conservative estimate that accounts for only a 183m buffer around developments) (Lagimodiere 2017). The LSA, which represents a moderate estimate of the area upon which direct Project effects may be experienced, is approximately 71, 746 ha. The Fort McKay First Nation is concerned that, if approved, the Project would add to the cumulative effects of industrial development on their Territory, which are already considered significant and adverse. The additional impacts of the proposed Project on the TU Values of Fort McKay, when they are already experiencing a shortage of culturally relevant lands and resources to conduct Traditional Use, is of great concern to the Fort McKay First Nation.

6.3.1. CONCERNS REGARDING THE PROJECT'S POTENTIAL IMPACTS ON SITE-SPECIFIC TRADITIONAL LAND USE VALUES

As discussed in Section 4.1.3, there were numerous Site-Specific concerns identified about the proposed Project by TU Respondents and Fort McKay First Nation members. Below is a summary of these Site-Specific concerns.

- Loss of access to and use of important transportation corridors and access routes, including Aostra Road. Loss of access to or disruption of water transportation routes.
- Loss of fishing sites for jackfish and pickerel. Respondents report that they still practice catch-and-release in the LSA, although they no longer feel it is safe to consume fish from the Athabasca River.

- Further disrupted and/or lost habitat for moose, deer, muskrat, beaver, grouse, whooping crane, black bear, ptarmigan, and brown (Grizzly) bear. Respondents believe that whooping cranes, bear, moose, beaver, and muskrat are still within the LSA and are concerned that these habitats may be adversely affected by the environmental effects of the Project.
- Further damage to already compromised berry harvesting sites for blueberries, low bush cranberries, cranberry, chokecherries, pin-berries, saskatoon berries, and strawberries.
- Further damage to already compromised medicinal plant gathering sites.
- Disrupted or lost access to and use of historically important cabin sites and camping sites that have been repeatedly used as a staging ground for practicing Traditional Land Use in the LSA.

Due to the systemic importance and interconnected nature of Traditional Use, the development of the Project within the already stressed Traditional Territory of Fort McKay will compound existing negative effects on the continuity of Traditional Knowledge and opportunities to conduct traditional land use.

6.3.2. INTANGIBLE TRADITIONAL LAND USE CONCERNS AND IDENTIFIED PROJECT CONCERNS

As discussed in Section 4.1.5, there were numerous Intangible concerns identified about the proposed Project by the Respondents interviewed for this TLUS. Below are the cumulative concerns thematically categorized and summarized.

Culture

- Cultural Knowledge Transmission: Fort McKay members emphasized the importance of experiential land-based learning to the transmission of cultural knowledge. They are concerned that the loss of appropriate areas for TU will reduce opportunities for this type of learning.
- Permanent Alteration of Land: Fort McKay members are concerned that future generations will not have any place to practice their traditional culture, or that Fort McKay's Territory will be so altered that it will no longer be suitable for Traditional Use.

Access

- Access Restrictions: Fort McKay members interviewed for this TLUS reported experiencing access restrictions, including no hunting signs and gates, when accessing TU resources in their Territory. They are concerned that the Project may contribute to these existing restrictions by limiting access to Aostra Road, which is utilized by community members to access traplines and resources in the western part of Fort McKay's Territory.

Air

- Health Concerns: Fort McKay members expressed concern about the impacts of poor air quality on their health. They reported increased rates of illness within their community, which they perceive as connected to industry-related air pollution.
- Fort McKay Air Quality: Fort McKay members described feeling ill and experiencing headaches when in Fort McKay or its vicinity. They reported that they must travel to relatively undeveloped areas like Namur (Buffalo) Lake in order to experience relief from these symptoms.
- Increased Air Pollution: Fort McKay members are extremely concerned about the Project's contribution to already compromised air quality, which includes industry odours and air pollution, and its effect on human health. Given the existing and projected air quality in the Fort McKay area, the assimilative capacity of the regional air zone relative to established federal and provincial criteria, objectives, and/or standards has been or will be exceeded

unless more rigorous emissions management actions are taken (Fort McKay First Nation 2018b:9–10). There are already relatively regular exceedances of Alberta's Ambient Air Quality Objectives (AAAQOs) within Fort McKay's Traditional Territory due to oil sands operations, and Fort McKay does not believe that the AAAQO thresholds, nor the way they are applied, are properly protective of human health and the health of Fort McKay's members (Fort McKay 2018b:9).

Water and Fish

- Ground Water Contamination: Fort McKay members feel that the Project could contribute to existing contamination of groundwater, including creeks. They noted that the contamination of one water source is likely to impact other water sources, which in turn impacts animal populations.
- Drinking Water: Fort McKay members reported that they no longer consider it safe to consume water from creeks or streams when out on the land. Some Fort McKay members further reported that they also do not consider their tap water to be safe for drinking and instead drink bottled water.
- Contaminated Fish: Fort McKay members interviewed for this TLUS stated that they are no longer comfortable consuming fish caught in the Athabasca River, as they consider the River too contaminated.
- Water Levels: Fort McKay members are concerned about the Project's contribution to declining water levels in their Territory, particularly in the MacKay and Athabasca Rivers. In addition to affecting aquatic ecosystems, low water levels limit Fort McKay members' usage of water routes and transportation corridors.

Wildlife

- Habitat Fragmentation: Fort McKay members are concerned about the fragmentation of animal habitats within their Territory. They reported that industrial development and its related infrastructure is disturbing the land and impacting key species like moose and caribou.
- Noise and Air Pollution: Fort McKay members are concerned about the Project's contribution to noise and air pollution, which wildlife avoid.
- Disease: Fort McKay members reported observing diseased animals in proximity to oil sands development. They are concerned that if the proposed Project proceeds, it will contribute to the existing health impacts of industrial pollution on wildlife, including wolves and moose. In addition to impacting the ecological health of Fort McKay's Territory, the prevalence of disease makes consuming harvested meat unsafe.

Quality of Resources

- Industrial Pollutants: Fort McKay members feel that industrial pollutants are making harvested meat, medicinal plants, and berries unsafe to consume. They perceive environmental issues such as increased dust and acid rain as resulting from oil sands development. If the Project proceeds, they are concerned it will further reduce the quality of resources within the LSA and within their Territory.
- Berry Gathering: Fort McKay members expressed particular concern about the declining quality of berry habitats within the LSA and within their Territory. They reported that many berry-gathering areas have been directly affected by industrial infrastructure or indirectly affected by industry-related pollution. Some Fort McKay members now buy their berries from grocery stores, as they no longer consider those gathered on the land to be suitable for consumption.

Reclamation

- Medicinal Plant Habitats: Fort McKay members feel that reclamation does not adequately restore sensitive medicinal plant habitats. They report that these habitats, once disturbed,

cannot be returned to pre-development conditions. In particular, they feel that the sacredness of medicinal plants is lost once they have been replanted.

- Loss of Future Land Use: Fort McKay members interviewed for this TLUS feel that reclamation does not adequately address concerns about the multigenerational loss of Traditional Use knowledge. Since reclamation may take several generations to complete, and since Fort McKay members consider reclamation unable to restore land to pre-development conditions, they are concerned that future generations will inherit land that is no longer suitable for TLU.

6.4. CUMULATIVE EFFECTS

The rapid rate of industrial development within the LSA and the greater region was of great concern to Fort McKay Respondents. The impacts on Fort McKay from the cumulative effects of industrial development are already considered significant. As discussed above, Respondents have reported regional declines in water quality and quantity, negative changes in air quality, degradation of fish and wildlife habitat, as well as significant decreases in the health, abundance, and overall biodiversity of wildlife, fish, and vegetation. Respondents also reported loss of access and/or restrictions in access to traditional lands, which has affected their ability to transmit cultural knowledge to younger generations. These cumulative effects further adversely impact Respondents' ability to practice their Aboriginal and Treaty rights. In this regard, any new Project needs to be seen not simply as adding to the destruction of already highly impacted lands, but rather as continuing to take away from the ability of Fort McKay members to practice and pass down their traditional land use activities and cultural knowledge and values to future generations.

As previously discussed in Section 2.6, significant portions of Fort McKay's Territory have already been impacted by existing development or will be impacted by planned development. Fort McKay has stressed that these developments have impacts that are cumulative in nature and extend beyond the taking up of land:

> Cultural heritage exists within a complex interrelated context of environmental, cultural, economic, and social influences. The suite of Traditional Activities that help support and maintain Fort McKay cultural heritage are situated within this context and are difficult to isolate from one another. The inextricable linkage among activities that support Community cultural heritage means that stressors influencing one activity have potential ramifications for another. Because of these connections, what may appear to be a minor change in one area may have larger and unanticipated consequences for the whole (Fort McKay Industry Relations Corporation 2010:103).

Although the Government of Alberta has developed the Lower Athabasca Regional Plan (LARP) in an attempt to set out a framework for Cumulative Effects Management, this planning process has not been successful in designating areas for the practice of TLU and exercise of Aboriginal and Treaty Rights, addressing the protection of Rights, or addressing the impacts of cumulative effects on Rights (LARP Review Panel 2015). As a result of these and other deficiencies, Fort McKay, along with five other First Nations in the Athabasca Region, requested that the Stewardship Minister review LARP. The 2015 LARP Review Panel found that "FMFN's Traditional Territory is the *most* severely affected of all First Nations by oil sands development in the region" (LARP Review Panel 2015: 156). The Panel further concluded that, based on the trend of industrial expansion within Fort McKay's Traditional Territory, "it is safe to assume that under the existing strategies and outcomes

described in the LARP, there will be little Traditional Territory left for FMFN members to carry out their TLU activities" (Larp Review Panel 2015:156).

Fort McKay is concerned that regional planning is prioritizing oil sands development at the expense of Fort McKay's Aboriginal and Treaty Rights. Fort McKay emphasized that LARP insufficiently addressed the cumulative and existing impacts of oil sands-based industrial development, including impacts to wildlife (i.e. caribou, fisher, moose and black bear), community health (specifically the loss of intergenerational knowledge transfer due to a diminishing and/or altered land base), and air and water quality (LARP Review Panel 2015:142-161). As discussed previously in Section 4.1.5, Project Effects, Fort McKay community members interviewed for this TLUS also expressed concern about the Project's impacts within the context of the cumulative effects of existing development within their Territory.

In January 2018, five Athabasca Region First Nations, including Fort McKay, submitted proposed amendments to the LARP to Alberta Environment and Parks. These recommendations were designed to provide remedies for the deficiencies in LARP, namely, "fundamental changes to land use planning, and consultation on broad land use issues, were required to address the LARP's failure to protect Aboriginal and treaty Rights" (Athabasca Region First Nations 2018:1). Relevant to this concern, the First Nations identified that "the Crown is not involved in discussions around mitigating or accommodating the impact on cumulative effects on Rights, as it asserts that these Rights are protected under LARP" (Athabasca Region First Nations 2018:7). The First Nations who produced amendments further argued that the seven fundamental failings of LARP, including the failure to mitigate or accommodate the impact of cumulative effects on Aboriginal Rights, have resulted in "unfettered approvals" of energy projects within the Athabasca Region (Athabasca Region First Nations 2018:7).

The following preliminary assessment of the Project takes into account the existing and cumulative effects already impacting Fort McKay's TLU, as articulated in Fort McKay's review of LARP and in other previously conducted assessments of the cumulative impacts of oil sands development on Fort McKay's Territory (for example, see Fort McKay Industry Relations Corporation 2010).

6.5. PRELIMINARY ASSESSMENT OF PROJECT-RELATED EFFECTS

The assessment of impact significance follows the methodology used for Environmental Impact Assessments as described in Section 6.1. Anticipated project effects on both Site-Specific Traditional Use Values and Intangible Traditional Use Values are considered in this preliminary assessment.

This TLUS is being conducted in the early stages of the Project's development and no Project information is currently available. An Alberta Energy Regulator application for the Project has not yet been submitted, and the proposed Project has yet to undergo an Environmental Impact Assessment. Fort McKay agrees with early consultation on the TLUS so that the results can be properly and adequately incorporated into the Environmental Impact Assessment results and early consultation and accommodation can occur. Further work is contemplated by Fort McKay on the development of mitigation and accommodation options.

Since there is no Project information available at this early consultation stage, this preliminary assessment is presented under the following assumptions:

- That the Project is anticipated to sustain existing levels of bitumen production at the

Suncor Base Plant, which is located on the north-eastern corner of the proposed Project footprint and within the LSA;
- That the entire Project footprint will become inaccessible if the Project proceeds;
- That the Project has the potential to have indirect impacts (including but not limited to air pollution, noise, and water contamination) on areas outside the Project footprint;
- That no adequate mitigation measures and accommodation options have yet been developed in consultation with Fort McKay.

The preliminary assessment is considered according to the five primary attributes for traditional use impact assessment as described below:

Direction = Negative: All identified Project-related effects will adversely impact Traditional Land Use and as a result the impacts on Aboriginal and Treaty Rights of Fort McKay First Nation members are considered to be negative.

Geographic Extent = Local & Regional: The geographic area within which Project-related effects on Traditional Land Use and the Aboriginal and Treaty Rights of Fort McKay First Nation will occur varies according to the effect in question. Noise, air emissions, effects on water (such as spills) and impacts on regional wildlife populations will extend beyond the LSA, but the majority of Project effects will be experienced within the LSA and are understood to be local.

Duration = Long-term/Permanent: It is anticipated that the majority of Project effects will continue during construction, operation, decommissioning and the early stages of reclamation. Project effects are considered long-term and permanent, given the fact that community members are doubtful about the possibility of reclamation to pre-development conditions.

Magnitude = High: Refers to the degree of change that an effect has the potential to produce. Because of the anticipated complete loss of all the Project Footprint for Traditional Use activities for longer than one generation, the magnitude of project effects is anticipated to be high within the Project Footprint and within the LSA.

Ecological Context = Region has prior adverse effects and is ecologically fragile: The region fits FEARO's definition of an area that is "already . . . adversely effected by human activities" (FEARO 1994). As discussed in the previous section on cumulative effects, existing and approved developments already cover most of Fort McKay's core Territory, causing direct and indirect disturbances (including air pollution, noise pollution, and water contamination) that affect regional ecosystems (see Section 2.6).

The determination of the significance of Project-related residual effects has been conducted according to the criteria detailed in Section 6.1 above. These criteria state that residual Project effects are considered significant if they meet the following three criteria: (1) they are clearly distinguishable; (2) they result in substantial changes in the overall use of lands or resources; and, (3) they are likely to result in strong concern in the community. At this time, available evidence suggests that Project-related effects identified in this study are negative (adverse), local (but to some extent also regional), long-term, and high magnitude. In addition, the ecological context for the proposed Project is within a region that has prior adverse (and cumulative) effects. Both the region and particularly the LSA are considered fragile, which increases the potential for Project effects to be significant. The significance of these effects is considered according to the following criteria:

1. Project effects on the Aboriginal and Treaty Rights of the Fort McKay First Nation will continue to be clearly distinguishable for the duration of the construction and operation of the Project as well as decades after the start of reclamation.

