KINROSS Great Bear

Great Bear Gold Project
Impact Statement

Section 10: Predicted Changes to Indigenous Peoples – Lac Seul First Nation

Table of Contents

Tables

Figures

Appendix

Acronyms and Abbreviations

%	Percent
%HA	Percent Highly Annoyed
2SLGBTQQIA+	Two-spirit, lesbian, gay, bisexual, transgender, queer, questioning, intersex, and asexual communities, along with other sexual and gender identities represented by the + symbol
2SLGBTQIA plus	Two-Spirit, lesbian, gay, bisexual, transgender, queer, questioning, intersex, and asexual plus
AEX	Advanced Exploration
ALCM	Additional Lung Cancer Mortality
ALIA	Anishinaabe-Led Impact Assessment
ANA	Asubpeeschoseewagong Netum Anishinabek (Grassy Narrows First Nation)
CCHS	Canadian Community Health Survey
CHER	Cultural Heritage Evaluation Report
CHR	Cultural Heritage Resource
CHVI	cultural heritage value or interest
cm	Centimetre
CO	Carbon Monoxide
COVID-19	Coronavirus Disease 2019
CSI	Crime Severity Index
CSIN	Community Services and Infrastructure
CSWB	Community Safety and Well-Being
CULRTP	Current use of lands and resources for traditional purposes
CWB	Community Well-Being
DDSAB	Data from district social services administration boards
DPM	Diesel Particulate Matter
EAP	Employee Assistance Program
EPC	Exposure Point Concentration
ERA	Ecological Risk Assessment
FNFNES	First Nations Food, Nutrition and Environment Study
fVC	Valued component under federal jurisdiction (federal valued component)
GBA Plus	Gender-Based Analysis Plus
Great Bear Resources	Great Bear Resources Ltd.
ha	Hectares
HHERA	Human Health and Ecological Risk Assessment

HHRA	Human Health Risk Assessment
HIA	Health Impact Assessment
HIV	Human Immunodeficiency Virus
HQ	Hazard Quotient
HR	Human Resources
IAA	*Impact Assessment Act*
IAAC	Impact Assessment Agency of Canada
ILCR	Incremental Lifetime Cancer Risk
KDSB	Kenora District Services Board
LAeq-1hr	A-weighted equivalent sound level
LIM-AT	Low-Income Measure After Tax
LSA	Local Study Area
LSFN	Lac Seul First Nation
MNO	Métis Nation of Ontario
MPOI	Maximum Point of Impingement
MMIWG	Missing and Murdered Indigenous Women and Girls
MMIWG2S+	Missing and Murdered Indigenous Women and Girls, Two-Spirit, Transgender, and Gender-Diverse+ peoples
N/A	Not Applicable
NCCIH	National Collaborating Centre for Indigenous Health
NO_2	Nitrogen dioxide
NOS	National Occupancy Standard
NWHU	Northwestern Health Unit
NWOMC	Northwestern Ontario Métis Community (Region 1)
OHA	*Ontario Heritage Act*
PA	Project Area
PAH	Polycyclic Aromatic Hydrocarbon
PHAC	Public Health Agency of Canada
PIT	Point-in-Time
$PM_{2.5}$	Particulate matter less than 2.5 microns in diameter
POD	Point of Departure
POPC	Parameter of Potential Concern
POR	Point of Reception
PPE	Personal Protection Equipment

pVC	pathway valued component
RJ	Restorative Justice
RLEF	Indigenous peoples in the Red Lake and Ear Falls Area
RSA	Regional Study Area
SPP	Social Performance Plan
SLaFN	Sioux Lookout area First Nations
SLFNHA	Sioux Lookout First Nations Health Authority
SO_2	Sulphur dioxide
TISG	Tailored Impact Statement Guidelines
TKLUS	Traditional Knowledge Land Use Study
TMF	Tailings Management Facility
TRV	Toxicity reference value
$\mu g/m^3$	Micrograms per cubic metre
UNDRIP	The *United Nations Declaration on the Rights of Indigenous Peoples Act*
VOC	Volatile Organic Compound
WFN	Wabauskang First Nation
WHO	World Health Organization

Table of Anishinaabe Words, with English Translations

Anishinaabe	Used to describe oneself or a collective group of First Nations peoples belonging to this particular cultural and linguistic family. Individuals use Anishinaabe (or plural form, Anishinaabeg/Anishinabek) to indicate membership and belonging to that group. Commonly used to describe Ojibwe people, but can also refer to other First Nations that also identify as Anishinaabe.
Anishinaabeg	plural form of Anishinaabe, referring to Anishinaabe Peoples
Manoomin	Wild rice
Nibi	Water

10.0 Predicted Changes to Indigenous Peoples – Lac Seul First Nation

The Impact Statement complies with the requirements of the *Impact Assessment Act* (IAA), a federal Act that evaluates how major projects may impact the environment, health, economy, and well-being of local Indigenous communities.

The IAA requires consideration of the impact that a designated project may have on an interested Indigenous group or the rights of the Indigenous Peoples of Canada recognized and affirmed by section 35 of the *Constitution Act, 1982.* This consideration is also reaffirmed by the Tailored Impact Statement Guidelines (TISG) for the Project as issued by the Impact Assessment Agency of Canada (IAAC).

Great Bear Resources, a wholly owned subsidiary of Kinross Gold Corporation, is seeking to develop and operate the Great Bear Gold Project (the Project), a proposed gold mine located near the Municipality of Red Lake in the District of Kenora, Northwestern Ontario within Treaty 3 territory.

Figure 10.1-1 illustrates the Project location relative to Treaty 3 territory, participating Indigenous Nations, and nearby municipalities including the Municipality of Red Lake and the Township of Ear Falls.

This assessment describes the current health and socio-economic conditions and assesses potential effects of the Project on Lac Seul First Nation (LSFN), based on the definition of adverse effects in the *Impact Assessment Act* (IAA), which includes:

> "adverse effects within federal jurisdiction means, with respect to a physical activity or a designated project,
>
> (e) with respect to the Indigenous Peoples of Canada, a non-negligible adverse impact occurring in Canada and resulting from any change to the environment on:
>
> (i) physical and cultural heritage,
>
> (ii) the current use of lands and resources for traditional purposes, or
>
> (iii) any structure, site or thing that is of historical, archaeological, paleontological or architectural significance;
>
> (f) a non-negligible adverse change occurring in Canada to the health, social or economic conditions of the Indigenous Peoples of Canada; and…"

The impact assessment process requires proponents to examine aspects of projects in different ways. These are referred to in this report as pathway valued components (pVCs) and federal valued components (fVCs). As outlined in Section 6, fVCs and pVCs are defined as follows:

- fVCs are valued components within federal jurisdiction, as guided by key issues identified in the TISG for the Project.
- pVCs are valued components that provide a pathway for direct or indirect effects to fVCs.

This assessment follows the framework used for other fVCs and pVCs and has been adapted to reflect the nature of social science analysis and assessment of changes to Indigenous health, which consider the human experience. This includes supplemental text and tables to add broader context.

The assessment of the Project and its potential effects on Indigenous Peoples and their interests are considered based on the following areas, based on the requirements of the TISG (Appendix A-1):

- **Community Services and Infrastructure**, to assess the potential effects of the Project on the use of services and infrastructure in the region by Indigenous Peoples (Section 10.5).
- **Current Use of Lands and Resources for Traditional Purposes**, to assess the potential effects of the Project on the current use of lands and resources by Indigenous Peoples for traditional purposes, including hunting, trapping, gathering, and experience of using the land (Section 10.6).
- **Indigenous Physical and Cultural Heritage, and Structures, Sites, or Things of Significance** to assess the potential effects of the Project on sites or areas of Indigenous heritage importance (including archaeological, historical, or architectural sites), as well as associated ceremonial, spiritual and cultural values (Section 10.7).
- **Community Well-being**, to assess the potential effects of the Project on the broader social and economic conditions that contribute that contribute to the health, well-being, stability, resilience, and quality of life for Indigenous Peoples (Section 10.8).
- **Health**, to assess the potential effects of the Project on environmental and socio-economic conditions that contribute to overall health and wellness for Indigenous Peoples, such as how changes in air or water quality impact biophysical human health outcomes, and how changes to community cohesion impact cultural continuity thus impacting mental, emotional and spiritual health (Section 10.9).

The assessment also considers potential effects of the Project on the exercise or practice of the rights of Indigenous Peoples[1] or the rights arising from treaties in the PA (Section 10.10). The assessment process, and associated Project TISG, is not a process for rights determination.

The discussion that follows assesses the predicted changes and effects for each of the Indigenous communities identified as potentially impacted by the Project in the TISG (Appendix A-1):

- **Lac Seul First Nation (LSFN), i.e., this section;**
- Asubpeeschoseewagong Netum Anishinabek (ANA; Section 12);
- Northwestern Ontario Métis Community (NWOMC; Section 13);
- Wabauskang First Nation (WFN; Section 11); and
- Indigenous Peoples living in the Red Lake and Ear Falls area (Section 14).

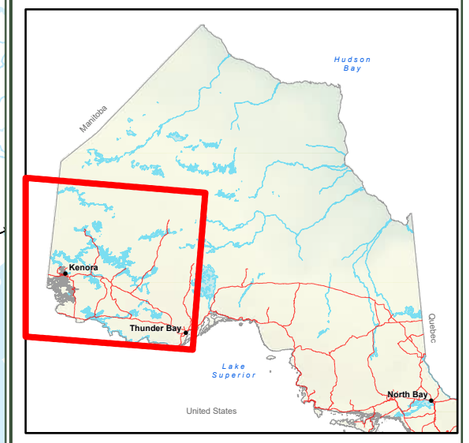
1 “Rights of Indigenous Peoples” and “Rights” refers to the rights of the Indigenous Peoples of Canada, as recognized and affirmed in section 35 of the Constitution Act, 1982. (Guidance: Assessment of Potential Impacts on the Rights of Indigenous Peoples)

Berens River
Pigeon River
Goose Creek
Leyond River
Minago Creek
Bloodvein River
Rice River
Beaver Creek
Gammon River
Wanipigow River
Manigotagan River
Sandy River
O'Hanly River
Black River
Moose River
Maskwa River
Cat Creek
Bird River
Stout Lake
Qoooowee Sahkaheekahn/ McInnes Lake
MacDowell Lake
WINTER ROAD
Postelnic Creek
Peekahchekahmeewee Sahkaheekahn/ Pikangikum Lake
Keechewahshaykahmeeshek/ Cairns Lake
Cat Lake
Tarp Creek
Ooshkahtahkahwee Sahkaheekahn/ Nungesser Lake
Birch Lake
Zionz Lake
Gull Lake
Trout Lake
Red Lake
Gullrock Lake
Bamaji Lake
Lake St. Joseph
Pashkokogan Lake
McCrea Lake
Whitewater Lake
Miniss Lake
Smoothrock Lake
Pakwash Lake
Sydney Lake
HIGHWAY 105
Savant Lake
Caribou Lake
Wabauskang 21
English River 21
Lac Seul
Lac Seul 28
Umfreville Lake
Separation Lake
Crowduck Lake
Rennie River
Bog River
Whitedell River
Hazel Creek
Birch River
Boggy River
Seine River
Tourond Creek
Whitemouth River
Rat River
Roseau River
Sprague Creek
Reed River
Shoal Lake
Lake of the Woods (lac des Bois)
Lake of the Woods
Lost Lake
Big Vermilion Lake
Minnitaki Lake
Sturgeon Lake
Seseganaga Lake
Eagle Lake
Wabigoon Lake
HIGHWAY 72
Dryberry Lake
Atikwa Lake
Rowan Lake
Upper Manitou Lake
Lower Manitou Lake
Kakagi Lake
HIGHWAY 11
Mameigwess Lake
Lake Nipigon
HIGHWAY 17
White Otter Lake
Otukamamoan Lake
Rainy Lake (lac à la Pluie)
Marmion Lake
Lac des Mille Lacs
Dog Lake
Pickerel Lake
HIGHWAY 11
HIGHWAY 11 & 17
HIGHWAY 11 & 71
Rainy Lake
Kabetogama Lake
Namakan Lake
Namakan Lake
Lac la Croix
Lac la Croix
Northern Light Lake
Lake Superior (lac Supérieur)
Upper Red Lake
Lower Red Lake
Minnesota
Michigan

N

LEGEND:

- PROJECT AREA
- TREATY 3 BOUNDARY
- HIGHWAY
- RAILWAY
- WATERCOURSE
- WATERBODY
- FIRST NATION RESERVE
- MUNICIPAL BOUNDARY (LOWER TIER)



NOTES:
NOTE1: BASE DATA ACQUIRED FROM LAND INFORMATION ONTARIO.

0 5 10 20 30 km

SCALE 1:1,800,000
PAGE SIZE 11 x 17
NAD 1983 UTM Zone 15N

THIS MAP IS FOR CONCEPTUAL PURPOSES ONLY AND SHOULD NOT BE USED FOR NAVIGATION

GREAT BEAR RESOURCES

GREAT BEAR GOLD PROJECT

TREATY 3 BOUNDARY

SLR

FIGURE NO:
10.1-1

DATE: November 12, 2025

PROJECT NO: 241.030825

10.1 Linkages to other Valued Components

Predicted social, economic and health changes to Indigenous Peoples who may be affected by the Project are presented in this assessment. Other potential effects are covered in the appropriate sections as noted.

Pathway Valued Components (pVCs):

- **Air Quality** (Section 7.2), **Sound** (Section 7.3) and **Vibration** (Section 7.4): Project-related activities which may create changes to air quality, sound or vibration may cause changes to the current use of land and resources for traditional purposes and affect the quality of their experiences. A change in the quality of these experiences may also cause changes to the health and well-being of the community.
- **Groundwater** (Section 7.5): Project-related activities may result in changes to groundwater flows and levels which may impact use of land, water, and resources for traditional purposes and affect the quality of experiences. A change in quality of experiences may also cause changes to the well-being of the community.
- **Surface Water Levels and Flows** (Section 7.6): Project-related activities may result in changes to surface water quantity which may impact navigation and water-based activities related to the current use of lands for traditional purposes and health.
- **Water Quality** (Section 7.7): Project-related activities may result in changes to surface water quality which may impact navigation and water-based activities (i.e., fishing) related to the current use of lands and resources for traditional purposes and health.
- **Vegetation Communities** (Section 7.8) and **Wild Rice** (Section 7.9): Project-related activities may result in changes to vegetation communities or wild rice availability that may impact the use of the land and resources for traditional purposes and affect the quality of their experiences. A change in the quality of these experiences may also cause changes to the health and well-being of the community.
- **Moose** (Section 7.10), **Other Wildlife** (Section 7.11), and **Species at Risk** (Section 7.12): Project-related activities may affect moose, other wildlife (e.g., furbearers and other ungulates), and species at risk, resulting in changes to the ability to use the land or resources for traditional hunting, trapping, and harvesting purposes.
- **Land and Resource Use** (Section 7.13): Potential changes to land and resource use (particularly changes in land use, access, and navigation) may affect the current use of land and resources for traditional purposes and the quality of experience for LSFN while practicing their traditional activities near the Project.
- **Cultural Heritage** (Section 7.14): potential changes to cultural heritage during the construction, operations and closure phases of the Project may affect Indigenous physical and cultural heritage, including structures, sites, or things of significance.
- **Archaeology** (Section 7.15): potential changes to archaeology during the construction, operations and closure phases of the Project may affect Indigenous physical and cultural heritage, including structures, sites, or things of significance.

- **Local and Regional Economy** (Section 7.16): Project-related activities that result in changes to the local and regional economy may affect Community Services and Infrastructure and Community Well-being due to linkages with the employment and economy within the region.

Federal Valued Components (fVCs):

- **Fish and Fish Habitat** (Section 8): Project-related activities may affect fish and fish habitat resulting in changes to the ability to use the land for traditional purposes, such as fishing and the consumption of traditional foods.
- **Migratory Birds** (Section 9): Project-related activities may affect migratory birds (e.g., migration patterns, behaviours), resulting in changes in the ability to use the land for traditional purposes, such as hunting and the consumption of traditional foods.

Attached Table 10.1-1 provides a summary of the pVC and fVC mitigation measures and the residual changes or effects after mitigation. Detailed description of the methods, existing conditions, mitigation measures, and residual effects can be found in the respective section.

10.2 Regulatory Setting

Government environmental regulations, objectives, policy or guidelines most relevant to Indigenous Peoples are summarized in the following. Further information regarding anticipated approval requirements is provided in Section 19. Further information regarding treaty, self-government, land claims or other agreements between federal and provincial governments and Indigenous Nations is presented in Section 10.10. Further information regarding negotiated agreements between Great Bear Resources and Indigenous communities is presented in Section 10.2.3.

10.2.1 Federal Legislation, Policies and Guidelines

Federal regulatory requirements related to Indigenous communities and populations are summarized in the following.

10.2.1.1 Impact Assessment Act

The Project follows the Impact Assessment Agency of Canada (IAAC) guidance when assessing and reviewing information from Indigenous communities, including:

- *Assessment of Potential Impacts on the Rights of Indigenous People* (Impact Assessment Agency of Canada 2024b)
- *Indigenous Knowledge Policy Framework for Project Reviews and Regulatory Decisions* (Impact Assessment Agency of Canada 2021)
- *Guidance: Indigenous Knowledge under the Impact Assessment Act* (Impact Assessment Agency of Canada 2024d)
- *Guidance: Protecting Confidential Indigenous Knowledge under the Impact Assessment Act* (Impact Assessment Agency of Canada 2024e)

The assessment of human health considers the following guidance from IAAC, and provided by Health Canada for used under the *Impact Assessment Act*:

- Interim Guidance – Health Impact Assessment of Designated Projects under the Impact Assessment Act. December 2024 (Health Canada 2024a)
- Analyzing Health, Social and Economic Effects under the Impact Assessment Act. 27 November 2020 (Impact Assessment Agency of Canada 2020)
- Guidance for Evaluating Human Health Impacts in Impact Assessment: Human Health Risk Assessment (Health Canada 2023a)
- Guidance for Evaluating Human Health Impacts in Impact Assessment: Air Quality (Health Canada 2023b)
- Guidance for Evaluating Human Health Impacts in Impact Assessment: Country Foods (Health Canada 2023c)
- Guidance for Evaluating Human Health Impacts in Impact Assessment: Drinking and Recreational Water Quality (Health Canada 2023d)

Additional guidance specific to the HHERA and HIA is presented in Appendix N-1 and Appendix N-2, respectively. In addition, relevant guidance related to other specific determinants of health are referenced in Section 10.9.

In addition to the *Impact Assessment Act*, this assessment also considers the regulations and requirements related to Indigenous communities and populations presented in Table 10.2-1.

Table 10.2-1: Indigenous Communities and Populations-Related Federal Regulatory Requirements

Act or Requirement	Ministry or Agency	Details
The United Nations Declaration on the Rights of Indigenous Peoples Act, 2021 (UNDRIP Act)	Government of Canada, and IAAC.	This federal legislation affirms UNDRIP as a universal international human rights instrument, applicable under Canadian law.
Constitution Act, 1982	Government of Canada	Section 35 recognizes and affirms existing Aboriginal and treaty rights.
Indian Act, 1876	Government of Canada	Governs matters pertaining to Indian Bands and reserves.
Migratory Birds Convention Act, 2005	Environment and Climate Change Canada	Contains broad legal safeguards and key protections that prohibit the killing, harming or disturbance of migratory birds and their nests or eggs. This includes impacts from any lawful and permitted activities like construction and development related to the Project.
Canadian Navigable Waters Act, 2019 (CNWA)	Transport Canada	Prohibits the construction or placement of any works in a navigable waterway that may interfere with the right to navigation, including Indigenous use as a means to exercise aboriginal or treaty rights, without complying with the requirements of the CNWA. The Project may require approvals under Section 5, 10, and 24 of the CNWA, and has completed a Navigable Waters Report.

Act or Requirement	Ministry or Agency	Details
Species At Risk Act, 2002	Environment and Climate Change Canada	Prevents the harm and disappearance of wildlife species in Canada. The act imposes critical habitat protection, permitting and compliance for activities that could affect listed species or their habitats, action plans, recovery strategies, and enforcement.
Fisheries Act, 1868/2019	Fisheries and Oceans Canada	Responsible for the proper management and control of fisheries; and the conservation and protection of fish and fish habitat including by preventing pollution. Environment and Climate Change Canada (ECCC) may also be involved in fisheries issues, particularly in relation to the prevention provisions within the *Fisheries Act*.

10.2.1.2 Tailored Impact Statement Guidelines

The TISG, developed by IAAC for the Project, indicate that the proponent must:

- Provide an analysis of any potential effects on Indigenous communities including effects on: Community Infrastructure and Services (Section 10.5); Current Use of Land and Resources for Traditional Purposes (Section 10.6); Indigenous Physical and Cultural Heritage, Structures, Sites, or Things of Significance (Section 10.7); Community Well-being (Section 10.8); and Health (Section 10.9);
- Provide an analysis on the impacts on the exercise or practice of Rights of Indigenous Peoples (Section 10.10).
- Work with each Indigenous community in the development of the Impact Statement, should they wish to participate. If communities choose to not participate, the proponent will continue to share information through preferred contact methods, such as providing Project updates through email, letter, or phone conversations.
- Describe the local and regional economic conditions and trends (Section 13.8). This includes information on any use of lands and water for economic activity (e.g., fishing and hunting guides, trapping, or seasonal resorts).

The TISG also references the implementation and consideration of responsibilities under the *Constitution Act*, 1982, the *Impact Assessment Act*, and the *UNDRIP Act*.

10.2.2 Provincial Legislation, Policies and Requirements

Provincial regulatory requirements that have ties to Indigenous interests, or that may require the participation of or deeper engagement with Indigenous communities are summarized in Table 10.2-2. Section 19 contains details related to permitting requirements, some of which will require Indigenous consultation or notification.

Table 10.2-2: Indigenous Communities and Populations-Related Provincial Regulatory Requirements

Act or Requirement	Ministry or Agency	Details
Ontario Heritage Act, 1975/2005 (OHA)	Ministry of Citizenship and Multiculturalism	Governs the practice of archaeology and protecting archaeological and cultural heritage sites. Consultation and verification with Indigenous communities is required during the preparation of a Cultural Heritage Evaluation Report (CHER).
Ontario *Water Resources Act*, 1990	Ministry of the Environment, Conservation and Parks	Governs mine development through water management permits, pollution prevention measures, and environmental compliance measures. There are multiple authorizations under this legislation that are informed by technical considerations and consultation with affected Indigenous Peoples.
Clean Water Act, 2006	Ministry of the Environment, Conservation, and Parks	This Act protects existing and future sources of drinking water through source water protection and prevention. The Act establishes locally led protection of drinking water supplies through prevention. It requires collaborative, watershed-based source protection. No source water protection plans are currently available for Red Lake and Ear Falls or surrounding areas.
Mining Act,1990	Ministry of Energy and Mines	Governs mineral exploration and mining activities. Advanced exploration) permits may be required for the lifecycle of the Project.
Crown Forest Sustainability Act	Ministry of Natural Resources	The cutting of merchantable timber reserved to the provincial Crown for site development will require a provincial license and an agreement with the Sustainable Forest License holder.
Lakes and Rivers Improvement Act, Public Lands Act	Ministry of Natural Resources	Work Permits (or Letter of Authority) are required for work on provincial Crown land including within any setback and / or below the high-water mark of watercourses and waterbodies. Also required for construction of a dam below the high-water level of a lake or river requires approval for the location of the dam, and its plans and specifications

10.2.3 Other Requirements and Negotiated Commitments

Further details on agreements and negotiated commitments between by Kinross – Great Bear Resources with participating Indigenous communities can be found in Section 3 (Participation and Engagement).

An amended Exploration Agreement was signed jointly with Lac Seul First Nation and Wabauskang First Nation on July 19, 2023. This includes a commitment to enter into negotiations for a Project Agreement for mine construction and operation. A Process Agreement was signed jointly with Lac Seul and Wabauskang on April 24, 2024, to assist with the negotiation of the Project Agreement. The parties are currently negotiating a Project Agreement.

A Relationship and Capacity Building Agreement was signed with the NWOMC and MNO on November 1, 2024, to provide Métis Parties with adequate capacity to participate in the regulatory process. This agreement also includes the commitment to negotiate and conclude a Community Benefit Agreement. Métis parties are currently negotiating a Benefit Agreement.

A Capacity Funding Agreement was signed with ANA on September 1, 2024, to support ANA's engagement with Great Bear Resources and the provincial and federal agencies related to this Project.

10.3 Assessment Approach

The assessment approach for the Project followed a step-by-step process as shown in Figure 10.3-1. A more thorough explanation of the approach is described in Section 6.

Sections 10.3.1 through 10.4 provide additional details on the assessment approach and influence of consultation and engagement. Sections 10.5 through 10.9 document the existing conditions, effects assessment, mitigation and enhancements, and residual effects. Residual effects after mitigation that are linked to the exercise or practice of rights as affirmed under the *Constitution Act, 1982* are assessed in Section 10.10 to determine the Project's potential impacts on the ability of LSFN to exercise or practice rights. Cumulative effects (if applicable) are assessed in Section 15.

Figure 10.3-1: Assessment Approach

10.3.1 Spatial and Temporal Boundaries

Spatial and temporal boundaries were established to describe the baseline existing conditions for, and to guide the assessment of each criteria. The boundaries vary depending on the criteria and are generally considered separately for each one. Where appropriate, criteria share spatial boundaries.

10.3.1.1 Spatial Boundaries

Each boundary is described and defined, including justification, in each individual criteria section (i.e., Sections 10.5.1, 10.6.1, 10.7.1, 10.8.1, and 10.9.1). Maps for each spatial boundary are provided in their respective section.

10.3.1.2 Temporal Boundaries

Temporal boundaries were defined by the schedule of phases of the Project (i.e., construction, operations, and decommissioning and closure), past conditions and historical context of the Project.

The temporal boundaries for the assessment as defined in Section 6.5 are:

- Construction phase:
  - Years -3 to -1 (3 years) representing the primary period of Project construction
  - Mining of the Viggo pit will be completed during this phase and will be initiated in the last year of construction in the LP Central pit
- Operations phase:
  - Years 1 to 26 (26 years), during year 1 the Project will transition from construction into operations and will not be at full capacity
- Closure phase:
  - Years 27 to 29 (3 years) represent the active closure period when most of the decommissioning and reclamation of the Project area is completed
  - Year 30 is a passive closure period
  - Year 31 is the final closure (removal of water management infrastructure)

10.3.2 Effects Assessment Criteria

In undertaking the assessment of effects to LSFN, the following criteria were used:

- Change in Community Services and Infrastructure
- Change in Current Use of Lands and Resources for Traditional Purposes
- Change in Indigenous Physical and Cultural Heritage, and Structures, Sites, or Things of Significance
- Change in Community Well-being
- Change in Health

To identify how the Project may result in positive or negative changes to the criteria, potential Project-related effects are assessed against the existing conditions. Indicators characterize the existing conditions and used to measure the change due to the Project-related activities. The criteria, potential effects, and indicators are summarized in Table 10.3-1.