2. While Fort McKay continues to exercise their Aboriginal and Treaty Rights in their Traditional Territory, if available and relatively undisturbed by industrial or recreational activities, the Fort McKay First Nation is facing a highly disturbed and fragmented landscape that has experienced recent and dramatic environmental change, as well as a significant increase in competition (hunting and fishing pressure) from increased recreational hunting, fishing, and trapping. Areas where Fort McKay First Nation members can access an intact and healthy environment suitable for TLU activities, and where they can avoid hunting competition and other recreational land users, are becoming increasingly limited. The impacts of the proposed Project area within Fort McKay's Traditional Territory, which is already under considerable stress, would work in conjunction with other oil sands developments to create substantial changes to Fort McKay land use. As a result, the Project-related changes to Fort McKay's overall use of lands or resources is considered substantial for the Fort McKay First Nation.

The degree to which Fort McKay First Nation members are concerned about the effects of the Project relates to the successful completion of detailed scientific studies by the Proponent which incorporate the results of Fort McKay-led studies such as this TLUS, Proponent adoption of best management practices developed in consideration of Fort McKay's traditional knowledge and concerns, the adequacy of Proponent and Crown mitigation measures, continued Environmental Monitoring that engages Fort McKay, including community-based monitoring, substantive adaptive management responses, and the clear and regular communication of all of these activities with Fort McKay. As the Project is in the early planning stages, most of these measures have not been met. Based on the results of this TLUS, it is clear that Fort McKay First Nation members have strong concerns about the Project.

3. According to the assessment criteria selected in this study, preliminary assessment results indicate that the Project related effects are (1) clearly distinguishable (2) will result in substantial changes in Fort McKay First Nation member's overall use of lands and resources, and (3) have already resulted in strong concern by Fort McKay members. Therefore, preliminary assessment results indicate that in the absence of appropriate mitigation measures, the Project-related effects on the Traditional Land Use and, as a result, the Aboriginal and Treaty Rights of Fort McKay First Nation are anticipated to be adverse and significant.

7. LIMITATIONS OF THE STUDY

Research for this study was conducted primarily in October 2018, when available Fort McKay First Nation members were interviewed, with data compilation and reporting completed from October to June 2019.

No TLUS is able to document the full breadth and depth of a First Nation member's knowledge regarding a study area. This study was designed to provide a reasonable account of Fort McKay First Nation Traditional Use Values in the area of the proposed Project given the constraints of Fort McKay First Nation members' health and availability, as well as the constraints of both research funding and time.

This report may contribute to, but should not be taken as a replacement for, other studies that may be required, including socio-economic surveys; traditional harvesting surveys; health and well-being, governance, or planning and policy assessments; or Cumulative Effects studies or assessments.

Information provided herein is the most current available to Fort McKay, but not all Fort McKay knowledge holders were able to fully participate as of the time of writing. This report may be updated or revised by Fort McKay First Nation if additional work is completed and new information arises.

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APPENDIX A: ETHNOGRAPHIC LITERATURE REVIEW

Previously documented information specific to the TLUS Local Study Area is limited; however, there are a number of sources that do provide cultural, historical, Traditional Ecological Knowledge (TEK) and/or Traditional Use information that is relevant to the Fort McKay First Nation and their Traditional Territory. Most previously documented information consists of either ethno-historical publications or technical reports (TLUS or TEK) produced by industry or consultants. Although there are some ethnographic publications and academic articles that describe the Dene (Chipewyan) and Cree cultural backgrounds of Fort McKay and related areas, the depth of ethnographic research conducted prior to the recent work of industry and consultants is sparse.

Information reviewed for this TLUS includes the following:

- Ethnographic and historical literature
- Academic research related to cultural practices and land use
- Project-specific TLUS
- Territory-wide TLUS and TLU and Occupancy Studies
- Community-guided traditional economic and land use surveys
- Regional multi-stakeholder research with an emphasis on TEK

Ethnohistorical Literature

While there are few primary ethnographic sources specific to Fort McKay First Nation, numerous ethnographic and historical publications discuss the larger cultural context of the Western Woods Cree and Dene people. Rather than provide a comprehensive review, the aim of this section is to highlight key ethno-historical sources relevant to Fort McKay First Nation. Appendix D provides a complete list of ethnographic and historical sources that were reviewed for this report.

Early historical sources of information regarding Dene and Cree culture include Birket-Smith (1930), which describes the culture and society of the Chipewyan of the area of Churchill, Manitoba, as well as Peter Fidler's account of hunting practices in the boreal forest to the south of Great Slave Lake in 1791 and 1792 (Helm 1993). Robert Hood's travel diary includes brief ethnographic descriptions of the Cree as well as the Chipewyan (1819). James Smith provides a detailed review of many key literary sources for Chipewyan (1981a) and Cree (1981b) cultures including their language, territory and environment, social and political organization. Alberta (1988) includes basic ethnographic information related to the Woodland Cree and Chipewyan. Additionally, Meyer's ethnography describes the Red Earth Cree of east-central Saskatchewan (1985).

Key historical references related to Cree and Dene ethnobiology include: Bernard Ross' description of animals (1861), plants and minerals (1862) useful to the Dene; Hohn's (1973) catalogue of bird and mammal names in Cree, Dene, and English; and Smith's (1975, 1978) studies of the relation between Dene social organisation and hunting practices. Irimoto (1981a, 1981b) has completed a detailed study on the caribou hunting practices of the Chipewyan. Jarvenpa has also written extensively on Dene hunting and trapping practices (1976, 1977a, 1983 with Brumbach), Depression-era Dene-white relations (1977b), as well as gender identity (1995 with Brumbach, 1997 with Brumbach, 2001 with Brumbach, 2002 with Brumbach), and the flexibility of Dene social structure (2009). Vanstone (1963) wrote about Dene trapping in the Athabasca River delta.

TLU and TEK Reports

In addition to ethnohistorical literature, there are numerous project-specific Environmental Impact Assessments (EIAs), Community-guided TLUS, and TEK reports that pertain to TLU and cultural knowledge for Fort McKay.

Project-specific TLUS

The vast majority of TLU research with Fort McKay First Nation began in the 1990s and is associated with EIAs for industry-related development. There have been over 30 TLUS involving the Fort McKay First Nation directed by industry or their consultants. While Fort McKay has undertaken a portion of the project-specific TLUS through the First Nation-owned company Fort McKay Environment Services (FMES 1996a, 1996b; FMES 1997; FMES and AGRA 1998a, 1998b, 1998c; FMES and AGRA 1999) it was not until June of 2010 that Fort McKay began to formally direct project-specific TLUS within their Traditional Territory. This recent change represents a significant shift in approach to TLUS for Fort McKay; to date, industry directed research has been, by volume, the largest producer of the TLUS studies for Fort McKay and as such has significantly contributed to the representation of community knowledge.

TLUS guided by Fort McKay provides a more accurate representation of community perspectives of Traditional Land Use and assessment of potential impacts on Traditional Use Values versus those produced for industry. Fort McKay's TLU Studies completed first for Dover OPCO's Dover Project[1] and then for Teck Resources' Frontier Project, both TLUS were completed in the fall of 2010 and represent the first Fort McKay-directed TLUS.

Territory-wide TLUS & TLU and Occupancy Studies

The Fort McKay First Nation completed two TLUS not related to industrial development, From Where We Stand (FMTA 1983) and *There is Still Survival Out There* (Fort McKay First Nation, 1994). In addition, Fort McKay recently completed a community-specific Cultural Heritage Assessment and Environmental Assessment that reflects the community's perspective on the changes in their cultural heritage and Traditional Territory since industrial development began in the early 1960s (Fort McKay IRC, 2010b). From 2011 to 2013 the FMSD directed a Territory-Wide Traditional Land Use Study. Although the Territory Wide study is currently on hold, a large number of interviews covering much of the Traditional Territory of Fort McKay have been completed, with data in the FMSD Community KnowledgeKeeper (CKK) web-based spatial database. These studies are discussed in detail below.

Land and Resource Studies & Community Documentaries

In addition to TLUS, there have been several research projects initiated by Fort McKay that range in format from community-based TEK studies to academic theses. These include: the Fort McKay-Albian Sands TEK Project (Garibaldi 2006) to assess mechanisms to meaningfully include TEK in industry land reclamation from a community perspective; an economic study to determine the effects of oil sands development on Fort McKay's traditional economy (Tanner, Gates, and Ganter 2001); a Master of Science thesis critiquing Traditional Knowledge considerations in environmental impact assessment (McKillop 2002); and videos with filmed elder interviews on the land such as On the Way to Moose Lake (Fort McKay First Nations n.d.), Understanding Trails (Fort McKay First Nation 2005), the Trail to Moose Lake (Fort McKay IRC 2009), Real Moose Country (Behr, T. 2011) and Moose Lake: Home and Refuge (Behr, T. 2013). Additionally, a medicinal plant study (BG-TEK Consulting 2003) was the first community-specific study on plant medicines in Fort McKay.

[1] Dover OPCO changed its name to Brion Energy in 2013.

There have also been several reports completed by regional groups, such as the Cumulative Environmental Management Association (CEMA), and studies funded by companies (outside of the EIA process) that have recorded TLU and TEK of Fort McKay First Nation members. These include: Traditional Use Mapping of the Lower Athabasca River (Westland 2009), Traditional Knowledge in Project Planning and Implementation in the Athabasca Oil Sands Areas (Barnaby and Emery 2001), Identifying Traditionally Used Plants in the Regional Municipality of Wood Buffalo (Dersch and Bush 2008), Report on Traditional Environmental Knowledge Input into Wildlife Habitat Reclamation Recommendations (Garibaldi 2006), Traditional Resource Management Strategies in the Regional Municipality of Wood Buffalo (FMA 2007a), Wildlife Movement Traditional Environmental Knowledge (FMA 2005), Traditional Fisheries of the Fort McKay First Nation (Stanislawski 1998), and Traditional Ecological Knowledge and Family History for RFMA 2137 (Highwood 2001).

Below are abstracts for select key documents that were considered in the TLUS for the Project. In addition, Appendix D provides a complete list of references pertaining to Fort McKay TLU and cultural knowledge within Fort McKay's Traditional Territory that were reviewed for this TLUS.

From Where We Stand (FMTA 1983)

The Fort McKay Tribal Administration (now the Fort McKay First Nation Band Administration) completed a Community study in 1983 in response to the unprecedented large-scale development taking place within their Traditional Territory. One of the prime intents of the report was to record and map traditional resource use and conduct an assessment of impacts on those uses resulting from development. This report was also intended to examine potential advantages of existing and future development and determine how the Community could take advantage of these opportunities. More than 53 Community members were interviewed in the language of their choice (Cree, Dene Suline/Chipewyan, or English) and 1:250,000 scale maps were used to record spatial data. Community researchers received training and helped conduct interviews and field research. Seven (7) maps were produced identify hunting, trapping, fishing, gathering, and habitation sites that Community participants knew about or used at the time of the interviews. The report also provides a detailed description of traditional land uses, presents a Community profile, and discusses Community member's perceptions of development impacts. Research results are presented at a broad geographic scale and research efforts were not designed to specifically elucidate TLU information for the Project area.

There is Still Survival Out There (Fort McKay First Nation 1994)

In 1994 the Community of Fort McKay conducted their own Traditional Land Use and Occupancy Study to help guide land use planning efforts that support opportunities to practice Treaty and Aboriginal Rights. Sixty-seven (67) elders shared their knowledge about living on the land with Community interviewers with the intent that this document would become an educational resource for the Community. The report discusses the history and land use patterns of Fort McKay Community members and includes excerpts of interview transcripts. Ten (10) maps were created to portray the extent and intensity of Land Use and Occupancy in this area. The maps show the location of trails and cabins, spiritual (grave) and historical sites, furbearers, big game, fish, birds, berries, trees and plants, place names, and traplines.

The Community of Fort McKay Traditional Uses of the Renewable Resources on the Suncor Steepbank Mine Site (Fort McKay 1996)

This document describes the traditional use of lands and resources in the Steepbank area. The main objectives of this study were to determine the extent of traditional renewable resource use activities within the area identified as the Suncor Local Study Area; to determine the extent to which these activities are still carried out on the area; to identify the significance of such use to the members of the community of Fort McKay; to initiate discussion regarding acceptable and mutually satisfactory resource use; and to make recommendations relative to traditional and non-traditional use of the water, land and resources. The region's resources play an important role in the lives of the people from the Fort McKay community, as well as those closer to Fort McMurray. They hunt, trap, and fish; they use the berries, herbs and other plants. These resource uses are a significant factor in the daily lives of community residents, and in their economic and physical health, and spiritual well-being. The people of Fort McKay are becoming increasingly dependent on resource-harvesting corporations, as the activities of those organizations continue to negatively impact traditional lifestyles. The people of the community are, therefore, seeking an appropriate balance between traditional and current lifestyles. This report documents the traditional uses of the proposed Steepbank Mine site, and makes recommendations to support continued, sustained, and viable choices for the area's resources and its inhabitants.

Survey of Consumptive Use of Traditional Resources by the Community of Fort McKay (FMES 1997)

This study identified species that are culturally important to the Community of Fort McKay with the intent of subsequently determining the contamination level and associated health risk of consuming those species. Eight (8) conclusions were presented at the end of this study: 1) Most adults and youth in the Community have serious concerns about the potential for contamination of the plants and animals which live in their Traditional Territory; 2) The consumption of moose far exceeds that of any other species; 3) The consumption of hares is also relatively high compared to other mammal and bird species; 4) Ruffled grouse and spruce grouse are among the most heavily consumed of the resident birds; 5) Waterfowl, especially mallard ducks, are eaten by a relatively large number of people in the Community; 6) Small prey species may be accumulating trace metals; 7) The bulk of the fish taken from the wild and eaten in the Community of Fort McKay, are taken from Namur (Buffalo) Lake, Gardiner (Moose) Lake, occasionally McClelland Lake, and the Athabasca Delta; 8) The local plants consumed in the largest quantities on a regular basis and are blueberries and cranberries. Rat root is not consumed in any major quantity, but is used by almost everyone in the Community; and, 9) Most caribou consumed in the Community come from the Northwest Territories.