Table 10.3-1: Criteria, Potential Effects, and Indicators for LSFN

Criteria	Potential Effect	Indicators
Change in Community Services and Infrastructure	• Change in housing and accommodations	• Existing housing (by type, quality, number of available units, vacancy rates) • Housing costs ($) • Planned builds ($, number of housing starts per year) • Size of anticipated non-local Project construction workforce (from Project Description and Employment and Economy pVC modelling)
	• Change in municipal, provincial, and non-profit service delivery capacity	• Number, capacity, and location of social service facilities, programs, and providers • Current accessibility, and planned upgrades for services (e.g., schools, Elder, youth, and women's services, health services, mental health and addiction services, and community recreation) to be measured as a percent (%) availability
	• Change in transportation infrastructure	• Availability and timeliness of community transportation programs
Change in Current Use of Lands and Resources for Traditional Purposes	• Change in availability, access to, and quality of experience related to traditional terrestrial wildlife harvesting (hunting and trapping)	• Location of areas for hunting, trapping, and wildlife harvesting in relation to the PA • Qualitative understanding of quality of experience, including spiritual and cultural activities and practices relating to transmission of knowledge, laws, customs, and traditions
	• Change in availability, access to, and quality of experience related to traditional aquatic harvesting (fishing)	• Location of areas for fishing and aquatic resources in relation to the PA • Qualitative understanding of quality of experience, including spiritual and cultural activities and practices relating to transmission of knowledge, laws, customs, and traditions
	• Change in availability, access to, and quality of experience related to traditional plant (food and medicinal) harvesting	• Location of areas for plant harvesting (for food and medicinal purposes) in relation to the PA • Qualitative understanding of quality of experience, including spiritual and cultural activities and practices relating to transmission of knowledge, laws, customs, and traditions

Criteria	Potential Effect	Indicators
	• Change in availability, access to and quality of experience related to traditional habitation, cultural, spiritual sites/areas	• Location of sites and areas for Indigenous traditional habitation, cultural, and spiritual activities in relation to the PA • Qualitative understanding of quality of experience, including spiritual and cultural activities and practices relating to transmission of knowledge, laws, customs, and traditions
Change in Indigenous Physical and Cultural Heritage, and Structures, Sites, or Things of Significance	• Alteration or destruction of sites or areas of Indigenous heritage importance, including archaeological, historical, or architectural sites	• Number and area of affected sites or areas of Indigenous heritage importance, including archaeological, historical, or architectural sites • Indigenous cultural importance of sites, including current use for Indigenous social, cultural, economic, ceremonial, spiritual and other cultural practices and activities
	• Change in access to or quality of experience with sites or areas of Indigenous heritage importance, including archaeological, historical, or architectural sites	• Number and area of affected currently visited / used sites or areas of Indigenous heritage importance, including archaeological, historical, or architectural sites • Importance of sites, including current use for Indigenous social, cultural, economic, ceremonial, spiritual and other cultural practices and activities • Detectable changes to sensory conditions, including acoustic changes (sound and vibration), visual quality (including changes to sightlines and viewsheds), and air quality (including fugitive dust and airborne particles)
	• Change in sacred, ceremonial, spiritual and cultural values (including language, stories and traditions) associated with sites or areas of Indigenous heritage importance, including archaeological, historical, or architectural sites	• Number and area of currently visited / used sites or areas of Indigenous heritage importance, including archaeological, historical, or architectural sites • Importance of sites, including current use for Indigenous social, cultural, economic, ceremonial, spiritual and other cultural practices and activities • Detectable changes to sensory conditions, including acoustic changes (sound and vibration), visual quality (including changes to sightlines and viewsheds), and air quality (including fugitive dust and airborne particles)

Criteria	Potential Effect	Indicators
Change in Community Well-being	• Change in community well-being	• Changes in housing availability and rental prices over time (e.g., housing unit counts, planned additional units, and population change percentages) • Cost of living metrics for goods and services (e.g., cost of living trends) • Safety statistics in RSA (e.g., number of incidents per year, rates per 100,000 population, Crime severity index values, and population change percentages) • Local crime rates (violent and non-violent) with a focus on crimes committed against women and girls • Employment participation data by gender • Access to lands and resources (e.g., proximity to harvesting areas and the presence of access constraints) • Service provider assessments of wait times, capacity limitations, and staffing needs in health, social, and education sectors • Community feedback and historical documentation on household pressures and caregiver challenges (e.g., interviews, service provider input) • Regional community feedback on perceived cohesion, division, or well-being collected through engagement and interviews • Proximity to traditional use areas, interview data on access and use

Criteria	Potential Effect	Indicators
Change in Health [1]	• Change in Health (Biophysical Determinants of Health)	Air Quality: • Change in air quality (measured as µg/m^3) • Change in health risks from exposure to air (measured as calculated Hazard Quotients, Incremental Lifetime Cancer Risks and / or Additional Lung Cancer Mortality) Multi-media Environmental Quality: • Change in soil quality (measured as milligrams per kilogram; mg/kg) • Change in water quality (measured as milligrams per litre; mg/L) • Change in traditional food quality (measured as mg/kg in food, mg/kg of body weight per day as dose) • Change in health risks from exposure to multiple environmental media including soil, water and traditional foods (measured as calculated Hazard Quotients and / or calculated Incremental Lifetime Cancer Risks) Access and Availability of Water: • Change in access (location), and availability of water (flow, levels) for drinking, recreational and cultural uses • Change in perception of environmental quality (avoidance) Access and Availability of Traditional Foods: • Change in traditional foods access and availability via wildlife, vegetation and fish population changes (measured as qualified and / or quantified population-level changes and land use) • Change in risks to ecological receptors, including plants, mammals, birds, fish (measured as calculated Hazard Quotients) • Change in perception of environmental quality (avoidance) Sensory Disturbances (Sound, Vibration, Light): • Change in sound levels (measured in dBA) and % Highly Annoyed (%HA) • Change in vibration levels (measured as air overpressure in dB) • Change in light emissions (measured as sky glow and light trespass levels) Change in environmental quality (avoidance)

Criteria	Potential Effect	Indicators
	• Change in Health (Social Determinants of Health) (1,2)	Economics (Employment, Income, Education): • Change in cost of living and traditional economy (measured as change in cost of living metrics for goods and services, cost of living trends, traditional economy practices) • Change in economic opportunity and inequality (measured as people-years of employment, Project revenues, employment participation, access to employment, income $CAD) • Change in access to health and social services (measured by capacity for service delivery, availability of services) • Education and training statistics as it relates to employment opportunities Housing: • Change in Availability (measured as size of non-local workforce, and existing housing type, quality, available units, vacancy rates, planned builds) • Change in Home Value, Affordability and Ownership (measured as size of non-local workforce, and existing housing costs $CAD; change in cost of living metrics for goods and services; change in economic opportunity and inequality) Access to Health and Social Services: • Change in access to health and social services (measured as number, capacity, and location of facilities, programs, providers, and planned upgrades e.g., schools, Elder, youth, and women's services, health services, mental health and addiction services, and community recreation) • Change in municipal, provincial, and non-profit service delivery (measured number, capacity, demand, planned upgrades) • Service provider assessments of wait times, capacity limitations, and staffing needs in health, social, and education sectors • Information on household pressures and caregiver challenges Food Security: • Changes in Food Security (measured by access, availability and utilization [quality and use] and stability of traditional foods; cost of living changes; perceptions of effects)

Criteria	Potential Effect	Indicators
		• Changes in use (avoidance) of certain traditional food sources or drinking or recreational water sources, and resultant changes to traditional economy, due to the perception of environmental quality • Perceived changes in environmental quality and tranquillity and effects on diet Mental Wellness and Personal Behaviours Community Cohesion: • Change in mental wellness and personal behaviours (including perceived stress, depression, anxiety, concern for future generations) via qualitative discussion analysis of community feedback and regional data on the state of intergenerational trauma, mental wellbeing, cultural continuity, poverty, community cohesion, perception of wellness, and if applicable, substance use in the absence of site-specific quantitative data on mental wellness • Change in community cohesion and perception of wellness (qualitative discussion of community feedback and regional data to describe potential changes to community cohesion in the absence of site-specific quantitative data) Actual and Perceived Safety (Accidents and Malfunctions): • Change in actual and perceived public safety, including emotional and social stress factors, due to risk of accidents and malfunctions (measured as risk characterization per potential accident type; qualitative analysis using community feedback in the absence of site-specific quantitative data on emotional and social stress) Safety of Indigenous Women and Girls: • Change in the safety of Indigenous Women and Girls (local crime rates [violent and non-violent] with a focus on crimes committed against women and girls) • Statistics on Missing and Murdered Indigenous Women and Girls (MMIWG)

Criteria	Potential Effect	Indicators
Notes: 1 Health is assessed through consideration of upstream conditions and changes to biophysical and social determinants of health; therefore, the indicators identified above are for the assessment of the determinants of health, in accordance with HIA guidelines. The existing conditions and assessment of potential effects for these determinants are described in detail in the relevant Impact Statement sections and appendices, the Human Health and Ecological Risk Assessment (Appendix N-1) and in the Health Impact Assessment (Appendix N-2). To provide additional context for health, existing conditions around current health status for Indigenous communities in the region are summarized in the health sections below, and described in detail in Attachment A of the Health Impact Assessment (Appendix N-2). 2 Some indicators are the same as indicators/assessment criteria for upstream conditions (environment, social, cultural, economic); however, they are considered through a different lens in terms of effects (i.e., Indigenous health) $CAD = Canadian dollars; dB = decibel; dBA = adjusted decibels; %HA = percent highly annoyed; mg/kg = milligram per kilogram; mg/L = milligrams per litre; PA = Project Area; pVC = pathway valued component; RSA = Regional Study Area; µg/m^3 = micrograms per cubic metre		

10.3.2.1 Mitigation and Enhancement Measures

Following the identification of potential effects, each interaction between Project activities and indicators was evaluated to determine whether the proposed mitigation measures would manage any risk associated with the effect. Where mitigation measures were determined to effectively avoid or minimize the interaction, no residual effect was carried forward. Where the mitigation measures reduced, but did not fully eliminate, the potential for an effect, the interaction was carried forward for residual characterization.

Great Bear Resources believes that responsible mining includes the following characteristics: 1) generates sustainable value for investors, host countries and communities; 2) prioritizes health and safety; 3) strives to create positive economic and social benefits; 4) improves the overall quality of people's lives during and after the mine operation; and 5) employs responsible stewardship of the environment. Great Bear Resources' policy statement includes the following objectives:

- Align biodiversity practices with regulatory requirements and industry best practices to support responsible land use and long-term environmental benefits. Through proactive stewardship, we aim to support ecosystem recovery, promote sustainable land management, and leave a positive environmental legacy beyond mining.
- Develop and operate projects in a manner that respects and strengthens Indigenous communities and brings positive contributions to their quality of life which are sustainable after mine closure.

10.3.3 Assessment of Significance

An assessment of significance is completed in a structured format described in Section 6.6.2 if residual effects are identified. The significance of residual effects to these criteria is evaluated utilizing the following attributes according the three threshold levels listed in Table 10.3-2 and Table 10.3-3:

- Ecological and social context: a qualitative measure of the sensitivity and / or resilience of the criteria to the potential effect
- Magnitude: a quantitative (statistical desktop data, usually collected from Statistics Canada's Census) or qualitative (information collected through interviews, questionnaires and focus groups) measure of the size or severity of the effect after mitigation relative to the baseline condition and / or applicable guideline
- Extent: the geographic area where the effect is expected to occur

- Duration: the period of time over which an effect is expected to occur
- Frequency: how often an effect is expected to occur
- Reversibility: the ability for the effect to be reversed
- Timing: the degree to which the effect is expected to occur during a sensitive period for the criteria (applicable to select criteria).

For a residual effect of a criteria to be determined to be significant, the following conditions must both be satisfied:

- A Level II or III rating is attained for ecological and social context; and
- A Level II or III rating is attained for all of the attributes involving magnitude, extent, duration, frequency, reversibility, and timing, as applicable.

Similarly, the effect is not likely to be significant if it has low or limited importance to the ecological and / or social context.

- A Level I rating is achieved for any of the attributes involving magnitude, extent, duration, frequency, reversibility or timing; or, if a Level I rating is achieved for the ecological and / or social context, then the residual effect is not considered to be significant.

Table 10.3-2: Significance Determination Attributes and Rankings – LSFN

Attribute	Description	Category
Ecological and Social Context	A qualitative measure of the sensitivity and / or resilience to change, based on professional judgement, consultation and Indigenous Knowledge	• Level I: Criteria may or may not be sensitive, and can support the predicted change with typical mitigation measures • Level II: Criteria is sensitive and requires special measures to support the predicted change • Level III: Criteria is sensitive and unable to support the predicted change even with special measures
Magnitude	A qualitative or quantitative measure to describe the size or degree of the residual effects relative to baseline conditions	• Defined separately for each criteria in Table 10.3-3.
Geographic Extent	The spatial extent over which the residual effect will take place	• Level I: Effect is restricted to the LSA • Level II: Effect extends beyond the LSA but within the RSA • Level III: Effect extends beyond the RSA
Duration	The time period over which the residual effect will or is expected to occur	• Level I: Effect occurs over the short-term: less than or equal to three years(1) • Level II: Effect occurs over the medium term: more than three years but less than 32 years(1) • Level III: Effect occurs over the long-term: greater than 32 years(1)

Attribute	Description	Category
Frequency	The rate of occurrence of the residual effect	• Level I: Effect occurs once, infrequently • Level II: Effect occurs intermittently or regularly • Level III: Effect occurs frequently or continuously
Reversibility	The extent to which the residual effect can be reversed	• Level I: Effect is fully reversible during the Project phases • Level II: Effect is partially reversible during the Project phases • Level III: Effect is not reversible during the Project phases
Timing (2)	A measure of whether the residual effect occurs during a sensitive period of the year	• Level I: Effects do not occur during a sensitive period, or related effects are fully mitigated • Level II: Effects occur during a sensitive period and are partially mitigated • Level III: Effects occur during a sensitive period and are not mitigated

Notes:
1. These timelines approximately align with the Project: construction phase is approximately three years, operations phase is approximately 26 years, and the active closure period is an additional three years.
2. As applicable.

Table 10.3-3: Criteria-specific Magnitude Rankings - LSFN

Criteria	Category
Change in Community Services and Infrastructure	• Level I: Project-related demand for regional services and infrastructure used by local Indigenous People are manageable, and well within the existing regional capacity. • Level II: Some elements of regional services and infrastructure used by local Indigenous People are operating close to or beyond capacity; however, the Project-related demand for regional services and infrastructure can be managed with mitigation measures. • Level III: Some elements of regional services and infrastructure used by local Indigenous People are operating tenuously close to or beyond capacity, and the Project-related demand for regional services and infrastructure cannot be managed with mitigation measures.
Change in Current Use of Lands and Resources for Traditional Purposes	• Level I: Project-related changes may increase the effort necessary but will not reduce the ability of Indigenous Peoples to practice traditional activities related to the current use of lands and resources for traditional purposes. • Level II: Project-related changes may reduce but not eliminate the ability of Indigenous Peoples to practice traditional activities related to the current use of lands and resources for traditional purposes. • Level III: Project-related changes will greatly reduce or eliminate the ability of Indigenous Peoples to practice traditional activities related to the current use of land and resources for traditional purposes.

Criteria	Category
Change in Physical and Cultural Heritage, and Structures, Sites, or Things of Significance	• Level I: Project-related change that is insufficient to alter how Indigenous heritage structures, sites or things, are used, accessed or experienced. • Level II: Project-related change that may alter how Indigenous heritage structures, sites or things are used, accessed or experienced. Associated Indigenous interests (such as intergenerational knowledge transfer) may be affected. • Level III: Project-related change that will result in a loss of Indigenous heritage structures, sites or things, and loss of access or use. Associated Indigenous interests (such as intergenerational knowledge transfer) are impeded.
Change in Community Well-being	• Level I: Measurable Project-related change in social determinants of well-being that may result in a slight adverse change in the population-level social and / or economic conditions of local Indigenous people. • Level II: Measurable Project-related change in social determinants of well-being that will result in a material adverse change in the population-level social and / or economic conditions of local Indigenous people. • Level III: Measurable Project-related change in social determinants of well-being that will result in a substantive adverse change in the population-level social and / or economic conditions of local Indigenous people.
Change in Health	• Level I: measurable Project-related changes in environmental exposures and / or social determinants of health are unlikely to result in a material adverse change in population-level health status of local Indigenous people. • Level II: measurable Project-related changes in environmental exposures and / or social determinants of health may result in a material adverse change in population-level health status of local Indigenous people. • Level III: measurable Project-related changes in environmental exposures and / or social determinants of health will result in a substantial adverse change in population-level health status of local Indigenous people.

10.3.4 Analytical Methods

The assessment of the potential effects of the Project has been completed in accordance with standard regulatory methods. The methods used to assess Indigenous health are provided in the health section below (Section 10.9) and detailed in the HHERA (Appendix N-1) and the HIA (Appendix N-2).

The Project's effects on the criteria were assessed by first collecting data via desktop research from reputable sources, such as Statistics Canada and municipal websites. While Statistics Canada remains the standard data source in the assessment process, due to the timing of the census, some of the data may reflect pandemic related limitations of the time. The 2021 census data was primarily collected in 2020 during the COVID-19 pandemic. In addition, when reporting statistics for small populations, there may be data suppression, or rounding errors. This can result in the total counts not matching the reported data.

While community-maintained population records may reflect more current or locally specific information, particularly for on-reserve populations, Statistics Canada data were used across the Impact Statement to support consistency and comparability across communities and assessment components.

As part of the methods, Gender-Based Analysis Plus (GBA Plus) was applied to understand how the Project may affect different groups. GBA Plus is a framework that considers how intersecting identity factors, including but not limited to, gender, age, culture, and education levels can shape diverse experiences of project effects. Within this framework, the terms men+ and women+ are used to acknowledge diversity within gender groups, recognizing that individuals may experience impacts differently depending on these intersecting identities. GBA Plus considerations are applied throughout this section, with each valued component including a dedicated subsection that addresses subgroup-specific effects in its context. This assessment prioritizes the use of on-reserve demographic and socio-economic data where available. However, due to limitations in data availability and public reporting at the on-reserve level, regional-scale data (e.g., Kenora District or provincial data) are used in some instances to provide contextual information. The geographic scale of all data sources is explicitly identified in the text.

Following the collection of the desktop data, it was analyzed for trends, and packages were developed and distributed to ALIA. The packages included:

- desktop data, which required validation by key service providers;
- questionnaires, designed to collect information about resources, capacity, thresholds and targeted information about vulnerable, and at-risk groups (populations that would be considered within the Gender Based Analysis Plus umbrella) within the on-reserve community; and
- interview guidance.

The packages were reviewed and collaboratively revised based on feedback from ALIA.
The ALIA reviewed and verified the desktop data, and collected important on-reserve qualitative socio-economic data, which included data from service providers to vulnerable groups. This was used to inform the Community Services and Infrastructure and Community Well-being criteria.

Where feasible, additional data from other sources have been added to reflect more current statistics or provide additional information on restrictions or limitations of the data.

In addition to publicly available sources of information, the description of existing conditions was informed by the following confidential reports prepared by or for specific Indigenous communities:

- A report titled “The Centre of The Universe”: Stories of Obishikokaang, Lac Seul First Nation Traditional Knowledge & Land Use Study, prepared for Lac Seul First Nation.
- A report titled Response Memo to Impact Statement – Indigenous Knowledge – Typical Requirements from SLR, Lac Seul First Nation Traditional Knowledge Studies, prepared for Lac Seul First Nation.
- What We Heard Report (Extract), prepared for Lac Seul First Nation and Wabauskang First Nation.

Great Bear Resources will continue to consider supporting studies and future monitoring identified by Indigenous communities during all phases of the Project.

The use of Indigenous Knowledge received by Indigenous Nations aligns with digital data governance principles for Indigenous data sovereignty, such as OCAP Principles (Ownership, Control, Access, and Possession) that were established by the First Nations Information Governance Centre. Information received by Indigenous Nations relating to land use documentation, cultural and heritage sites, community services and infrastructure, and community well-being is considered proprietary to the respective Indigenous communities.

To maintain confidentiality for these received documents, direct quotation from Indigenous Knowledge studies and documents (including traditional land use studies) are avoided, and the documents are broadly identified as confidential reports, where applicable, throughout this section.

Complementing these qualitative sources, the assessment of Indigenous health is conducted through a single comprehensive assessment. This approach relies on the combined findings of the Human Health and Ecological Risk Assessment (HHERA; Appendix N-1) and Health Impact Assessment (HIA; Appendix N-2) for all participating Indigenous communities (i.e., LSFN, WFN, ANA, NWOMC and RLEF). The health subsection includes the assessment and discussion of Indigenous health overall, presenting findings for all five Indigenous communities.

Interactions between the Project and valued components were determined based on professional judgment and technical expertise based on experience with other projects similar in breadth, along with input from consultation / engagement activities. It is acknowledged that changes to pVCs and residual effects on fVCs represent distinct concepts. However, for the purpose of consistency in reporting across this Section, the terminology of “residual effects” may be applied uniformly to both pVCs and fVCs. This approach supports consistency while recognizing the methodological distinction.

The overall assessment methodology for the Project is further described in Section 6.

10.3.5 Assumptions and the Use of the Conservative Approach

Given the limited information available, the assessment of effects, and significance, is based on a conservative approach. This means assuming a ‘worst-case’ or less favorable scenario when considering the effect of a change. The details on the use of conservatism in the Indigenous health assessment are provided in the HHERA (Appendix N-1) and the HIA (Appendix N-2).

The available information may not reflect all activities for an Indigenous community and may also reflect cultural sensitivity about sharing such information in a study of this nature. In these instances, information from other sources, such as projects of similar nature or within the same region, was also used to supplement information to inform this assessment of Project-related changes.

The best available information is included and if new information emerges about physical and cultural heritage sites, there are regulatory processes to identify and manage any such resources. The Project Area will continue to be subject to monitoring, and additional steps will be taken as required to support appropriate consideration of potential cultural and heritage values.

10.4 Influence of Consultation and Engagement

Engagement with LSFN started in February 2018, and has been ongoing throughout the impact assessment process, and will continue with LSFN over the life of the Project. Great Bear Resources has a mutual and respectful relationship with LSFN including providing support to the community through funding of research conducted for the TKLUS undertaken by LSFN.

Great Bear Resources has also provided LSFN with Sections 10, 11 and 14 of the impact statement for review, comment and validation prior to submission of the Impact Statement. Great Bear Resources provided the following effects assessment sections (excluding health) to LSFN for their review and validation: Indigenous Peoples LSFN (November 12 2025), Indigenous Peoples WFN (November 19 2025); and Indigenous Peoples living in Red Lake and Ear Falls area (November 19 2025). The validation enabled the communities to verify that the information (Indigenous Knowledge), shared with Great Bear Resources to inform the IS, has been considered and interpreted appropriately. It is important to acknowledge that the validation step is not a sign-off from communities on the conclusions in the sections; information included within the sections may be considered by LSFN to inform the independent ALIA decision making process. A letter was received on January 20 2026 from Chief Bull (LSFN) and Chief Petiquan (WFN) to confirm that the validation process had been completed. A workshop also occurred with LSFN on February 19, 2026 to present interim health results.

Section 3 provides more detail on the consultation to date. The Record of Consultation (Appendix C) includes detailed comments received, and responses provided, during the development of the Impact Statement.

10.4.1 Impact Statement Valued Components

As required by the Tailored Impact Statement Guidelines (TISG; Appendix A-1), the Impact Statement must identify the valued components of the environment that will be the focal points for the impact assessment. Valued components are components of the natural and human environment that are of particular concern or value to participants and that may be affected by the Project.

Great Bear Resources identified a preliminary list of potential valued components based on comments raised during consultation on the Project, as well as data from extensive biophysical and human environment baseline studies, and literature sources.

A preliminary list of pVCs and fVCs was developed and consulted upon during preparation of the Impact Statement as summarized in Section 6. The pVCs and fVCs confirmed as important by participating Indigenous Nations include: air, wildlife, lands, water, and people. Based on the TISG and feedback received through consultation, the pVCs and fVCs identified for assessment in the Impact Statement include Indigenous Peoples and their interests: Community Services and Infrastructure; Current Use of Lands and Resources for Traditional Purposes; Indigenous Physical and Cultural Heritage and Structures, Sites, or Things of Significance; Community Well-being; and Health.

Engagement sessions were held in LSFN on February 18-20, March 24-26, and April 22-25, 2025, to introduce the topics of Fish Compensation measures, Species at Risk, and of Interest and Closure Planning. During engagements, the communities shared that important fish species included walleye (pickerel), sauger, sturgeon, lake trout, and whitefish. During Species at Risk engagements, LSFN and WFN noted important species include bear and moose. Throughout these engagements, manoomin (or wild rice) was noted as important to communities.

LSFN's engagement has also been supported through formal agreements, including the Exploration Accommodation Agreement (2020) and Amended Exploration Agreement (2023), with ongoing negotiations toward an Impact Benefit Agreement. Engagement has been structured through the Environmental Management Committee and a dedicated Environmental Liaison position, and community members participated in workshops on fisheries offsetting, species at risk, closure planning, archaeology, socio-economic data collection, and wild rice enhancement. Great Bear Resources funded a Wild Rice Enhancement Project in collaboration with LSFN to explore revitalization options.

10.4.2 Community Services and Infrastructure

On June 2, 2025, LSFN issued a letter urging the Ontario government to prioritize the development of new transmission infrastructure north of Dryden to address pressing power supply limitations. With the existing transmission line to Red Lake at capacity, there is a growing risk of development restrictions for surrounding Indigenous Nations at a time when new housing and community infrastructure are needed.

Based on engagement and consultation to date, and confidential reports prepared by or for LSFN, key issues incorporated under community services and infrastructure (Section 10.5) include: increased housing and associated increased use of community services and infrastructure.

General comments for the regional community services and infrastructure (Section 15.0) include concerns regarding transportation regarding the existing public road infrastructure, increased traffic, and limited lack of bus routes and other transportation services.

Possible changes to community services were also noted, such as daycare services, social services, and the women's shelter. These services were identified as being either close to, or at capacity.

10.4.3 Current Use of Lands and Resources for Traditional Purposes

Key information from confidential reports have been incorporated into relevant sections of this assessment (Section 10.6, Section 10.7), including information on traplines located within the PA, RL068 and RL059 which are both registered to LSFN individuals. Information about species harvested has also been included.

The general importance of manoomin (or wild rice) in the LSA to LSFN was also confirmed. LSFN noted plant harvesting in the PA, particularly edible mushrooms, which are also abundant in the LSA and RSA. Wild cranberries are also harvested by LSFN in the LSA at the confluence of Dixie Creek and Chukuni River.

A Boreal Caribou track was observed on a Pakwash Lake beach in the LSA, and the PA is located within the Sydney Range for Boreal Caribou. However, due to past disturbance caused by forestry and fires, the PA and the area around the PA is comprised of low-quality habitat for Caribou. Caribou are not expected to use the PA for key seasonal critical habitat use.

Fish harvesting and tourism importance was noted by LSFN at Pakwash Lake, Chukuni River, Gullrock Lake, Two Island Lake, Keg Lake East Lake, and Bruce Lake. Fish species of importance were also confirmed. Because fish is a primary staple, LSFN noted that there is concern of fish loss or contamination (or further impacts to fish population and health)

Community members from LSFN and WFN met on June 6, 2024, and discussed concerns about potential water contamination, referencing historical issues such as mercury levels from a paper mill in Dryden, and emphasized the importance of ongoing water quality monitoring by communities. LSFN indicated that the Project may impact the quality of hunted and trapped game due to potential for environmental contamination of water and food that animals are dependent on. On January 15, 2025, LSFN and WFN reiterated their commitment to the stewardship of their traditional territories and emphasized the importance of addressing concerns about the Project's impact on lands, waters, and species at risk from their perspective.

From the community engagement sessions with LSFN, contamination concerns about resource quality (inclusive of culturally important plant and animal species for harvesting) arose. Concerns about the potential for increased diseases, such as masses or tumours found in fish, and the contamination of important waterways and waterbodies from mercury, arsenic, or phosphorous were also highlighted. Other concerns included changes in air quality from Project activities and risks of increased dust.

Changes to the access of culturally important areas and resources were identified by LSFN, noting that harvesters may be less interested in accessing their preferred and traditional areas due to real or perceived changes in water quality from tailings and other contamination sources that affect water. On June 6, 2024, cultural heritage landscapes and climate change considerations were identified and discussed, with an emphasis on their inclusion in the Impact Statement.

Changes in water quality from Project activities were identified as having the potential to affect the quality of experience of LSFN who use waterways and waterbodies as sites of transmitting intergenerational knowledge. LSFN also identified that these changes to the land from Project activities may make harvesters, hunters, and trappers view the land as less functional, less desirable for traditional harvesting and cultural activities, and less safe for use. LSFN noted that changes to the land and resources downstream from the Project are of concern for potential impacts on water, communities, and harvesters. Disturbances / disruption relating to dust, air quality, and noise were also identified by LSFN as potentially impacting the quality of experience for those on the land.

Based on engagement and consultation to date, and confidential reports prepared by or for LSFN, key issues incorporated under current use of lands and resourced for traditional purposed (Section 10.6) include: changes to access, availability, and quality of experience related to terrestrial wildlife harvesting (wildlife and land quality), changes to access, availability, and quality of experience related to traditional aquatic harvesting (fishing and water quality), changes to access, availability, and quality of experience related to plant harvesting (vegetation and land quality), and reduction in access to culturally important areas and the experience (traditional habitation, spiritual, and cultural sites).

10.4.4 Indigenous Physical and Cultural Heritage and Structures, Sites or Things of Significance

For LSFN, engagement and consultation processes have indicated an interest in the findings of the archaeological and cultural heritage studies undertaken for the Project, as well as a general concern with LSFN traditional use activities and locations, including places with heritage value, as they relate to Project activities.

For the archaeological sites identified in or near the PA, archaeological reports have been shared with Indigenous communities, and, based on input from LSFN and WFN, avoidance of all potentially affected archaeological sites has been selected as the mitigation.

Based on engagement and consultation to date, and confidential reports prepared by or for LSFN, key issues incorporated under Indigenous physical and cultural heritage, and structures or things of significance (Section 10.7) include: alteration or loss of these Indigenous physical and cultural areas.

Based on engagement and consultation to date with LSFN, key issues incorporated under Indigenous Physical and Cultural Heritage, and Structures or Things of Significance (Section 10.7) include: alteration or loss of these physical and cultural areas; associated changes to the quality of experience and practices of LSFN community members potentially undertaking traditional activities in these locations; and implications for cultural continuity and LSFN's ability to transmit Indigenous Knowledge intergenerationally.

10.4.5 Community Well-being

Information provided within a confidential report prepared by or for LSFN included detailed community discussions regarding local employment, concerns regarding cost of living, food security, and hunting. Also noted is the potential for increased violence due to change in the population. The increased presence of male workers was identified as a risk for increased rates of sexually transmitted infections, crime, human trafficking, and potential violence against Indigenous women+ and girls.

The potential for contamination and its impact on health and community well-being was cited as concerning for LSFN on June 6, 2024. These contamination exposure risks include how they extend to drinking water quality, and cultural uses of water (e.g., bathing or medicinal), and impact on medicines that grow by the river (e.g., wildlife, plants, berries). Land and soil quality changes were cited by LSFN as also having a risk to mushrooms, medicines, wild plants and berries. On November 5, 2024, additional community concerns were discussed, such as trout populations and water quality.

During a Fish Compensation Workshop hosted by the Great Bear Project on February 19, 2025, a meeting attendee asked if wild rice compensation programs could be done in unison with the fish compensation. GBR has funded a study by Lakehead University, Northern Bioscience and Harris Ecological Consulting, upon the request of LSFN and WFN. The purpose of this study is to help address the loss of historic manoomin (wild rice) production on Wabauskang Lake.

During an Anishinaabe-Led Indigenous Assessment (ALIA) meeting, held October 31, 2025, concerns including community safety, cost of living and barriers to employment opportunities associated with the Project, protecting and improving the health of community members; including access to land-based healing, food security and nutrition, and enhanced community recreation and community infrastructure were presented and discussed with Great Bear Resources.

While the Project presents opportunity for LSFN, the overarching concern is that population growth associated with Project-related demands could result in affect community well-being for LSFN if not managed carefully.

Based on engagement and consultation to date, and confidential reports prepared by or for LSFN, key issues incorporated under Community Well-being (Section 10.7) include: increased cost of living due to the increase in population; food security and access to hunting areas; increase of crime within the community; potential impacts to water, wildlife, fish, and vegetation that will impact the health and well-being of the community members.

10.4.6 Health

This section provides a summary of the past and ongoing activities that have supported the discussion, scoping and assessment of Indigenous health.

As detailed in Impact Statement Section 3 (Participation and Engagement), engagement activities between Great Bear Resources and Indigenous communities have included in-person and virtual small group meetings, in-person and virtual community meetings, site visits, small workshops, formal presentations, public engagements, one-on-one in-person engagements, letters, and emails.