Traditional Fisheries of the Fort McKay First Nations (Stanislawski 1998)

This research report documents the traditional fisheries of the Fort McKay First Nation. Fourteen (14) interviews with present and past fishermen in the community of Fort McKay were conducted from December 22, 1997 to March 22, 1998. The study focused on traditional fishing areas in the vicinity of Fort McKay included the Athabasca River corridor, Firebag River drainage, and Namur/Gardiner Lakes area. Fishing camps were set up along these traditional locations to smoke and dry fish for human consumption and provide stores of dog food and bait for trapping furbearers. Fishing gear used at these traditional spots included nets with 4 to 5.5 inches mesh; set lines with a number of bated hooks usually attached to a long pole; angling gear composed of rod, reel, and usually a spoon; pitch forks; homemade nets; homemade hooks from lard pail handles; and snares attached to a long pole. Of particular concern were traditional fisheries in the Namur/Gardiner Lakes system, since the area is still relatively undisturbed and relied on to provide

quality fish to the community. Winter net fishing data were collected during two trips to the traditional fishing grounds in the Namur/Gardiner Lakes area.

Some Effects of Oil Sands Development on the Traditional Economy of Fort McKay (Tanner, Gates, and Ganter 2001)

The authors assessed the value of lost economic opportunities traditionally derived from renewable resource harvesting for the people of Fort McKay. The objectives of the study were to: 1) map existing oil, gas, and oil sands development, leases and forest management areas; 2) develop an economic assessment method for valuing the traditional economy; 3) evaluate the impacts of Syncrude and Suncor's oil sands mines - 1965 to 1999; and, 4) forecast the effects of oil sands development into the future. This study did not attempt to quantify the full extent of damages experienced by the people of Fort McKay resulting from breaches of Treaty and Aboriginal Rights.

This study did not document site-specific TLU. Rather it drew upon information identified in There is Still Survival Out There (Fort McKay First Nation, 1994) when discussing site-specific harvesting locations. This study provided useful background information for the TLUS including a discussion on seasonal rounds of the community of Fort McKay.

Toward Culturally Appropriate Consultation: An Approach for Fort McKay First Nation (McKillop 2002)

McKillop's main focus in this unpublished Master of Science thesis was the inefficiencies of the environmental impact assessment process in relation to Traditional Land Use. She posits that using the entire Traditional Territory of a community as an environmental assessment study area dilutes the true impact to areas most valued for resource harvesting and other traditional pursuits, and that what is required to address this inefficiency is the delineation of a study area that is smaller and more meaningful to the community. To this end, McKillop proposed the Culturally Significant Ecosystem (CSE) approach. The information used to model the CSE was derived from There is Still Survival Out There (Fort McKay First Nation 1994), and new TLU was not documented for this study. The land-use patterns can be expressed as geographically coherent units according to the community's intensity of use. According to McKillop, more accurate impact assessments, both project-specific and cumulative, can be gained by identifying high-intensity areas of use. McKillop also outlined the current state of government policies and legislation regarding Aboriginal Rights and consultation and presented an alternative framework for environmental impact assessments. This framework includes documenting Traditional Knowledge, developing a Community-based environmental management strategy, and allowing for greater Community participation in the environmental impact assessment process.

Traditional Land Use Setting Report for the Suncor Voyageur Project (Golder 2005)

This study was conducted in preparation for Suncor Energy's Voyageur project, consisting of the North Steepbank Mine extension, and the construction of the Voyageur bitumen upgrader, with Local Study Areas (LSAs) of 5,010 and 1,823 ha respectively. The project looked at historical and current traditional land use (TLU) within the project area with four FMFN members and two non-indigenous trappers with interests in the study area. The study provides a brief summary of the TU activities of the interviewees, including hunting, gathering, trapping, and habitation sites.

Jackpine Mine and Pierre River Mine Traditional Land Use Studies

Traditional Knowledge and Land Use (Golder 2007)

In preparation for the Jackpine Mine and Pierre River Mine (JPM/PRM) project application, Golder Associates prepared a Traditional Knowledge and Land Use Study (TKLUS) on behalf of Shell

Canada Ltd. In this application, Shell proposed an expansion of the JPM on the east side of the Athabasca River south of McClelland Lake, and the development of a new mine (PRM) on the west side of the Athabasca River adjacent to the proposed Frontier Project. The report assessed the project specific and cumulative effects of both projects on TLU within the six directly affected traplines (i.e., the Local Study Area) and Fort McKay's Traditional Territory (i.e., the Regional Study Area).

Fort McKay First Nation Traditional Knowledge Report (FMA 2007b)
At the request of Fort McKay, FMA Heritage Resource Consultants (FMA) conducted a second TLUS for the JPM/PRM project application. Similar to the Golder Associates (2007) study discussed above, this TLUS provided a project-specific and cumulative effects assessment of the JPM/PRM project on Fort McKay's TLU. Community members' project-specific and regional development-related concerns were also documented together with their proposed mitigation measures. This study was qualitative in nature and used interview information and a literature review to inform the assessment. Two Community members with a trapline near the PRM project, the senior trapper and junior trapper for RFMA #1650, were interviewed for this study as well as eight Fort McKay Community members.

Traditional Use Mapping of the Lower Athabasca River (Westland 2009)
The intent of this study was to understand the potential impacts on Traditional Use along the lower Athabasca River corridor from Fort McMurray to Lake Athabasca resulting from changing water levels. Methods for this study included collection, analysis, and mapping of existing Traditional Land Use information for the five regional First Nations and seven Métis communities along the river corridor. Twenty (20) studies were reviewed in this process, with the majority of the studies pertaining to the community of Fort McKay. The study assessed the potential effects of changing water levels on: 1) traditional resources used by Indigenous people; 2) traditional knowledge transfer; 3) traditional diet and health; 4) access to resources; and 5) traditional spiritual activities and places. The report concluded with a discussion of data gaps and further research needs.

Fort McKay Specific Assessment (FMSA, Fort McKay IRC 2010)
In 2010 the community of Fort McKay conducted their own environmental impact assessment – the Fort McKay Specific Assessment (FMSA), – which is comprised of three components: 1) an environmental assessment, 2) a cultural heritage baseline assessment, and 3) a project-specific cultural heritage assessment. The Community created the approach and methodology of the FMSA to more meaningfully address project-specific and cumulative effects on environmental, cultural, and traditional resources of concern and interest to Fort McKay. The 2010 FMSA is considered a pilot project, which was conducted in response to the Shell Canada Ltd. Pierre River Mine and Jackpine Mine Expansion projects. However, the intent behind the FMSA was that the approach would be used for subsequent development applications within the Fort McKay Traditional Territory. The FMSA provides information and recommendations to assist Alberta, Canada, the project proponent, and Fort McKay to develop mitigation and accommodation strategies and inform consultation. The cultural heritage assessment did not identify site-specific TLU; rather, it assessed cumulative effects of regional development on Fort McKay's cultural heritage in a qualitative fashion. Information contained in FMSA was used to inform the discussion of key Community concerns regarding project-specific and cumulative development.

Teck-SilverBirch Frontier TLUS (2011)

Teck Resources Limited (Teck) and SilverBirch Energy (SilverBirch) are jointly planning to develop the Frontier Project (the Project). The Project contains two separate development areas. The more southerly development area is located approximately 38 km north of Fort McKay and the more northerly development area is located approximately 51 km north of Fort McKay. The Project is located adjacent to the proposed Shell Pierre River Mine. Fort McKay directed Ann Garibaldi and Towagh Behr to complete a TLUS to consider the potential effects of the Project. They completed five days of interviews, six days of fieldwork, and two Community validation workshops as a part of this TLUS. There were sixty-six (66) Site-Specific Traditional Use Values identified that may be impacted by this Project. The TLUS determined that the post-mitigation residual effects of the Project will add to the already significant and adverse cumulative regional effects of development. In addition, given the historic and current importance of the area for hunting, the Project effects are particularly troubling for the Community. The Community considers the cumulative Project-related effects of Frontier Project on the TLU values, Aboriginal and Treaty Rights of the Community to be significant and adverse.

WBEA-TEEM TEK Fort McKay Berry Project (2012)

This research report summarizes the Wood Buffalo Environmental Association's (WBEA) Traditional Environmental Knowledge (TEK) berry monitoring research activities with the Community of Fort McKay (November 2011-2012). Research on this project has been Community-based with fieldwork and guidance from the Fort McKay berry focus group members (the project participants). WBEA representatives also attended the meetings and field trips and provided focus group members with information about WBEA's activities. Research was led by PhD student Janelle Baker. The main themes that emerged from this research were: 1) berry picking has been and continues to be an important nutritional and social and cultural activity for Fort McKay Community members, but that many of the traditional berry patches around Fort McKay have been destroyed by industrial development or are no longer accessible; 2) The remaining berry patches in the Fort McKay area had a lot of berries, but the majority of participants expressed concerns that the berries near Fort McKay are inedible because they are too close to oil sands activities and are therefore contaminated; and, 3) Traditional berry picking activities have clearly been disrupted in the areas close to the Community by industrial activity. Further, members of a Community focus group established as part of this research had a general sense of worry and helplessness regarding contamination of their wild food supply. They would like to have their wild food tested in ways that they can be involved in and trust. Focus group members further demonstrated that they observe contamination and changes in the local environment in subtle details that may not be obvious to the untrained observer. (Indicators include small berries (or none present), dried up plants, and dust on berries.)

This research was recently updated with the release of a WBEA fact sheet (2015) summarizing the project's findings. The fact sheet offers two additional key results: 1) Berries in the Moose Lake area have higher levels of health-promoting attributes than store-bought berries; and 2) Berries in the Moose Lake area typically had the lowest concentration of trace elements, compared to both berries found in areas close to industrial disturbance and to store-bought berries.

Dover TLU Project (2013)

Dover OPCO funded a Fort McKay directed TLUS that considered the effects of their proposed Dover Commercial Project. Fort McKay engaged the Integral Ecology Group and Kwusen Research and Media to work with the community to prepare an overview of TLUS data for inclusion in Dover's EIA. The objective of the Overview-Level Traditional Land Use Study for the Dover Commercial

Project (Overview TLUS, completed September 30, 2010) and later the Dover Commercial Project Traditional Use Update Report (TU Update Report completed in March 2013) was to assess the current impacts to the Community of Fort McKay's Treaty and Aboriginal Rights from both the Project and cumulative development perspectives. Both the Overview TLUS and the TU Update report demonstrate that the Dover Project creates adverse negative impacts on Fort McKay TU Values and contributes to a significant adverse situation with respect to cumulative effects. The TU Update report identified over 424 TU Values impacted within the Project Reporting Area and 593 TU Values impacted within 20km of the Fort McKay's Buffalo and Moose Lakes Reserves.

Community members stated very clearly that a buffer around the Buffalo and Moose Lakes Reserves is most desired offset to mitigate both Project-related and cumulative effects from a cultural and Traditional Use perspective. According to Fort McKay's cumulative effects study one of the four critical management strategies to ensure ecological integrity and maintenance of Traditional Land Use opportunity is to anchor the protected area network in a culturally and environmentally relevant manner. This protected area will serve as a biological refuge that will help maintain nearby landscape diversity. A buffer surrounding Buffalo and Moose Lakes will help provide this function for the reserve land allowing people to be able exercise Aboriginal and Treaty Rights by shifting the edge of the undeveloped land away from the reserve and thereby decreasing 'edge effect'.

Fort McKay Traditional Land Use Preliminary Results for the Modified Joslyn North Mine Project Environmental Support Assessment (2013)

This report presents the preliminary results of research undertaken on behalf of the Community of Fort McKay regarding the proposed amendment to expand the western portion of the Joslyn North Mine Project (the Project) by 1,573 ha as currently proposed by Total E&P Canada (Total). The TLU research (the Study) was carried out by EverNorth Consulting under contract to the Fort McKay Sustainability Department. The report is based on a literature review and five interviews with community members that were completed in August of 2013. Interviews were structured to draw on four key VECs identified by Total: air quality, noise and visual disturbance, aesthetics, water, terrestrial and land and resource use and access. The interviews revealed that the MPA is an important area for traditional resource harvesting activities.

Fort McKay Traditional Land Use Study: Koch Oil Sands Operating ULC's Dunkirk Project (Behr, Bennet, Spak 2014a)

This report, conducted by the Fort McKay First Nation (FMFN) with Kwusen Research & Media, sought to outline the potential effects of the proposed Koch Dunkirk Project, as well as to connect these effects to industry-caused cumulative effects already experienced by FMFN community members. The latter has resulted in approximately 2,119,015 hectares (ha) being made unavailable to FMFN members for practicing Traditional Land Use. The Local Study Area (LSA), which includes the KOCH Dunkirk Project and the surrounding areas it is likely to impact, would make a further 84,327 ha unavailable to members of Fort McKay. The report authors unpacked these existing and potential industrial effects over seven (7) days of interviews with Elders and Traditional Knowledge Holders from the Fort McKay community. These interviewers produced 23 site-specific traditional use values that intersect directly with the LSA. Access barriers to hunting, as well as potential and existing damage to the delicate habitats of animals like caribou and moose, emerged as prominent themes from these mapping and interview sessions. More generally, land fragmentation, contamination of resources, and industrial pollution were identified as salient concerns among FMFN members. These concerns were reflected in eight non-site-specific values, which were identified as follows: 1) the loss of and damage to resource harvesting areas and the concomitant impact on the well-being of the FMFN community; 2) the quality and flow level of local water

sources; 3) the real and perceived health risks linked to industrial ventures in the area; 4) the increased travel time and expense incurred by FMFN members seeking to distance themselves from industrial ventures and the concomitant erosion of cultural knowledge; 5) the habitat fragmentation and de-population of various species; 6) increased barriers to areas where TLU can be practiced; 7) the loss of cultural knowledge; and 8) concerns about the ineffectiveness of reclamation.

Fort McKay Traditional Land Use Study for the Proposed Imperial Aspen Project (AMEC 2014)

This report was commissioned by Imperial Oil Resource Ltd. to identify the potential effects of the Imperial Aspen Project, a SAGD oil-sands project, on Fort McKay Traditional Land Use. In keeping with Alberta's Provincial requirements, the report provides a map and description of traditional land use areas; an additional map of any traditional land use areas designated historic resources under the Historical Resources Act; and a summary of potential impacts of the Aspen Project on the ability of Fort McKay First Nation (FMFN) to practice Traditional Land Use. In addition, the report was required to provide Aboriginal viewpoints on the reclamation process. The report's authors conducted joint interview/mapping sessions and held a validation meeting to discuss their results with interviewees and community members. The resulting data was broken down into several main topics of concern, including project effects on trapping, access to Traditional Land Use sites, species and species population/health, climate change, and water health and flow rate. Respondents also voiced concerns about the long-term and cumulative impacts of both existing industrial development and the proposed Aspen project. The report concluded by sharing three mitigation measures proposed by study participants: namely access for trapline holders and traditional land users to areas within the project lease; reclamation policies rooted in Aboriginal consultation; and the hiring and training of security personnel who are culturally sensitive and respectful.