Feedback from Indigenous Nations and stakeholders has directly influenced the assessment of potential effects on Indigenous health and the development of mitigation and enhancement measures, including:

- **Potential Points of Reception:** Confidential reports in the form of Traditional Knowledge Land Use Study (TKLUS) for LSFN, WFN, and NWOMC included information on land and resource use, species of importance for subsistence and cultural purposes, and cultural areas of importance. The assessment of human health, including the selection of surrogate species and points of reception (PORs) used in the HHERA included consideration of this information. Further detail on this process is provided in Section 4.4 of Appendix N-2.
- **Wild Rice Enhancement Project:** At the request of LSFN and WFN, Great Bear Resources has funded a collaborative study to address the loss of historic Wild Rice production on Wabauskang Lake. The enhancement project, located on the WFN reserve and supported by LSFN, will develop options for habitat restoration and knowledge-sharing on sustainable harvesting practices, supporting long-term stewardship by community members. Wild Rice has been highlighted as a key interest by Indigenous communities. This mitigation measure supports Indigenous health and wellness.
- **Contamination:** In response to concerns about waterfowl exposure to contaminants (e.g., tailings and toxins), the Project has committed to robust tailings management, regular environmental monitoring, and transparent communication of results. Wildlife will be discouraged from inhabiting contact water ponds, including but not limited to the Tailings Management Facility (TMF) pond, mine water pond and collection water pond. In order to address concerns surrounding the possibility of the Project further contributing to ongoing mercury levels and risk of methylation, Great Bear Resources undertook a study requested by IAAC to evaluate potential methylmercury generation from Project in downstream watersheds and evaluated potential risk to human health associated with fish consumption. This study can be referenced in Appendix T.

- **Environmental monitoring and Indigenous participation:** Great Bear Resources has committed to ongoing engagement with Indigenous environmental monitors and the Environmental Management Committee, to support Indigenous knowledge informing the monitoring of species of importance.
- **Communication and adaptive management:** The Project will maintain open communication with communities regarding monitoring results, adaptive management measures, and opportunities for community input throughout the Project lifecycle.

During a community meeting on October 10, 2023, during the Planning Phase for the Impact Statement, an Elder of the LSFN spoke on the intrinsic value of water including to all life, fish and traditional medicines, and the importance of protecting water for future generations.

LSFN indicated that real or perceived environmental contamination, particularly water contamination, could change the experience for land users and result in changes to food security, the transfer of cultural knowledge and health. LSFN noted that potential surface water contamination could adversely affect the safety and quality of drinking water and traditional food sources, including hunted and trapped game, harvested plants, as well as fish, which is a key component of the community diet. Additionally, concerns were raised that changes to air quality as a result of elevated dust levels, as well as changes to water quality may change the experience of land users, change access to traditional harvesting areas and pose health risks.

As described in Impact Statement Section 10 (fVC Indigenous Peoples: LSFN) during consultation and engagement activities with LSFN, LSFN also raised concerns related to potential increases in cost of living and employment opportunities associated with the Project crime, human trafficking, sexually transmitted infections, and violence against Indigenous women and girls due to the increased population. During an Anishinaabe-Led Indigenous Assessment meeting, held October 31, 2025, concerns including community safety associated with the Project, protecting and improving the health of community members; including access to land-based healing, food security and nutrition, and enhanced community recreation and community infrastructure were presented and discussed with Great Bear Resources.

Comments related to health received during the validation process (described above), such as concerns raised around cost of living in the area, housing and homelessness, access to health services, and environmental changes due to Project activities, have been considered in the assessment of Indigenous health.

Based on engagement and consultation to date, and confidential reports prepared by or for LSFN, key considerations incorporated under health include: ongoing communication, cost of living, food security, public safety, access to harvesting areas and potential effects to water, wildlife, fish, and vegetation that could potentially affect the health of the community members.

10.5 Community Services and Infrastructure

Community services and infrastructure were selected as criteria to evaluate how the Project may interact with the capacity of regional and local facilities, services, and infrastructure, including transportation networks utilized by LSFN community members. These components are assessed both individually and collectively. Collectively, they help evaluate the broader social and economic conditions of LSFN that depend on the stability and reliability of these programs, services, and systems.

The assessment of community services and infrastructure includes a review of:

- Housing and accommodations (including short-term rentals and temporary lodgings)
- Social services (e.g., childcare, daycare, Elder care, youth programs, community wellness workers, women's shelters, and mental health and addictions counselling)
- Healthcare services (including primary and secondary care)
- Emergency response services (e.g., fire, police, ambulance, and other emergency responders)
- Infrastructure (e.g., power, utilities, landfill and waste disposal, water and wastewater treatment)
- Traffic networks and transportation infrastructure

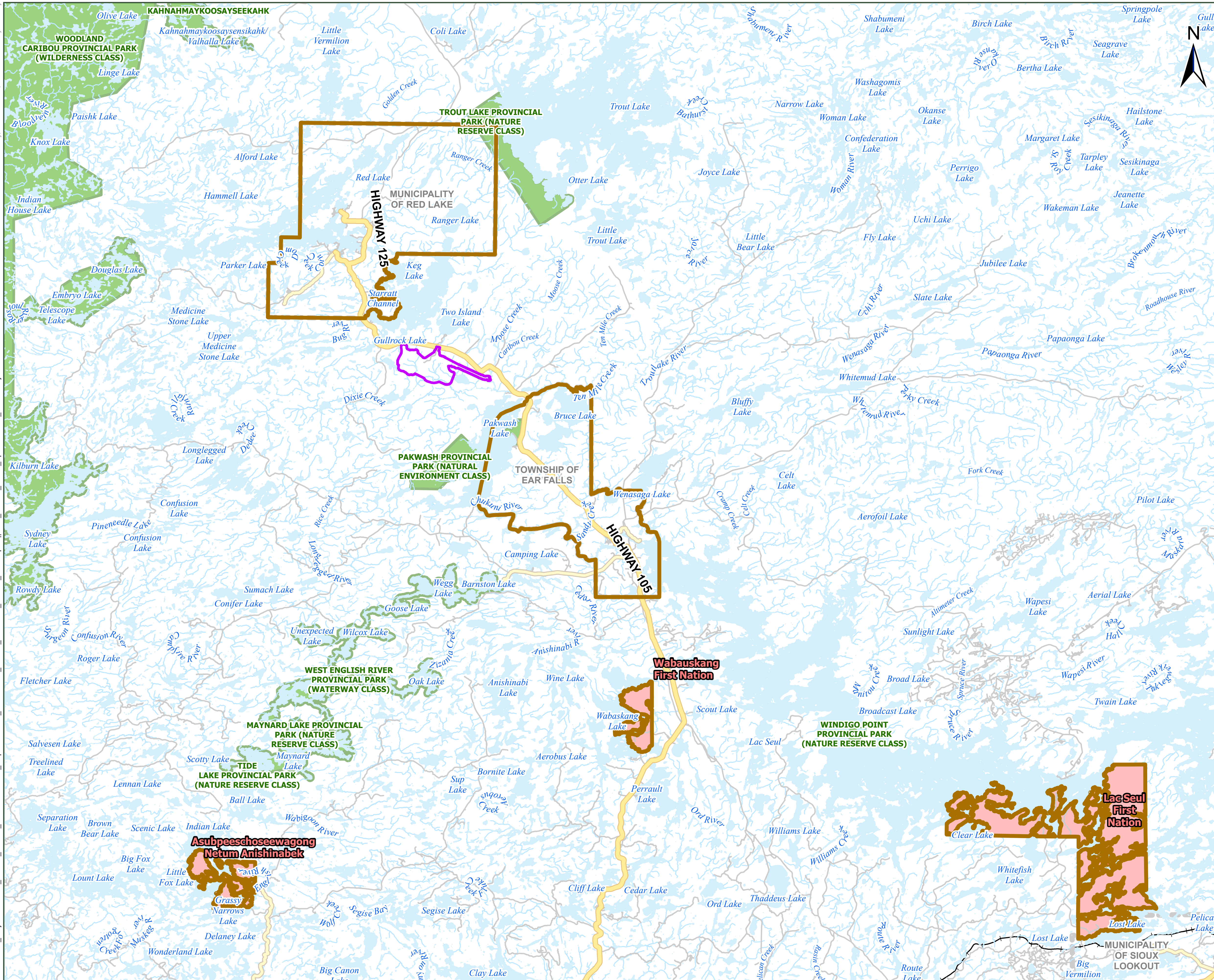
This assessment focuses on services available specifically to community members of LSFN, while also acknowledging the regional health, social, and education programs and infrastructure accessed by LSFN community members in the Kenora District, including in Red Lake and Ear Falls. For a more comprehensive assessment of predicted changes to Indigenous Peoples' access to services and infrastructure in the Red Lake and Ear Falls area, including broader systems not specific to LSFN, refer to Section 14, Predicted Changes to Indigenous Peoples living in the Red Lake and Ear Falls Area.

10.5.1 Spatial Boundaries

There are three study areas within the spatial boundaries. They are the Project Area (PA), the Local Study Area (LSA), and the Regional Study Area (RSA), which includes both the PA and the LSA. The spatial boundaries used for the assessment of community services and infrastructure are shown in Figure 10.5-1 and are defined:

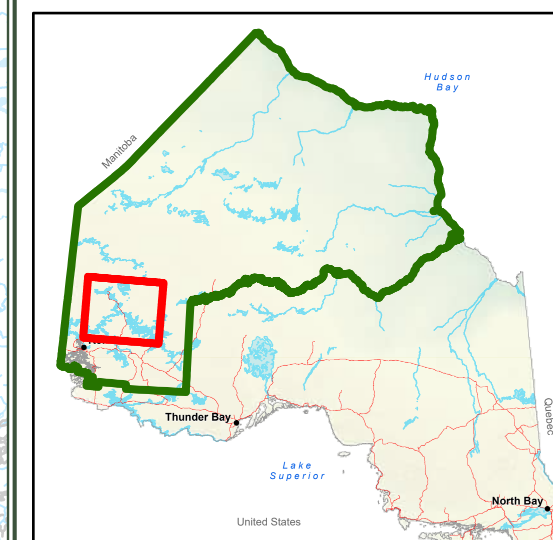
- The PA is defined as the footprint of the Project including all temporary and permanent areas associated with the Project, as well as a buffer to allow flexibility for design optimizations prior to construction and over the mine life (Section 6.4). The PA is approximately 3,349 hectares (ha) in size.
- The LSA is the area within which Project-related effects may reasonably be expected to occur and can be predicted or measured with a reasonable degree of accuracy and confidence. The regions that the Project's socio-economic demands are expected to influence, possibly causing direct, indirect and / or induced effects on community services and infrastructure include the Indigenous communities of ANA, LSFN, WFN, NWOMC (the community of Métis citizens in the region), and Indigenous Peoples living in the Red Lake and Ear Falls area
- The RSA encompasses the LSA and is used to provide regional context for the significance of residual effects and is also the area within which potential for cumulative effects of the Project in combination with other past, present or reasonably foreseeable projects or activities are considered. The region surrounding the LSA and the PA may also experience direct, indirect, and / or induced effects on community services and infrastructure due to the socio-economic demands of the Project. This could include transportation corridors, and / or services which operate throughout the region. The RSA for community services and infrastructure is the District of Kenora. The RSA is also the region which cumulative effects on the pVCs and fVCs are likely to occur.

These boundaries are consistent with those used for other social valued components, including Community Well-being (Section 10.8) and Health (Section 10.9).



LEGEND:

- PROJECT AREA
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- HIGHWAY
- MAJOR ROAD
- LOCAL ROAD
- RAILWAY
- WATERCOURSE
- WATERBODY
- INDIGENOUS COMMUNITY
- PROVINCIAL PARK
- MUNICIPAL BOUNDARY (LOWER TIER)



NOTES:
NOTE1: BASE DATA ACQUIRED FROM LAND INFORMATION ONTARIO.

0 5 10 20 30 km

SCALE 1:550,000
PAGE SIZE 11 x 17
NAD 1983 UTM Zone 15N
THIS MAP IS FOR CONCEPTUAL PURPOSES ONLY AND SHOULD NOT BE USED FOR NAVIGATION

GREAT BEAR RESOURCES

GREAT BEAR GOLD PROJECT

SPATIAL BOUNDARIES FOR COMMUNITY SERVICES AND INFRASTRUCTURE

SLR

FIGURE NO:
10.5-1

DATE: November 11, 2025
PROJECT NO: 241.030825

10.5.2 Existing Conditions

A summary of existing conditions for community services and infrastructure, along with the methods used to characterize baseline conditions is presented. Additional details are provided in the Socio-Economic Baseline Report (Appendix O-1).

Current services and infrastructure that are specific to LSFN community are included; however, community members also rely on services and infrastructure available in Red Lake, Ear Falls and other larger centers within the RSA (such as the City of Kenora). Some services and infrastructure, as outlined in this Section and Section 15, are only provided in these larger communities and require community members to travel to access them. Specialized services are typically accessed in the broader RSA, including the Kenora District.

While the discussion centers on on-reserve LSFN-specific service delivery, Section 14, Predicted Changes to Indigenous Peoples living in the Red Lake and Ear Falls Area, provides insight for a broader assessment of general community services and infrastructure used by LSFN off-reserve community members in the Red Lake and Ear Falls area.

10.5.2.1 Methods

A description of existing community services and infrastructure conditions for LSFN community members is presented. The existing conditions data was collected through desktop research of publicly available sources, including statistical data from the 2021 Census and other public sources and, if available, qualitative information gathered through interviews with key service providers and community organizations.

The TISG also states that the description of baseline economic conditions must include "any relevant treaty provisions pertaining to economic development for Indigenous Peoples". Great Bear Resources is not aware of any treaty provisions pertaining to economic development for LSFN.

Additional information from related criteria sections, including community well-being, the Project Description, and employment and economy studies were used to understand the potential for effects on community services and infrastructure.

This quantitative and qualitative information is used to describe the current existing conditions. The potential Project-related changes to community services and infrastructure are relative to these existing (or baseline) conditions. The assessment of potential effects from these changes informs the development of appropriate mitigation measures, which in turn support the prediction of residual effects. The finding of this assessment will inform the mitigation measures and long-term monitoring proposed for the Project.

10.5.2.2 Description

Desktop sources, including statistical data (e.g., income, employment, housing), and regional service information, are used to characterize the conditions within LSFN community: Frenchman's Head, Kejick Bay, Whitefish Bay, and Canoe River. Where relevant, this assessment refers to Section 14.5 (Predicted Changes to Indigenous Peoples living in the Red Lake and Ear Falls Area - Community Services and Infrastructure) for a broader understanding of infrastructure and service provision within the RSA.

Community services and infrastructure reflect the overall social and economic conditions that support populations within LSFN. The existing capacity and challenges in infrastructure and service areas are also closely connected to other criteria, including:

- Current Use of Lands and Resources for Traditional Purposes (Section 10.6)
- Community Well-Being (Section 10.8)
- Health (Section 10.9)
- Local and Regional Economy (Section 7.16)

Existing conditions are based on both statistical information (e.g., income, employment, housing) and insights from community-based organizations. When presented together, these sources provide a foundation for evaluating how potential future changes may affect overall well-being in the LSA and RSA.

10.5.2.2.1 Accommodation and Lodging

As of the 2021 Census, LSFN had a total of 320 occupied private dwellings, and 255 of these were provided by the LSFN band. Of the occupied private dwellings in LSFN, 255 were in need of maintenance or minor repairs and 65 dwellings were in need of major repairs (Statistics Canada 2023d).

The LSFN Ke-nawind Housing Development Authority manages 120 rental units in addition to providing a home ownership program for community members (Lac Seul First Nation 2023e). A three-bedroom unit rents for $350/month, with smaller units costing less (Lac Seul First Nation 2023e). Nationally, the average for a 2-bedroom unit in urban centres with a population greater than 10,000 is $1,447 (Canada Mortgage and Housing Corporation 2024) In Kenora, the closest municipality with available data, the average rent for all unit types is $1,048 (Canada Mortgage and Housing Corporation 2025). While these units rent for lower than the national and Kenora averages, Ke-nawind Housing Development Authority notes that the cost of living, particularly electricity costs, makes rent collection difficult at times (Lac Seul First Nation 2023e).

Housing suitability refers to whether a private household is living in suitable accommodation according to the National Occupancy Standard (NOS). The NOS considers the number of bedrooms relative to household size and composition. Within Lac Seul, 81.3% of households are living in suitable housing (Statistics Canada 2023d).

Homelessness studies may not capture everyone experiencing housing insecurity. People who are couch-surfing, living in overcrowded homes, staying temporarily with friends or family, or in unsafe housing situations are often missed in traditional counts.

10.5.2.2.2 Municipal, Provincial and Non-Profit Service Delivery Capacity

10.5.2.2.2.1 Recreation And Leisure

The Lac Seul Events Centre in Frenchman’s Head serves as the community’s central recreational and meeting hub. Completed in 2013 at a cost of approximately $8.5 million, the facility was funded in part through a legacy timber-harvesting settlement (Ross 2019). The centre features a full-size ice rink with ice-side and mezzanine seating, five heated dressing rooms and a large central concourse. Multipurpose spaces include the Bear Room, a 2,301 square foot space that can accommodate up to 160 people standing or 80 seated in dining layout. The Moose and Wolf Rooms which are approximately 700 square foot each, seating up to 50 in boardroom or flexible setups, and the Loon Room which is a smaller 170 square foot meeting area and can seat six in boardroom style. The facility also contains a kitchen and canteen, as well as a fitness room equipped with cardio and weight-training equipment.

Memberships at the Events Centre cost $15 for youth per-month, $30 for adults per-month, and $10 per visit for drop ins (Lac Seul First Nation 2023c).

Since opening, the events centre has become a regional hub for sports, conferences, and community gatherings. It hosts hockey tournaments, trade shows, career fairs, AGMs, and cultural events, and has reached its full capacity of approximately 1,300 attendees during special events such as alumni game with the Montreal Canadiens (Ross 2019). The complexes are described as essential for community events but are beginning to deteriorate and require repairs (Kocis 2025).

In addition to the Events Centre, LSFN operates other recreational facilities. The Dora Thomas Memorial Complex in Whitefish Bay provides a gathering space for events and recreational programming, and the Brian Brisket Memorial Complex in Kejick Bay supports youth activities and community functions. Outdoor recreational amenities in various communities include baseball fields and outdoor hockey ensuring year-round opportunities for recreation and leisure (NorthWest Health Line 2025).

10.5.2.2.2.2 Social Services

The Sahkatcheway Access Centre, located in Kejick Bay, supports elderly LSFN community members and individuals with disabilities by providing homemaking services such as light housekeeping, meal preparation, laundry, and personal care. During winter months, the Centre offers additional outdoor assistance like firewood provision and snow shoveling, along with short-term loans of mobility aids (e.g., walkers, raised toilet seats). This facility also houses Ontario Works, extended health benefits programming, and long-term care services. It operates out of accessible premises with regular ‘9 to 5 hours’ on weekdays (NorthWest Healthline 2025).

The Ontario Works program are offices located in both Frenchman’s Head and Kejick Bay. It delivers short-term financial support to individuals and emphasizes the development of employment-related skills. Services include job search assistance, training coordination (such as computer literacy, Workplace Hazardous Materials Information System (WHMIS), First Aid, and safe food handling), childcare, transportation, and equipment support by helping eligible clients get the tools, gear or supplies they need to start or maintain a job. A component new to Lac Seul Ontario Works is the Eligibility Review Officer / Family Support Worker who assists single-parent and temporary care clients in navigating community services, custody and child-support matters, treatment referrals, and legal aid. The program has expanded to administer services in Slate Falls. Through partnerships and subsidy programs, Ontario Works has enabled full-time employment placements for members in roles such as education retention workers, store clerks, and seasonal positions at regional facilities like Mahkwa Lodge and Lac Seul Resort (Lac Seul First Nation 2023g).

The Lac Seul Training Centre of Excellence, based in Hudson, offers certified training programs and workshops designed to equip community members for careers in sectors like construction, forestry, hospitality, mining, and other resource extraction industries (Lac Seul First Nation 2023i). This institution plays a significant role in aligning local workforce development with regional economic opportunities and serves as a bridge between training and employment provision (Lac Seul First Nation 2023i).

The Home and Community Care program provides home health care services for ill, injured, and elderly community members. Services include the development of personalized care plans, case management, home care nursing, personal care, foot care, education, transportation, and respite for family members and caregivers. The program assists clients in navigating regional health services and offers a day program to reduce depression and dementia risks.

The program employs two certified Personal Support Workers, one activity coordinator, one transportation driver/escort, and one nurse / program coordinator. With four of these five staff members expected to retire within the next one to five years, staffing challenges, particularly for certified personal support worker (PSWs) and transportation drivers, is ongoing, due to barriers such as wage inequities, burnout, limited childcare, and limited transportation. All services are operating at full capacity, supporting Elders, individuals with disabilities, and vulnerable community members within the community and regionally (Chisel 2025).

LSFN does not operate an emergency shelter within its communities. Social supports are provided primarily through the Ontario Works program. Members requiring access to an emergency shelter would typically be required to go to the Sioux Lookout Emergency Shelter which has a capacity of up to 24 adults (aged 16+) in a group facility for individuals requiring overnight emergency shelter or food (Northwest Health Line 2024). The extent to which this facility can consistently meet demand is unknown at the time of writing, as no detailed capacity or utilization data was available.

10.5.2.2.2.3 Health Services, Elder Care, Mental Health and Addiction Services

The LSFN Health Department administers and coordinates a broad range of health services across its three communities. Core functions include the operation of community health clinics, which are staffed by two community nurses and three community health representatives. These clinics provide primary care, emergency response, and health promotion initiatives. They also coordinate consultations with visiting professionals such as nurse practitioners, physicians, dentists, dental hygienists, and optometrists (Lac Seul First Nation 2023d). Preventative health education programs are offered on topics including childcare, diabetes, chronic disease management, immunization, sexual health, and communicable disease prevention. Telemedicine appointments are available through the Ontario Telemedicine Network, with two stations located at the Kejick Bay Clinic to facilitate virtual consultation with specialists (NorthWest Health Line 2025).

Home and community care services are delivered by a nurse and two personal support workers who provide in-home care to ill, injured, and elderly residents. These services include dressing changes, companion care, vital sign monitoring, and routine health assessments, with more than twenty clients receiving daily visits (Lac Seul First Nation 2023d). Medical transportation is available for community members who require access to services outside LSFN community. A fleet of three vans and four drivers complete an average of four to six trips per day to Sioux Lookout for medical appointments, diagnostic testing, and prescription pick-ups.
A wheelchair-accessible van has been planned to improve mobility support for individuals with disabilities. Dental care is provided on a quarterly basis and visiting optometrists have recently been incorporated eye care into the services delivered (Lac Seul First Nation 2023d; Lac Seul First Nation 2025). Early childhood and parenting programs are also offered in the community. The Aboriginal Head Start program operates in both Frenchman’s Head and Kejick Bay, providing developmental programming and meal services for children (Lac Seul First Nation 2023d).

The Healthy Babies Healthy Children program delivers prenatal and postnatal home visits, pregnancy and newborn care education, and provides parenting resources such as the "Baby's Best Chance" handbook. Program staff conduct follow-up visits within 48 hours of hospital discharge to support maternal recovery and infant health (211 Ontario North 2025).

Mental health and addictions services are available through the National Native Alcohol and Drug Abuse Program, which provides culturally relevant prevention activities, school-based education, Alcoholics Anonymous and Narcotics Anonymous meetings, group support, home visits, counselling, and referrals to detoxification and residential treatment facilities (NorthWest Health Line 2025). A suboxone Treatment Program operates out of the Kejick Bay Health Clinic to support individuals with opioid use disorders, and a healing lodge is being developed to provide aftercare and land-based recovery options (Lac Seul First Nation 2023h).

At present, there are no in-community maternity or birthing services. Pregnant women are typically evacuated around thirty-six weeks of gestation, or earlier if deemed high-risk, to hospitals in Sioux Lookout, Thunder Bay, or Winnipeg to deliver. Evacuations may require extended stays in these locations until delivery and discharge. The Non-Insured Health Benefits program may cover the cost of an escort for eligible clients (Better Outcomes Registry & Network 2023).

Community members also experience broader public health challenges in general. For example, research indicates that one in three Canadian women+ will experience sexual assault in their lifetime, with Indigenous women+ experiencing a higher rate of sexual assault compared to non-Indigenous women+ (Sexual Assault Support Centre n.d.). Ah-shawah-bin Sioux Lookout / Lac Seul Victim Support Services offers the Victim Quick Response Program+ that provides sexual assault support and assistance for victims of human trafficking (211 Ontario North 2025). Additionally, the Ontario Native Women's Association offers the following programs and services for Indigenous women+ in Kenora that address these challenges: Breaking Free from Family Violence, Ending Violence Against Indigenous Women, Indigenous Anti-Human Trafficking, and Indigenous Victim and Family Liaison(Ontario Native Women's Association n.d.). For additional information on sexual assault occurrence and crime, see Section 10.8.2.2.4.

10.5.2.2.2.4 Burial Services

LSFN provides cemetery services in Frenchman's Head, Kejick Bay, and Whitefish Bay. Planned works include developing a new cemetery at Kejick Bay and enhancing existing cemeteries in Frenchman's Head and Whitefish Bay (Lac Seul First Nation 2022).
Ontario Works offers eligible LSFN community members assistance with funeral and burial expenses (211 Ontario North 2025).

10.5.2.2.2.5 Educational Services and Facilities

There are three schools within the LSFN (Lac Seul First Nation 2023b):

- The Morris Thomas Memorial Christian School is located within the community of Whitefish Bay and offers schooling from junior kindergarten to grade 10. At the time of conducting research for this assessment, the school had 27 students enrolled and offers courses in Christian teachings and Native language, in addition to cultural and traditional activities (211 Ontario North 2023b).

- The Obishikokaang Elementary School is located within the community of Frenchman's Head and offers schooling from junior kindergarten to grade 8. At the time of conducting research for this assessment, there were 104 students enrolled at the school, which offers Native language as a subject course, cultural and traditional outings, and an after-school program. The facility contains a computer lab, gymnasium, library, and industrial kitchen (211 Ontario North 2023c). At the time of writing this report, LSFN is adding on two more daycare rooms to the Obishikokaang Elementary School (Kocis 2025).
- The Wanintawingaang Memorial School is located within the community of Kejick Bay and offers schooling from junior kindergarten to grade 8. At the time of conducting research for this assessment, the school had 74 students enrolled at the facility which contains a gymnasium and a library. The school offers Native language as a subject course, in addition to cultural and traditional outings (211 Ontario North 2023d).

These schools employ Language Keepers to reinforce the language through conversations, classroom interactions, and translation of instructions to help retain the sound and usage of the language.

According to school staff interviewed, land-based education is provided through a dedicated outdoor education team. This two-member team of outdoor education teachers rotate across the three schools to lead on-the-land learning focused on nature, water, and environmental knowledge (Davis, 2025). These activities are integrated with the Ontario curriculum and reported on Ontario-issued report cards, despite the schools operating independently of the provincial system.

High School Support Program

Students from LSFN must travel outside of the communities to attend secondary school, with the closest option being Sioux North High School in Sioux Lookout, approximately 26km away. LSFN operates a High School Support Program that provides daily transportation to and from Sioux Lookout, assistance with after-school activities, in-school support such as attendance and academic tracking, access to mental health services, and a liaison between parents and school staff. The program also organizes monthly activities and offers support for students completing independent or distance education through institutions such as Wahsa Distance Education Centre and 7 Generations Education Institute (Lac Seul First Nation 2023b). While some students choose to attend Indigenous operated institutions like Pelican Falls in Sioux Lookout, mental health and family challenges can disrupt educational continuity (Davis 2025). In addition to distance-related constraints, students may experience broader social and cultural factors that influence educational access, continuity, and student well-being as outlined in Section 10.8.2.2.2.1
To address these needs, LSFN is actively developing infrastructure for an independent high school room to support students pursuing alternative learning models. A dedicated teacher is in place, but the physical space remains under development (Davis 2025).

Staffing and Recruitment

LSFN schools currently maintain stable staffing levels, including special education teachers at Frenchman's Head and Kejick Bay. While LSFN has experienced some difficulty hiring a principal for Whitefish Bay, recruitment overall has not been a substantial challenge. Competitive pay, inclusion in the Ontario Teacher Pension plan, proximity to Sioux Lookout, and road accessibility have served as effective attractants for prospective staff.

Recruitment strategies include attending career fairs, targeting first-year teachers, collaborating with Teach for Canada which is a national Indigenous-focused teacher recruitment program, and implementing internal pay equity measures alongside a custom salary grid (Davis 2025).

Accessibility and Inclusion

All schools aim to be inclusive and trauma-informed learning environments. While the schools are technically accessible, concerns remain about infrastructure (e.g., a steep hallway at Kejick Bay may pose a barrier for students using wheelchairs) (Davis 2025).

Some students face challenges related to 2SLGBTQIA plus inclusion. While LSFN schools are designated as safe spaces, social acceptance remains a work in progress. For example, some community members opposed raising the pride flag at school, leading to its placement at the community entrance instead (Davis 2025).

Infrastructure and Expansion Plans

Obishikokaang Elementary School in Frenchman's Head is scheduled to receive two additional classrooms, along with a new library and computer lab. A daycare centre is also planned for integration into the school. In Whitefish Bay, Morris Thomas Memorial Christian School is currently operating in a converted house with several additions. A feasibility study for a new school has been completed and is pending funding approval.

In Kejick Bay, Waninitawingaang Memorial School received a new playground two years ago. Meanwhile, the playground at Obishikokaang Elementary School will need adjustments as construction progresses (Davis 2025).

10.5.2.2.2.6 Emergency Services

Fire

The Lac Seul Fire and Emergency Services Department is made up of volunteers with a current active roster of 17, three pumper trucks, a tanker, and a first response / command vehicle. Services are currently located in Whitefish Bay, Frenchman's Head, and Kejick Bay (Lac Seul First Nation 2023j).)

Police

The Lac Seul Police Service (LSPS) has been serving the communities of Frenchman's Head, Kejick Bay, and Whitefish Bay for 25 years. According to LSPS staff interviewed in 2025, the detachment is comprised of 17 officers, 2 recruits in training and five support staff. Officers are primarily Indigenous, with approximately 60–70% of staff identifying as such (Rossi 2025).

The department has made efforts to improve gender representation, now employing three female officers and one additional female officer in training. Officers work 23-hour rotating shifts to support continuous coverage, typically with two to three officers per shift, plus trainees when available (Rossi 2025). Average emergency response time is approximately 15–20 minutes to reach communities (Rossi 2025).

The service operates near capacity (19 of 21 officer positions filled), but the existing police building is considered undersized, prompting ongoing discussions about infrastructure expansion and alignment with new Ontario policing legislation.

Although Indigenous communities are exempt from the new Act, LSPS is considering opt-in, which would improve funding opportunities but require additional compliance measures and facility upgrades.

Specialized services, such as a K9 unit and detective work related to Missing and Murdered Indigenous Women and Girls (MMIWG), are supported through project-based funding rather than the core budget. Due to limited resources, specialized officers are sometimes reassigned to general patrol duties.

Challenges identified by staff include:

- Retaining officers trained at the Ontario Police College, as many transfer to better-resourced urban services.
- Recruiting local officers due to high background check barriers (e.g., criminal records).
- Limited infrastructure: the former detachment office in Kejick Bay was closed, requiring officers to return to Frenchman's Head even during high call volumes in Kejick Bay.
- Long-standing need for additional transportation capacity, particularly for prisoner transfer (e.g. females are flown to Sault Ste. Marie).

LSPS also collaborates with Restorative Justice (RJ) programs. While community-level implementation is still developing, officers currently refer post-charge cases to RJ streams and work with a local justice committee. A social navigator has recently been hired to support youth outreach and education, including programming in Sioux Lookout schools.

Staff also raised concerns about mental health and addiction-related calls, which have increased in frequency. Officers often respond to complex incidents involving intergenerational trauma, substance use (notably methamphetamines), and lack of timely treatment access. Staff noted a desire for a local treatment centre in Kejick Bay, and improvements to victim services, currently limited to a visiting representative from Dryden.

Finally, LSPS is participating in regional collaboration via Indigenous Police Chiefs of Ontario, facilitating joint initiatives, youth programs, and advocacy for equitable funding and recognition (Rossi 2025).

Ambulance

LSFN is served by the Northwest Emergency Medical Services (EMS) division of Kenora District Services Board (KDSB), and has approximately 120 primary care paramedics, 10 administrative personnel and a fleet of 25 ambulances, five community paramedic emergency response vehicles, one multi-casualty incident support vehicle, and six emergency response/administrative vehicles. The nearest ambulance base to the LSFN community is located in Sioux Lookout, one of the nine stations in the Kenora region. This base consists of three ambulances, one emergency response unit, one emergency response vehicle and 23 paramedics (14 Full-Time, six Part-Time, three Casuals) (Kenora District Services Board 2025).

In the surrounding remote communities, ambulance response times can reach up to 1.5 hours. According to service provider interviews, when delays occur, the Ontario Provincial Police (OPP) may assist with patient transport as a regional backup measure. While this may not apply uniquely to LSFN, it reflects broader emergency protocols across remote northwestern Ontario communities (Hall & Lamme 2025).

Sioux Lookout is also home to one of Ornge's air ambulance bases, which provides emergency medical air transport for patients in critical condition or in locations where ground access is limited or delayed. This service enhances regional response capacity for time-sensitive or long-distance transfers (Ornge 2025).

10.5.2.2.3 Infrastructure

The infrastructure services available in LSFN are presented in Table 10.5-1.

Table 10.5-1: Summary of Infrastructure Services - Lac Seul First Nation, 2025

Service	Availability (Yes / No / Unknown)	Information
Transportation - Road	Yes	• Frenchman's Head, Kejick Bay, and Whitefish Bay are accessible by all-weather roads from the hamlet of Hudson at the end of Highway 664. • In 2021, Ontario was ranked number one in road safety in North America with the lowest fatality rate of 0.52 per 10,000 licensed drivers. Total collisions reported in Kenora District account for only 0.4% of all collisions in Ontario (Ontario Ministry of Transportation 2021).
Transportation - Winter Road	Yes	• Ice Road between Frenchman's Head and Hudson (Lac Seul First Nation 2024)
Transportation - Air	No	• There are no airports located within LSFN, the closest airport is in Sioux Lookout which serves scheduled passenger services year-round (Sioux Lookout Airport CYXL 2013). The community is accessible by road; there are float planes for Lac Seul's fly-in-fly-out lodges and guide outfitting operations. • Ornge Air Ambulance maintains a base in Sioux Lookout and coordinates emergency air transport for the region. While a heliport is listed in Sioux Lookout and a registered heliport exists at Red Lake's Margaret Cochenour Memorial Hospital, public sources do not confirm which facilities are currently used for emergency medical transfers serving Lac Seul First Nation (Spotting Mode 2025; Ornge 2025; JetMate 2025).
Transportation - Rail	No	• N/A
Transportation - Water Access	No	• N/A
Utilities (such as wastewater))	Yes	• Sewage treatment plant was recently constructed as well as upgrading the sewage and collection system in Frenchman's Head (S. Burnett & Associates Limited 2022c; Government of Canada - Canadian Assessment Agency of Canada 2022; LH North 2025).

Service	Availability (Yes / No / Unknown)	Information
Solid Waste Management	Yes	• The LSFN Public Works Department organizes residential garbage collection in all three communities on Mondays and Fridays, which is disposed of in an on-reserve landfill (211 Ontario North – Lakehead Social Planning Council 2023f).
Water Treatment	Yes	• The Obishikokaang Water Treatment Plant was constructed in Kejick Bay in 2019 by S. Burnett and Associates Limited. This new water treatment plant lifted an 18 yearlong boil water advisory for the community (S. Burnett & Associates Limited 2020b). • The facility services approximately 353 residents and has capacity for future expansion. • Water treatment systems are also in place in Frenchman's Head and Whitefish Bay, where ongoing upgrades and planning efforts have been identified by Lac Seul First Nation Public Works (Lac Seul First Nation 2025)
Communications	Yes	• Telephone and cellular services are provided by Keewaytinook Okimakanak Mobile (KNET), as well as through other major providers (Keewaytinook Okimakanak Mobile 2013). • High speed wireless internet is available in the communities of Kejick Bay, Frenchman's Head, and Whitefish Bay, provided through LSFN Internet in partnership with KNET (Lac Seul First Nation 2023f). • The Lac Seul First Nation Broadband Upgrade Project is currently under consideration, and would consist of the construction of two new communication towers in Frenchmen's Head, repairs to an existing tower in Whitefish Bay, burying 6.5 km of new fibre cable along existing roadway and water line routes, , and laying 2 km of new underwater fibre cable between Kejick Bay and Whitefish Bay (Government of Canada - Impact Assessment Agency of Canada 2022).
Energy Supply (Distribution of transmission line)	Yes	• Electricity to all three LSFN communities is supplied by Hydro One Networks (CallMePower n.d.).

10.5.3 Potential Effects

The potential interactions between proposed Project-related activities and on-reserve community services and infrastructure for LSFN are used to identify potential effects (positive and negative), and whether these effects are direct or indirect.

A detailed overview of the Project's potential interactions with community services and infrastructure for LSFN is presented in Table 10.5-2. Project interactions are characterized as either having no interaction (–) or a potential interaction (✓). Project activities that result in no interaction are not considered further in the assessment.

Project activities identified as having a potential interaction are carried forward to the potential effects assessment to determine positive (desirable and beneficial) and negative (undesirable or adverse) effects on the community services and infrastructure criteria.

The assessment considered potential interactions between Project activities and community services relevant to LSFN. The analysis focuses on on-reserve conditions, including potential changes to housing and accommodations, municipal, provincial, and non-profit service delivery capacity, and transportation infrastructure.

Given the distance (approximately 200km by road) between the LSFN community and the location of the PA, no direct interactions to on-reserve housing, community services, or infrastructure are anticipated. However, any potential effects on regional community services and infrastructure that LSFN community members may access is assessed in Section 14, Predicted Changes to Indigenous Peoples living in the Red Lake and Ear Falls area.

No measurable adverse effects to on-reserve community services or infrastructure are anticipated for LSFN during any Project phase.

During construction, the Project is not expected to generate population growth or service demands within the LSFN community, as housing and services are reserved for LSFN community members and their families.

Throughout operations, indirect effects on regional services accessed by some LSFN community members may occur if demand temporarily exceeds capacity. However, these are expected to be minor and within existing service thresholds.

The Project may also contribute to enhanced regional revenues that could indirectly support improvements to programs and infrastructure accessible to LSFN community members.

Closure activities are similarly not expected to result in measurable effects, as workforce demobilization and reclamation activities will occur over a limited duration and scale.

Table 10.5-2: Potential Interactions Between Project Activities and Community Services and Infrastructure – Lac Seul First Nation

Project Component / Activity	Change in Housing and Accommodations	Change in Municipal, Provincial, and Non-Profit Service Delivery Capacity	Change in Transportation Infrastructure
Construction Phase			
Site preparation activities	-	-	-
Establishment and operation of water management and treatment facilities	-	-	-
Open pit mining	-	-	-
Underground mining	-	-	-
Management of rock and unconsolidated materials in stockpiles	-	-	-
Establishment of onsite fish habitat and compensation measures	-	-	-

Project Component / Activity	Change in Housing and Accommodations	Change in Municipal, Provincial, and Non-Profit Service Delivery Capacity	Change in Transportation Infrastructure
Establishment of onsite aggregate operations	-	-	-
Construction of the starter embankments for the tailings management facility	-	-	-
Construction and operation of buildings and infrastructure	-	-	-
Waste management	-	-	-
Commissioning of the process plant	-	-	-
Power supply	-	-	-
Employment and expenditures	✓	✓	✓
Operations Phase			
Underground mining	-	-	-
Mining of the LP Central pit	-	-	-
Management of rock and unconsolidated materials in stockpiles	-	-	-
Process plant operation	-	-	-
Management of desulphurized tailings in the tailings management facility	-	-	-
Management of concentrate tailings and contact water in the Viggo management facility	-	-	-
Operation of water management and treatment facilities	-	-	-
Construction of a mine water pond	-	-	-
Operation and maintenance of buildings and infrastructure	-	-	-
Waste management	-	-	-
Power supply	-	-	-
Progressive reclamation activities	-	-	-
Employment and expenditures	✓	✓	✓
Closure Phase			
Active closure	-	-	-
Passive closure	-	-	-
Final reclamation	-	-	-
Employment and expenditures	✓	✓	✓

Legend: ✓ = Interaction exists
- No interaction exists

10.5.4 Mitigation and Enhancement

No specific on-reserve mitigation or enhancement measures are proposed for community services and infrastructure during the construction, operations, or closure phases of the Project, as no potential effects have been identified for any phase. At the regional level, however, several mitigation and enhancement measures relevant to infrastructure and service delivery have been identified and are described in Section 14. These include commitments to ongoing coordination with municipal and regional authorities on housing, transportation safety, and community services to support Indigenous and non-Indigenous communities. Environment Committee(s) and community-based monitoring opportunities will be provided as a forum for ongoing information sharing, monitoring and adaptive management throughout the Project.

10.5.5 GBA Plus Considerations

10.5.5.1 Indigenous Nations Population

The communities of Lac Suel First Nation are several hours away from the PA. Community members seeking specialized services off-reserve access them in Kenora or Dryden, which is not anticipated to be impacted by the Project.

Therefore, no GBA Plus considerations are anticipated for LSFN regarding access to community on-reserve services and infrastructure.

10.5.6 Residual Effects after Mitigation

No residual effects are anticipated. Existing conditions are expected to remain unchanged, and Project activities will not place additional demand on, or otherwise affect, community services and infrastructure within the LSFN on-reserve communities.

10.5.7 Significance of Residual Effects

Since the assessment indicates no residual effects to community services and infrastructure for LSFN, a determination of significance is not required.

10.5.8 Confidence

The prediction confidence assignment reflects the information available through Project-specific TKLUS reports, publicly available data (statistical websites, government pages, previously completed EA/IS reports), understanding of the effectiveness of applicable mitigation measures, and outcomes of other pVCs and fVCs. The assessment is informed by substantial primary and secondary information and robust analysis.

With the proposed management and mitigation measures, including careful implementation of normal planning procedures by the relevant authorities, and liaison between GBR and those local authorities, the residual environmental effect of a change in capacity of community services and infrastructure has been determined with a high level of confidence.

10.6 Current Use of Lands and Resources for Traditional Purposes

Current use of lands and resources for traditional purposes (CULRTP) includes activities related to the harvesting of species and resources, such as trapping, hunting, fishing, gathering plants, and use of areas where the transfer of knowledge regarding cultural practices occurs, such as traditional habitation sites, ceremonial sites, travel routes or sacred sites.

The CULRTP criteria reflects traditional or Indigenous Knowledge that is adaptive, intergenerational, and responsive to social, economic and environmental changes. Information regarding LSFN rights and history, and the assessment of impacts on the right to exercise or practice traditional activities is provided in Section 10.10.

The CULRTP criteria evaluates how the Project may affect the ability of LSFN community members current use of lands and resources for traditional purposes, such as changes to access, use, and quality of experience while engaging in these activities.

As outlined in Assessment Approach (Section 10.3), the assessment includes consideration of the following potential effects:

- Change in the availability, access to, and quality of experience related to traditional terrestrial wildlife harvesting (hunting and trapping)
- Change in the availability, access to, and quality of experience related to traditional aquatic harvesting (fishing and aquatic resources)
- Change in availability, access to, and quality of experience related to traditional plant harvesting (food and medicinal purposes)
- Change in availability, access to, and quality of experience related to traditional habitation, cultural, and spiritual sites and areas.

While both Section 10.6 and 10.7 assess traditional habitation, cultural, and spiritual use sites and areas, Section 10.6 (CULRTP) assesses the current use of these sites, inclusive of currently used campsites, cabins, and culturally important sites and areas. Section 10.7 assesses these sites and areas in relation to their heritage values (e.g., potential changes to their physical and cultural heritage values).

10.6.1 Spatial Boundaries

There are three study areas within the spatial boundaries. They are the Project Area (PA), the Local Study Area (LSA), and the Regional Study Area (RSA). The RSA includes both the PA and the LSA. The spatial boundaries used for the assessment of CULRTP are shown in Figure 10.6-1 and are defined:

- The PA is defined as the footprint of the Project including all temporary and permanent areas associated with the mine site, as well as a buffer to allow flexibility for design optimizations prior to construction and over the mine life (Section 6.4). The PA is approximately 3,349 hectares (ha) in size.
- The LSA is the area within which Project-related effects may reasonably be expected to occur and can be predicted or measured with a reasonable degree of accuracy and confidence. For CULRTP, the LSA is defined based on the same LSA for Moose and Other Wildlife pVCs.

This defines an area over which ongoing traditional use forms the basis for continuing practices integral to CULRTP, as well as associated intergenerational transfer of associated knowledge, values, beliefs and traditions. Specifically, the Moose and Other Wildlife pVCs captures the largest extent across which traditional use may be affected.

- The RSA encompasses the LSA and is used to provide regional context for the significance of residual effects and is also the area within which potential for cumulative effects of the Project in combination with other past, present or reasonably foreseeable projects or activities are considered. For current use of lands and resources for traditional purposes, the RSA is also defined based on the RSA for Moose and Other Wildlife pVCs for the same reasons as identified for the LSA. The Moose and Other Wildlife pVCs have relevance for past, present, and future traditional activities and captures the largest extent across which traditional use may be affected.

These boundaries are consistent with those used for Indigenous Physical and Cultural Heritage, and Structures, Sites, or Things of Significance.

N

LEGEND:

- PROJECT AREA
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- HIGHWAY
- MAJOR ROAD
- LOCAL ROAD
- RAILWAY
- WATERCOURSE
- WATERBODY
- INDIGENOUS COMMUNITY
- PROVINCIAL PARK
- MUNICIPAL BOUNDARY (LOWER TIER)

NOTES:
NOTE1: BASE DATA ACQUIRED FROM LAND INFORMATION ONTARIO.

0 5 10 20 30 km

SCALE 1:650,000
PAGE SIZE 11 x 17
NAD 1983 UTM Zone 15N

THIS MAP IS FOR CONCEPTUAL PURPOSES ONLY AND SHOULD NOT BE USED FOR NAVIGATION

GREAT BEAR RESOURCES

GREAT BEAR GOLD PROJECT

SPATIAL BOUNDARIES FOR CURRENT USE OF LANDS AND RESOURCES FOR TRADITIONAL PURPOSES

SLR

FIGURE NO:
10.6-1

DATE: November 11, 2025 PROJECT NO: 241.030825

10.6.2 Existing Conditions

An overview of current use of lands and resources for traditional purposes by LSFN includes demographic context, land governance, and spatial patterns of cultural use (where available). It outlines known practices of harvesting and ceremonial land use, which are central to Anishinaabe identity, health, and cultural continuity.

This Section focuses on LSFN. Information on existing conditions of other participating Indigenous Nations are provided in Sections 11 (WFN), 12 (ANA), 13 (NWOMC), and 14 (Indigenous Peoples living in the Red Lake and Ear Falls area).

10.6.2.1 Methods

A description of the baseline conditions is presented to characterize the known and existing conditions for current use of land and resources for traditional purposes (CULRTP) by LSFN community members. This is based on:

- Community knowledge: received through engagement activities such as meetings, oral input and written input, traditional land use information, and Indigenous Knowledge for the area around the Project , and additional input described in Section 10.4, Influence of Consultation and Engagement;
- Publicly available secondary sources: relevant documents and publicly available studies which contain biophysical, cultural heritage, archaeological aspects, Indigenous Knowledge, and traditional land use information for the area around the Project; and
- Socio-Economic Baseline Study for the Great Bear Project (2024) (Appendix O-1).

In addition to these publicly available sources of information and ongoing engagement, the existing conditions have been informed by confidential reports prepared by or for LSFN.

These combined information sources provide an understanding of the current CULRTP information. The existing conditions are used to support the assessment of potential effects from the Project on CULRTP and will support long-term monitoring for the Project with interested LSFN community members.

10.6.2.1.1 Importance of Land and Resource Use for Traditional Purposes

The nature and importance of current land and resource use for traditional purposes is based on the unique, and deeply rooted relationships that Indigenous Peoples have with the land, water, animals, and ecosystems. These relationships holistic, incorporating physical, economic, spiritual, cultural, and communal components. These cultural relationships with the natural world foster a sense of responsibility and stewardship, where caring for the land is a sacred duty passed down through generations. Access to land and resources is essential for Indigenous Peoples maintenance of their cultural practices, intergenerational knowledge sharing, food sovereignty, and community well-being.

Indigenous Knowledge systems are based on observation, experience, and adaptation of diverse Indigenous communities through time. They offer valuable insight into land and resource use patterns. It is through traditional and current land and resource use studies that an understanding of the existing nature and importance can be described and changes due to the Project can be determined.

Important areas and sites of current use for LSFN community members may reflect both past Indigenous community areas (e.g., village sites, historic harvesting, spawning, or hunting sites), and the ongoing significance of present-day campsites, tourist camps, water travel routes, or harvesting and social areas. Harvesting sites and areas for fishing, plant gathering, and hunting or trapping also reflect how many generations have accumulated knowledge through their deep relationships with the land and water and are still used by LSFN community members to maintain these connections to land and place.

10.6.2.1.2 Quality of Experience of Current Land and Resource Use for Traditional Purposes

Quality of experience for current use of land and resources for traditional purposes refers to the preferred and / or required conditions (e.g., not disturbed by changes in sensory conditions) needed to use or maintain traditional and current use practices (e.g., technologies, methods, and habits). This includes changes to environmental, biophysical, or spiritual and cultural qualities of areas, sites, and resources that would make them inappropriate for Indigenous use or value. These may change the ability of these lands, waters, and resources to support LSFN cultural practices and traditions. Disturbances to lands, waters, and resources include changes to sensory conditions (e.g., air and dust emissions, sound, light) which may affect tangible and intangible aspects of culture. Tangible aspects of culture include traditional current use areas, cultural sites, and landscapes. Intangible aspects of culture include gatherings, rituals, and embedded Indigenous Knowledge.

10.6.2.2 Description

The description of CULRTP by LSFN community members includes demographic context, land governance, and spatial patterns of use by LSFN. It also outlines known practices of harvesting and ceremonial land use, which are central to Indigenous identity, health, and cultural continuity.

It is understood that LSFN relies on Treaty 3 territory that extends beyond the lands directly around LSFN reserve, and notes that culturally important areas, such as Trout Lake, were left out of the reserve boundaries. For this reason, the description of existing conditions for CULRTP focuses on known high-use and high-value areas within Treaty 3 territory that overlap with the LSA and RSA, including between Lac Seul Watershed, the English-Wabigoon Watershed, and the Chukuni River and its greater watershed (including Pakwash Lake, Gullrock Lake, Wabauskang Lake, Red Lake, and Trout Lake).

10.6.2.2.1 Governance and Legal Characteristics

The description of governance includes legal characteristics and historic and modern governance of LSFN. Further information regarding the history of Treaty 3 (Figure 10.1-1) and exercise of treaty rights is presented in Section 12.10, Impact on the Exercise or Practice of Rights.

Lac Seul First Nation (LSFN) joined Treaty 3 in 1874 through adhesion. The creation of the Lac Seul reserve reduced LSFN's traditional territory, excluding areas like Trout Lake, which still hosts LSFN-affiliated residents. The current reserve spans approximately 26,821 hectares. Treaty 3 covers approximately 142,450 km² from west of Thunder Bay to Manitoba. It is governed by the Grand Council Treaty 3, representing 28 Indigenous Nations and approximately 25,000 people.

Several councils guide and inform the work of Grand Council Treaty #3, including an Elder's Council, Oshkiniigiig (a Youth Executive Council), Mizi'iwe Aana Kwat (2SLGBTQIA+), Gaagiidoo-Ikwewag (Women), and Mamawichi-Gabowitaa-Ininiwag (Men) councils (The Government of the Anishinaabe Nation in Treaty #3, n.d.). This is to support balance and equity across different sub-communities of Anishinaabeg.

LSFN operates under the *Indian Act* electoral system, with a Chief and eight Councillors elected every two years (last held in November 2024) (Lac Seul First Nation 2023). Alongside this, LSFN maintains traditional Anishinaabe governance rooted in ancestral laws, land stewardship, and spiritual relationships with territory.

Central to LSFN's governance is Anishinaabe Inakonigaawin (law) (The Government of the Anishinaabe Nation in Treaty #3, n.d.), which includes:

- Respect for land and water
- Offering thanks to spirit and Creator
- Recognition of Treaty #3 rights
- Stewardship responsibilities.

Key written laws include (Grand Council Treaty #3 Women's Council 2019):

- Manito Aki Inakonigaawin (Great Earth Law)
- Nibi Declaration (Water Law)
- Abinooji Inakonigewin (Childcare Law).

A confidential report prepared for LSFN noted that LSFN community members identified several important teachings that guide their stewardship of land, water, and traditional territories including:

- Seven Grandfather Teachings: Truth, Humility, Respect, Love, Honesty, Courage, Wisdom (Seven Generations Education Institute, 2021)
- Seven Generations Thinking: Long-term decision-making
- Ceremonial practices: water ceremonies, pipe ceremonies, sacred fires, and shaking tent ceremonies
- Principles of reciprocity and circle work.

Governance initiatives that inform land-use planning include:

- Flood Claim: Following Southwind v Canada (2021), Negotiated compensation related to hydroelectric flooding of reserve lands (Lac Seul First Nation, 2023m).
- Good Governance Project: Launched in 2022 to align law and policy with biannual elections and support self-government (Lac Seul First Nation 2023n).
- Comprehensive Community Plan (CCP): Guides sustainable land use planning, integrating Traditional Knowledge and Land Use Studies (Lac Seul First Nation 2022).
- Framework Agreement on First Nation Land Management: LSFN joined in 2019 to develop its own Land Code, transferring land management authority from the federal government to the community (Lac Seul First Nation 2023o).

10.6.2.2.2 Traditional Harvesting of Wildlife Species, Including Hunting and Trapping

LSFN community members practice traditional wildlife harvesting, hunting, and trapping activities across their traditional territories, using the boreal forest to move between harvesting and hunting or trapping grounds, and participating in their seasonal rounds. In confidential reports prepared for LSFN, hunting and trapping ranges are noted to extend around the vast area surrounding Lac Seul, including areas north of the lake proper.

Section 7.13 (Land and Resource Use) identifies four traplines identified either in the PA or the LSA (Table 10.6-1). The trapline areas within the PA include RL068 and RL059, which are both registered to LSFN trappers; a non-Indigenous trapper is also active at RL068. In the LSA, trapline RL061 is registered to an ANA member. Additionally, registered trapline RL073 sits in the LSA, and is registered to a non-Indigenous individual.

Table 10.6-1: Trapline Areas in the LSA

Trapline Area	Trapline Total Area (km^2)	Overlap of Trapline Area with PA (km^2)	Overlap of Trapline Area with LSA (km^2)
RL061	215.3	0	108.6
RL073	360.8	0	44.7
RL068	789.2	26.2	363.5
RL059	650.8	7.3	173

LSFN identified several current use areas for hunting, trapping, and harvesting of traditional wildlife resources by LSFN. This includes the two trapline areas held by LSFN community members (RL068 and RL059) that overlap with the PA, which are currently used for trapping wildlife and bird species. The report also references trapline area RL87ND68, a regional trapline area that encompasses trapline RL0068. LSFN identified that within this trapline area overlapping the PA, the most common fur bearers harvested are marten, short-tailed weasel, muskrat and beaver. Otter, squirrel, mink, timber wolf, coyote, fox and lynx were also harvested.

In addition, other areas were noted within the LSA used for trapping and harvesting including the Snake Falls area (approximately 9 km away from the PA boundary), and areas around Pakwash Lake and the Chukuni River.

As outlined in Section 7.13 (Land and Resource Use), there are three trapper cabins identified in the LSA, but none are located within the PA. Most trapping activity throughout Treaty #3 territory occurs during the fall and winter seasons by Indigenous Peoples, with muskrat trapping occurring in the spring (Zappe & Dowsley 2025). Trapping locations are common around lakes and take advantage of the trails and wildlife movement patterns within the surrounding forest. In addition to the registered traplines, LSFN noted active traplines in the RSA at Bear Narrows to Root River on the northeast end of Lac Seul, and south of Lac Seul to Wabigoon.

LSFN identified current wildlife harvesting areas in the RSA around Trout Lake, Ear Falls, Narrow Lake, Swain Lake, and Shabumeni Lake. Most of the current hunting and trapping areas for LSFN occur outside the RSA, including areas around Frenchmen’s Head, Kejick Bay, and Sioux Lookout. LSFN also uses some areas for commercial hunting, including activities relating to where furs are sold, as well as subsistence through personal trapping. These areas include Sachigo Lake, Brodeur Lake, and Stirland Lake.

Culturally important terrestrial species hunted and trapped by LSFN in the PA and LSA include: beaver, goose, muskrat, moose, partridge, wolf, grouse, whitetail deer, rabbit, and duck.

LSFN also identified important waterfowl hunting areas used during the fall migration. These areas are manoomin beds that provide habitat and food to waterfowl located on Pakwash Lake, Chukuni River, Bruce Lake, and areas downstream from Ear Falls.

Hunting is a key part of LSFN community and culture, as it provides food, connection with family, and a way of passing down traditions to younger family members. Hunting and trapping activities are also opportunities for LSFN community members to share teachings about hunting techniques and responsible harvesting practices with their youth.

LSFN has noted sightings or species at risk within their traditional territories. This includes:

- Caribou (west of the PA toward Woodland Caribou Provincial Park, along park or logging roads, and around Snake Falls Roads, the northeast side of the Chukuni River, on the beach on Pakwash Lake, and Trout Lake)
- Wolverine (recording stealing catches in traps).

10.6.2.2.3 Traditional Harvesting of Aquatic Resources, Including Fishing

Fishing occurs year-round throughout Treaty 3 territory for LSFN as an important source of food and economic livelihood. Fishing also plays a central role in cultural connections to the land, as identified in confidential reports prepared for LSFN. These reports also noted that fish is the most important traditional protein source for LSFN community members, with most fishing occurring during the summer, and some ice fishing during the winters. Fish and other aquatic resources are described by LSFN as being shared with community and Elders as part of cultural traditions.

Fishing is common year-round for LSFN community members in several areas in the LSA and RSA. No current use of the PA by LSFN for fishing or aquatic resource harvesting has been identified. LSFN has identified current use of fishing and aquatic resource areas in the LSA, including along the Chukuni River, Pakwash Lake, Gullrock Lake, Two Island Lake, and Bruce Lake. In the LSA, approximately 5 km away from the PA, two whitefish spawning areas were identified within the Chukuni watershed. There are 10 fish spawning areas further within the LSA, including for northern pike, white sucker, and lake whitefish. It was also noted by LSFN that catch-and-release fishing tournaments are held by community members on Pakwash Lake. LSFN also identified current use for fishing and aquatic resources in the RSA around Keg Lake and East Lake, as well as some spawning areas for walleye.

LSFN identified that common fish species harvested in the LSA and RSA include: sucker (longnose and white), tullibee, burbot, northern pike, sauger, lake whitefish, trout (lake), yellow perch, rock bass, bait fish, walleye (pickerel), bass (rock, smallmouth, and largemouth), muskellunge, and mooneye.

As identified in Section 7.13 (Land and Resource Use), there are several waterbodies and watercourses located within the PA. Further detail on navigation is available in Section 7.13. LSFN have not identified any watercourses within the PA as navigable. No groundwater sites (e.g., springs) or systems relating to harvesting of aquatic resources have been identified by LSFN.