Fort McKay Traditional Land Use Study: Value Creation's Advanced Tristar Project (Behr, Bennet, Spak 2014b)

Drawing on both existing land use information and new interviews with Elders and Knowledge Holders, this report identified the potential impacts of the Advanced Tristar SAGD Project, an endeavour situated within the already rapidly industrializing traditional territory of the Fort McKay First Nation. The report identified that approximately 2,119,015 hectares (ha) has already been made unavailable to FMFN members wishing to practice Traditional Land Use. The Local Study Area (LSA), which includes the Advanced Tristar Project and the surrounding areas it is likely to impact, would make a further 21,252 ha unavailable to members of Fort McKay. Community interviews produced 59 site-specific traditional use values that intersect directly with the LSA. Access barriers to hunting, potential and existing damage to the delicate habitats of animals like caribou and moose, and damage to muskeg habitats emerged as prominent themes from these mapping and interview sessions. More generally, concerns about the decreasing availability of sites that have not been contaminated or altered by industry emerged at the forefront of interviews with community members. These concerns were reflected in nine non-site-specific values, which were identified as follows: 1) the present-day and historic significance of the LSA to members of the FMFN; 2) the loss of and damage to resource harvesting areas and the concomitant impact on the well-being of the FMFN community 3) the quality and flow level of local water sources; 4) the real and perceived health risks linked to industrial ventures in the area; 5) the increasing travel time and expense incurred by FMFN members seeking to distance themselves from industrial ventures, and the concomitant erosion of cultural knowledge; 6) the habitat fragmentation and de-population of various species; 7) increasing barriers to areas where TLU can be practiced; 8) the loss of cultural knowledge; and 9) concerns about the ineffectiveness of reclamation.

The Politics of TEK in Oil and Gas Development: Knowledge (Re)constructions and Assimilation (Ross 2015)

Drawing from both a review of existing literature and her own interviews conducted with Traditional Environmental Knowledge holders, Ross seeks to contextualize and understand TEK's relationship to natural resource management, particularly in the oil and gas sector. Ross offers a background to TEK and way it has historically been perceived by Western society, then focuses more specifically on the politics of TEK in industrial review processes. She posits that the main way in which TEK is analyzed by the oil and gas sector—through regulatory review structures—is inherently problematic, as these structures are not suitable for meaningful and participatory engagement with TEK holders. Rather, regulatory reviews are used to expedite the approval of industrial projects for financial gain, often at the expense of those who hold Traditional Environmental Knowledge. She concludes by recommending that TEK holders consider practicing positive refusal, in which they decline to participate or share their knowledge through processes dictated by industry groups and corporations. She further suggests that widespread changes in the way TEK is perceived, not only by industrial groups but by wider society, are required to truly transform understandings of Indigenous Knowledge.

FMFN Cultural Impact Assessment: Teck Frontier Oil Sands Mine Project (Integral Ecology Group 2016)

This study was commissioned by the Fort McKay First Nation (FMFN) in 2016 to investigate and document the potential impacts of the proposed Teck Frontier Oil Sands Mine Project, and to link these impacts to historical and present-day issues caused by existing oil sands developments. Garnering their data primarily from focus groups, the authors of the report assessed their findings by measuring the cumulative effects of industrial developments on five core cultural components: physical cultural sites, cultural practices, cultural landscapes, cultural values, and well-being. Each of these five cultural components was found by the report to have been negatively impacted by industrial development in FMFN territory and its surrounding areas. The report concluded with six strategies or mitigation measures intended to lessen these impacts and assist in supporting FMFN culture and traditions. These strategies are as follows: 1) Develop a cultural and community-based strategy that can be used as a framework for approaching cultural and environmental initiatives; 2) observe and assess FMFN culture on a regular basis to ensure that issues caused by industrial development can be dealt with immediately; 3) endeavour to maintain and improve language learning and transmission within the FMFN community; 4) create community-based and participatory reclamation initiatives; and 5) foster employment opportunities that integrate land-based FMFN cultural practices into the local economy.

Aboriginal Traditional Knowledge on Habitat, Disturbance, and Management Practices for the Ronald Lake Bison Herd (ESSA 2018)

Drawing on the Traditional Knowledge of five First Nation and Metis communities, including the Fort McKay First Nation and the Fort McKay Metis, this study sought to improve upon existing management and survival strategies for the Ronald Lake Bison Herd (RLBH), one of only nine disease-free wood bison herds left in Canada. Thirty-four (34) individuals were interviewed over several three-day long workshops that identified the distribution and habitat of the RLBH; established the threats and cumulative effects faced by the herd, as well as the areas most integral to its survival; and proposed management practices rooted in existing Aboriginal traditions and knowledge of environmental stewardship. Workshop participants identified several factors most likely to affect the survival of the RLBH, including industry, loss of habitat, water diversion, and water quality. The latter theme proved particularly salient across all workshops. The workshops produced five major management strategy themes for the herd: 1) prioritizing buffalo survival over financial gain; 2) protecting key habitats; 3) monitoring and researching the herd; 4) ensuring that there is

Indigenous involvement in all management plans; and 5) communicating with and ensuring accountability from industry, particularly oil-based industry.

FMFN Traditional Land Use Study and Cultural Impact Assessment Regarding Suncor Energy Inc.'s Proposed Lewis in Situ Project

This study was conducted in response to the proposed Lewis In Situ Steam Assisted Gravity Drainage (SAGD) Project. The study examined data from current and prior TU research, oral history, and historical documents to identify project-specific effects and the project's contribution to cumulative effects on TU values, traditional land use opportunities and on the Treaty and Aboriginal Rights and interests of Fort McKay. The study identified one hundred four (104) site-specific TU values in six categories that intersect the Lewis Project Local Study Area (LAS). Of particular concern among the TU Values were currently utilized highly valued Subsistence Values (trapping, hunting, fishing areas, berry picking areas), and Wildlife/Ecological Values including critical wildlife habitat (caribou, moose, fur-bearers) and muskeg, which was identified as a critically important environmental feature for water filtration. The TLU interviews identified that the LSA intersects important Habitation Values (trapping cabins) and Cultural/Spiritual Values (medicinal plant gathering areas). The study emphasizes the fact that these effects are in the context of a highly disturbed and fragmented industrial landscape, adding to the numerous major existing industrial impacts on FMFN members' ability to practice traditional land use in their traditional territory.

APPENDIX B: COMMONLY UTILIZED TRADITIONAL USE MAMMAL SPECIES TABLE

Common Name	**Scientific Name**
Bear (grizzly)	*Ursus arctos*
Beaver	*Castor canadensis*
Bison	*Bison bison athabascae*
Black Bear	*Ursus Americanus*
Bobcat	*Lynx rufus*
Caribou (barren-ground)	*Rangifer tarandus groenlandicus*
Caribou (wood)	*Rangifer tarandus caribou*
Cougar	*Puma concolor*
Coyote	*Canis latrans*
Deer (Mule)	*Odocoileus hemionus*
Deer (White-Tailed)	*Odocoileus virginianus*
Elk	*Cervus canadensis*
Ermine	*Mustela erminea*
Fisher	*Martes pennanti*
Fox (red)	*Vulpes vulpes*
Horse	*Equus ferus caballus*
Lynx (Canadian)	*Lynx canadensis*
Marten	*Martes americana*
Mink	*Neovison vison*
Moose	*Alces alces*
Muskrat	*Ondatra zibethicus*
Otter (river)	*Lontrascanadensis*
Porcupine	*Erethizon dorsatum*
Rabbit	*Oryctolagus cuniculus*
Skunk	*Lepus americanus*
Squirrel (red)	*Mephitis mephitis*
Weasel	*Tamiasciurus hudsonicus*
Wolf	*Mustela sp.*
Wolf (gray)	*Canis lupus*
Wolverine	*Gulo gulo*

APPENDIX C: TRADITIONAL LAND USE STUDY INTERVIEW GUIDE

BIOGRAPHICAL INFORMATION AND GENEALOGICAL QUESTIONS:

1. What is your full legal name?
2. Do you have a nickname?
3. (For married women who changed their last name:) What is your maiden name?
4. Where do you live? (Off Reserve, On Reserve?)
5. What is your home address?
6. What is your telephone number?
7. What is your email address?
8. What is your date of birth?
9. Are you a member of Fort McKay First Nation?
10. Where did you grow up?
11. Where have you lived? (List all the towns and cities)
12. What are your primary spoken languages?
13. What languages are most often spoken at home?
14. What languages are sometimes, but not often spoken at home?
15. What languages were spoken at home when you were growing up? Do you still speak these languages?
16. Are you married?
17. What is your spouse's/partner's name?
18. Do you have any children? How many?
19. What are your children's names and when were they born?

20. What is your mother's full legal name? (What was her maiden name?).

21. What is/was her date of birth? Where did your mother grow up? Is your mother still with us? When did she pass on? How old was she when she passed away?

22. What is your father's full legal name?

23. What is/was his date of birth? Where did your father grow up? Is your father still with us? When did he pass on? How old was he when he passed away?

24. Do you have brothers and sisters?

25. What are their names and what order were they born in? Which brothers and sisters are still with us today?

26. Is there anything else you'd like to tell us about your family?

27. Do you have a Dene or Cree name? If so, when and how was it given to you? Are there teachings that come with this name (e.g. a responsibility that comes with the name)?

28. Who taught you about your traditions? Who taught you how to live off the land, history, stories, skills and cultural knowledge, etc.?

GETTING STARTED:

**Note: "Other" code can also be used and designated to which category once imported to the CKK.*

FIRST QUESTIONS

1. Are there places in this part of the Territory [indicate Google Earth map] where you go?
2. Why do you go to this area?

Habitation Sites (Places where you live and stay):

In this section we are interested in knowing about any places around the study area that you have camped or stayed overnight. We want to mark down specific areas in or near the study area where you've actually camped or stayed in cabins. We'll ask you about where your family or other community members have lived after.

X – Habitation Site

1. Are there any places around the study area where you have lived or stayed in a house or cabin?
2. When did you live/stay there, and for how long?
3. When did people first stay there?
4. What year was it built?
5. Who built it?
6. What did you do there?
7. Do you know of other places where your parents or other family members, or community members camped lived in the area (including old cabins)?

X C– Campsite

1. Are there any places around the study area where you have spent the night camping?
2. Was it in a tepee, or a tent, or a lean-to, or in the open?
3. When did you live/stay there, and for how long?
4. When did people first stay there?
5. Who built it?
6. What did you do there?
7. Do you know of other places where your parents or other family members, or community members camped in the area?

GP-Gathering Place

1. In the study area, do you know of any Gathering (meeting) Places or Village Sites where (First Nations or Métis) people would get together?
2. Why would they get together?
3. Who would gather there, and at what time of year?
4. When was the last time people were there?

ProspX – Prospective Camp/Cabin

1. Are there any special places that you know of that you think will be important for you or the community in the future, because you plan to build a cabin or house?

<u>Cultural/Spiritual Sites:</u>
In this section we are interested in knowing about places that are special because of cultural or spiritual reasons.

BU – Burial Site

1. Do you know of any Burial sites where members of your family or other people are buried?
2. When were the people buried there?
3. Who were they?

CP- Ceremonial Place

1. Are there any places that you or others have gone for Ceremonies like tea dances, drum dances, sweats, healings, feasts marriages, coming of age ceremonies, Christian tent meetings, or any other special spiritual or religious events that may have taken place?

SP – Spiritual Place

1. In the area around the Project, have you heard of places that are important for spiritual reasons? (Wesakechak, ghosts, part human/part animal people, etc.)? For example, places where it is not safe to go, or where you have to do special things or be quiet because of the things that are around?
2. What lives there?
3. How should people act if they go there?

AR – Archaeological Site
BP – Birth Place

PN – Place Names
OP – Orientation Point
TP – Teaching Place

MP – Medicinal Plants

1. Are there any places around the study area where you have gone to collect ceremonial or Medicinal Plants?
2. Are there other places people go to harvest?
3. Do you currently have quality concerns with these species? When did that start?

TS – Traditional Stories

1. Have you heard of other places from Traditional Stories, Legends, or that are associated with local history that are close to the proposed Project

2. What is the story?

<u>Wildlife/Ecological:</u>
We want to mark down the areas close to the Study Area, or nearby, that you have observed important animal habitat. For example, animal birthing areas, overwintering areas, or migration corridors. We'll also ask you if you know of specific areas which you are concerned about, regarding development impacting wildlife or plants.

HA -Animal Habitat
HB – Habitat Bird
HF – Habitat Fish
HR – Horse Range
IC – Industry Concern
WH – Wild Horses

SL – Salt licks

1. Do you know of any mineral licks used by Moose or any other animals?

<u>Subsistence:</u>
We want to mark down the areas close to the Study Area, or nearby, that you have hunted and killed animals (big and small game) for food or for your families or your community's own use. After that, we will ask you about other places in the area that you've heard of people using, either a long time ago, or more recently. We will also ask you about other food harvesting areas, such as berries and other plants.

H - Hunting (*trapping is below)

1. Are there areas in or near the Project area where you have hunted big animals for food or other uses?
2. What types of animals?
3. Was this in the past 15 years or longer ago?
4. Do other people in your family or community also hunt there?
5. Are there areas in or near the Project area where you have hunted animals?
6. Do you currently have quality concerns with these species? When did that start?

BH – Bird Harvesting

1. Are there areas in or near the Project area where you have caught birds for food or other uses?
2. What types of birds?
3. Was this in the past 15 years or longer ago?
4. Do other people in your family or community also hunt/trap birds there?
5. Do you currently have quality concerns with these species? When did that start?

Large animals commonly hunted in the project area may include:

Moose	Deer	Caribou	Grizzly Bear	Black bear	Woodland buffalo

Small animals and birds commonly hunted in the project area may include:

Beaver	Wolf	Rabbit	Porcupine	Muskrat	Eagles	Ptarmigan
Grouse	Chickens	Ducks	Geese	Swans	Loons	Owls

EG – Egg

1. Have you gathered wild eggs in or around the Project area?
2. What types?
3. Do you currently have quality concerns with these species? When did that start?

F – Fishing

1. Are there areas in or near that Project area where you have fished?

2. What types of fish did you catch?
3. Do you currently have quality concerns with these species? When did that start?

Fish commonly caught in the project area may include:

Lake Trout	Steelhead	Jackfish (Northern pike)	Whitefish
Ling Cod	Grayling	Pickerel	Perch

B - Berries

1. Are there areas where you have gone to harvest Berries?
2. Do you know of other places where people go?
3. What kind of berries are/were collected?
4. What time of year do you harvest?
5. Do you currently have quality concerns with these species? When did that start?

Berries commonly collected in the study area may include:

Mooseberries	Low bush cranberries	Blueberries
Raspberries	Gooseberry	Saskatoon berries
Pin cherries	Choke cherries	Hazelnuts
Wild strawberry	Rose hips	

FP – Food Plants

1. Are there any areas where you have gone to collect Food Plants (mint, wild onions, etc.)?
2. How about other people?
3. What other kinds of plants are collected?
4. Do you currently have quality concerns with these species? When did that start?