In addition to fishing, LSFN community members spoke to the importance of fish spawning areas for the maintenance of culturally important fish species. LSFN identified fish spawning areas in the LSA around Pakwash Lake and Gullrock Lake, within Ear Falls, and in the RSA in areas around Red Lake.

10.6.2.2.4 Traditional Harvesting of Plants for Food and Medicine

Plants used for food and medicinal purposes have always been very important to the Anishinaabeg. For LSFN community members, plant harvesting includes for use as food sources, medicines, and cultural materials. The knowledge of plant harvesting areas and uses is passed down through generations. LSFN community members rely on both terrestrial plants and aquatic plants, such as manoomin, from the waterways within Treaty 3 territories. These waterways and traditional manoomin harvesting areas are also used to harvest migratory birds and waterfowl that populate manoomin ecosystems.

LSFN has identified current use of locations in the PA where they pick edible mushrooms. No current use areas for manoomin or other aquatic harvesting has been identified in the PA by LSFN. LSFN has identified additional current use of plant gathering and harvesting sites in the LSA, including: yearly harvesting of wild cranberries at the confluence of Dixie Creek and the Chukuni River and along Dixie Creek, potato harvesting in the sand bars around the mouth of the Chukuni River, several manoomin harvesting areas along Pakwash Lake, Chukuni River, and multiple harvesting areas downstream of the Ear Falls area. LSFN has identified that they currently use the RSA for plant gathering as well, including terrestrial plant gathering around Little Vermillion Lake; berry picking around Trout Lake, Red Lake, and Coli Lake; and manoomin harvesting along Trout Lake and a small creek west of Manitou Falls. No groundwater sites (e.g., springs) or systems related to manoomin or terrestrial plant gathering have been identified by LSFN.

In the Cultural Heritage Report (Appendix P-3), two cultural heritage resource (CHR) sites were identified that were associated with manoomin fields: CHR 3 in the PA and CHR 5 in the LSA. No changes to CHR 5 are anticipated, as it is located outside of the PA. The other cultural heritage sites are outside the LSA and associated with hunting, fishing, and water travel route. No changes to CHRs 1, 2, 4 and 5 are expected as they are located outside the PA. Section 10.7 assesses any physical or cultural heritage value associated with these cultural heritage sites for LSFN.

Traditional and currently harvested plant species for food and medicinal purposes include: manoomin (wild rice), tamarack, red-osier dogwood, red willow, wild plum, cow parsnip, grandfather root, wild red raspberry, wild strawberry, cranberry, blueberry, sweetgrass, white birch, wild mint, sweežlag, calamus, eastern white cedar, mushrooms (chaga and chanterelle), cherries (pin and choke), wild crab apple, willow (heart-leaved and diamond), wild ginger, wild gooseberry, honeysuckle bush, juniper, Labrador tea, water lily, lily pad, sagebrush, and sage.

Manoomin is a critically important crop, both spiritually and culturally for Anishinaabeg (Shkilnyk, 1985). Manoomin is described by LSFN as an important source of nutrition, a means of economic stability, and a way to connect with LSFN community members through traditional knowledge sharing and practices. Under the Nibi Declaration, there is a sacred relationship between manoomin and nibi, where the spread of manoomin through water during the harvest supports humans and non-humans (Paridy 2021). Under Anishinaabe migration stories, manoomin is understood as food growing on the water, becoming a sacred gift (Paridy 2021).

10.6.2.2.5 Use of Traditional Habitation, and Cultural and Spiritual Sites and Areas

LSFN land use is inseparable from culturally important spaces, as land and water hold knowledge about cultural identifies, stories, traditions, and relations. Cultural and spiritual sites and areas can include traditional habitation sites, birth and marriage sites, burial sites, settlement areas, historic and contemporary harvesting and gathering sites, and sacred or spiritual areas.

This section includes an assessment of LSFN's current use of these sites and areas. An assessment of these sites physical and cultural heritage value for LSFN is assessed in Section 10.7.

No current use is identified by LSFN at the PA for sites and areas relating to traditional habitation, cultural, or spiritual use. LSFN has identified several sites and areas currently used in the LSA, including spiritual and burial sites at the mouth of the Chukuni River, Snake Falls, Pakwash Lake, and south toward Ear Falls. Historical hunting areas of cultural importance were identified between Ear Falls and Pakwash Lake, and unspecified areas in the LSA relating to traditional travel routes, past village sites (including short habitations and seasonal camps), and other sites of historic habitation. LSFN has identified that the community uses boats along most of the lakes, rivers, and streams in the LSA, which also have Anishinaabe language descriptions that denote places, features, and connections with their communities. LSFN has identified social and cultural areas in the LSA currently used for campsites, cabins, and tourist camps. No groundwater sites (e.g., springs) or systems in the PA, LSA, or RSA related to cultural or spiritual use have been identified by LSFN.

LSFN has also confirmed that prior to the construction of Highway 105 (which overlaps with the LSA), travel was primarily conducted along lakes and rivers (open water and frozen). Water travel routes are still in use by the community to access seasonal, short term camps and food harvesting areas. These water travel routes are also used for maintaining connection with the land and for pleasure trips. LSFN has identified that they are noted to be throughout the LSA and beyond.

LSFN has also identified current use of cultural and spiritual sites in the RSA, including historical hunting sites along Trout Lake, historical plant and natural resource gathering sites along Minnitaki Lake (where ancestors would carve traditional pipes out of soapstone), and historical manoomin sites along Lake Minnitaki and Twinflower Lake.

LSFN community members have identified historical trapping areas on maps that were used by their ancestors. These include many of the same areas where LSFN current traps, including Trout Lake and around Lac Seul, but with the additions of areas north of Red Lake (in the RSA), and outside the RSA around Seseganaga Lake, and areas west of Manitou Falls.

10.6.3 Potential Effects

Potential interactions between proposed Project-related activities and CULRTP criteria identifies the potential effects (positive and negative), and whether they are direct or indirect effects.

A detailed overview of the Project's potential interactions with current use of land and resources for traditional purposes for LSFN is presented in Table 10.6-2. Project interactions are characterized as either having no interaction (-) or a potential interaction (✓). Project activities (Section 5.0) that result in no interaction are not considered further in the assessment.

Project interactions that are identified as a potential interaction are carried forward to the potential effects assessment to determine the positive (desirable and beneficial) and negative (undesirable or adverse) potential effects on the CULRTP criteria.

Table 10.6-2: Potential Interactions Between Project Activities and Current Use of Land and Resources for Traditional Purposes – Lac Seul First Nation

Project Component / Activity	Change in availability, access to and quality of experience related to traditional terrestrial wildlife harvesting (hunting and trapping)	Change in availability, access to and quality of experience related to traditional aquatic harvesting (fishing)	Change in availability, access to and quality of experience related to traditional plant (food and medicinal) harvesting	Change in availability, access to and quality of experience related to traditional habitation, cultural, spiritual sites/areas
Construction Phase				
Site preparation activities	✓	✓	✓	✓
Establishment and operation of water management and treatment facilities	✓	✓	✓	✓
Open pit mining	✓	✓	✓	✓
Underground mining	-	-	-	-
Management of rock and unconsolidated materials in stockpiles	✓	✓	✓	✓
Establishment of onsite fish habitat and compensation measures	✓	✓	✓	✓
Establishment of onsite aggregate operations	✓	✓	✓	✓
Construction of the starter embankments for the tailings management facility	✓	✓	✓	✓
Construction and operation of buildings and infrastructure	✓	✓	✓	✓
Waste management	-	-	-	-
Commissioning of the process plant	✓	✓	✓	✓
Power supply	✓	✓	✓	✓

Project Component / Activity	Change in availability, access to and quality of experience related to traditional terrestrial wildlife harvesting (hunting and trapping)	Change in availability, access to and quality of experience related to traditional aquatic harvesting (fishing)	Change in availability, access to and quality of experience related to traditional plant (food and medicinal) harvesting	Change in availability, access to and quality of experience related to traditional habitation, cultural, spiritual sites/areas
Employment and expenditures	-	-	-	-
Operations Phase				
Underground mining	-	-	-	-
Mining of the LP Central pit	✓	✓	✓	✓
Management of rock and unconsolidated materials in stockpiles	✓	✓	✓	✓
Process plant operation	✓	✓	✓	✓
Management of desulphurized tailings in the tailings management facility	✓	✓	✓	✓
Management of concentrate tailings and contact water in the Viggo management facility	✓	✓	✓	✓
Operation of water management and treatment facilities	✓	✓	✓	✓
Construction of a mine water pond	✓	✓	✓	✓
Operation and maintenance of buildings and infrastructure	-	-	-	-
Waste management	-	-	-	-
Power supply	-	-	-	-
Progressive reclamation activities	✓	✓	✓	✓
Employment and expenditures	-	-	-	-
Closure Phase				
Active closure	-	-	-	-

Project Component / Activity	Change in availability, access to and quality of experience related to traditional terrestrial wildlife harvesting (hunting and trapping)	Change in availability, access to and quality of experience related to traditional aquatic harvesting (fishing)	Change in availability, access to and quality of experience related to traditional plant (food and medicinal) harvesting	Change in availability, access to and quality of experience related to traditional habitation, cultural, spiritual sites/areas
Passive closure	-	-	-	-
Final reclamation	✓	✓	✓	✓
Employment and expenditures	-	-	-	-

Legend: ✓ = Interaction exists
- No interaction exists

The interactions identified in Table 10.6-2 are used in sections 10.6.3.1 to 10.6.3.3 to identify the potential effects on CULRTP prior to the application of mitigation measures. These potential effects may be direct or indirect negative effects, where applicable.

10.6.3.1 Construction Phase

The construction phase of this Project is expected to occur over three years and will include preparation of the site and construction of Project infrastructure. Since the construction phase is expected to cause potential interactions with the natural environment and landscape, there may be direct or indirect effects on LSFN use of land and resources for traditional purposes.

During the construction phase, interactions and effects may occur within the PA, LSA and RSA. Project activities identified in Table 10.6.2 have the potential to result in effects to current use of lands and resources for traditional purposes, including for wildlife harvesting, fish and aquatic resource harvesting, plant gathering, and traditional habitation, cultural, and spiritual sites and areas.

10.6.3.1.1 Wildlife Harvesting (Hunting & Trapping)

Project activities during the construction phase at the Project are anticipated to have potential direct and indirect effects on traditional terrestrial wildlife harvesting activities within the PA and LSA. One of the two traplines in the PA (RL068 and RL059) that are registered to LSFN is currently trapped by a non-Indigenous individual. Interactions with Project activities may lead to direct and indirect negative effects on LSFN current use of the PA and LSA for trapping activities.

The availability of traditionally hunted and trapped terrestrial wildlife species may be indirectly affected by habitat loss or alteration, changes in surface water quality, and sensory disturbances such as dust, light and visual changes. These factors can disrupt ecosystems that support traditional harvesting activities. Wildlife availability in the LSA may be also directly or indirectly affected by habitat changes and disturbances due to increased traffic, sound, and vibration that can alter wildlife behavior, distribution, and presence in both the PA and LSA.

Access to areas where LSFN community members traditionally hunt and trap species in the PA and LSA may change due to changes in the landscape, PA access requirements, and infrastructure development. This could limit the ability to travel to or through areas currently used for hunting, trapping, and harvesting wildlife species. Access is not anticipated to be altered in the LSA or RSA during construction.

The quality of experience for LSFN community members while hunting and trapping in the LSA may change due to sensory disturbances. Sound, dust, vibration, light and visual changes to the landscape may make these areas less suitable for hunting and trapping activities. As detailed in Section 7.13 (Land and Resource Use), changes to visual setting will commence during construction and continue throughout all phases of the Project. Construction-related activities, such as vegetation clearing and development of Project infrastructure, may also influence the quality of harvesting experiences near the site.

10.6.3.1.2 Fishing and Aquatic Resource Harvesting

While there is no identified current use of the PA by LSFN for fishing or aquatic resource harvesting, there is identified current use of the LSA. Indirect negative potential effects are anticipated as a result of Project activities.

There may be an indirect change to the availability of fished species or aquatic resources in the LSA due to Project-related changes. Aquatic habitats may be indirectly affected by vibration, surface water runoff, and sedimentation, which may in turn affect fish and aquatic species population and distribution. These changes can damage fish habitats, alter spawning areas in Pakwash Lake and the Chukuni River, and reduce the availability of culturally significant fish species. Additionally, treated effluent discharge into the Chukuni River may impact water quality and fish health. The Cultural Heritage Report (Appendix P-1) indicates that while a segment of the Chukuni River (comprising CHR 1) falls partly within the PA, it will not be subjected to direct or indirect effects from the Project. The Cultural Heritage Report predicts that the planned effluent pipe will not hinder river use for travel, and the discharge from the pipe will avoid changes to water and fish by adhering to regulatory requirements for water quality and quantity (Appendix P-1, p. 27).

Since there is no identified use of the PA for fishing identified by LSFN, no potential effects on access to fishing and aquatic resource harvesting areas and sites are anticipated. None of the watercourses or waterbodies identified in the PA, LSA or RSA are listed on the schedule of ‘navigable waters’ as defined by the *Canadian Navigable Waters Act* (Government of Canada 2026).

The quality of experience of fishing in traditional areas within the LSA may be diminished due to sensory disturbances. A reduction of groundwater flows and levels during construction and operations will reduce groundwater contributions to the baseflow of some watercourses and waterbodies within or adjacent to the PA. Project activities may lead to a change in the quality of fishing and aquatic harvesting experiences. Sound, vibration, and dust, along with changes to the landscape and view, can disrupt the experience and make these fishing areas less suitable for cultural activities in proximity to the PA. No changes to the current navigation of waterways and waterbodies in the LSA used for traditional aquatic harvesting by LSFN are anticipated.

10.6.3.1.3 Traditional Plant Harvesting (Including for Food and Medicinal Purposes)

Project activities during the construction phase at the Project are anticipated to have potential direct and indirect effects on traditional plant gathering and harvesting activities within the PA and LSA. As noted previously, LSFN community members gather edible mushrooms in the PA. Interactions with Project activities may lead to direct and indirect negative effects on LSFN current use of the PA and LSA for these activities.

The availability of plant species for harvesting in the PA and LSA may change as a result of direct and indirect effects to vegetation health and availability. Vegetation health and availability may change as a result of several factors, including dust, changes in surface water quality and flow, and alteration to vegetation areas caused by vegetation removal and clearing. As a result, the availability of plant harvesting areas in the LSA may change due to indirect environmental changes.

Access to areas where LSFN community members traditionally gather plants in the PA and LSA may be reduced due to changes in the landscape, PA access requirements, and infrastructure development. This could limit the ability to travel to, or through areas currently used for gathering and harvesting of plants for food and medicinal purposes. Access is not anticipated to be altered in the LSA or RSA during construction.

The quality of experience at traditional plant harvesting areas in the PA and LSA may be changed due to sensory disturbances from Project activities. A reduction of groundwater flows and levels during construction and operations will reduce groundwater contributions to the baseflow of some watercourses and waterbodies within or adjacent to the PA. Sound, dust, and vibrations during closure activities can interfere with the culturally meaningful nature of harvesting practices. Project components such as the mine rock storage areas and tailings management area may change the landscape and viewscape, which may make these areas less suitable for traditional plant gathering activities.

10.6.3.1.4 Traditional Habitation, Cultural, and Spiritual Sites and Areas

There is no identified traditional habitation, cultural, or spiritual sites and areas for LSFN in the PA. As such, there are no potential effects anticipated that would change access or availability in the PA. However, the Project has the potential to indirectly change detectable sensory conditions for quality of experience with traditional habitation, cultural, and spiritual sites and areas for LSFN in the LSA. No changes to the current navigation of waterways and waterbodies of cultural or spiritual importance by LSFN are anticipated. The assessment of these sites' cultural and physical heritage value is found in Section 10.7.

Sensory disturbances that have the potential to change quality of experience for LSFN in the LSA include levels of sound and dust deposition. A reduction of groundwater flows and levels during construction and operations will reduce groundwater contributions to the baseflow of some watercourses and waterbodies within or adjacent to the PA. Changes to the landscape, particularly from the development of Project components such as the mine rock storage areas and tailings management area, may visually alter culturally important areas for LSFN while in the LSA. Additionally, modifications to surface water flow conditions can affect water travel routes in the LSA, which are often used to access traditional sites. These disruptions from sensory disturbances, altered travel routes, or environmental changes may make traditional areas less suitable for cultural use.

10.6.3.2 Operations Phase

The operations phase is anticipated to extend over a 26-year period. Similar interactions as the construction phase will continue, and potential effects to CULRTP for LSFN may occur within the PA, LSA and RSA during operations. Availability of wildlife for hunting and trapping, fishing and aquatic areas, and plant harvesting areas will continue to be directly and indirectly affected by Project-related activities, though in a larger area, as the footprint of the operations will advance throughout the operations phase.

There will be no access to areas within the PA for harvesting throughout operations. However, access to land and resource areas within the LSA will remain available during Project operations.

Quality of experience for LSFN community members harvesting or using traditional sites and areas in the LSA may continue to be indirectly affected by changes in groundwater flows and levels for waterbodies adjacent to the PA from interactions with open pit and underground mining activities in the PA, or sensory disturbances from sound and visual changes during operations for those sites and areas in the LSA that are in close proximity to the PA. Project facilities, such as the tailings management facility and the mine rock storage area, will be at maximum height and extent during operations. These additional features on the landscape may have the potential to affect land users visual experience while accessing or visiting harvesting or traditional sites and areas within the LSA where the Project is visible (refer to Appendix O-3 for further detail on viewshed analysis).

10.6.3.3 Closure Phase

The active closure phase is anticipated to occur over a three-year period, immediately after operations stop. Closure activities will start the initial reclamation and revegetation of mining areas and stockpiles. Mining and equipment used during closure will be similar to those used during construction, but on a much smaller scale. The passive closure period includes occasional maintenance, limited use of mining and construction equipment, and a short final close-out period where water treatment infrastructure will be removed.

Project activities during the closure phases are expected to result in temporary and short-term ground and sensory disturbances, and continued changes to harvesting site access related to the Project.

Interactions similar to those identified during the construction and operation phases will continue during closure activities for LSFN community members in the PA, LSA and RSA. This includes potential effects relating to availability of traditionally harvested species and traditional habitation, cultural, and spiritual use sites and areas, as well as potential changes to the quality of experience while harvesting or accessing current use sites and areas.

With progressive and active rehabilitation, the re-establishment of vegetation communities would allow wildlife to return to the PA and surrounding area. Progressive and final reclamation, including active and passive revegetation, will minimize visual effects. A viewshed analysis conducted for the Project (Appendix Q) concluded that there will be very limited viewing of the Project facilities even at their maximum extent and height, generally later in operations and only in the far distance. Once progressive and final reclamation activities are completed, supplemented by natural regrowth after closure, the residual stockpiles are expected to visually blend into the natural landscape in the limited location where they are visible in the far distance.

Sensory disturbances due to sound and vibration, are expected to change over the active closure phase as mining and milling operations cease. Changes to groundwater flows and levels are expected to return to near baseline conditions post-closure, after the cessation of open pit and underground mining. With the closure of the PA and site rehabilitation allowing for the return of wildlife, there is the possibility of a return of use of the PA for harvesting for food and medicinal purposes.

10.6.4 Mitigation and Enhancement

Mitigation measures for CULRTP have been developed to address effect pathways identified in Section 10.6.3. Mitigation measures are technical measures proposed by the Project, informed by baseline studies and predictive reports, and engagement with Indigenous communities.

Great Bear Resources is designing the mine operation with appropriate safeguards and believes in the spirit of cooperation and consultation; the mine will be a strong source of positive benefits for host communities and Indigenous groups. This commitment is illustrated through Great Bear Resources funding a regional community-based Chukuni Watershed Aquatic Monitoring Program.
This will focus on the transfer of knowledge from Elder Advisors from each Nation to youth throughout all phases of the Project. The program will also serve to increase capacity of the Indigenous Nations to complete future monitoring programs to protect the waters throughout the Shared Territory of WFN and LSFN.

Mitigation measures include a mix of Project design measures, operational policies, and community partnerships for environmental monitoring. The goal with these limitations is to reduce the magnitude, duration, and likelihood of adverse residual effects on CULRTP.

Table 10.6-3 outlines the mitigation measures thematically, aligning with the interactions identified in Section 10.6.3. These are anticipated to apply to all Project phases, unless indicated otherwise. Anticipated residual effects after application of these mitigation measures are discussed in more detail in Section 10.6.6.

Table 10.6-3: Project Design, Mitigation, and Enhancement Measures for CULRTP – Lac Seul First Nation

Potential Effects	Project Design, Mitigation and Enhancement Measures
Change in availability, access to, and quality of quality of experience related to traditional terrestrial wildlife harvesting (hunting and trapping)	Access: There will be no access within the PA (the active mine site), due to safety. Access will be maintained to the LSA, via the existing road / trail network or planned forestry roads. Environment Management Committee: Great Bear Resources will work with the environmental management committee(s) and interested Indigenous members throughout the duration of the Project (all phases), to facilitate ongoing communications, sharing and integration of Indigenous Knowledge and environmental information, and share and evaluate Project approvals, adaptive management and monitoring plans, and address emerging issues and interests identified by Indigenous Nations. Environmental Monitors: Great Bear Resources will continue to work with the Environmental Management Committee and engage Indigenous environmental monitors from local communities in the implementation of mitigation and monitoring practices for Project activities. Herbicide use: Avoid the use of chemical herbicides.

Potential Effects	Project Design, Mitigation and Enhancement Measures
	Inclusive and Local Hiring Strategy (Project policies): Support reasonable requests and work schedule flexibility for Indigenous employees relating to time off to pursue traditional land use and harvesting activities. Great Bear Resources will offer employees an Annual Fitness and Mental Health Benefit fund ($500 per annum) which may be used to purchase gear and equipment which would facilitate land-based activities including but not limited to fishing equipment and snowshoes. Integrated Mine Closure: Great Bear Resources is committed to progressively rehabilitating the mine site wherever practical to reduce potential erosion, improve stability and work towards meeting end land use objectives. Closure end land use objectives will be informed by ongoing consultation with local Indigenous Nations. Test plot revegetation studies may occur during operation as part of the commitment to progressive rehabilitation. These studies will evaluate the most effective revegetation approach for various application areas. The results will be used to update and inform the revegetation approach with respect to growth medium, seed mixes and nutrient mixes. Active and passive re-vegetation of Project area to encourage and support terrestrial and aquatic species. Prohibition of Fishing and Hunting: Prohibit fishing and hunting within the PA by employees, suppliers, and contractors while working or residing on site. Project Design (visual, dust, and sound): Infrastructure and mine stockpile height have been limited to reduce effects on standard viewscapes; Controlling dust and debris from roads through water sprays and potentially chemical suppressants. The Project has also been designed to minimize construction sounds where applicable (e.g., reduction of generator noise, reduced sound haul trucks); where practical, maintain trees and other vegetation to provide a buffer for the view of Project components. Trapline Engagement: Maintain regular communication with trapline holders regarding activities and opportunities to facilitate their land use activities. Work with Ministry of Natural Resources (MNR) and trapline license holders (LSFN community members) to determine alternative options for trapline losses.
Change in availability, access to, and quality of experience related to traditional aquatic harvesting (fishing and aquatic resources)	Environment Management Committee: Great Bear Resources will work with the environmental management committee(s) and interested Indigenous members throughout the duration of the Project (all phases), to facilitate ongoing communications, sharing and integration of Indigenous Knowledge and environmental information, and share and evaluate Project approvals, adaptive management and monitoring plans, and address emerging issues and interests identified by Indigenous Nations. Environmental Monitors: Great Bear Resources will continue to work with the Environmental Management Committee and engage Indigenous environmental monitors from local communities in the implementation of mitigation and monitoring practices for Project activities. Fish Offsetting Plan: Develop and implement Fish Habitat Offset and Compensation plan, including habitat diversion plans, and fish relocation from affected watercourses. Inclusive and Local Hiring Strategy (Project policies): Support reasonable requests and work schedule flexibility for Indigenous employees relating to time off to pursue traditional land use and harvesting activities.

Potential Effects	Project Design, Mitigation and Enhancement Measures
	Great Bear Resources will offer employees an Annual Fitness and Mental Health Benefit fund ($500 per annum) which may be used to purchase gear and equipment which would facilitate land-based activities including but not limited to fishing equipment and snowshoes. Integrated Mine Closure: Great Bear Resources is committed to progressively rehabilitating the mine site wherever practical to reduce potential erosion, improve stability and work towards meeting end land use objectives. Closure end land use objectives will be informed by ongoing consultation with local Indigenous Nations. Test plot revegetation studies may occur during operation as part of the commitment to progressive rehabilitation. These studies will evaluate the most effective revegetation approach for various application areas. The results will be used to update and inform the revegetation approach with respect to growth medium, seed mixes and nutrient mixes. Active and passive re-vegetation of Project area to encourage and support terrestrial and aquatic species. Prohibition of Fishing and Hunting: Prohibit fishing and hunting within the PA by employees, suppliers, and contractors while working or residing on site.
Change in availability, access to, and quality of experience related to traditional plant harvesting (food and medicinal)	Access: There will be no access within the PA (the active mine site), due to safety. Access will be maintained to the LSA, via the existing road/trail network or planned forestry roads. Environment Management Committee: Great Bear Resources will work with the environmental management committee(s) and interested Indigenous members throughout the duration of the Project (all phases), to facilitate ongoing communications, sharing and integration of Indigenous Knowledge and environmental information, and share and evaluate Project approvals, adaptive management and monitoring plans, and address emerging issues and interests identified by Indigenous Nations. Environmental Monitors: Great Bear Resources will continue to work with the Environmental Management Committee and engage Indigenous environmental monitors from local communities in the implementation of mitigation and monitoring practices for Project activities. Herbicide use: Avoid the use of chemical herbicides. Inclusive and Local Hiring Strategy (Project policies): Support reasonable requests and work schedule flexibility for Indigenous employees relating to time off to pursue traditional land use and harvesting activities. Great Bear Resources will offer employees an Annual Fitness and Mental Health Benefit fund ($500 per annum) which may be used to purchase gear and equipment which would facilitate land-based activities including but not limited to fishing equipment and snowshoes. Integrated Mine Closure: Great Bear Resources is committed to progressively rehabilitating the mine site wherever practical to reduce potential erosion, improve stability and work towards meeting end land use objectives. Closure end land use objectives will be informed by ongoing consultation with local Indigenous Nations. Test plot revegetation studies may occur during operation as part of the commitment to progressive rehabilitation. These studies will evaluate the most effective revegetation approach for various application areas. The results will be used to update and inform the revegetation approach with respect to growth medium, seed mixes and nutrient mixes. Active and passive re-vegetation of Project area to encourage and support terrestrial and aquatic species

Potential Effects	Project Design, Mitigation and Enhancement Measures
	Plant Harvesting (for food and medicinal purposes): Where there is interest, provide opportunities to local Indigenous community members to harvest plants for traditional purposes prior to construction activities. Project Design (visual, dust, and sound): Infrastructure and mine stockpile height have been limited to reduce effects on standard viewscapes; Controlling dust and debris from roads through water sprays and potentially chemical suppressants. The Project has also been designed to minimize construction sounds where applicable (e.g., reduction of generator noise, reduced sound haul trucks); where practical, maintain trees and other vegetation to provide a buffer for the view of Project components. Wild Rice Enhancement Project: Great Bear Resources has funded a study by Northern Bioscience and Harris Ecological Consulting, upon the request of LSFN and WFN. The purpose of this study is to help address the loss of historic wild rice (Manoomin) production on Wabauskang Lake. Potential effects on wild rice are anticipated because of an overprint at Unnamed Waterbody 1 by Project infrastructure. The enhancement study is anticipated to offset potential effects on wild rice as a result of the Project. The wild rice enhancement location, on WFN reserve, has been recommended by the WFN and supported by LSFN. The study will develop potential enhancement options for implementation in 2026. In addition to habitat restoration, the Project will incorporate education and knowledge-sharing on sustainable harvesting practices, supporting long-term stewardship by community members. This collaborative initiative could support broader wild rice revitalization projects in the future and could be shared with other Indigenous communities in the local area if there is interest, advancing the understanding, and recovery of this culturally and ecologically important plant. Together, these efforts will support a more holistic understanding of Wild Rice habitats, cultural values, and their continued importance to the region.
Change in availability, access to, and quality of experience related to traditional habitation cultural, and spiritual sites and areas	Access: There will be no access within the PA (the active mine site), due to safety. Access will be maintained to the LSA, via the existing road / trail network or planned forestry roads. Environment Management Committee: Great Bear Resources will work with the environmental management committee(s) and interested Indigenous community members throughout the duration of the Project (all phases), to facilitate ongoing communications, sharing and integration of Indigenous Knowledge and environmental information, and share and evaluate Project approvals, adaptive management and monitoring plans, and address emerging issues and interests identified by Indigenous Nations. Environmental Monitors: Great Bear Resources will continue to work with the Environmental Management Committee and engage Indigenous environmental monitors from local communities in the implementation of mitigation and monitoring practices for Project activities. Inclusive and Local Hiring Strategy (Project policies): Support reasonable requests and work schedule flexibility for Indigenous employees relating to time off to pursue traditional land use and harvesting activities. Great Bear Resources will offer employees an Annual Fitness and Mental Health Benefit fund ($500 per annum) which may be used to purchase gear and equipment which would facilitate land-based activities including but not limited to fishing equipment and snowshoes.

Potential Effects	Project Design, Mitigation and Enhancement Measures
	Integrated Mine Closure: Great Bear Resources is committed to progressively rehabilitating the mine site wherever practical to reduce potential erosion, improve stability and work towards meeting end land use objectives. Closure end land use objectives will be informed by ongoing consultation with local Indigenous Nations. Test plot revegetation studies may occur during operation as part of the commitment to progressive rehabilitation. These studies will evaluate the most effective revegetation approach for various application areas. The results will be used to update and inform the revegetation approach with respect to growth medium, seed mixes and nutrient mixes. Active and passive re-vegetation of Project area to encourage and support terrestrial and aquatic species Project Design (visual, dust, and sound: Infrastructure and mine stockpile height have been limited to reduce effects on standard viewscapes; Controlling dust and debris from roads through water sprays and potentially chemical suppressants. The Project has also been designed to minimize construction sounds where applicable (e.g., reduction of generator noise, reduced sound haul trucks); where practical, maintain trees and other vegetation to provide a buffer for the view of Project components.