Plants commonly collected in the study area may include:

Muskeg Moss	Cow parsnip	Pitcher Plant/Frog pants	Fungus
Mint	Tiger lily	Labrador tea/Trapper tea	Rat root
Wild sarsaparilla			

CP – Caches Pit

WP – Water Plants
M – Mushroom picking

FT – Firewood

1. Is there an area that you know of that is used for harvesting firewood in or near the Project area?
2. What kind of wood would you use?

DW – Deciduous Wood (eg. Maple)
EW – Evergreen Wood (e.g. Spruce)

1. Are there any places where you have collected materials from trees?
2. What kind of tree? What was the purpose? Do you know of places where others go to harvest? Are the trees harvested deciduous or evergreen trees?

Tree materials commonly collected in the study area may include:

Willow	Alder	Poplar/Aspen
Tree (pitch/gum/sap)	Birch (bark)	White Spruce (cambium, gum)
Tamarack	White Spruce (including gum)	Jack pine
Water plants (rat root, cat tails)	Willow (including rotting willow)	

DF – Drying Fish
DM – Drying Meat
DB – Drying Berries

1. Are there places in or around the Project area that have been used for preserving food or preparing hides? Smoking or drying fish? Drying meat? Drying berries? Scraping or Preparing Hides?
2. Have these sites been used in the past 15 years or longer ago?
3. Do you know of other places where people go?
4. Are there any drying racks or other structures at this site?

Food/hide preserving activities commonly practiced may include:

Smoking fish	Drying fish	Drying berries or plants
Preparing hide	Drying meat	

WA – Water (drinking water source)

1. Where do you go to get water?
2. Do you know other places that people go?

M - Minerals

1. Area there any places that you go for collecting minerals, like special rocks for making tools, paint, or other uses?

2. Do you know areas where other community members go?

FW – Fishing Weir

1. Are there places in or near the Project area where members of your family or community use, or had used fishing weirs, traps, platforms, or other structures for fishing?

<u>Indigenous Landscape:</u>
In this section we are interested in knowing about places that are as transportation routes, and how you access other resource areas and areas of cultural importance.

BM – Boundary Marker

1. Do you know of places in the Territory which have boundary markers?
2. What does it mark?
3. Who told you about this place?
4. How long has it been there, who built it (if it is a non-natural feature)?
5. When was the last time you visited there?

OP – Orientation Points

1. Do you know of places in the Territory which have places used to orient yourself?
2. How long have people used that place for?
3. When was the last time you visited there?
4. Who told you about it?

PN – Place Names

6. Do you know of places in the Territory which have Indigenous place names associated with them?
7. Who told you this name?
8. Do you know anyone in your community who has a lot of knowledge of place names?

<u>Transportation:</u>
In this section we are interested in knowing about places that are as transportation routes, and how you access other resource areas and areas of cultural importance.

GA – Gate Access
T – Trail
WT – Water Transportation Corridor

1. Are there any old roads, wagon roads, pack or foot trails, or water transportation corridors in the area?
2. When were these last used?
3. Do people access the area now? How?
4. Have any of your routes become inaccessible? Why?

Trapping Commercial:
We want to mark down the areas close to the Study Area, or nearby, that you have hunted and killed animals (big and small game) for sale. We'll also ask you about places you have conducted other commercial land use activities.

$T – Trapping

1. Have you or your family or community trapped in the study area?
2. What were you trapping?
3. Do you know of other places where your parents or other family members, or community members have trapped?
4. Do you currently have quality concerns with these species? When did that start?

Animals commonly trapped in the study area may include:

Marten	Wolf	Beaver	Weasel	Fox	Mink
Fisher	Otter	Muskrat	Lynx	Wolverine	Squirrel

$F - Commercial Fishing

1. Have you ever caught fish for money (guiding/outfitting, commercial fishing)?
2. What fish, and where?
3. Do you currently have quality concerns with these species? When did that start?

$H - Commercial Hunting

1. Have you ever hunted for money around the study area (guiding/outfitting)?
2. What were you hunting and where?
3. Do you currently have quality concerns with these species? When did that start?

4. Do you currently have quality concerns with these species? When did that start?

Impacts of Industrial Development and Project Effects Questions:

1. Do you expect any problems with the upcoming proposed Base Mine Expansion project?
   These could be problems with any phase of the mine project:
   - Project planning and information sharing/consultation with your community;
   - Construction;
   - Operation;
   - Reclamation.
2. Can you think of any solutions which will help lessen the impacts of the proposed project?
3. Are there other ways in which you would like Suncor to support the community of Fort McKay?
4. Do you think your use of a trapline will change because of the proposed project? How?
5. Have you experienced, or have you heard of, changes in the Territory since the industrial Oil expansion of the 1960s?
6. Have you noticed (or heard of) changes in animal populations since the 1960s?
7. How has your community's use of the Athabasca River changed since the 1960s?
8. How has transportation changed for you and your family since the 1960s?
9. Has your ability to pass on your cultural knowledge to the next generation changed, if so, how? When, and why was that?
10. Did you ever live on a trapline? When did you move off it, and why?
11. What are the impacts of Industrial Development, including oil exploration, extraction, processing and transportation, like pipelines, on you and your community?
12. How has life changed for you and your family since you were a child?
13. How has life changed for you and your family since your grandparents' time?
14. How does development impact your land use?
15. Do you have experience being unable to access or being excluded from important areas on the land? Please explain why your access was blocked.
16. What are the impacts of being unable to access these areas?
17. How does oil extraction affect your harvesting of plants and animals?

18. What distance from oil industry infrastructure do you consider it safe or okay to harvest plants for food and medicine, pick berries, hunt, or fish? [Get specifics, if this is a different distance for different kinds of roads and activities.]
19. What impact have all the different developments of oil exploration, extraction, processing, and transportation had on your harvesting, hunting and fishing activities?
20. How about on your culture, your ability to practice your culture and pass it down to future generations?
21. What impacts have non-Aboriginal people moving into Cree and Dene lands had on your community and culture?
22. What is your experience with increased Crown grants, leases and private property in Cree and Dene lands? Are there important places that you can no longer access because it, or the access to it, is now occupied?
23. What is the state of the Cree and Dene languages today?
24. What do you think has contributed to the state of the Cree and Dene languages?

Is there anything else about the proposed Base Mine Expansion Project, or development to the land generally, that you would like to share?

APPENDIX D: COMPREHENSIVE LIST OF REVIEWED ETHNOGRAPHIC AND HISTORICAL REFERENCES

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Kwusen Research & Media Ltd.
917 Mason St., Victoria, BC V8T 1A1

Towagh Behr, M.A.

Tel.: 250 858 3878
email: towagh@kwusen.com

SUMMARY OF EXPERIENCE

Towagh Behr has conducted Traditional Knowledge (TK), Traditional Use Studies (TUS), and Cultural Heritage Assessments (CHA) with over thirty Indigenous communities in western and northern Canada over the past fifteen years. His expertise is in working with communities to understand and communicate likely effects of industrial development upon traditional practices, cultures, languages, and communities. In addition to conducting ethnographic and archival research projects with communities, he has a technical background as a documentary filmmaker and website developer. Towagh has a BA (joint honours anthropology & sociology) from McGill University and an MA in cultural anthropology and environmental studies from the University of Victoria where his research focused on the use of New Media to work with First Nations in creating their own multimedia representations of their cultures, languages, and traditional knowledge. Moreover, he has over a decade of consulting experience, working as part of multidisciplinary teams, on environmental assessment processes. His many years' experience as an applied anthropologist has provided a solid foundation in the interface of Traditional Environmental Knowledge (TEK), environmental assessment, and traditional systems of land and resource management. Towagh has worked with Indigenous communities to integrate their TEK into environmental assessment and consultation processes for the oil and gas, mining, and energy sectors. He has also provided training and capacity building programs for First Nation communities that have included TUS research methods, interviewing methods, website development, and documentary video production.

In response to recurring challenges First Nations research partners were having managing diverse recordings (maps, audio, video, notes, etc.) made as a part of TUS and TEK studies, Towagh conceived of and led the development of an open-source web-based data management and mapping system. Over the past decade he has grown this software platform into the CKK (Community KnowledgeKeeper: knowledgekeeper.ca), which is now used to manage research and consultation related data for thirty-five Indigenous communities. Towagh and his team at Kwusen Research & Media Ltd. (Kwusen: www.kwusen.com), understand the challenges and frustrations communities encounter when dealing with the consultation process and the importance of a secure, centralized platform for assessing, tracking, and responding to consultations. Towagh leads his research and IT teams at Kwusen in providing support to Indigenous communities facing the challenges imposed by industrial development and obstacles to their ability to self-govern their lands and resources. Kwusen assists with training, collaborative research projects, consultation support, and the development of information management tools.

Kwusen Research & Media Ltd.
917 Mason St., Victoria, BC V8T 1A1

ACADEMIC AND PROFESSIONAL QUALIFICATIONS

2005 M.A. Anthropology and Environmental Studies. University of Victoria.

1998 B.A. (Joint Honours), Anthropology and Sociology. McGill University.

- Member, Canadian Anthropology Society
- Member, International Association of Impact Assessment

SELECT EMPLOYMENT HISTORY

Kwusen Research & Media Ltd. – Victoria, BC

- Anthropologist/Principal (2010 - present)

Founder and Principal of a research and media production company specializing in serving Indigenous communities. Duties include: Business management, staff supervision, design and delivery of traditional use studies; traditional ecological knowledge studies; cultural impact assessments; expert testimony; independent review of environmental assessments; community-based research; archival research; training and local capacity building; and communication of project deliverables through video and webpages.

Integral Ecology Group Ltd. – Victoria, BC

- Anthropologist/Principal (2011 - 2012)

Cultural Anthropologist and Principal in Integral Ecology Group - a specialist company focusing on applied ecological and cultural research providing consulting services that interface between human land uses and their supporting and surrounding environments. Duties include: design and delivery of traditional use studies; traditional ecological knowledge studies; Aboriginal rights and interests impact assessments; independent review of environmental assessments; community-based research; training and local capacity building; and communication of research project results through video documentaries and websites.

Golder Associates Ltd. – Victoria, BC

- Anthropologist/Traditional Studies and New Media Specialist (2006 - 2010)

As a Traditional Use Studies Specialist and then as Traditional Studies Discipline Leader for British Columbia, delivered Traditional Use and Traditional Knowledge Studies. Duties included: supervision of staff, project administration; design and delivery of traditional use studies; traditional ecological knowledge studies; Aboriginal interests impact assessments; cultural impact assessment; independent review of environmental assessments; community-based research; archival research; training and local capacity building.

First Peoples' Heritage Language & Culture Council – Victoria, BC

- Research Coordinator - First Peoples' Language Map of BC (2008)

Research, website development and administration for the creation of an online First Nations' language map of British Columbia (http://maps.fphlcc.ca). Conducted community-based interviews, research and community consultation to represent 203 First Nations and their 38 languages. Completed information architecture and customization of a website with mapping application. Interviewed First Nations community members, recorded and authored website content.

Kwusen Media – Victoria, BC

- Cultural Anthropologist and New Media Producer (2005 - 2006)

Founder and Principal of a consulting and media production company specializing in the production of cultural, historic, and linguistic studies; videos, websites, and digital archives. Conducted research,

analysis, and reporting on socio-economic criteria and indicators for land management and archival/literature reviews for Aboriginal rights and title. Provided video documentation, training in video production, website development, and management of language/culture revitalization projects.

Pacific Peoples' Partnership – Victoria, BC

- Project Officer (2004)

Developed, conducted and administered a province-wide consultation process on the local impacts of globalisation. Organized and led public forums in ten communities, co-authored trade issues booklet, wrote reports, and budgets.

Nuu-chah-nulth Central Region Language Group – Ucluelet, BC

- Anthropologist (2002 - 2004)

Worked with First Nations to address loss of language and cultural knowledge; and facilitated the creation of a regional community-based organization for culture/language revitalization. Conducted research on the application of new media within revitalization programs; and coordinated the production of a CD-ROM, documentary video and interactive video on TEK and language.

TEACHING EXPERIENCE

Traditional Use Study Methods and Data Management Training Course, Upper Nicola Band, Interior BC, 2018

Delivered Traditional Use interview methods training to six participating Syilx Parties' members. Topics included TEK versus TUS, TEK/TUS within environmental assessments, history of TEK/TUS, social sciences methodology, ethics in research, mapping interview methods and GPS field assessment.

Cultural Heritage Assessment Methods Training, Adams Lake Indian Band, Neskonlith Indian Band, Shuswap Indian Band, Southeastern BC, 2016

Delivered Cultural Heritage Interview methods training to eight Secwépemc Parties' Cultural Heritage (CH) Researchers. Topics included TEK versus TUS, TEK/TUS within environmental assessments, history of TEK/TUS, social sciences methodology, ethics in research, mapping interview methods and GPS field assessment.

P'egp'ig'lha Traditional Land Use and Occupancy Training Course, Southwestern BC, 2014-2015

Coordinated and conducted a Traditional Land Use and Occupancy Methods Training Course with community members. Topics included TEK versus TUS, TEK/TUS within environmental assessments, history of TEK/TUS, social sciences methodology, ethics in research, mapping interview methods and GPS field assessment.

Traditional Use study Methods Training, Athabasca Chipewyan First Nation, Fort McKay First Nation, Fort McKay Metis, Fort Chipewyan Metis, Mikisew Cree, and Athabasca Chipewyan First Nation, Northern AB, 2014-2015

Coordinated and conducted a Joint Traditional Land Use Methods Training Course with Fort McKay First Nation, Fort McKay Metis, Fort Chipewyan Metis, Mikisew Cree, and Athabasca Chipewyan First Nation community members. Topics included TEK versus TUS, TEK/TUS within environmental assessments, history of TEK/TUS, social sciences methodology, ethics in research, mapping interview methods, and video recording techniques.

Diavik Diamond Mine, Northwest Territories

Provided training in video production techniques and on the job training to five youth while shooting a documentary video of an Elder/youth Traditional Knowledge and science camp hosted by Diavik at Lac

de Gras, NWT.

Traditional Land Use Methods training Course, Upper Nicola Band, Interior BC, 2014
Coordinated and conducted a Traditional Land Use Methods Training Course with community members. Topics included TEK versus TUS, TEK/TUS within environmental assessments, history of TEK/TUS, social sciences methodology, ethics in research, mapping interview methods and GPS field assessment.

Traditional Use Study Research Methods training, Adams Lake Indian Band, Interior BC, 2013
Coordinated and conducted a Traditional Land Use Methods Training Course with community members. Topics included TEK versus TUS, TEK/TUS within environmental assessments, history of TEK/TUS, social sciences methodology, ethics in research, mapping interview methods and GPS field assessment.

Traditional Use Study Research Methods Training, K'ómoks First Nation, Southwestern BC, 2012-2013
Delivered a five-day course in traditional use studies research methods to community members. Topics included TEK versus TUS, TEK/TUS within environmental assessments, history of TEK/TUS, social sciences methodology, ethics in research, mapping interview methods and GPS field assessment.