Attached Table 10.1-1 includes mitigation measures applicable to the management of effects on pVCs and fVCs that are linked with CULRTP for LSFN. It includes plans, policy and measures from predictive reporting on Project pVCs and fVCs. These will be applied for effects management.

10.6.5 GBA Plus Considerations

During the life of the Project, the PA will be inaccessible. This is expected to last for approximately 32 years once construction begins until the end of active closure. As presented in Appendix X, the Gender-Based Analysis Plus (GBA Plus) subgroups who could experience negative effects by restricted access include:

- Indigenous Peoples. This includes men+, women+, Elders and youth. The inability to access sites of typical harvesting activity may result in the loss of transmission of knowledge across multiple generations for that location

While the PA will be inaccessible, traditional land use activities reported in the LSA, ranging from trapping to plant gathering and manoomin harvesting can continue.

10.6.6 Residual Effects after Mitigation

After the implementation of mitigation measures, assessment and characterization of potential residual effects is completed using the methodology outlined in Section 6. Further details on residual effect criteria ratings that are specific to CULRTP criteria are defined in Section 6 and Section 10.1.2.

The attached Table 10.1-1 summarizes the results of the assessment for the linked pVC and fVC components. Detailed description on the methods, existing conditions, mitigation measures, and residual effects can be found in their respective sections.

Based on the assessment of linked pVCs and fVCs, residual changes considered as part of the assessment of residual effects on CULRTP are:

- Migratory birds (fVC)
- Air quality (pVC)
- Sound (pVC)
- Vibration (pVC)
- Visual Environment (pVC)
- Groundwater (pVC)
- Surface Water Flows and Levels (pVC)
- Water quality (pVC)
- Vegetation communities (pVC)
- Moose (pVC)
- Other wildlife (pVC)
- Species at Risk (pVC)
- Cultural Heritage (pVC)

There are other linked pVCs and fVCs listed in Table 10.1-1 and section 10.1 that do not have residual changes after mitigation measures have been applied. This includes fVC Fish and Fish Habitat, and pVCs Wild Rice, Land and Resource Use, and Archaeology. This means that Project activities will not change their existing conditions over the Project life cycle. Therefore, those linked pVCs and fVCs are not carried forward into the residual effects assessment for LSFN community members.

10.6.6.1 Residual Effects after Mitigation – Lac Seul First Nation

Following the identification of potential effects between Project activities and CULRTP indicators, potential effects were evaluated to determine whether the proposed mitigation measures would fully address the effect. Where mitigation measures were determined to effectively avoid the interaction, no residual effect was carried forward. Where the mitigation measures reduced but did not fully eliminate the potential for an effect, the interaction was carried forward for residual effects characterization. This process made sure that only unmitigated or partially mitigated effects were included in the residual effects assessment.

Table 10.6-4 summarizes the potential effects that remain after mitigation and enhancement measures are implemented.

Table 10.6-4: Residual Effects Remaining After Mitigation – Current Use of Lands and Resources for Traditional Purposes for Lac Seul First Nation

Potential Effect		Potential Residual Effect Remaining After Mitigation (Y/N)
Change in availability, access to, and quality of experience related to traditional terrestrial wildlife harvesting (hunting and trapping)	Availability (quantity of traditionally hunted and trapped wildlife species available)	Y
	Access (to locations and areas for hunting and trapping)	Y
	Quality of experience (detectable changes to sensory conditions at harvesting sites or areas)	Y
Change in availability, access to, and quality of experience related to traditional aquatic harvesting (fishing)	Availability (quantity of traditionally fished species available)	N
	Access (to locations for fishing and aquatic harvesting)	N
	Quality of experience (detectable changes to sensory conditions at harvesting sites identified)	N
Change in availability, access to, and quality of experience related to traditional plant harvesting (food and medicinal purposes)	Availability (quantity of traditionally gathered plant species available)	Y
	Access (to locations for plant gathering and picking)	Y
	Quality of experience (detectable changes to sensory conditions at harvesting sites or areas)	Y
Change in availability, access to, and quality of experience related to traditional habitation, cultural, and spiritual sites and areas	Availability (of traditional habitation, cultural, and spiritual sites and areas currently used – e.g., not altered or destroyed)	N
	Access (changes to access to sites and areas identified as currently used)	N
	Quality of experience (detectable changes to sensory conditions at traditional habitation, cultural, or spiritual sites and areas currently used)	Y

10.6.6.1.1 Change in Availability, Access to, and Quality of Experience Related to Traditional Terrestrial Wildlife Harvesting (Hunting and Trapping)

As LSFN has registered trapline holders that overlap with the PA and has identified current hunting, trapping, and harvesting of wildlife in the LSA, there may be direct and indirect changes to access, availability, and quality of experience relating to terrestrial wildlife harvesting for LSFN community members. These will have direct effects to trapping in the PA, and indirect changes to LSFN community members hunting and trapping in the LSA.

Project activities through construction to closure may affect wildlife behaviour and responses directly in the PA. There will be no access to the PA during the Project lifecycle. However, access and availability of harvesting opportunities will remain in the LSA and RSA for LSFN.

No critical moose habitat types are expected to be eliminated, and there are no residual effects on Moose, Other Wildlife, or Species at Risk pVC assessment. Due to this, it is anticipated that availability of large and small game will not change for hunting and trapping activities in the LSA as a result of changes to wildlife populations. While residual effects were predicted for migratory birds, they were predicted to be not significant after mitigation has been applied.

For LSFN community members hunting within the LSA, access in the LSA (outside the PA) will not be directly affected, but availability of hunted and trapped species may still be indirectly affected at LSA sites and areas immediately near the PA. This is due to changes in wildlife behaviour as a result of sensory disturbance. Habitat in the RSA will remain for all wildlife species, and there are no Project features expected to affect any wildlife species or populations.

Table 10.6-5 characterizes the residual effect attributes related to terrestrial wildlife harvesting.

Table 10.6-5: Characterization of Negative Residual Effects on Change in Availability, Access to, and Quality of Experience Related to Traditional Terrestrial Wildlife Harvesting (Hunting and Trapping) for Lac Seul First Nation

Attribute	Category	Rationale
Ecological or Social Context	Level I	Criteria may or may not be sensitive, and can support the predicted change with typical mitigation measures:
Magnitude	Level I	Project-related changes may increase the effort necessary but will not reduce the ability of Indigenous Peoples to practice traditional activities related to the current use of lands and resources for traditional purposes. Access and availability of terrestrial wildlife trapping in the PA is anticipated to be restricted due to safety regulations on site, however the affected area of the trapline is relatively small and harvesting opportunities remain in the LSA. Changes to the availability and experience in the LSA may increase the effort necessary to harvest but not reduce the ability to practice these traditional activities.
Geographic Extent	Level I	Effect is restricted to the LSA.
Duration	Level II	Effect occurs over the medium term: more than three years but less than 32 years.
Frequency	Level II	Effect occurs intermittently or regularly.
Reversibility	Level I	Effect is fully reversible during the Project phases.
Timing	Level I	Effects do not occur during a sensitive period, or related effects are fully mitigated.

10.6.6.1.2 Change in Availability, Access to, and Quality of Experience Related to Traditional Plant Harvesting (Food and Medicinal)

As LSFN has identified current use of the PA for edible mushroom harvesting, and gathers plants in the LSA, it is anticipated that changes to access, availability, and quality of experience relating to plant harvesting will have direct effects to plant harvesting in the PA, and indirect effects on LSFN plant gathering in the LSA.

For LSFN gathering plants in the PA, it is anticipated that access and availability of plant gathering sites and areas will be directly affected throughout the duration of the Project phases. It is also anticipated that access will not be directly affected for plant gathering opportunities in the LSA, as it is outside of the PA. However, several terrestrial and aquatic plant harvesting sites have been identified in the LSA and RSA, which include yearly harvesting of wild berries and manoomin.

Available harvesting areas within the LSA and RSA will remain accessible. While access to the PA will be prohibited for safety purposes from the onset of construction until following active closure, Great Bear Resources will provide opportunities to local Indigenous community members to harvest plants for traditional purposes in the PA prior to initiating construction activities.

For LSFN gathering plants in the LSA, their quality of experience while gathering plants for food and medicinal purposes may still be indirectly affected by Project activities at sites and areas immediately adjacent to the PA. This is due to changes in flows and levels of groundwater reducing groundwater contributions to waterways and waterbodies adjacent to the PA, and sensory disturbances (sounds, dust, vibrations) along roads where LSFN gather plants and natural resources.

Table 10.6-6 characterizes the residual effect attributes relating to terrestrial plant gathering for food and medicinal purposes.

Table 10.6-6: Characterization of Negative Residual Effects on a Change in Availability, Access to, and Quality of Experience Related to Traditional Plant Harvesting (Food and Medicine) for Lac Seul First Nation

Attribute	Category	Rationale
Ecological or Social Context	Level I	Criteria may or may not be sensitive and can support the predicted change with typical mitigation measures.
Magnitude	Level I	Project-related changes may increase the effort necessary but will not reduce the ability of Indigenous Peoples to practice traditional plant harvesting activities related to the current use of lands and resources for traditional purposes. Access and availability of plant gathering sites in the PA is anticipated to change. However, LSFN access to other plant harvesting areas in LSA and RSA will remain unchanged. In the LSA, quality of experience (e.g., sensory and viewscape disturbances) during plant harvesting may increase the effort necessary but not reduce the ability of LSFN community members to practice these traditional activities.
Geographic Extent	Level I	Effect is restricted to the LSA.
Duration	Level II	Effect occurs over the medium term: more than three years but less than 32 years.

Attribute	Category	Rationale
Frequency	Level II	Effect occurs intermittently or regularly.
Reversibility	Level I	Effect is fully reversible during the Project phases.
Timing	Level I	Effects do not occur during a sensitive period, or related effects are fully mitigated.

10.6.6.1.3 Change in Availability, Access to, and Quality of Experience Related to Traditional Habitation, Cultural, and Spiritual Sites and Areas

For LSFN visiting traditional habitation sites in the LSA, access and availability of sites will not be directly affected, as they are outside of the PA. Available campsites, cultural and spiritual sites and areas and other habitation sites currently used will remain accessible in the LSA and RSA. However, these traditional habitation, cultural, and spiritual sites and areas in the LSA may still be indirectly affected by changes in the quality of experience. This is due to changes in flows and levels of groundwater reducing groundwater contributions to waterways and waterbodies adjacent to the PA, and sensory disturbances around where LSFN habitation, cultural, and spiritual sites and areas in the LSA.

Table 10.6-7 characterizes the residual effect attributes relating to traditional habitation, cultural, and spiritual sites and areas.

Table 10.6-7: Characterization of Negative Residual Effects on Change in Availability, Access to, and Quality of Experience Related to Traditional Habitation, Cultural, and Spiritual Sites and Areas for Lac Seul First Nation

Attribute	Category	Rationale
Ecological or Social Context	Level I	Criteria may or may not be sensitive, and can support the predicted change with typical mitigation measures.
Magnitude	Level I	Project-related changes may increase the effort necessary but will not reduce the ability of Indigenous Peoples to practice cultural activities while visiting and using traditional habitation, cultural, and spiritual sites and areas related to the current use of lands and resources for traditional purposes.
Geographic Extent	Level I	Effect is restricted to the LSA.
Duration	Level II	Effect occurs over the medium term: more than three years but less than 32 years.
Frequency	Level II	Effect occurs intermittently or regularly.
Reversibility	Level I	Effect is fully reversible during Project phases.
Timing	Level I	Effects do not occur over a sensitive period, or related effects are fully mitigated.

10.6.7 Significance of Residual Effects

The magnitude of the effect on CULRTP is low (Level I) and restricted to the LSA (Level I). The effect will occur intermittently (Level II), will occur over the medium term of more than three years but less than 32 years (Level II), and will be fully reversible at closure (Level I). The importance of conducting traditional practices is very high for Indigenous Peoples, however the small, localized effect can be accommodated in terms of social context (Level I). The residual effect is therefore not significant.

10.6.8 Confidence

The prediction confidence assignment reflects the information available through Project-specific TKLUS reports, publicly available data (statistical websites, government pages, previously completed EA/IS reports), understanding of the effectiveness of applicable mitigation measures, and outcomes of other pVCs and fVCs. The assessment is informed by substantial primary and secondary information and robust analysis however, as noted in the assessment, there are some instances where the information collected had data gaps or lacked detail.

The overall confidence in residual environmental effect and significance predictions for CULRTP is moderate. As additional information continues to be shared through Great Bear Resources' ongoing consultation with local Indigenous communities over Project life, relevant information will be incorporated into Project planning as practical.

10.7 Indigenous Physical, Cultural Heritage, Structures, Sites or Things of Significance

Indigenous physical and cultural heritage was selected as criteria to evaluate how the Project may interact with sites or areas of Indigenous heritage importance (including archaeological, historical, or architectural sites), as well as associated ceremonial, spiritual and cultural values. Indigenous physical and cultural heritage differs from the pVCs of archaeology and cultural heritage in that it is an fVC; also, it encompasses both tangible heritage, such as physical places of heritage value, and intangible heritage, such as the customs, practices and teachings that convey cultural knowledge of heritage value. Potential effects are assessed to evaluate potential changes to these sites and areas as a whole. As outlined in Section 10.3, the assessment of Lac Seul First Nation (LSFN) physical and cultural heritage considers the following criteria:

- Alteration or destruction of sites or areas of Indigenous heritage importance, including archaeological, historical, or architectural sites.
- Change in access to or quality of experience with sites or areas of Indigenous heritage importance, including archaeological, historical, or architectural sites.
- Change in sacred, ceremonial, spiritual and cultural values (including language, stories and traditions) associated with sites or areas of Indigenous heritage importance, including archaeological, historical, or architectural sites.

Publicly available summaries of Indigenous physical and cultural heritage for LSFN are limited; however, LSFN has provided input through ongoing engagement, site visits, and a confidential TKLUS report. This assessment incorporates that information while respecting confidentiality.

Sites and areas discussed in relation to the archaeology and cultural heritage pVCs include physical heritage sites and areas, as defined under the *Ontario Heritage Act* (OHA); they are considered OHA-defined physical heritage, which is also commonly regarded as having heritage importance to Indigenous communities. The current use of lands and resources for traditional purposes criteria was also considered to reflect forms of Indigenous physical and cultural heritage that are not defined or protected under the OHA but are commonly valued by Indigenous communities, including LSFN, as reflected by the identification and inclusion of heritage-related considerations in their confidential TKLUS report and the LSFN Comprehensive Community Plan (Lac Seul First Nation 2022).

10.7.1 Spatial Boundaries

There are three study areas within the spatial boundaries. They are the Project Area (PA), the Local Study Area (LSA), and the Regional Study Area (RSA), which includes both the PA and the LSA. The spatial boundaries used for the assessment of Indigenous physical and cultural heritage are shown in Figure 10.7-1 and are defined:

- The PA is defined as the footprint of the Project, including all temporary and permanent areas associated with the mine site, as well as a buffer to allow flexibility for design optimizations prior to construction and over the mine life (Section 6.4). The PA is approximately 3,349 hectares (ha) in size.
- The LSA is the area within which Project-related effects may reasonably be expected to occur and can be predicted or measured with reasonable accuracy and confidence. Based on the relationship between Indigenous heritage and the current use of lands and resources for traditional purposes, these criteria share an LSA, which is defined using the LSAs of the moose and other wildlife pVCs. These LSAs integrate a range of resources and places that support traditional use, which in turn supports cultural practices integral to Indigenous physical and cultural heritage, along with associated intergenerational knowledge transfer. This LSA also encompasses the LSAs for the pVCs of archaeology and cultural heritage, which are more narrowly defined by a buffer of 1 km around the PA for both; the selection of these areas as the LSAs for these pVCs is guided by the potential for direct physical effects to the integrity of archaeological and cultural heritage resources. The selection of these areas as the LSAs for these pVCs is guided by the potential for direct physical effects to the integrity of archaeological and cultural heritage resources.
- The RSA encompasses the LSA and is used to provide regional context for the significance of residual effects; it is also the area within which potential for cumulative effects of the Project in combination with other past, present or reasonably foreseeable projects or activities are considered. For Indigenous physical and cultural heritage, the RSA is again defined based on the RSAs for the moose and other wildlife pVCs for the same reasons as identified for the LSA. The RSAs for the related pVCs of archaeology and cultural heritage are the same as the LSAs, again reflecting these pVCs' primary concern with physical effects to archaeological and cultural heritage resources.

These boundaries are consistent with those used for Current Use of Lands and Resources for Traditional Purposes (CULRTP).

N

LEGEND:

- PROJECT AREA
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- HIGHWAY
- MAJOR ROAD
- LOCAL ROAD
- RAILWAY
- WATERCOURSE
- WATERBODY
- INDIGENOUS COMMUNITY
- PROVINCIAL PARK
- MUNICIPAL BOUNDARY (LOWER TIER)

NOTES:
NOTE1: BASE DATA ACQUIRED FROM LAND INFORMATION ONTARIO.

0 5 10 20 30 km

SCALE 1:650,000
PAGE SIZE 11 x 17
NAD 1983 UTM Zone 15N

THIS MAP IS FOR CONCEPTUAL PURPOSES ONLY AND SHOULD NOT BE USED FOR NAVIGATION

GREAT BEAR RESOURCES

GREAT BEAR GOLD PROJECT

SPATIAL BOUNDARIES FOR INDIGENOUS PHYSICAL AND CULTURAL HERITAGE, AND STRUCTURES, SITES, OR THINGS

SLR

FIGURE NO:
10.7-1

DATE: November 11, 2025 PROJECT NO: 241.030825

10.7.2 Existing Conditions

The summary of existing conditions for Indigenous physical and cultural heritage, along with the methods used to characterize baseline conditions is informed by a Project-specific TKLUS report provided by LSFN that outlines traditional use of the PA, LSA, and RSA for harvesting and other cultural activities with links to LSFN physical and cultural heritage.

The discussion also draws on publicly available sources, including academic literature, government reports, and information available on the LSFN community website. The TKLUS report study from LSFN discusses both current and historical use in relation to traditional use activities and locations in the PA, LSA and RSA. For this assessment, it is assumed that any traditional use locations, whether current or historical, may hold heritage meaning and value to any Indigenous people that use the area, which may include LSFN community members.

10.7.2.1 Methods

This assessment includes consideration of the archaeology and cultural heritage pVCs, along with the current use of land and resources for traditional purposes criteria and Project-specific confidential TKLUS reports, since these collectively describe places and practices of possible heritage interest to the potentially affected Indigenous communities. Specifically, the archaeology and cultural heritage pVCs provide information on physical heritage places that are protected under the OHA and of potential importance to Indigenous communities. The current use of lands and resources for traditional purposes criteria captures ongoing traditional activities that both extend from and pass forward these Indigenous communities' physical and cultural heritage places, values and teachings.

The archaeology studies (Appendix Q-1) and cultural heritage studies undertaken in support of this Impact Statement were consulted for information on the identification of physical heritage as required under the Ontario Heritage Act (OHA) and Ontario Regulations (O. Reg.) 9/06 and 10/06. The terrestrial archaeology assessment report is in Appendix Q-1, and the marine archaeological assessment report is Appendix Q-2. Project-specific traditional use studies provided by potentially affected Indigenous communities were used to further inform on the current use of lands and resources for traditional purposes. These confidential sources are not appended to the IS.

This assessment also used available public sources and engagement records.
However, defining Indigenous physical and cultural heritage in relation to the Project remains somewhat interpretive, as its holistic continuity with traditional land- and water-based cultural places and activities, including the transfer of intergenerational knowledge, makes it challenging to consider in isolation. For this reason, a conservative approach to the identification of Indigenous physical and cultural heritage was used. An inclusive approach was also applied specifically to the current use of lands and resources for traditional purposes; that is, all places and practices considered in relation to the current use of lands and resources for traditional purposes were regarded as having possible heritage value.

Publicly available sources used in the assessment of Indigenous physical and cultural heritage include:

- Academic literature, including published books and articles and unpublished theses and dissertations

- Sources available through the LSFN community website, including background on the community and its history, as well as the LSFN Land Code and Comprehensive Community Plan
- Government documents and reports on the Treaty #3 area and its Anishinaabe signatories, including LSFN
- Reports prepared for Grand Council Treaty #3, which represents Treaty #3 signatory communities, including LSFN
- Recent news or information articles and websites
- Sources and summaries available from online resources

In addition to the publicly available sources of information, the description of existing conditions was informed by confidential reports prepared by or for LSFN. The information in these reports is considered proprietary to the respective Indigenous community. Therefore, they are generally identified as confidential reports in this assessment.

10.7.2.2 Description

The description of Indigenous physical and cultural heritage sites, areas or things of significance by LSFN community members includes a description of the historic, and where applicable current, land use and governance at these sites, areas or things.

10.7.2.3 Past and Current Traditional Use of Heritage Places and Practices

The heritage elements of traditional places and practices are rooted in past use, which often continues to the present day because of LSFN's ongoing use of lands and waters. Heritage value also develops and evolves over time.

10.7.2.3.1 Historical Context of Lac Seul First Nation

Anishinaabeg families and communities ancestral to LSFN travelled throughout their traditional territory to harvest subsistence and other resources as they became available. Travel relied on a system of terrestrial trails and water-based travelways; portages were prominent links in this system, providing efficient terrestrial linkages between the region's many waterbodies and watercourses (Taylor-Hollings 2017). The pattern of seasonal harvesting activities also integrated and supported an array of social, economic, ceremonial, spiritual and other cultural activities, as well as the associated passing of Anishinaabe knowledge, beliefs, values and practices between generations.

The addition of European trade goods to Anishinaabe life in this region was initially through exchange with Indigenous groups such as the Cree and Nakota, who, acting as intermediaries, moved these goods inland from trade posts along Hudson's Bay and Lake Winnipeg in exchange for furs. However, direct European trade was established in the 1700s, when the Hudson's Bay Company (HBC), the Northwest Company (NWC) and others established trade posts at locations including Red Lake, Lac Seul and the confluence of the Chukuni and English rivers (Appendix Q-1; Taylor-Hollings 2017). Sustained contact with fur traders and other newcomers entering the region exposed the region's Anishinaabeg to a series of epidemics. The associated population loss and social disruption were compounded by depletion of fur and game species in some areas (Taylor-Hollings 2017).

By the late nineteenth century, the Government of Canada wished to establish transportation routes connecting more easterly parts of Ontario to the Red River region; in response, the Anishinaabeg indicated their expectation of compensation for this use of their lands, as well as their interest in a treaty. Negotiations were initiated in 1871 and concluded with the signing of Treaty 3 in 1873, with the subsequent establishment of reserves. Chief Sahkatcheway of the Lac Seul and English River bands was a signatory at this time; further adhesions of Anishinaabeg in the Lac Seul area occurred in 1874 (Filice 2025).

Moving into the early twentieth century, Anishinaabeg in the region saw increasing forestry and tourism, creating additional wage economy activities and roles, but also placing pressure on lands and resources that they traditionally used. External presence in the region was increased in the 1920s, when the discovery of gold at Red Lake prompted a gold rush in 1926, followed by ongoing mining to present (Red Lake Regional Heritage Centre , n.d.; Russell 1987).
The establishment of missions, followed by residential schools, also exerted pressure, as did restrictions under the *Indian Act* on Anishinaabe sacred, spiritual and ceremonial practices. The removal of Anishinaabe children to residential schools created ruptures in Anishinaabe culture, along with attendant social issues, which some Lac Seul families worked to avoid by hiding and raising children on the land (Taylor-Hollings 2017).

LSFN was also affected by the 1929 construction of a dam to produce hydroelectric power at Ear Falls. Associated changes in the water levels of Lac Seul and linked waterbodies flooded reserve lands and traditional use areas, substantially altering LSFN settlements, activities and livelihoods around the lake ((Allan 2024; Lac Seul First Nation 2023l). LSFN community members also highlight that places of heritage importance, including burials, were submerged under the lake's water or eroded out of its changed shorelines. Kejick Bay, an LSFN settlement formerly on the lakeshore, became an island separated from land access to the nearby LSFN community of Whitefish Bay. It has since been connected to adjacent road networks via a causeway. A third LSFN community, Frenchman's Head, is located on Lost Lake to the south (Lac Seul First Nation 2023l). Use of Lac Seul as a reservoir with seasonally controlled levels continues to have implications for LSFN traditional use sites and activities today. LSFN only saw the settlement of their compensation claim for the effects of the flooding in 2024 (Allan 2024).

LSFN community members were also subject to the introduction of the trapline registry in the 1940s. Although the government "meat bosses" and "meat men" conferred with Anishinaabeg families to define and assign traplines based on their traditional use areas, they were not always apportioned and assigned accurately, and boundaries were sometimes altered to create free areas for assignment to non-Indigenous trapline holders (Chapeskie 1993). Also, the single person designated as the trapline holder was sometimes able to sell the family trapline even though the associated areas were traditionally communally held, used and stewarded (Chapeskie 1994; Taylor-Hollings 2017).

Similarly, with the recognition of the commercial value of manoomin (wild rice), the province began licensing of manoomin harvesting to non-Anishinaabe individuals from outside the region.

Starting in the 1970s, LSFN community members saw these licensees assume control of manoomin lakes previously harvested and reseeded by generations of their families, a situation which separated them from an important food and income source, while also denying their familial connection to manoomin lakes.

This history has served to create the physical and cultural heritage places and practices of LSFN and its community members (e.g., formation of archaeological sites, continuation of traditional harvesting practices). At the same time, it has eroded elements of Indigenous

physical and cultural heritage (e.g., disruption of intergenerational knowledge transfer due to the *Indian Act*, residential schools and industrial development).

10.7.2.3.2 Current Heritage Perspectives of Lac Seul First Nation

LSFN and its community members continue actively harvesting throughout their traditional territory, maintaining the associated land- and water-based cultural practices. These practices are a living expression of LSFN heritage, rooted in their relationship with the region and its resources, as well as the associated Anishinaabe knowledge, values, beliefs, and language. Places and resources used today are summarized in Section 10.6.2 which provides additional information on current use of land and resources for traditional purposes.

LSFN's Project-specific TKLUS report emphasizes the importance of hunting, trapping, fishing and plant gathering to their community members at locations in the LSA and RSA, such as Pakwash Lake, Bruce Lake, Gullrock Lake, Two Island Lake, Keg Lake, East Lake, and the Chukuni River.

This study emphasizes the use, value and maintenance of LSFN fishers' multigenerational knowledge and stewardship of fish habitat and spawning areas, as well as the past and continuing cultural and subsistence value of traditionally harvested fish. It also highlights the multigenerational nature of trapline ownership and use in the area, consistent with the identification of traplines in LSFN's *Comprehensive Community Plan* as historic, traditional and culturally important locations that they would like to preserve for future generations (Lac Seul First Nation 2022)..

Section 7.13 (Land and Resource Use) identifies four traplines identified either in the PA or the LSA (Table 10.6-1). The trapline areas within the PA include RL068 and RL059, which are both registered to LSFN trappers; a non-Indigenous trapper is also active at RL068. In the LSA, trapline RL061 is registered to an ANA member. Additionally, registered trapline RL073 sits in the LSA, and is registered to a non-Indigenous individual.

LSFN's Project-specific TKLUS report discusses LSFN's historical relationship with manoomin and associated waterfowl hunting areas, as well as LSFN's current initiative to restore manoomin beds and associated intergenerational knowledge. LSFN's *Comprehensive Community Plan* identifies manoomin areas as historic, traditional and culturally important locations that they would like to preserve for the future (Lac Seul First Nation 2022). LSFN's Project-specific TKLUS report study identifies manoomin harvesting areas, along with associated camps, in the LSA, along the shores of Pakwash Lake and the Chukuni River as far as Ear Falls. It also notes the overall importance of manoomin in the region.

LSFN's Project-specific TKLUS report also indicates that LSFN community members harvest mushrooms within the PA, and it discusses annual harvesting of cranberries along Dixie Creek at the confluence with the Chukuni River. Any heritage elements of these places or activities are not emphasized, although plant gathering may be a context for intergenerational knowledge transfer.

According to LSFN community members, road- and air-based access to the region and its waterways has changed traditional trail and travelway use, but existing land- and water-based routes continue to be used, and portages remain key points in these networks, which often include stopping points suitable for camping, harvesting, and other activities.

In the area of the Project, the LSFN TKLUS report notes that traditional water routes, including the Chukuni River, continue to be used for harvesting and recreational activities, and for maintaining traditional connections to the land and water. LSFN's Project-specific TKLUS report also indicates that historic terrestrial trails also continue to be maintained and used today.

Additionally, LSFN's Project-specific TKLUS report notes that historical village and habitation sites have been identified in areas within the LSA and RSA, including the north side of Pakwash Lake, the nearby segment of the Chukuni River, and the region between the eastern ends of Longlegged Lake and Conifer Lake. This study highlights that camps and cottages are important for LSFN community members to stay connected to their traditional land- and water-based activities, and it mentions that many of these locations along the Chukuni River are privately owned by LSFN community members.

Locations used for ceremonial and spiritual practices, including burial grounds, are among the historic, traditional and culturally important locations that LSFN's Comprehensive Community Plan identifies as needing preservation (Lac Seul First Nation 2022). LSFN's Project-specific TKLUS report indicates that there are indications of spiritual sites in the LSA, at the mouth of the Chukuni River and on the west side of Pakwash Lake. It also shows that LSFN Elders have identified several burial sites in the LSA and RSA, including Bruce Lake, Pakwash Lake, Two Island Lake, and the connecting segments of the Chukuni River, as well as the area between the eastern extents of Longlegged Lake and Conifer Lake.

10.7.2.4 Archaeological Sites

Archaeology is a Western-based science that uses material remains to understand past ways of life. It relies on physical evidence to define archaeological sites, so it may not capture less tangible forms of heritage, although these are often discussed in the context of cultural heritage and TKLUS reports (see Section 7.14 and Section 7.15). LSFN has participated in Project-specific archaeological studies, site visits, and related discussions, complementing archaeological perspectives with LSFN views on the importance of the archaeological findings (Section 7.15). Per Ontario's *Standards and Guidelines for Consultant Archaeologists* (Ministry of Citizenship and Multiculturalism 2011), archaeological site significance has been discussed and will be decided with Indigenous communities, and those decisions will be documented.

As required under the OHA, archaeological studies supporting the Project to date have included Stage 1, 2, and 3 desktop and field studies for terrestrial areas (Appendix Q-1). Additionally, a marine archaeological study focused on waterbodies was carried out; it also involved desktop and fieldwork (Appendix Q-2). In both cases, initial desktop studies and subsequent field surveys extended to the boundary of the Great Bear Resources property, covering the PA and nearby areas. All archaeological work to date falls within the LSA of the Indigenous physical and cultural heritage criteria (see Section 7.15).

The desktop component of the marine archaeological study identified Unnamed Waterbody 1, Unnamed Waterbody 2, Unnamed Waterbody 6, Pakwash Lake, Dixie Lake, Dixie Creek and the Chukuni River in the PA and adjacent portions of the LSA as having archaeological potential (Appendix Q-2).

The 2024 and 2025 fieldwork supporting the marine archaeological study involved visual inspections of Unnamed Waterbody 1, as well as the Chukuni River, where an effluent discharge pipe is planned; no archaeological materials were identified (Appendix Q-2).

The survey work carried out for the Stage 2 terrestrial archaeological studies resulted in the identification of five previously undocumented Pre-contact archaeological sites within the surveyed area (Appendix Q-1). These sites include:

- EfKj-1: a Late Woodland period site within the PA on Unnamed Waterbody 2
- EfKj-2: a Pre-contact period site on Dixie Creek within the LSA
- EfKj-3: a Late Paleo period site on Unnamed Waterbody 6 within the LSA
- EfKj-4: a Late Paleo period site within the LSA on Unnamed Waterbody 6, adjacent to EfKj-3
- EeKj-4: a Middle and Late Woodland period site on Pakwash Lake within the LSA

WFN and LSFN identified EeKi-4 as a sacred site during engagement at the July 31, 2024, Environmental Management Committee meeting for the Project.

Stage 3 work has been undertaken at EfKj-1, EfKj-2, EfKj-3, and EfKj-4. As outlined in *Ontario's Standards and Guidelines for Consulting Archaeologists* (MTCG 2011), affected Indigenous communities must be engaged during Stage 3 when assessing the cultural heritage value or interest of sites which are (a) the subject of Indigenous oral history, (b) have known or potential sacred or spiritual importance, or (c) show an association with traditional land use or geographic features of cultural heritage interest. These communities must also be engaged when formulating the Stage 4 mitigation strategy for Indigenous sites characterized as rare, sacred or of Woodland age.

These requirements are applicable to EfKj-1, EfKj-2, EfKj-3, and EfKj-4, and based on these sites' Pre-Contact cultural materials and affiliations, LSFN and WFN have shared Anishinaabe perspectives on them during site visits during the Stage 3 work in 2024 and 2025 (Appendix Q-1), indicating, in the course of their Stage 3 site visits, that they regard EfKj-1, EfKj-2, EfKj-3 and EfKj-4 as holding clear cultural interest and community value. On that basis, avoidance has been selected as the means for mitigating potential effects to these sites.

10.7.2.5 Cultural Heritage Landscapes and Built Heritage Resources

For regulatory purposes in Ontario, cultural heritage landscapes are defined as:

> …a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest by a community, including an Indigenous community. The area may include features such as buildings, structures, spaces, views, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association. (Ministry of Municipal Affairs and Housing, 2024)

Built heritage resources may be part of a cultural heritage landscape or occur discretely. In Ontario, they are defined as:

> a building, structure, monument, installation or any manufactured or constructed part or remnant that contributes to a property's cultural heritage value or interest as identified by a community, including an Indigenous community. (Ministry of Municipal Affairs and Housing, 2024)

Cultural heritage landscapes are important in considerations of Anishinaabe heritage due to their traditionally mobile lifeways, which created a network of interrelated places and practices.

These have framed the Anishinaabeg relationship to the land and water, while distributing their subsistence and cultural activities throughout their traditional use areas. They are commonly comprised of multiple locations of heritage importance, which may include, but are not limited to, natural features, built structures, archaeological sites and / or traditional use places.

For the purposes of cultural heritage studies in Ontario, including the one undertaken for this Project, cultural heritage landscape features may be individually identified and described as "cultural heritage resources" (CHR) to simplify and facilitate discussion of elements indicative of cultural heritage landscapes (see Section 10.7).

A 40-year moving window is commonly used as a nationally and provincially recognized threshold for identifying when a building or landscape has "cultural heritage value or interest, " as discussed under the OHA and reflected in these definitions. However, the ongoing use of Indigenous heritage places or resources may not fit with this approach, and Indigenous heritage may include elements that are not captured by federal or provincial regulatory frameworks.

In the RSA, waterbodies once used for manoomin harvesting may also no longer support manoomin stands due to changes in water levels caused by hydroelectric damming in the English-Wabigoon River system. However, these areas, as well as waterbodies used for fishing and travel, may still form parts of cultural heritage landscapes because of their known historical use; manoomin lakes also hold potential for future Indigenous use through the restoration of suitable conditions or access.

The background research and field review undertaken for the Project's Cultural Heritage Report (Appendix P-1) identify five potential cultural heritage resources (CHRs) within a study area comprised of the PA and a 1-km buffer around it. This study area only covers the portions of the Indigenous physical and cultural heritage LSA that are closest to the PA. Of these five CHRs, three (CHR 2, 4 and 5) were found to be located entirely outside the PA, beyond Project-related disturbance. The fourth, designated Chukuni River (CHR 1), is located within the PA and adjacent parts of the LSA. It was identified because:

> "The river may have cultural heritage significance for local Indigenous Nations as it supports customary practices such as harvesting, hunting and was historically used as a canoe transportation route. This watercourse may have heritage significance for historical / associative and contextual reasons." (Appendix P-1, p.22)

The Cultural Heritage Report (Appendix P-1) indicates that, while the segment of the Chukuni River that comprises CHR 1 falls partly within the PA, it will not be subject to direct or indirect impacts from the Project. More specifically, the report anticipates that a planned effluent pipe to be placed in this location will not interfere with the use of the river for travel, and discharge from the pipe will avoid effects on water and fish by complying with regulatory requirements for water quality and quantity (Appendix P-1, p.27).

The Project cannot avoid CHR 3, which is comprised of manoomin fields at Unnamed Waterbody 1, A Cultural Heritage Evaluation Report (CHER) for CHR 3 was undertaken to determine if it has cultural heritage value or interest (CHVI) per Ontario Regulation (O. Reg. 9/06) of the OHA.

Based on publicly available sources and confidential reports shared by Indigenous communities, the CHER determined that CHR 3 meets multiple criteria for CHVI based on its historical / associative and contextual value (Appendix P-2). A Cultural Heritage Impact Assessment (CHIA) prepared in consultation with Indigenous communities was therefore required to identify appropriate conservation strategies and / or mitigation measures (Appendix P-3).

Consistent with the findings of the CHIA, Great Bear Resources' engagement with LFSN and WFN regarding Unnamed Waterbody 1's manoomin stands has resulted in collaborative development of the Wild Rice Enhancement Project (see Section 7.14).

10.7.3 Potential Effects

Potential interactions between the proposed Project activities and LSFN's Indigenous physical and cultural heritage identifies the possible effects, including both positive and negative effects, as well as whether they are direct or indirect. It examines the current use of land and resources for traditional purposes criteria and the pVCs of archaeology and cultural heritage (Sections 10.6 and 10.7), along with Project-specific studies conducted to support their assessment; for the two pVCs, the focus is on Indigenous input as required under the OHA. The results of engagement and consultation beyond archaeological and cultural heritage studies are also considered in relation to the potential Project effects on aspects of current land and resource use with heritage significance.

A detailed overview of the Project's potential interactions with Indigenous physical, cultural heritage, sites, areas or things of significance prior to mitigation is presented in Table 10.7-1. Project interactions are characterized as either having no interaction (-) or a potential interaction (✓). Project activities that result in no interaction were not considered further in the assessment. Project interactions that were identified as a potential interaction are carried forward to the potential effects assessment to determine the positive (desirable and beneficial) and negative (undesirable or adverse) potential effects on the physical, cultural heritage, sites, areas or things of significance.

Table 10.7-1: Potential Interactions Between Project Activities and Indigenous Physical and Cultural Heritage and Structures, Sites or Things of Significance

Project Component / Activity	Alteration or destruction of sites or areas of Indigenous heritage importance, including archaeological, historical, or architectural sites	Change in access to or quality of experience with sites or areas of Indigenous heritage importance, including archaeological, historical, or architectural sites	Change in sacred, ceremonial, spiritual and cultural values (including language, stories and traditions) associated with sites or areas of Indigenous heritage importance, including archaeological, historical, or architectural sites
Construction Phase			
Site preparation activities	✓	✓	✓
Establishment and operation of water management and treatment facilities	✓	✓	✓
Open pit mining	✓	✓	✓
Underground mining	-	-	-

Project Component / Activity	Alteration or destruction of sites or areas of Indigenous heritage importance, including archaeological, historical, or architectural sites	Change in access to or quality of experience with sites or areas of Indigenous heritage importance, including archaeological, historical, or architectural sites	Change in sacred, ceremonial, spiritual and cultural values (including language, stories and traditions) associated with sites or areas of Indigenous heritage importance, including archaeological, historical, or architectural sites
Management of rock and unconsolidated materials in stockpiles	✓	✓	✓
Establishment of onsite fish habitat and compensation measures	✓	✓	✓
Establishment of onsite aggregate operations	✓	✓	✓
Construction of the starter embankments for the Tailings Management Facility	✓	✓	✓
Construction and operation of buildings and infrastructure	✓	✓	✓
Waste management	-	-	-
Commissioning of the process plant	✓	✓	✓
Power supply	✓	✓	✓
Employment and expenditures	-	-	-
Operations Phase			
Underground mining	-	-	-
Mining of the LP Central pit	✓	✓	✓
Management of rock and unconsolidated materials in stockpiles	✓	✓	✓
Process plant operation	✓	✓	✓
Management of desulphurized tailings in the tailings management facility	✓	✓	✓
Management of concentrate tailings and contact water in the Viggo management facility	✓	✓	✓
Operation of water management and treatment facilities	✓	✓	✓
Construction of a mine water pond	✓	✓	✓

Project Component / Activity	Alteration or destruction of sites or areas of Indigenous heritage importance, including archaeological, historical, or architectural sites	Change in access to or quality of experience with sites or areas of Indigenous heritage importance, including archaeological, historical, or architectural sites	Change in sacred, ceremonial, spiritual and cultural values (including language, stories and traditions) associated with sites or areas of Indigenous heritage importance, including archaeological, historical, or architectural sites
Operation and maintenance of buildings and infrastructure	✓	✓	✓
Waste management	-	-	-
Power supply	✓	✓	✓
Progressive reclamation activities	✓	✓	✓
Employment and expenditures	-	-	-
Closure Phase			
Active closure	✓	✓	✓
Passive closure	-	-	-
Final reclamation	✓	✓	✓
Employment and expenditures	-	-	-

Legend: ✓ = Interaction exists

- No interaction exists

10.7.3.1 Construction Phase

The construction phase of the Project is expected to occur over a three-year period and will include site preparation and the construction of Project infrastructure.

The construction phase activities checked off in Table 10.7-2 were specifically identified and included for consideration due to their potential physical, sensory and experiential effects on Indigenous physical and cultural heritage places and practices. These activities may result in pathways to potential direct and indirect effects on Indigenous physical and cultural heritage as follows:

- A loss or alteration of vegetation which may affect:
    - plant habitat, and current plant harvesting places and opportunities, as well as embedded cultural activities and intergenerational knowledge transfer
    - wildlife habitat, and current hunting places and opportunities, as well as embedded cultural activities and intergenerational knowledge transfer
    - fishing habitat, and current fishing places and opportunities, as well as embedded cultural activities and intergenerational knowledge transfer

    - current camping and habitation places and opportunities, as well as embedded cultural activities and intergenerational knowledge transfer
    - current trails and travelways, as well as embedded cultural activities and intergenerational knowledge transfer
    - the condition of archaeological sites, historical sites, cultural heritage landscapes and other places with Indigenous heritage value (e.g., harvesting areas used in past, old trails, landmarks used in navigation or discussed in oral traditions) in a way that affects that value
- Vegetation and ground disturbance, which may lead to erosion, sedimentation or other alteration of surface water quality and quantity, thereby affecting:
    - fish, wildlife and plant habitat, and current harvesting places and opportunities, as well as embedded cultural activities and intergenerational knowledge transfer
    - the condition of archaeological sites, historical sites, cultural heritage landscapes and other places with Indigenous heritage value in a way that affects that value
- Use of vehicles and equipment, blasting and human activity, which may lead to altered wildlife or fish behaviour or increased wildlife or fish mortality, thereby affecting:
    - wildlife and fish habitat, and current hunting and fishing places and opportunities, as well as embedded cultural activities and intergenerational knowledge transfer;
    - the experience and condition of archaeological sites, historical sites, cultural heritage landscapes and other places with Indigenous heritage value
- Use of vehicles and equipment, blasting and human activity which may lead to changes to sensory qualities (e.g., sound and vibration levels, viewsheds, dustfall), thereby affecting:
    - the experience of places and practices currently used for traditional harvesting and cultural activities, including sacred, spiritual and ceremonial activities, as well as intergenerational knowledge transfer;
    - the experience and condition of archaeological sites, historical sites, cultural heritage landscapes and other places with Indigenous heritage value.
- Changes in access to:
    - places currently used in past or present for traditional activities, including harvesting, camping and travelling, as well as sacred, spiritual and ceremonial practices, and intergenerational knowledge transfer;
    - places integrating archaeological sites, historical sites, cultural heritage landscapes and other places with Indigenous heritage value.

These interactions are similar to those involving the criteria of current use of lands and resources for traditional purposes because locations still subject to Indigenous use may have Indigenous heritage significance based on their role in ongoing cultural practices established at that place in the past, as well as their importance in passing those practices between generations.

These interactions also resemble those in archaeology and cultural heritage (Section 10.6 and Section 10.7) because Indigenous physical and cultural heritage value can be tied to cultural heritage landscape or archaeological sites.

Potential effects during the construction phase may affect LSFN community members, if they use this area for their land- and water-based activities, as well as teachers and learners involved in passing on cultural knowledge across generations (e.g., Elders and youth).

These effects will include loss of access to the PA, although access to the LSA will remain. Direct effects are not predicted for the LSA, but some indirect effects, such as sensory disturbances, may occur in parts of the LSA that are proximal to the PA.

10.7.3.2 Operations Phase

The operations phase is anticipated to extend over a 26-year period. The operations phase activities checked off in Table 13.7-2 have been specifically identified, since they may result in the same pathways to potential physical, sensory and experiential effects on Indigenous physical and cultural heritage as construction phase activities.

While ground disturbance activities and vegetation removal are planned to occur during the construction phase, it is possible that additional ground disturbance or vegetation removal may occur during closure. Specifically, any further vegetation removal, ground disturbance and related activities linked to expansion or progressive remediation of mining features and facilities may alter vegetation, wildlife and fish, as well as their habitats, and associated harvesting opportunities, thereby disrupting cultural activities linked to Indigenous heritage, including knowledge transmission. Such changes may also affect places and things that derive their Indigenous heritage importance from sacred, spiritual, ceremonial, or other cultural practices not directly linked to or embedded in harvesting, as well as archaeological and historic sites, cultural heritage landscapes, and other places with Indigenous heritage value. Interactions with operational activities may also alter or hinder access and use of heritage places and things. Indigenous physical and cultural heritage may experience further potential effects parallel to those of the archaeology and cultural heritage pVCs (Section 7.14 and Section 7.15).

Potential effects during the operations phase may affect LSFN community members, if they use this area for their land- and water-based activities, as well as teachers and learners involved in intergenerational transfer of cultural knowledge (e.g., Elders and youth).

These effects will include loss of access to the PA, although access to the LSA will remain. Direct effects are not predicted for the LSA, but some indirect effects, such as sensory disturbances, may occur in parts of the LSA that are proximal to the PA.

10.7.3.3 Closure Phase

The closure phase will be initiated with a three-year active closure period immediately after operations cease, followed by a one-year passive closure period and then a final close-out period anticipated to extend for one year. While ground disturbance activities and vegetation removal are planned to occur during the construction phase, it is possible that additional ground disturbance or vegetation removal may occur during closure. Closure phase activities may physically disturb plant, wildlife and fish habitats, as well as cultural activities associated with their harvesting, including intergenerational knowledge transfer.

They may also alter the physical and sensory character of heritage places and things, thereby affecting the conditions preferred or required to maintain their heritage value, as well as cultural activities that rely on these places and things, including knowledge sharing. Access may also be altered or obstructed.

The closure phase will involve filling mine pits with water and removing infrastructure. Physical activities associated with infrastructure removal and associated remediation have the potential to affect Indigenous physical and cultural heritage through physical and sensory disturbances, and obstruction of, or alteration of access to, sites or areas of Indigenous heritage importance. Culturally valued places, as well as access to these places, may also be affected by physical alterations resulting from erosion or the redirection of surface water.

Potential effects during the closure phase may affect LSFN community members if they use this area for their land- and water-based activities, as well as teachers and learners who are actively involved in intergenerational transfer of cultural knowledge (e.g., Elders and youth).

These effects will include loss of access to the PA, although access to the LSA will remain. Direct effects are not predicted for the LSA, but some indirect effects, such as sensory disturbances, may occur in parts of the LSA that are proximal to the PA.

10.7.4 Mitigation and Enhancement

Mitigation of potential effects to Indigenous physical and cultural heritage is connected to the archaeology and cultural heritage pVCs when the recognition of heritage importance by archaeological and cultural heritage practitioners aligns with the values of Indigenous communities. This occurs when Indigenous communities agree that an archaeological site or cultural heritage landscape feature identified under the OHA is also considered important from their perspective.

For the archaeological sites identified in or near the PA, archaeological reports have been shared with all Indigenous communities, and based on input from LSFN and WFN, avoidance of all potentially affected archaeological sites has been selected as the mitigation.

Potential effects to the locations identified by the cultural heritage studies within the PA will be mitigated by Project design features at CHR 1 (Chukuni River) and by wild rice research and offsetting for CHR 3 (wild rice stands on Unnamed Waterbody 1).

Great Bear Resources has funded a study by Northern Bioscience and Harris Ecological Consulting to explore and address the loss of historic manoomin production on Wabauskang Lake through wild rice enhancement. In addition to habitat restoration, the Project will incorporate education and knowledge sharing on sustainable harvesting practices, supporting long-term stewardship. Results of this collaborative initiative have potential to inform wild rice revitalization projects in the future and to support the ongoing presence and success of the species across the region.

The mitigation and enhancement measures for multiple biophysical fVCs and pVCs (Sections 7.0), in combination with the mitigation measures for current use of lands and resources for traditional purposes (Section 10.6), further contribute to the mitigation of potential effects to Indigenous physical and cultural heritage, extending to sites and areas associated with current use of lands and resources for traditional purposes.

Protection of Indigenous access to and quality of experience of places and resources, which are traditionally valued and used for cultural and heritage reasons, will be mitigated through design and management measures aimed at limiting the physical and temporal extent of sensory effects outside the PA, as well as the need for land users to adjust patterns of movement in the LSA around the lack of access to the PA. Additional mitigations include vibration control and reducing visual disturbance through design, such as the height and placement of mine structures and stockpiles.

A commitment to support and respect ceremonial practices includes integrating ceremonial activities in collaboration with local Indigenous communities. Indigenous environmental monitoring, engagement with trapline holders, and continued feedback through the environmental committee will provide opportunities for ongoing input on project activities and mitigation measures concerning traditional activities and cultural heritage considerations. This committee will facilitate continuous sharing and application of Indigenous Knowledge, address new issues raised by Indigenous communities, and encourage communication and dialogue about Project activities, approvals, and adaptive management and monitoring plans.

The mitigation measures specific to potential effects on Indigenous physical and cultural heritage include:

- **Chance Find Procedure (CFP)**: An Archaeological Resources Protection Procedure (Chance Find Procedure) has been established for the Project.
- **Cultural Heritage Protection Plan (CHPP)**: The CHPP will be developed with participating Indigenous Nations to support consistent protection of Indigenous heritage (including intangible values), archaeological and cultural heritage sites. The CHPP will be a version-controlled living document, updated through the Chance Find Procedure, with decisions documented jointly.

  For the archaeological sites identified in or near the PA, archaeological reports have been shared with Indigenous communities, and, based on input from LSFN and WFN, avoidance of all potentially affected archaeological sites has been selected as the mitigation.
- **Environmental Management Committee**: Great Bear Resources will work with the environmental management committee(s) and interested Indigenous members throughout the duration of the Project (all phases), to facilitate ongoing communications, sharing and integration of Indigenous Knowledge and environmental information, and share and evaluate Project approvals, adaptive management and monitoring plans, and address emerging issues and interests identified by Indigenous Nations.
- **Environmental monitors:** Great Bear Resources will continue to work with the Environmental Management Committee and engage Indigenous environmental monitors from local communities in the implementation of mitigation and monitoring.
- **Indigenous-led ceremonies:** Great Bear Resources is committed to incorporate appropriate ceremonial practices into the Project. Ceremonies will be held under the direction of local Indigenous Nations.

Table 10.1-1 includes mitigation measures applicable to the management of effects on pVCs and fVCs that are linked to Indigenous physical and cultural heritage to LSFN. It includes relevant plans, policies, and measures from predictive reporting on linked pVCs and fVCs.

10.7.5 GBA Plus Considerations

During the life of the Project, the PA will be largely inaccessible. This is expected to last for approximately 30 years once construction commences. Sites of Indigenous physical and cultural heritage importance in the PA include a trapline owned by an LSFN family, a waterbody with a manoomin stand, and areas used for mushroom and berry gathering.

As presented in Appendix X, the GBA Plus subgroups that may experience negative effects by restricted access include:

- Indigenous Peoples. This includes men+, women+, Elders and youth. The inability to access sites of Indigenous physical and cultural heritage importance may result in the loss of knowledge transmission across multiple generations.

10.7.6 Residual Effects after Mitigation

After the implementation of mitigation measures, assessment and characterization of potential residual effects on Indigenous physical and cultural heritage structures, sites, or things of significance is completed using the methodology outlined in Section 6. Further details on residual effect criteria ratings that are specific to physical and cultural heritage sites or things are defined in Section 6 and in Section 10.3.2.

The attached Table 10.1-1 summarizes the results of the assessment for the linked pVC and fVC components. Detailed description on the methods, existing conditions, mitigation measures, and residual effects can be found in their respective sections.

Based on the assessment of linked pVCs and fVCs, residual changes after mitigation considered as part of the assessment of residual effects on Indigenous physical and cultural heritage structures, sites, or things of significance include:

- Cultural Heritage (pVC)

There are other linked pVCs and fVCs listed in Table 10.1-1 and section 10.1 that do not have residual changes after mitigation measures have been applied. This includes linked fVC Fish and Fish Habitat, Wild Rice, Land and Resource Use and Archaeology. This means that Project activities will not change their existing conditions over the Project life cycle. Therefore, those linked pVCs and fVCs are not carried forward into the residual effects assessment for LSFN community members.

10.7.6.1 Residual Effects to Indigenous Physical and Cultural Heritage after Mitigation for Lac Seul First Nation

Sections 10.7.6.1.1, 10.7.6.2.2 and 10.7.6.1.2 summarize the results of the residual effects assessment for the three potential effects to Indigenous physical and cultural heritage. These sections draw from the residual effects of the two linked pVCs of Archaeology and Cultural Heritage, and the criteria of Current Use of Lands and Resources for Traditional Purposes.

These are the three sources of information that encompass both tangible and intangible places and things relevant to the assessment of Indigenous physical and cultural heritage. Table 10.7-2 summarizes the potential effects that remain after mitigation and enhancement measures are implemented.

Table 10.7-2: Residual Effects Remaining after Mitigation Measures for Indigenous Physical and Cultural Heritage – Lac Seul First Nation

Potential Effect	Potential Residual Effect Remaining
Alteration or destruction of sites or areas of Indigenous heritage importance, including archaeological, historical, or architectural sites.	Y
Change in access to or quality of experience with sites or areas of Indigenous heritage importance, including archaeological, historical, or architectural sites.	Y
Change in sacred, ceremonial, spiritual and cultural values (including language, stories and traditions) associated with sites or areas of Indigenous heritage importance, including archaeological, historical, or architectural sites.	Y

As each potential effect identified for Indigenous Physical and Cultural Heritage has indicators relating to archaeology, cultural heritage, and current use of lands and resources, they are assessed in relation to the linked pVCs and Section 10.6. There are no residual effects for the Archaeology pVC, and so there are no residual effects relating to archaeological sites. Potential residual effects remaining on indicators include those related to current use sites (or identified historical use sites) identified through confidential reports shared by LSFN, and Cultural Heritage sites identified in the Cultural Heritage Report. While some of these sites and areas have been assessed relating to changes in their current use, they are assessed here in relation to their physical and cultural heritage values.

10.7.6.1.1 Residual Effects on Alteration or Destruction of Sites or Areas of Indigenous Heritage Importance

The PA overlaps with terrestrial locations and resources that LSFN identifies as having historical and cultural importance. Specifically, it includes a trapline owned by an LSFN family and areas used for mushroom gathering. The PA also overlaps with a waterbody with a manoomin stand; this particular stand does not have a record of LSFN use but LSFN states that manoomin is of general cultural importance to LSFN. Additional nearby berry gathering sites include cranberry sites along Dixie Creek and at the confluence of Dixie Creek and the Chukuni River.

Trapline RL068 (also designated RL87ND68) is currently worked by a non-Indigenous trapper. However, discussion of the trapline, its yields, and its ownership by an LSFN family in the LSFN Project-specific TKLUS report indicate a continued LSFN interest in its community members' historical relationship with the area encompassed by the trapline, consistent with Anishinaabe principles of multigenerational familial stewardship of trapline areas (see Section 10.6).

LSFN's Project-specific TKLUS report also highlights their community members' interest in manoomin stands as a valued heritage and cultural resource that they wish to revitalize. On this basis, the report notes a general concern with the well-being of this species. This interest extends to the Project's impact to the manoomin stands on Unnamed Waterbody 1 in the PA, even though this is not a stand known to have been harvested by LSFN community members. The Wild Rice Enhancement Project helps to address this interest by supporting manoomin recovery at Wabauskang Lake and providing a potential source of valuable information for supporting manoomin recovery efforts across the region, including LSFN's wild rice revitalization work.

LSFN further notes that their community members gather mushrooms in the PA and cranberries along Dixie Creek at its confluence with the Chukuni River. Heritage elements of these activities are not emphasized. However, plant gathering is commonly a context for sharing of Indigenous Knowledge and therefore is conservatively considered in relation to residual effects on Indigenous physical and cultural heritage. Dustfall and pollutants from Project activities are identified by LSFN as particular concerns for mushroom gathering. At the same time, LSFN does not identify a unique value to or historical basis for mushroom and cranberry harvesting in this location.

Last, LSFN's Project-specific Indigenous Knowledge study highlights that the Chukuni River, which includes a short segment within the PA, is a historic focus for past LSFN activities, including travel, camps and villages, with many LSFN community members continuing to own and use properties along the Chukuni River today. However, as noted in relation to the identification by the cultural heritage study of the Chukuni River as a CHR, a planned effluent pipe to be placed in this location will not interfere with the use of the river for travel, and discharge from the pipe will avoid effects on water and fish by complying with regulatory requirements for water quality and quantity. These measures in turn will mitigate potential effects to ongoing LSFN activities (confirmed by LSFN) along the Chukuni River in the PA and the LSA.

For archaeological heritage, Great Bear Resources has made design changes to components within the PA to protect EfKj-1 through avoidance, consistent with the mitigation strategy identified via input from LSFN and WFN.

Archaeological work to date has confirmed that the Project will not impact archaeological site EeKi-4, as it is located beyond the archaeology pVC LSA and RSA (Appendix Q-1). Although EfKj-2, EfKj-3 and EfKj-4 are located closer to the PA, they are also beyond the archaeology pVC LSA and RSA and will be avoided.

For cultural heritage landscapes, the Project cannot avoid CHR 3, the manoomin fields between Unnamed Waterbodies 1 and 2 (Appendix P-1). The subsequent CHER determined that CHR 3 meets multiple criteria for CHVI based on its historical / associative and contextual value (Appendix P-1)). For this reason, a Cultural Heritage Impact Assessment prepared in consultation with Indigenous communities was required including further engagement with Indigenous communities to gain a deeper understanding of their perspectives on the location.

Consistent with the CHIA, wild rice research and offsetting have been selected as appropriate mitigations, based on input from LSFN and WFN. Specifically, Great Bear Resources has funded a study by Northern Bioscience and Harris Ecological Consulting to explore and address the loss of historic manoomin production on Wabauskang Lake through wild rice enhancement. Although located on WFN's reserve, the results of this collaborative initiative have the potential to inform LSFN wild rice projects. Promoting manoomin recovery also aligns with LSFN's general concern regarding the well-being of these valued historical and cultural resources across the region. LSFN's Project-specific TKLUS report highlights that the importance to the community to lose a manoomin-bearing area

Based on loss of the manoomin stand at Unnamed Waterbody 1 and of access to the trapline and plant gathering areas in the PA during Project construction and operations, a residual effect to Indigenous physical and cultural heritage associated with traditional use places and activities is anticipated, which is characterized in Table 10.7-3. No residual effect to Indigenous physical and cultural heritage associated with archaeological sites is anticipated.