Traditional Use Study Research Methods Training, Fort Nelson First Nation, Northeastern BC, 2009-2010
Delivered a five-day course in traditional use studies research methods to twelve community members. Topics included TEK versus TUS, TEK/TUS within environmental assessments, history of TEK/TUS, social sciences methodology, ethics in research, mapping interview methods and GPS field assessment.

Ministry of Forests – Forest and Range Evaluation Program, Vancouver BC, 2008
Provided a one-day interviewing methods course to Ministry staff and First Nations heritage impact evaluation program participants. Topics included interview formats, question types, cognitive interview processes, ethics, interview preparation and practice.

Aseniwuche Winewak Nation, Western AB, 2007
Provided a youth training course in video production techniques and collaborated in completion of short documentary video.

SELECT PROJECT EXPERIENCE

Adams Lake Indian Band and Neskonlith Indian Band Cultural Heritage Assessment

- Ministry of Transportation and Infrastructure Highway 1 – Kamloops to Alberta Four-Laning Kicking Horse Canyon, Phase 4 West Portal, Quartz Creek and Selkirk Mountain, Golden West, Jumping Creek to McDonald, Greeley to Hanner, and Craigellachie Projects; 2019, ongoing

Directing the Cultural Heritage Assessment (CHA) to consider potential effects on Adams Lake Indian Band and Neskonlith Indian Band's Aboriginal Rights and Title from the proposed Highway 1- Four Laning Projects. CHA Tasks include coordinating and conducting CHA interviews with Elders and knowledge holders, facilitating conducting a community workshop, and overseeing ground truthing, data management, and report writing.

Adams Lake Indian Band Cultural Heritage Assessment

- BC Hydro Revelstoke Generating Station Unit 6 Project; 2019, ongoing

Directing the Cultural Heritage Assessment (CHA) to consider the potential effects of the Revelstoke Generating Station on Adams Lake Indian Band's Aboriginal Rights and Title. CHA tasks include supervising and conducting archival research, report writing, and data management.

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Fort McKay Traditional Land Use Study

- Suncor Leases within Fort McKay's Traditional Territory; 2019, ongoing

Directing the Traditional Land Use Study (TLUS) to consider existing and potential effects of Suncor leases within Fort McKay's Traditional Territory. TLUS tasks include facilitating and leading interviews with Fort McKay elders and knowledge holders; supervising data management; preparing and reviewing a memo and map figures demonstrating Fort McKay's Traditional Use within the study area.

Fort McKay Traditional Land Use Study

- Suncor Base Mine Expansion Project; 2019, ongoing

Directing the Traditional Land Use Study Project to consider potential effects on Fort McKay Aboriginal and Treaty Rights from the proposed Suncor Base Mine Expansions Project. TLUS tasks included facilitating interviews with knowledgeable community members, as well as a community workshops and groundtruthing session; supervising Project data management; and reviewing and contributing to report writing and Project assessment.

Upper Nicola Band Overview Traditional Use Study

- MKI Wind Energy's Mount Mabel Wind Energy Project; 2018; ongoing

Directing the Overview Traditional Land Use Study Project to consider potential effects on Upper Nicola Band's Syilx Title and Rights. TUS tasks include facilitating interviews with Cultural Advisors and knowledge holders; supervising a desktop review of existing Traditional Use Data; and reviewing map figures and memo writing.

Okanagan Indian Band Cultural Knowledge and Use Study

- BC Hydro's Shuswap Falls Water License Renewals Project; 2018

Directed the Cultural Knowledge and Use Study (CKUS) to consider the potential effects of BC Hydro's Shuswap Falls Water License Renewals Project on Okanagan Indian Band's Syilx Rights and Title. CKUS tasks included overseeing CKUS interviews, data verification workshop, and groundtruthing; reviewing and revising report; and presenting final report to OKIB at an in-person meeting.

Upper Nicola Band Traditional Use Study

- BC Hydro's West Kelowna Transmission Project; 2018

Directed the Traditional Use Study to consider the potential effects of BC Hydro's West Kelowna Transmission Project on Syilx Title and Rights. TUS tasks included project management, facilitating and conducting interviews and workshops; review of map figures; and report writing and review.

Fort McKay Traditional Land Use Study

- Suncor's Lewis SAGD Project; 2018

Directed the Traditional Land Use Study Project to consider potential effects on Fort McKay Aboriginal and Treaty Rights from the proposed Suncor Lewis SAGD development. TLUS tasks included facilitating interviews with knowledgeable community members, as well as a community workshops and groundtruthing session; supervising Project data management; and reviewing and contributing to report writing and Project assessment.

Adams Lake Indian Band Preliminary Traditional Use Study

- Ruddock Creek and Harper Creek Mining Projects; 2017, ongoing

Directing the preliminary Traditional Use Study to consider the potential effects of the Ruddock and Harper Creek mines on Adams Lake Indian Band's Traditional Use and Aboriginal Rights and Title. TUS tasks include supervising and conducting archival research, report writing, and data management.

Adams Lake Indian Band Governance Review and Interviews

- 2017, ongoing

Directing a Traditional Use data review and series of interview on the topic of Adams Lake Indian Band's historic and ongoing governance structures, including law-making, inter- and intra- tribal decision-making and negotiating, environmental stewardship, and decion-making and political protocols. Project tasks include conducting interviews with knowledge holders and elders and supervising a desktop review of existing Traditional Use data related to governance.

Adams Lake Indian Band, Little Shuswap Lake Indian Band, and Neskonlith Indian Band Cultural Heritage Assessment

- Ministry of Transportation and Infrastructure Highway 1 – Kamloops to Alberta Four-Laning Salmon Arm West Project, 2016

Directing the Cultural Heritage Assessment (CHA) to consider potential effects on Adams Lake Indian Band, Neskonlith Indian Band, and Little Shuswap lake Indian Band's Aboriginal Rights and Title from the proposed Salmon Arm West project. CHA tasks include coordinating and conducting a CHA Methods Training Session with community researchers, leading interviews with Elders and knowledge holders, and overseeing data management.

P'egp'ig'lha Traditional Land Use and Occupancy Study, Southwestern BC

- 2014 - 2015

Directed the Traditional Land Use and Occupancy Study conducted by the P'egp'ig'lha Council in collaboration with Kwusen. Tasks included coordinating and conducting a Traditional Land Use and Occupancy Methods Training Course with community members, conducting indoor interviews with knowledge holders, and overseeing data management.

Athabasca Chipewyan First Nation Traditional Land Use Study, Northern AB

- Imperial Oil's Aspen Project; 2014 - 2015

Directed the Traditional Land Use Study Project to consider potential impacts of the proposed Aspen SAGD development. Tasks included coordinating and conducting a Joint Traditional Land Use Methods Training Course with Fort McKay First Nation, Fort McKay Metis, Fort Chipewyan Metis, Mikisew Cree, and Athabasca Chipewyan First Nation community members, overseeing data management, facilitating a community data verification workshop, and report writing.

Mikisew Cree First Nation Indigenous Knowledge, Scoping and Baseline Study, Northern AB

- Enbridge's Norlite Pipeline Project; 2014

Directed the Indigenous Knowledge Scoping and Baseline Project for Enbridge's' proposed Norlite Pipeline Project. This study documented and assessed the potential impacts of the proposed pipeline on MCFN's Traditional Land Use, Aboriginal and Treaty Rights and interests. Tasks included overseeing data collection and management and memo writing and review.

Upper Nicola Band Traditional Use Study, Interior BC

- Kinder Morgan's TransMountain Pipeline Expansion Project; 2014

Directed the Traditional Use Study Project to consider potential effects on Upper Nicola Band's Aboriginal Rights and Title from the proposed TransMountain Pipeline Expansion development. Tasks included coordinating and conducting a Traditional Land Use Methods Training Course with community members, overseeing data management, facilitating a community data verification workshop, and report and assessment writing.

Fort McKay First Nation Traditional Land Use Study, Northern AB

- Value Creation Inc.'s Advanced Tristar Project; 2014

Directed the Traditional Land Use Study Project to consider potential effects on Fort McKay Aboriginal and Treaty Rights from the proposed Advanced Tristar SAGD development. Tasks included coordinating and conducting a Joint Traditional Land Use Methods Training Course with Fort McKay First Nation, Fort

McKay Metis, Fort Chipewyan Metis, Mikisew Cree, and Athabasca Chipewyan First Nation community members, overseeing data management, facilitating a community data verification workshop, and report and assessment writing.

Fort McKay First Nation Traditional Land Use Study, Northern AB

- Koch Oil Sands Operating ULC's Dunkirk Project; 2014.

Directed and led the Traditional Land Use Study Project to consider potential effects on Fort McKay Aboriginal and Treaty Rights from the proposed Koch Dunkirk SAGD development. Tasks included coordinating and conducting a Joint Traditional Land Use Methods Training Course with Fort McKay First Nation, Fort McKay Metis, Fort Chipewyan Metis, Mikisew Cree, and Athabasca Chipewyan First Nation community members, leading indoor interviews with twelve Fort McKay knowledge holders, overseeing data management, facilitating a community data verification workshop, and report and assessment writing.

Mikisew Cree First Nation Indigenous Knowledge Study & Community KnowledgeKeeper, Northern AB

- Imperial's Aspen Project; 2013.

Trained community members to conduct research to document and assess the potential impacts of a proposed Oil Sands project on the First Nation's traditional land use, rights and interests. Tasks included training and project management, facilitating a data verification workshop, report and assessment writing. Management and implementation of MCFN Community Knowledgekeeper to manage all MCFN traditional use data, track consultation with industry and assess impacts of industrial development.

Athabasca Chipewyan First Nation Community KnowledgeKeeper, Northern AB

- ACFN Community KnowledgeKeeper development and implantation; 2013

Led the development and implementation of the ACFN Community Knowledgekeeper – data management, consultation tracking, and mapping system. Oversaw the import of all previous TUS data into the CKK database.

Adams Lake Indian Band, Interior BC

- TUS advisor and research methods trainer; 2013

Trained Community Researchers on our Traditional Use Study research methods. Advised on data management and TUS program development.

K'ómoks First Nation Traditional Use Study, Vancouver Island BC

- BC Hydro's John Hart Regenerating Station Replacement Project and Compliance Coal's Raven Underground Coal Project; 2012-2013

Trained and worked with two community members to conduct two studies to assess the potential impacts of proposed project developments on the First Nation's rights and interests. Tasks included training and managing community researchers, historical research, conducting indoor interviews, field site validation, community verification and mitigations development workshop, and report writing.

Wahpeton Dakota Nation Traditional Land Use Study, Central SK

- Star-Orion South Diamond Project, Shore Gold Inc.; 2011-2012

The Wahpeton TLU was conducted for the Environmental Impact Assessment of the proposed Orion South Diamond Project. Tasks included review of relevant literature, a one-week training for Community Researchers, interviews with Elders and knowledgeable land users, field verification, a community verification and mitigations development workshop, and report writing.

Fort McKay IRC Overview-Level Traditional Land Use Study, Northern AB

- Dover Commercial Project, Dover Operating Corp.; 2010

Worked with First Nation and Métis community to, at an overview-level, document traditional land use values and conduct an impact assessment of the proposed Dover Commercial Project, a SAGD oil extraction project near Fort McKay, AB. Tasks included provision of a research methods workshop for community members, traditional use mapping interviews, community review workshop, ground-truthing (helicopter), reporting, assessment, and mitigations development. Provision of Expert Witness testimony on behalf of Fort McKay in regulatory hearing.

Fort McKay Industrial Relations Corporation Traditional Land Use Study, Northern AB

- Frontier and Equinox Projects, Teck and Silverbirch; 2010-2011

Worked with First Nation and Métis community to document traditional land use values and conduct an impact assessment of the proposed Frontier and Equinox oil sands mine near Fort McKay, AB. Tasks included provision of a research methods workshop for community members, traditional use mapping interviews, ground-truthing (helicopter & quad), community review workshop, reporting, assessment, and mitigations development.

Fort Nelson First Nation Traditional Use Study, Northeastern BC

- TransCanada Cabin Mainline, TransCanada Corp.; 2009-2010

Worked with First Nation to conduct a TUS and assessment of impacts to rights and interests from the proposed TransCanada Cabin Mainline natural gas pipeline near Fort Nelson, BC. Tasks included project management, community capacity building, methodology development, First Nations liaison, community-based mapping, focus group interviews, ground-truthing, reporting, assessment and mitigations development.

Fort Nelson First Nation Traditional Use Study, Northeastern BC

- Cabin Gas Plant, EnCana Corp.; 2009

Worked with First Nation to conduct a TUS and assessment of impacts to rights and interests from the proposed EnCana Cabin Gas Plant, near Fort Nelson, BC. Tasks included community capacity building, methodology development, First Nations liaison, archival review, community-based mapping, focus group interviews, ground-truthing and reporting.

Fort Nelson First Nation EA Review, Northeastern BC

- EnCana Cabin Gas Plant; 2009

Managed an independent technical review of the environmental assessment documents associated with the proposed EnCana Gas Plant. Tasks included First Nations liaison, coordination of technical reviewers, First Nations interests assessment review, reporting and project management.

Traditional Land Use Assessment, Northeastern BC

- Roman Mountain Coal Project, Peace River Coal Inc.; 2008-2009

Conducted TUS and TEK studies as components of an environmental impact assessment for a proposed coalmine. Completed community-based research, archival and literature reviews, wrote reports and conducted impact assessment on Aboriginal rights.

Traditional Use Study, Southwestern BC

- Interior to Lower Mainland Transmission Line, BC Transmission Corp.; 2008

Conducted an overview-level TUS for planning of a linear electrical transmission project. Research involved archival review, field interviews and coordinated research with more than forty First Nations with traditional territories in the Fraser Valley, Fraser Canyon and in the vicinity of Nicola Lake. Tasks have included methodology development, interview protocols, First Nations liaison, conducting mapping interviews, archival reviews and reporting.

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Public and First Nations Consultation, Vancouver Island BC

- Phase 3 Landfill, Elk Falls Mill, Catalyst Paper Corp.; 2007

Provision of public and First Nations consultation support including analysis of First Nations consultation requirements and strategic advice. Tasks included delivery of consultation tools including letters, contact matrices, and development of a public consultation website.

Traditional Use Study, North Eastern BC

- Horizon Mine Coal Project, CH2M Hill and Hillsborough Resources Ltd.; 2006-2007

Conducted TUS interview and mapping sessions for proposed developments with five Aboriginal communities. Completed archival and literature reviews and co-authored preliminary TUS report based on primary and secondary research data.

Traditional Land Use Study, Western AB

- Aseniwuche Winewak Nation; 2006

Advised on a video documentation, data management and archiving methodology for TUS. Provided video production, video editing and digital archiving training to build local capacity.

Review of Socio-economic Criteria and Indicators in Oceans Management, Canada

- Fisheries and Oceans Canada; Centre for Global Studies, University of Victoria; 2006

Provided research, analysis and data sources for a review of current experience and available precedents that may serve as models in the task of bringing economic, social and cultural considerations more fully into processes of integrated oceans management at the scale of Fisheries and Oceans Canada's Large Ocean Management Areas (LOMAs).

Literature Review of Potential Aboriginal Interests, North Eastern BC

- Kemess North Copper-Gold Mine, Northgate Minerals Corp.; 2006

Archival, cartographic and ethnographic literature review to determine soundness of Aboriginal rights claim for an environmental impact assessment process.

Kwusen Research & Media Ltd.
917 Mason St., Victoria, BC V8T 1A1

PUBLICATIONS

Behr, T., S. Machelak, and A. Skala. 2018. Traditional Land Use Study Regarding BC Hydro's West Kelowna Transmission Line. Prepared in collaboration with Upper Nicola Band, Okanagan Indian Band, and Westbank First Nation for BC Hydro. Victoria, BC.

Behr, T., S. Machelak, A. Skala, and A. Cartwright. 2018. Cultural Knowledge & Use Study Regarding BC Hydro's Shuswap Falls Water License Renewals Project. Prepared in collaboration for Okanagan Indian Band Nation for BC Hydro. Victoria, BC.

Behr, T., S. Machelak, A. Skala, and A. Cartwright. 2018. Traditional Land Use Study Regarding Suncor's Lewis SAGD Project. Prepared in collaboration with the Fort McKay First Nation for Suncor. Victoria, BC.

Behr, T., S. Machelak, and A. Skala. 2017a. Salmon Arm West Cultural Heritage Assessment for the Highway 1 - Kamloops to Alberta Four-Laning Program. Cultural Heritage Assessment. Victoria, BC.

2017b. Chase Creek Road to Chase West and Chase West to Jade Mountain Cultural Heritage Assessment for the Highway 1 - Kamloops to Alberta Four-Laning Program. Cultural Heritage Assessment. Victoria, BC.

2017c. Taft Overhead to 19 Mile Overhead and RW Bruhn Bridge Replacement Cultural Heritage Assessment for the Highway 1 - Kamloops to Alberta Four-Laning Program. Cultural Heritage Assessment. Victoria, BC.

Bennett, T., **T. Behr,** S. Spak, and P. McCormack. 2015. Traditional Land Use Study Regarding Imperial Oil's Aspen Project. Prepared in collaboration with Athabasca Chipewyan First Nation.

Behr, T., S. Spak, S. Machelak, and J. Hazelbower. 2014. Traditional Use Study Regarding Kinder Morgan Trans Mountain Pipeline Expansion Project. Prepared in collaboration with Upper Nicola Band.

Behr, T., S. Spak, and T. Bennett. 2014. Traditional Land Use Study Regarding Koch Oil Sands Operating ULC.'s Dunkirk Project. Prepared in collaboration with Fort McKay First Nation.

Bennett, T., **T. Behr,** and S. Spak. 2014. Traditional Land Use Study Regarding Value Creation Inc.'s Advanced Tristar Project. Prepared in collaboration with Fort McKay First Nation.

Behr, T., and B. Farrant. 2013. Traditional Use Study for the BC Hydro John Hart Generating Station Replacement Project. Prepared in collaboration with K'ómoks First Nation for BC Hydro.

Behr, T., J. Hazelbower, and L. Omani. 2012. Wahpeton Dakota Nation Community History. Wahpeton Dakota Nation, Prince Albert, Saskatchewan.

Behr, T., J. Hazelbower, and L. Omani. 2012. Overview-Level Traditional Land Use Study for SaskPower's Shore Gold Diamond Mine Transmission Line. Prepared in collaboration with Wahpeton Dakota Nation for SaskPower.

Behr, T., J. Hazelbower, and L. Omani. 2011. Overview-Level Traditional Land Use Study for the Shore Gold Star-Orion South Diamond Project. Prepared in collaboration with Wahpeton Dakota Nation for Shore Gold.

Behr, T. and A. Garibaldi. 2011. Traditional Land Use Study for the Teck and Silverbirch Frontier Project. Prepared in collaboration with the Fort McKay Industry Relations Corporation for the Teck and Silverbirch Frontier Project.

Behr, T. and A. Garibaldi. 2010. Overview-level Traditional Land Use Study for the Dover Commercial Project. Prepared in collaboration with the Fort McKay Industry Relations Corporation for the Dover OCPO Dover Commercial Project.

Peace River Coal Inc. [S. Trusler, **T. Behr,** and C. Candler] 2010. Roman Coal Project, Environmental

Assessment Report, Volume 3, Section 21 First Nations Interests and Use. Prepared by Golder Associates for Peace River Coal.

Behr, T., P. Evans, and B. Keats. 2010. Traditional Use Study and Assessment of the Proposed TransCanada Horn River Mainline Project (Cabin Section). Prepared by Golder Associates Ltd. and Fort Nelson First Nation for EnCana Corp.

Golder Associates [Mundy, D. and **T. Behr.]** 2009. Independent Technical Review: Cabin Gas Plant Application for an Environmental Assessment Certificate. Prepared by Golder Associates for Fort Nelson First Nation.

Behr, T., L. Lowe, N. Thorpe, A. Tofflemire, K. Dhaliwal-Gill, P. Evans. 2009. Traditional Land Use Assessment of the Proposed Cabin Gas Plant Project. Prepared by Golder Associates Ltd. and Fort Nelson First Nation for TransCanada Pipelines Ltd.

Golder Associates Ltd. [C. Candler and **T. Behr]** 2007. Traditional Land Use Assessment of the Proposed Horizon Mine Coal Project. Prepared by Golder Associates for Peace River Coal Inc.

Behr, T. and R. Koppang. 2006. Socioeconomic Considerations in Large Ocean Management Areas. Centre for Global Studies, University of Victoria, British Columbia.

Behr, T. 2005. Hypermedia and Ethnographic Research: Nuu-chah-nulth and Upper St'át'imc case studies. Thesis submitted to the Faculty of Graduate Studies. University of Victoria, British Columbia.

Behr, T., M. deLuca, and K. Schacter. 2004. Trade Deliberations Guide. Pacific Peoples' Partnership, Victoria, British Columbia.

DOCUMENTARY VIDEOS

The Buffalo Hunters (Moosetoose Matchey Wee No)– Documentary Video, Northern Alberta

- Director and Co-producer; documentary video (67 minutes); 2014

Assembled and directed a team of camera operators, animators, video editor, music composer, and sound engineer. Completed interviews and final documentary video with Mikisew Cree First Nation hunters on a traditional buffalo hunt. Filmed over five intensive days, this film shows how buffalo hunting is an essential part of Mikisew identity and the many pressures Mikisew hunters experience while attempting to continue this practice in the face of oil sands development in their Traditional Lands.

Moose Lake – home and refuge, Documentary Video, Northern Alberta

- Co-producer and Director; documentary video (20 minutes); 2013

Assembled and directed a team of camera operators, animators, video editor, music composer, and sound engineer. Completed interviews and final documentary video on Fort McKay's experience of oil sands development, the importance of Moose Lake as their last refuge from industrial development and the alarming pace at which industrial development may degrade their traditional territory and way of life. https://vimeo.com/72715280

Real Moose Country, Documentary Video, Northern Alberta

- Producer and Director; documentary video (24 minutes); 2011

Produced and directed a documentary that provides a window into the challenges faced by an Aboriginal community of hunters and trappers struggling with their place in the increasingly industrialized landscape of northern Alberta.

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SELECTED WEBSITES and NEW MEDIA

Geokeeper, App, Victoria

- Project Director; App; Victoria BC; 2017 - present

Provided overall specifications, project management and guidance for the development of an app that supports environmental monitoring and guardianship programs by allowing users to collect data in the field with customizable survey forms while recording GPS tracks in real time. Provides ongoing direction and support for app updates, as well as methods training and fieldwork with community members.

Nuxalk-Carrier Grease Trail, Website, Interior BC, http://www.greasetrail.com/trail

- Project Director; web-based multi-media map; 2014 – present

Provided overall specifications and guidance for the development of a web-based multi-media map. Worked with Carrier Chilcotin Tribal Council and six First Nations in BC on a project to document and communicate knowledge and stories about the Nuxalk-Carrier Grease Trail. Provided ongoing direction and support during the development of an interactive, web-based multi-media map that includes video recorded interviews and recent and historical images.

Fort McKay Community KnowledgeKeeper, Website, Northern Alberta

- Project Director; web-based data management, mapping and industry consultation tracking system; 2011 - present

Provided overall specifications, and guidance for the development of a web-based traditional land use data management and traditional knowledge archive that can be queried against proposed industrial developments. Worked with First Nations staff to develop industry consultation tracking and documentation features. Provided ongoing direction and support for the creation of a web-based portal for the submission of proposed oil sands development project information to the First Nation (http://fmsd.fortmckay.com).

Athabasca Cree First Nation Community KnowledgeKeeper, Website, Northern Alberta

- Project Director; web-based data management, mapping and industry consultation tracking system; 2011 - present

Provided overall specifications and guidance for the development of a web-based traditional land use data management and traditional knowledge archive that can be queried against proposed industrial developments. Worked with First Nations staff to develop industry consultation tracking and documentation features. Provided ongoing direction and support for the creation of a web-based portal for the submission of proposed oil sands development project information to the First Nation (http://acfn.kwuesen.com)

Mikisew Cree First Nation Community KnowledgeKeeper, Website, Northern Alberta

- Project Director; web-based data management, mapping and industry consultation tracking system; 2011 - present

Provided overall specifications and guidance for the development of a web-based traditional land use data management and traditional knowledge archive that can be queried against proposed industrial developments. Worked with First Nations staff to develop industry consultation tracking and documentation features. Provided ongoing direction and support for the creation of a web-based portal for the submission of proposed oil sands development project information to the First Nation (http://mcfn.kwusen.com).

Wahpeton Dakota Nation Community KnowledgeKeeper, Website, Central Saskatchewan

- Project Director; web-based data management system, mapping and traditional knowledge archive; 2011-2012

Provided overall specifications and guidance for the development of a web-based data management repository for all interview data gathered as a part of two traditional land use studies. Directed the development of a website for public access to an interactive Dakota place names maps and TK of key species pages (http://wahpeton.ca).

Fort Nelson First Nation Community KnowledgeKeeper, Website, Northeastern BC

- Project Director; web-based data management, mapping and industry consultation tracking system; 2010 - present

Provided overall specifications and guidance for the development of a web-based traditional land use data management and traditional knowledge archive that can be queried against proposed industrial developments. Worked with First Nations staff to develop industry referrals tracking and documentation features. Provided ongoing direction and support for the creation of Lands Department website and web-based TK sharing projects (http://lands.fnnation.ca).

CONFERENCE PRESENTATIONS

Behr, T. 2019. Community-Directed Consultation and Collaborative Research are Critical in Achieving FPIC. Society for Applied Anthropologists. Portland, Oregon.

Behr, T. 2018. Community-Directed Consultation and Collaborative Research are Critical in Achieving FPIC. Free, Prior and Informed Consent Conference. Bruce County, Ontario.

Behr, T., C. Westman, S. Machelak, A. Skala, 2018. Methodologies for Engaging with the Evolving Understandings of Indigenous Rights within Impact Assessment (Roundtable). CASCA (Canadian Anthropology Society/la société canadienne d'anthropologie). Santiago, Cuba.

Behr, T. 2016. Avoiding the Assessment of Indigenous Rights. International Association for Impact Assessment. Nagoya, Japan.

Machelak, S. and **T. Behr,** 2016. Disputing Power: New Methods in Collaborative Traditional Use Studies. Society for Applied Anthropology Annual Meeting. Vancouver, BC.

Behr, T. 2015. The Uncertain Shift from Oral to Digital Traditional Knowledge Management Conference of the Canadian Anthropology Society. Toronto, ON.

Behr, T. 2013. Community-controlled Web-based Spatial Archive: postcolonial archive or neoliberal agent? American Anthropological Association Annual Meeting. Chicago, IL.

Behr, T. 2013. Unsettling the Record: Beyond the University. Invited Roundtable Speaker. Conference of the Canadian Anthropology Society, Victoria, British Columbia.

Behr, T. 2012. Tools for Power: Web-based Community Mapping and Assessment of Industrial Development. Conference of the Canadian Anthropology Society, Edmonton, Alberta.

Behr, T. 2012. Death by a Thousand Cuts: Facilitating Indigenous Peoples Assessment of Small Industrial Developments. Conference of the International Association for Impact Assessment, Porto, Portugal.

Behr, T. 2011. Traditional Knowledge on Demand. The Society for Applied Anthropology, Seattle, Washington.

Behr, T. 2010. Contested Cartographies: Culture vs. Industrial Development in Northeastern BC. Conference of the Canadian Anthropology Society, Montreal, Quebec.

Behr, T. 2009. Indigenous Voice and a Colony Re-imagined. Conference of the Canadian Anthropology

Society, Vancouver, British Columbia.

Behr, T. 2008. Networking Indigenous Self-Representation + Colonizing Databases in Web 2.0. European Association of Social Anthropologists - workshop: Medial Practices and Cultural Producers. Universitat Overta de Catalunya, Barcelona, Spain.

Behr, T. April 2005. Community Histories in Photographs: engaging communities through photograph collections – Upper St'át'imc History in Photographs. UVic CURA Conference: Sharing Knowledge Through Research Partnerships, Victoria, British Columbia.

Behr, T. Dec 2004. Authority, (Re)presentations & (Re)productions: the construction of ethnographic hypermedia. American Anthropological Association Annual Meeting, Atlanta, Georgia.

Behr, T. May 2004. Indigenous Language and Culture out of Control: Computers as Indiscriminate Speakers of Nuu-chah-nulth. Conference of the Canadian Anthropology Society, London, Ontario.

Behr, T. March 2003. Bringing Back the Language. Society for Ethnobiology, Seattle, Washington.

Stella J. Spak, PhD

Tel.: 250 370-5007
email: stella@kwusen.com

ACADEMIC AND PROFESSIONAL QUALIFICATIONS

2001	PhD in Anthropology, University of Toronto. *Dissertation Title: "Canadian Resource Co-management Boards and their Relationship to Indigenous Knowledge: Two Case Studies".*
1995	M.A. Anthropology, Carleton University Ottawa Ontario. *Thesis Title: "The Communicative Difficulties of Integrating Traditional Environmental Knowledge Through Wildlife and Resource Co-management".*
1993	Zwischenprufung (equivalent to a B.A.), Ethnology, History, Anglistic, Albert Ludwigs Universitat, Freiburg, Germany

TEACHING AND COURSE DEVELOPMENT EXPERIENCE:

Sessional Lecturer, First Nations Studies, Simon Fraser University.

- "Introduction to First Nations Studies" Fall 2002, 2003 (undergraduate)

Sessional Lecturer, Indigenous Governance Programs, Faculty of Human and Social Development, University of Victoria.

- "The Indigenous – State Relationship" Fall 2003 – December 2007 (Online-Course)
- "Dene ethnography, history and contemporary political issues (land claims)." Reading and Research Seminar, Spring-Summer 2002
- "Indigenous-State Relationship Workshops, Sayisi Dene Nene Land Claims Office, Tadoule Lake" Spring 2002
- "Research Seminar" Graduate Research Methods Seminar, Fall 2001

Part time term faculty position, Camosun College.

"Introduction to Anthropology" Winter 2006

Sessional Lecturer, Department of Anthropology, University of Victoria

"Development Anthropology" Winter 2009

Teacher of Anthropology at Lester B. Pearson College of the Pacific in Victoria BC

- "First and Second Year Social and Cultural Anthropology" Sept. 2009- May 2013 (Introduction to the history and development of anthropological theory from the inception of the discipline to the present, ethnography, gender studies, nationalism and identity, globalization, resistance, colonialism and Indigenous issues in Canada and globally, development anthropology).

- Supervisor of Pearson Anthropology Student's Summer Fieldwork Projects Sept.2009-May 2013

GUEST LECTURES:

- "Anthropology of Science, Technology and Environment" University of Alberta, November 1999 (Dr. Eric Higgs)
- "State Resource Management, Environmental Epistemologies and Power" Public Lectures, Carleton University / University College of Cape Breton, May 2003

TEACHING ASSISTANT:

Prepared and held tutorials, facilitated discussions groups, presented course material, graded exams and term

papers, assisted in lectures and overall student assessment.

University of Toronto, Fall / Winter 1995 – 1997
- Introduction to Archaeology
- Introduction to Physical Anthropology
- Introduction to Anthropological Linguistics
- Introduction to Social and Cultural Anthropology

Carleton University, Ottawa. January 1994 - May 1995
- Introduction to Anthropology

RESEARCH EXPERIENCE AND SKILLS:
- May 2014 - Present: Researcher for of Kwusen Research and Media.

- January 2005- 2009: member of a research team contracted by the "Akwesasne Task Force on the Environment" in relation to the EPA Superfund cleanup site near Akwesasne. N.Y. Primary responsibility: working on the Cultural Impact Assessment aspects of Natural Resource Damage. I.e. determining the effects environmental contamination had on Mohawk Culture.

- May-August 2002: Developed for credit academic on-line version of IGOV 383 "The Indigenous-State Relationship" for the Indigenous Governance Program, Faculty of Human and Social Development at the University of Victoria.

- "Effectiveness of various co-management models in Canada." Presentation and workshop - Sayisi Dene Nene Land Claims Office and legal council. Winnipeg, June 2002

- January 2002: Developed course material tailored to the needs of the Sayisi Dene Nene Land Claims Office for delivery of IGOV 383 "The Indigenous-State Relationship" as ten consecutive workshops in the community.

- December 2000-February 2001: Co-Investigator on a project coordinated by Brian Egan and Dr. Michael M'Gonigle for the Eco-Research Chair of Environmental Law and Policy, University of Victoria. Researched and documented models of community-based management of renewable natural resources in British Columbia, Canada and Alaska. This work was published in Report 2 of "When there's a Way, there's a Will" Section: "Models of Community-Based Natural Resource Management".

- October 1998: Doctoral fieldwork in Inuvik and Tsiigehtchic NT. In order to compare crisis- based resource co-management boards such as the BQCMB to claims-based resource co-management I spent time in the office of the Gwich'in Renewable Resource Board in Inuvik and attended the Gwich'in Renewable Resource Board meeting in the Gwich'in community of Tsiigehtchic.

- June 1997- June 1998: Doctoral fieldwork with the Dene communities of Fond du Lac, Lac Brochet, Tadoule Lake and Lutsel K'e, focussing on the communities experience with the Beverly and Qamanirjuaq Caribou Management Board (BQCMB). Special emphasis was placed on the Board's attitude towards the communities' Environmental Knowledge. Structured and unstructured interviews in the communities thus focused on the community members experience with the BQCMB and its attitudes toward their concerns and knowledge. Interviews were also conducted with the BQCMB's government and community representatives. All BQCMB meetings over the 1996-98 period were attended, employing participant observation in order to understand the dynamics underlying its operations. Research results were presented to the communities and approved before completing and defending the dissertation in 2001.

- Provided expertise on the political, legal and historical background of co-management agreements as well as TEK and its use in Canada to Praxis Research Associates, Ottawa in regards to their work on the Royal Commission on Aboriginal People's Report.

- Conducted interviews, archival, computer and film research, as well as quantitative and qualitative data collection and analysis.

PAPERS AND CONFERENCE PRESENTATIONS:

Cultural Impacts of Environmental Contaminates on the Mohawks of Akwesasne. *Prepared for St. Regis Mohawk Tribe-Environment Division, by Taiaiake Alfred PhD, Theresa McCarthy PhD and Stella Spak PhD 2007.*

Knowledge, Power and Natural Resource Co-management in Canada. *Anthropologica pp. 233-246. Vol.47 No 2, 2005.*

Co-management in Canada.*"When there's a Way, there's a Will: Developing Sustainability through the Community Ecosystem Trust. Report 2, Models of Community-Based Natural Resource Management" Brian Egan and Lisa Ambrus eds. pp 41-47.*

Canadian Resource Co-management Boards and their Relationship to Indigenous Knowledge: Two Case Studies" *PhD Dissertation University of Toronto, 2001.*

The Communicative Difficulties of Integrating Traditional Environmental Knowledge Through Wildlife and Resource Co-management. *M.A. Thesis, Carleton University, 1995.*

Co-management in Canada. *Invited guest speaker at Pacific Peoples Partnership Conference: Governing the Environment: Pan-Pacific Perspectives on Indigenous Governance, Local Resources and Aid, September 2002.*

Indigenous Knowledge, Power and Natural Resource Co-management in Canada. *CASCA Conference, Windsor, May 2002. Paper Presentation:*

Canadian Resource Co-management and Traditional Environmental Knowledge. *Paper presentation: 8th International Symposium on Society and Resource Management, Bellingham, June 2000.*

Renewable Resource Co-management in the Canadian North and Traditional Knowledge. *Paper Presentation: Congress 2000 (CINSA Society), Edmonton, May 2000.*

Canadian Resource Co-management, Cross–cultural Communication and Traditional Environmental Knowledge *Paper Presentation: International Graduate School, Freiburg, Germany. December 1995.*

The BQCMB and the lack of TEK use in co-management arrangements. *Paper Presentation: LEARNED Conference, Montreal, May 1995*

Wildlife Management in the Future Nunavut Territory (NWT). *Presentation: The Fourth National Student Conference on Northern Studies, Ottawa. November 1994.*

SCHOLARSHIPS:

1999 - 2000: University of Toronto Dissertation Fellowship Award
1996 - 1999, University of Toronto Open Doctoral Fellowship
1997 - 1998: Arctic Working Group Travel Grant
1995 - 1996: Differential Fee Waver Scholarship

LANGUAGES AND CITIZENSHIPS:

- German, English, French (Reading)
- Canadian Citizenship

Kwusen Research & Media Ltd.
917 Mason St., Victoria, BC V8T 1A1

Alissa Cartwright, M.Phil.

Tel.: 250 661 9182
Email: alissa@kwusen.com

ACADEMIC AND PROFESSIONAL QUALIFICATIONS

2017	Master of Philosophy in Public History & Cultural Heritage, Trinity College, Dublin
2016	Bachelor of Arts in History (Hons), University of Victoria

SUMMARY OF EXPERIENCE

Alissa holds an M.Phil. in Public History & Cultural Heritage from Trinity College, Dublin. As a Kwusen team member, Alissa has worked with the Adams Lake Indian Band, the Neskonlith Indian Band, the Splats'in First Nation, the Fort McKay First Nation, the Mikisew Cree First Nation, the Maaqutusiis Hahoulthee Stewardship Society, the Upper Nicola Band, the K'omoks First Nation, and the Okanagan Indian Band. She supports community CH researchers, manages and reviews interview data using the CKK, and manages report writing. In her recent work with Kwusen, Alissa has participated in Cultural Knowledge and Use Studies, Traditional Land Use Studies, and Cultural Heritage Assessments with Okanagan Indian Band, Fort McKay First Nation, and Adams Lake Indian Band, respectively.

SELECT EMPLOYMENT HISTORY

Kwusen Research & Media – Victoria, BC
Indigenous Rights Research Manager (March 2019 – Present)
As the Indigenous Rights Research Manager, Alissa supervises and contributes to report writing, manages data within client CKKs, manages project timelines and budgets, and provides support to community researchers.

Kwusen Research & Media – Victoria, BC
Research Assistant (April 2018 – March 2019)
As a Research Assistant, Alissa's duties included reviewing and coding interview transcriptions, Community KnowledgeKeeper (CKK) data entry and review, video and audio editing and processing, report formatting and copy-editing, secondary source research, and GIS processing of CHA/TU data.

Beacon Law Centre – Brentwood Bay, BC
Legal Assistant (2017-2018)
As a legal assistant, Alissa's duties included: preparing and reconciling client accounts, requesting mortgage payouts, delivering bank drafts and preparing cheques, communicating with clients about their mortgage, sale, and purchase transactions, and completing all conveyancing procedures for sale transactions.

Landscapes of Injustice, University of Victoria and Land Title Office of BC – Victoria, BC and New Westminster, BC
Research Assistant (2014, 2015, 2017)
As a Research Assistant for three semesters, Alissa's duties included: processing primary sources into XML-based databases, researching historic land title information at the Land Title & Survey Authority of British Columbia and entering this information into a relational database, and georeferencing historic maps using QGIS and Google Earth software. She also participated in several community outreach

events, including the Powell Street Festival in Vancouver and IdeaFest at the University of Victoria.

SELECT PROJECT EXPERIENCE

Adams Lake Indian Band and Neskonlith Cultural Heritage Assessment

-Ministry of Transportation and Infrastructure – Kamloops to Alberta Four-Laning Program: Craigellachie, Greely to Hanner, Jumping Creek to McDonald, Golden West Phase 1&2, Quartz Creek and Selkirk Mountain, and Kicking Horse Phase 4: West Portal Projects (ongoing)
Cultural Heritage Assessment (CHA) to consider potential effects on Adams Lake Indian Band and Neskonlith's Aboriginal Rights and Title for the proposed Four-Laning Projects. CHA tasks include supporting community researchers, overseeing data management, and report writing.

Adams Lake Indian Band Preliminary Traditional Use Study

-Imperial Metals and Yellowhead - Mining Ruddock Creek and Harper Creek Mines (ongoing)
Traditional Use Study (TUS) to consider potential effects on Adams Lake Indian Band Aboriginal Rights and Title for the proposed Ruddock Creek and Harper Creek Mines. CHA tasks include supporting community researchers, overseeing data management, archival research, and memo writing.

Adams Lake Indian Band Desktop Cultural Heritage Assessment

-BC Hydro – Revelstoke Unit 6 Generating Station Replacement (ongoing)
Cultural Heritage Assessment (CHA) to consider potential effects on Adams Lake Indian Band Aboriginal Rights and Title for the proposed Revelstoke Unit 6 Generating Station Replacement. CHA tasks include overseeing data management, archival research, and report writing.

Upper Nicola Band Overview Traditional Use Study

-MKI Wind Energy – Mount Mabel Wind Energy Project (ongoing)
Overview Traditional Use Study (TUS) to consider potential effects on Upper Nicola Band's Aboriginal Rights and Title for the proposed Mount Mabel Wind Energy Project. Overview TUS tasks include supporting community researchers and transcribers, overseeing data management, and memo writing.

Adams Lake Indian Band Desktop Review of Potential Impacts to ALIB Fishing Rights

-Trans Mountain Corporation - Trans Mountain Expansion Pipeline (2019)
Desktop Review to consider potential effects on ALIB's Aboriginal Rights and Title for the proposed Trans Mountain Pipeline Project. Project tasks included reviewing existing CHA data in ALIB's CKK, secondary source research, and memo writing.

Fort McKay Traditional Land Use Study

-Suncor – Lewis In Situ SAGD Project (2018)
Traditional Land Use Study (TLUS) to consider potential effects on Fort McKay's Aboriginal and Treaty Rights for the proposed Lewis In Situ SAGD Project. TLUS tasks included report writing and data management.

Okanagan Indian Band Cultural Knowledge and Use Study

-BC Hydro – Sugar Lake and Shuswap Falls Water License Renewal (2018)
Cultural Knowledge and Use Study (CKUS) to consider potential effects on Okanagan Indian Band's Aboriginal Rights and Title for the proposed Sugar Lake and Shuswap Falls Water License Renewal. CKUS tasks included data management and report writing/formatting.

Kwusen Research & Media Ltd.
917 Mason St., Victoria, BC V8T 1A1

PUBLICATIONS

Behr, T., **A. Cartwright,** and D. Waugh**.** 2019. Preliminary Traditional Use Desktop Review and Gap Analysis for the proposed BC Hydro John Hart, Strathcona, and Ladore Projects. Prepared in collaboration for K'omoks First Nation for BC Hydro. Victoria, BC.

Behr, T., **A. Cartwright,** and D. Waugh**.** 2019. Desktop Review of Potential Impacts to ALIB Fishing Rights from the Trans Mountain Pipeline. Prepared in collaboration for Adams Lake Indian Band for Trans Mountain Pipeline. Victoria, BC.

Behr, T., S. Machelak, A. Skala, and **A. Cartwright.** 2018. Cultural Knowledge & Use Study Regarding BC Hydro's Shuswap Falls Water License Renewals Project. Prepared in collaboration for Okanagan Indian Band Nation for BC Hydro. Victoria, BC.

Behr, T., S. Machelak, A. Skala, and **A. Cartwright.** 2018. Traditional Land Use Study Regarding Suncor's Lewis SAGD Project. Prepared in collaboration with the Fort McKay First Nation for Suncor. Victoria, BC.

SCHOLARSHIPS & AWARDS

University of Victoria
Peter Liddell Award in Humanities Computing (2015)
Ted and Jane Wooley Scholarship (2014)
Jamie Cassels Undergraduate Research Award (2014)
Clara Evelyn Wilson Scholarship (2014)
J. Alan Baker Memorial Scholarship (2014)
Tatton Anfield Prize in American History (2013, 2014)
Harper Scholarship-History (2013)
Helen Jessop Ford Scholarship (2013)
Norah Lugrin Shaw and Wendell Burrill Shaw Memorial Scholarship (2013)
President's Scholarship (2012, 2013)
University of Victoria Entrance Scholarship (2011)

St. John's School of Alberta
St. John's School of Alberta Legacy Foundation Scholarship (2012, 2013, 2014, 2017)