Table 10.7-3: Characterization for Negative Residual Effect on Alteration or Destruction of Sites or Areas of Indigenous Heritage Importance - Lac Seul First Nation

Attribute	Category	Rationale
Ecological or Social Context	Level I	Criteria may or may not be sensitive, and can support the predicted change with typical mitigation measures
Magnitude	Level I	Project-related change that is insufficient to alter how Indigenous heritage structures, sites or things, are used, accessed or experienced. Magnitude is Level I because of the relatively compact physical extent of the area to which access will be lost, i.e., the PA, along with the documentation and development of management and mitigation measures, including a CFP and a CHPP, for Indigenous physical and cultural heritage in the PA. They will be further managed by Indigenous-informed mitigations for Indigenous heritage in the PA. Ongoing input through Indigenous monitoring and engagement will further support and maintain Indigenous heritage in the PA and LSA
Geographic Extent	Level I	Effect is restricted to the LSA
Duration	Level II	Effect occurs over the medium term: more than three years but less than 32 years
Frequency	Level II	Effect occurs intermittently or regularly.
Reversibility	Level I	Effect is fully reversible during the Project phases
Timing	Level I	Effects do not occur during a sensitive period, or related effects are fully mitigated

10.7.6.1.2 Residual Effects on Access to or Quality of Experience with Sites or Areas of Indigenous Heritage Importance

The PA overlaps with terrestrial locations and resources that LSFN identifies as having historical and cultural importance. Specifically, it includes a trapline owned by an LSFN family and areas used for mushroom gathering. Loss of access due to the Project will affect these activities. Additional nearby berry gathering sites include cranberry sites along Dixie Creek and at the confluence of Dixie Creek and the Chukuni River.

Trapline RL068 (also designated RL87ND68) is currently worked by a non-Indigenous trapper. However, discussion of the trapline, its yields, and its ownership by an LSFN family in the LSFN Project-specific TKLUS report indicate a continued LSFN interest in its community members' historical relationship with the area encompassed by the trapline, consistent with Anishinaabe principles of multigenerational familial stewardship of trapline areas (see Section 10.6).

LSFN further notes that their community members gather mushrooms in the PA and cranberries along Dixie Creek at its confluence with the Chukuni River. Heritage elements of these activities are not emphasized. However, plant gathering is commonly a context for sharing of Indigenous Knowledge and therefore is conservatively considered in relation to residual effects on Indigenous physical and cultural heritage. Dustfall and pollutants from Project activities are identified by LSFN as particular concerns for mushroom gathering. At the same time, LSFN does not identify a unique value to or historical basis for mushroom and cranberry harvesting in this location.

LSFN's Project-specific TKLUS report highlights that the Chukuni River, which includes a short segment within the PA, is a historic focus for past LSFN activities, including travel, camps and villages, with many LSFN community members continuing to own and use properties along the Chukuni River today. However, as noted in relation to the identification by the cultural heritage study of the Chukuni River as a CHR, a planned effluent pipe to be placed in this location will not interfere with the use of the river for travel, and discharge from the pipe will avoid effects on water and fish by complying with regulatory requirements for water quality and quantity. These measures in turn will mitigate potential effects to ongoing LSFN activities (confirmed by LSFN) along the Chukuni River in the PA and the LSA.

On this basis, a residual effect on Indigenous physical and cultural heritage is anticipated in relation to heritage-related past and current use of land and resources for traditional purposes, which is characterized in Table 10.7-4. Residual effects involving changes in access to or quality of experience with archaeological sites or cultural heritage landscapes of Indigenous heritage importance are not anticipated for LSFN.

The associated characterizations are presented in Table 10.7-4 and are based on the following assumptions regarding the effectiveness of relevant mitigations. It is assumed that application of mitigations for Indigenous physical and cultural heritage, as well as linked pVCs, protect Indigenous access to and quality of experience of heritage sites, areas and things. It is assumed that mitigation measures which restore LSFN access and experience at closure, e.g., reclamation, are sufficiently advanced that conditions after 32 years are consistent with those needed for heritage practices and experience. It is also assumed that mitigation measures for sensory effects restrict residual effects to that PA such that their frequency in areas accessible to LSFN community members during the Project is infrequent, and their timing does not affect sensitive seasonal periods (e.g., fall harvest of wildlife and plants in the LSA).

Table 10.7-4: Characterization for Negative Residual Effect Potential Effect on Access to or Quality of Experience with Sites or Areas of Indigenous Heritage Importance - Lac Seul First Nation

Attribute	Category	Rationale
Ecological or Social Context	Level I	Criteria may or may not be sensitive, and can support the predicted change with typical mitigation measures
Magnitude	Level I	Project-related change that is insufficient to alter how Indigenous heritage structures, sites or things, are used, accessed or experienced. Magnitude is Level I because of the relatively compact physical extent of the area to which access will be lost, i.e., the PA, along with mitigations including Indigenous ceremonies and Indigenous monitoring. Application of mitigations for sensory effects also will support required or preferred conditions for Indigenous physical and cultural heritage places or practices in the LSA
Geographic Extent	Level I	Effect is restricted to the LSA
Duration	Level II	Effect occurs over the medium term: more than three years but less than 32 years
Frequency	Level II	Effect occurs intermittently or regularly
Reversibility	Level I	Effect is fully reversible during the Project phases
Timing	Level I	Effects do not occur during a sensitive period, or related effects are fully mitigated

10.7.6.1.3 Residual Effects on Sacred, Ceremonial, Spiritual and Cultural Values Associated with Sites or Areas of Indigenous Heritage Importance

The PA overlaps with terrestrial locations and resources that LSFN identifies as having historical and cultural importance. Specifically, it includes a trapline owned by an LSFN family and areas used for mushroom gathering. The PA also overlaps with a waterbody with a manoomin stand; this particular stand does not have a record of LSFN use but LSFN states that the species is of general cultural importance to LSFN. Additional nearby berry gathering sites include cranberry sites along Dixie Creek and at the confluence of Dixie Creek and the Chukuni River.

LSFN further notes that their community members gather mushrooms in the PA and cranberries along Dixie Creek at its confluence with the Chukuni River. Heritage elements of these activities are not emphasized. However, plant gathering is commonly a context for sharing of Indigenous Knowledge and therefore is conservatively considered in relation to residual effects on Indigenous physical and cultural heritage. Dustfall and pollutants from Project activities are identified by LSFN as particular concerns for mushroom gathering. At the same time, LSFN does not identify a unique value to or historical basis for mushroom and cranberry harvesting in this location.

On this basis, a residual effect on Indigenous physical and cultural heritage is anticipated in relation to heritage-related past and current use of land and resources for traditional purposes, which is characterized in Table 10.7-7. Residual effects involving changes in sacred, ceremonial, spiritual, and cultural values associated with archaeological sites or cultural heritage landscapes of Indigenous heritage importance are not anticipated for LSFN.

The associated characterizations are presented in Table 10.7-5 and are based on the following assumptions regarding the effectiveness of relevant mitigations. It is assumed that application of mitigations for Indigenous physical and cultural heritage, as well as linked pVCs, protects heritage sites, areas and things that support cultural values and knowledge, as well as intergenerational knowledge transfer. It is assumed that mitigation measures which restore LSFN access and experience at closure (e.g., reclamation) are sufficiently advanced that conditions after 32 years are consistent with those needed for practicing, teaching and learning activities that support Indigenous cultural heritage. It is also assumed that mitigation measures for sensory effects restrict residual effects to the PA such that their frequency in areas accessible to LSFN community members during the Project is infrequent, and their timing does not affect sensitive seasonal periods key to practicing and sharing cultural activities (e.g., fall harvest of wildlife and plants in the LSA).

Table 10.7-5: Characterization for Negative Residual Effect Potential Effect on Sacred, Ceremonial, Spiritual and Cultural Values (Including Language, Stories and Traditions) Associated with Sites or Areas of Indigenous Heritage Importance - Lac Seul First Nation

Attribute	Category	Rationale
Ecological or Social Context	Level I	Criteria may or may not be sensitive, and can support the predicted change with typical mitigation measures
Magnitude	Level I	Project-related change that is insufficient to alter how Indigenous heritage structures, sites or things, are used, accessed or experienced. Magnitude is Level I because of the relatively compact physical extent of the area to which access will be lost, i.e., the PA, for the purposes of cultural practices and / or intergenerational knowledge transfer. Application of mitigations for sensory effects also will support required or preferred conditions for Indigenous cultural practices and intergenerational knowledge transfer in the LSA.
Geographic Extent	Level I	Effect is restricted to the LSA
Duration	Level II	Effect occurs over the medium term: more than three years but less than 32 years
Frequency	Level II	Effect occurs intermittently or regularly
Reversibility	Level I	Effect is fully reversible during the Project phases
Timing	Level I	Effects do not occur during a sensitive period, or related effects are fully mitigated

10.7.7 Significance of Residual Effects

The magnitude of the effect on Indigenous physical and cultural heritage is low (Level I) and restricted to the PA and LSA (Level I). The effect will occur intermittently (Level II), and it will occur through construction, operations and closure (Level II). It will be fully reversible at closure (Level I). The limited spatial extent of the Project, along with design and mitigation measures, including provision for ceremonies in the PA as appropriate, reduce any Project contribution (Level I). The residual effect is therefore not significant.

10.7.8 Confidence

The prediction confidence assignment reflects the information available through Project-specific TKLUS reports, publicly available data (statistical websites, government pages, previously completed EA / IS reports), understanding of the effectiveness of applicable mitigation measures, and outcomes of other pVCs and fVCs. The assessment is informed by substantial primary and secondary information and robust analysis however, as noted in the assessment, there are some instances where the information collected had data gaps or lacked detail.

The overall confidence in residual environmental effect and significance predictions for Indigenous physical and cultural heritage and structures, sites or things of significance is moderate. As additional information continues to be shared through Great Bear Resources' ongoing consultation with local Indigenous communities over Project life, relevant information will be incorporated into Project planning as practical.

10.8 Community Well-being

Community well-being was identified as a criteria as it reflects the broader social and economic conditions that influence quality of life. These conditions may be directly or indirectly affected by Project-related changes to social determinants of health including, income, employment, housing affordability, food security, access to services, community cohesion, and access to land and resources. These factors are considered individually and collectively to assess the broader social and economic conditions that contribute to health, stability, resilience and quality of life of LSFN community members across the LSA and RSA.

The community well-being assessment incorporates the following key themes, reflected in the structure of the existing conditions and effects assessment:

- Social determinants of health (e.g. income, employment, housing, cost of living, traditional economy and education level, access to health and social services)
- Community cohesion (e.g. household dynamics, gender-based and caregiver vulnerabilities, family stability, and community inclusion)
- Public Safety (e.g. crime and gender-based violence, safety risks for women+, girls+, and 2SLGBTQIA plus people, where “women+” and “girls+” refer to women, girls, and some non-binary individuals as defined by Statistics Canada)
- Access to land and resources (e.g. harvesting, cultural practices, and land stewardship).
- Population dynamics (e.g. regional population growth, mobility, and demographics)
- Economic opportunity and inequality (e.g. access to employment and training, and barriers for Indigenous and vulnerable groups)

A GBA plus lens is applied to consider the experiences of diverse groups (e.g., Elders, youth, 2SLGBTQL plus, and women+). The assessment integrates desktop research and qualitative data (collected from key service providers) to develop a comprehensive understanding of existing conditions, and potential effects on community well-being. Information sources include a desktop baseline socio-economic report (Appendix O-1), publicly available statistics, academic literature, media reports, and non-confidential Indigenous Knowledge and land use information, where available.

As outlined in the Section 10.3.2 and summarized in Table 10.3-2, the assessment draws on a set of quantitative and qualitative indicators covering housing and cost of living, income inequality, service capacity, safety, employment participation, household pressures, community cohesion, and access to traditional resources. These indicators align directly with the themes and form the basis for evaluating changes in community well-being.

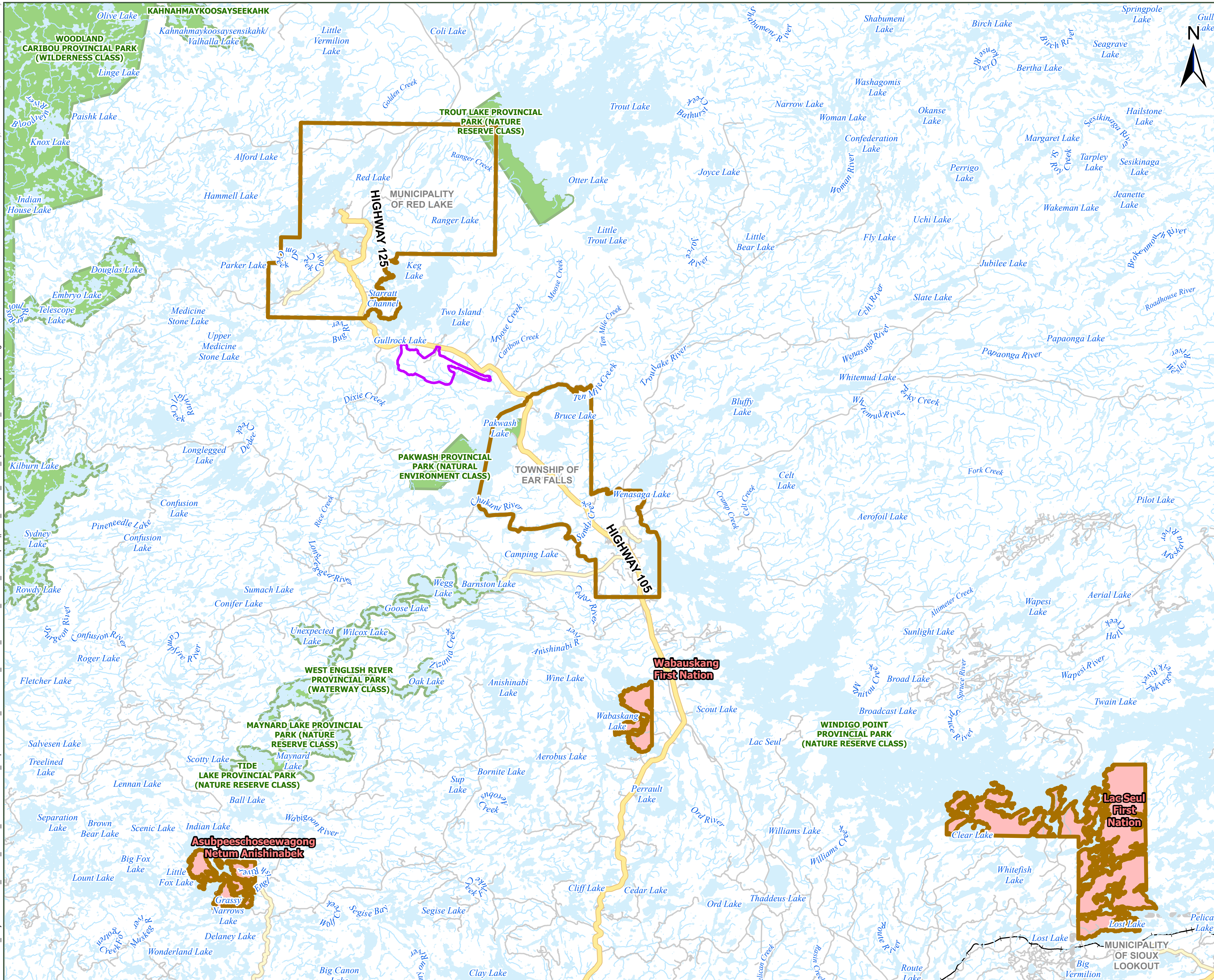
10.8.1 Spatial Boundaries

There are three study areas within the spatial boundaries. They are the Project Area (PA), the Local Study Area (LSA), and the Regional Study Area (RSA), which includes both the PA and the LSA. The spatial boundaries used for the assessment of community well-being are shown in Figure 10.8-1 and are defined:

- The PA is defined as the footprint of the Project including all temporary and permanent areas associated with the mine site, as well as a buffer to allow flexibility for design optimizations prior to construction and over the mine life (Section 6.4). The PA is approximately 3,349 hectares (ha) in size.

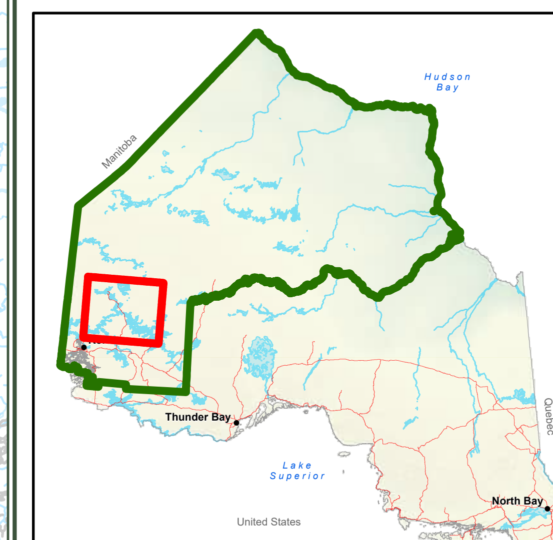
- The LSA is the area within which Project-related effects may reasonably be expected to occur and can be predicted or measured with a reasonable degree of accuracy and confidence. The region that the Project's socio-economic demands are expected to influence, possibly causing direct, indirect and / or induced effects on community well-being include the Indigenous communities of ANA, LSFN, NWOMC, WFN, and the Indigenous Peoples living in the Red Lake and Ear Falls area.
- The RSA encompasses the LSA and is used to provide regional context for the significance of residual effects and is also the area within which potential for cumulative effects of the Project in combination with other past, present or reasonably foreseeable projects or activities are considered. The region surrounding the LSA and the PA may also experience direct, indirect, and / or induced effects on community well-being due to the socio-economic demands of the Project. This could include transportation corridors, and / or services which operate throughout the region. The RSA for community well-being is the District of Kenora. The RSA is the region which cumulative effects on the valued component are likely to occur.

These boundaries are consistent with those used for community services and infrastructure (Section 10.5).



LEGEND:

- PROJECT AREA
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- HIGHWAY
- MAJOR ROAD
- LOCAL ROAD
- RAILWAY
- WATERCOURSE
- WATERBODY
- INDIGENOUS COMMUNITY
- PROVINCIAL PARK
- MUNICIPAL BOUNDARY (LOWER TIER)



NOTES:
NOTE1: BASE DATA ACQUIRED FROM LAND INFORMATION ONTARIO.

0 5 10 20 30 km

SCALE 1:550,000
PAGE SIZE 11 x 17
NAD 1983 UTM Zone 15N
THIS MAP IS FOR CONCEPTUAL PURPOSES ONLY AND SHOULD NOT BE USED FOR NAVIGATION

GREAT BEAR RESOURCES

GREAT BEAR GOLD PROJECT

SPATIAL BOUNDARIES FOR COMMUNITY WELL-BEING

SLR

FIGURE NO: **10.8-1**

DATE: November 11, 2025 PROJECT NO: 241.030825

10.8.2 Existing Conditions

Community well-being reflects the social, economic, cultural, and service conditions that influence overall quality for LSFN community members.

To align with the assessment indicators used in the effects analysis information is organized by: social determinants of health (income, housing, cost of living, employment, education); access to services (health, childcare, social, education); household dynamics (including gender-based and caregiver vulnerabilities); public safety (including gender-based violence); economic opportunity and inequality; community cohesion; access to land and resources; and population dynamics.

The baseline characterization draws on desktop research. Additional details are provided in the Socio-Economic Baseline Study (Appendix O-1).

10.8.2.1 Methods

The information presented was collected via desktop research utilizing publicly available data sources such as Statistics Canada and other public websites (e.g., municipal, Indigenous communities) as well as qualitative information gathered through interviews with key service providers and community organizations. Where available, statistical data from the 2021 Census and other public sources are used to provide a quantitative baseline. However, statistical information specific to LSFN is limited.

As a result, generalized regional data is supplemented with qualitative information gathered through interviews with key service providers and community organizations. These insights help to contextualize community-specific challenges and strengths that may not be reflected in available statistical sources. This reflects the integration of both traditional and community-based knowledge sources to inform a comprehensive and balanced understanding of well-being in the LSA and RSA.

The analysis is guided by the TISG, which requires consideration of health, social, and economic conditions, with specific attention to the well-being of LSFN community members.

It is important to note that the reference year for income data is 2020, during the first year of the COVID-19 pandemic. This period was marked by considerable disruptions to employment, earnings, and government transfers, which may have had both short- and medium-term effects on reported income levels across Canada, particularly in small or remote communities.

The TISG also states that the description of baseline economic conditions must include “any relevant treaty provisions pertaining to economic development for Indigenous Peoples”. Great Bear Resources is not aware of any treaty provisions pertaining to economic development for LSFN.

10.8.2.2 Description

Community well-being reflects the overall social and economic conditions that support the health, stability, and resilience of individuals, families, and communities. It is closely connected to other pVCs and fVCs, including:

- Local and Regional Economy (Section 7.16)
- Community services and infrastructure (Section 10.5)
- Current use of lands and resources for traditional purposes (Section 10.6)

- Health (Section 10.9).

Statistical information (e.g., income, employment, housing) provides an understanding of community conditions. These sources offer a foundation for evaluating how existing pressures and potential future changes may affect overall well-being in the LSA and RSA.

10.8.2.2.1 Community Well-Being Index

The Community Well-Being (CWB) Index is a composite measure developed by Indigenous Services Canada that provides a high-level snapshot of socio-economic conditions across Canadian communities. The index incorporates four indicators: income, education, housing, and labour force activity. These are scored on a scale from 0 to 100, with higher values indicating higher levels of community well-being. The CWB Index is intended to support broad, cross-community assessments; however, its coverage varies based on community size and data availability, and not all communities are assigned CWB scores.

CWB outcomes vary across Indigenous Nations and non-Indigenous municipalities, reflecting differences in socio-economic conditions, governance and service delivery frameworks, and historical context. Within the Kenora District, some larger municipal communities are included in the CWB Index and are referenced in this assessment to provide regional context for interpreting CWB results. These municipal communities are not presented as direct comparators to LSFN, as structural differences such as population size, limit comparability.

In 2021, Lac Seul First Nation received a CWB score of 61, which is above the national average for Indigenous communities (approximately 58). The component scores indicate stronger outcomes in housing and labour force activity, alongside lower outcomes in income and education. The breakdown of the CWB score for Lac Seul First Nation is as follows:

- Income: 56
- Education: 36
- Housing: 76
- Labour Force Activity: 74

Municipal communities in the surrounding region that are included in the CWB Index reported higher overall scores in 2021, generally ranging from the high-70s to low-80s. These differences should be interpreted in light of structural factors, particularly population size and associated service concentration. Larger municipalities such as Red Lake and Ear Falls function as regional service hubs and typically benefit from greater infrastructure capacity, and access to broader opportunities. These characteristics influence CWB component scores and highlight the importance of interpreting differences in CWB outcomes within their broader demographic and service delivery context.

10.8.2.2.2 Social Determinants of Health

Social determinants of health, including income, education, housing and employment are evaluated to understand baseline conditions across the LSA and RSA.

Where specific on-reserve data for LSFN is not available, broader Kenora District data is used to illustrate regional trends and context. This approach is important because the Kenora District reflects many of the systemic challenges and opportunities affecting small, remote, and Indigenous communities across northwestern Ontario.

It is also important to note that residents of the LSA frequently access specialized services, such as healthcare, emergency shelters, and social supports, located in regional centres such as City of Kenora, reinforcing the connection between regional trends and on-reserve well-being.

While the RSA trends are presented to situate findings within a broader socio-economic environment, Project-related impacts are expected to be most directly experienced within the LSA.

Both quantitative data (such as Statistics Canada information) and qualitative insights (collected through service provider interviews) are integrated throughout the Section to provide a comprehensive understanding of current conditions and community well-being.

10.8.2.2.2.1 Income and Employment

Income is a determinant of individual and household well-being, and defines access to housing, education, health care, and other basic needs. It informs financial security, quality of life, and the overall social and economic resilience of communities. Regional data on income levels, income inequality, income distribution and sources of income are included. Together, these indicators provide insight into financial stability, affordability pressures, and broader socio-economic conditions across the study area.

Income and Income Status

In 2020, the on-reserve median after-tax household income for LSFN community members was $46,800, representing an increase of 2.6% from $45,600 in 2015. The on-reserve average after-tax household income was $52,520, which remains lower than the provincial average of approximately $76,000. Among individuals, the median after-tax income was $22,400 and the average was $27,200, both below the Ontario averages of $39,200 and $42,000 respectively (Statistics Canada 2022). Among those employed full-time / full-year, income levels were also lower compared to the province.

In 2020, the median employment income for LSFN community members was $42,800 compared to $67,000 in Ontario. The average employment income was $46,400 versus $82,400 provincially. LSFN women+ reported slightly higher median and average incomes than men+, which is the reverse of the provincial trend (Statistics Canada 2023).

Low-income prevalence (LIM-AT)

Low-income prevalence for LSFN community members is notably higher than in surrounding areas (Table 10.8-2). LSFN low-income rate, as defined by the Low-Income Measure – After Tax (LIM-AT) in 2020 reported the living in low-income conditions:

- 38.4% of the total LSFN population
- 39.0% of children (ages 0–17)
- 38.0% of working-age adults (ages 18–64)
- 40.0% of seniors (ages 65+)

The LIM-AT identifies individuals as low income if their adjusted after-tax household income falls below 50% of the national median. This measure reflects the extent to which individuals may struggle to afford essential goods and services, such as housing, food, and transportation.

As a relative measure, it highlights disparities in financial well-being both within and between communities.

By comparison:

- The provincial average for LIM-AT was 10%.
- The municipality of Red Lake reported a LIM-AT of 6.5%.

See Table 10.8-1 for a detailed breakdown of low-income prevalence by age group and gender (Statistics Canada 2023d).

Among the total population on-reserve, 42% of women+ were living in low income, compared to 35% of men+. This gender gap persists across age groups. For example, 43% of girls under 18 lived in low income, compared to 36% of boys, and 45% of senior women+ were living in low income, compared to 35% of senior men. These trends suggest that LSFN women+ and gender-diverse individuals may face increased economic vulnerability.

The 2021 CWB Index supports these findings. LSFN received a CWB income score of 56, which falls below both the national average (78) and the national average for Indigenous communities (61). This lower score suggests that income-related challenges, such as limited employment opportunities, income inequality, and cost-of-living pressures, continue to affect household well-being. A score of 56 reflects a low level of income-based well-being (Government of Canada 2021).

Table 10.8-1: Prevalence of Low Income by Age Group - Lac Seul 28 2025

Age group in low income	Total	Men+	Women+	Ontario Total (%)
Total population	38.4%	34.9%	42%	10
0 – 17 years	39%	36%	42.5%	11.5
18 – 64 years	38%	34.2%	42%	9
65+ years	40%	35%	45%	12

Source: (Statistics Canada 2023)

Note: Reference year for income data is 2020*

Note:

The category men+ includes men, as well as some non-binary persons. The category women+ includes women, as well as some non-binary persons.

Income Inequality

The Gini Index is a commonly used measure of income inequality. It ranges from 0 to 1, where 0 represents perfect income equality (everyone has the same income), and 1 represents maximum inequality (one person has all the income, and everyone else has none). A higher Gini value indicates greater income inequality within a population.

The Gini Index for adjusted after-tax household income for LSFN on-reserve communities is 0.366, which suggests a moderate level of income inequality in the community. The P80/P20 ratio, another measure of inequality, was 3.2, indicating that individuals earned 3.2 times more than those at the 20th percentile (Statistics Canada 2022; Statistics Canada 2023d).

Income Distribution

On-reserve income distribution data as shown in Table 10.8-2 further shows that approximately 83% of individuals fall within the bottom half of the income spectrum, with 37% in the lowest decile and with 17% of individuals fall within the top half (Statistics Canada 2022).
These figures suggest a concentration of individuals in lower income brackets. which can have implications for economic resilience and access to opportunity, particularly among groups already facing systemic barriers.

Table 10.8-2: Income Distribution - Lac Seul First Nation, 2025

Decile Group	Total (%)	Men+ (%)	Women+ (%)
In bottom half	82.9	84.1	80.6
1st decile (lowest)	37.1	38.3	35.7
2nd decile	14.6	15.9	13.3
3rd decile	16.1	14	17.3
4th decile	8.3	10.3	7.1
5th decile	6.3	6.5	7.1
In top half	17.6	15.9	18.4
6th decile	5.4	4.7	7.1
7th decile	2	0.9	2
8th decile	2.9	2.8	3.1
9th decile	3.9	3.7	3.1
10th decile (highest)	2.9	3.7	3.1

Source: (Statistics Canada 2023)

Note: Reference year is 2020

Note:

The category men+ includes men, as well as some non-binary persons. The category women+ includes women, as well as some non-binary persons.

Employment and Economic Participation

Labour market engagement is a key component of community well-being, particularly in relation to income security and access to other determinants of health and quality of life. In 2021, LSFN on-reserve population reported a participation rate of 50% and an employment rate of 44%, both lower than Ontario averages. As shown in Table 10.8-3, the unemployment rate for the LSFN population was 11.9%. These labour force indicators are based on approximately 670 LSFN individuals aged 15 years and older living on-reserve out of a total population of 1,025 (Statistics Canada 2023):

- Women+ had a higher employment rate (45%) compared to men+ (43%).
- Women+ had a lower participation rate (48%) than men+ (50%).
- Men+ had a higher unemployment rate (14%) compared to women+ (10%).

These figures suggest that while women+ are proportionally more likely to be employed, barriers may exist that reduce their overall participation. These could include caregiving responsibilities, lack of childcare, or challenges accessing employment opportunities aligned with their skills or interests.

Table 10.8-3: Labour Force Indicators by Gender – Lac Seul First Nation,2025

Lac Seul First Nation Population				Ontario		
Indicator	**Total**	**Men+**	**Women+**	**Total**	**Men+**	**Women+**
Participation Rate (%)	50	50	48.4	62.8	67.1	58.7
Employment Rate (%)	44	42.9	45.3	55.1	59.6	50.8
Unemployment Rate (%)	11.9	14.3	9.7	12.2	11.2	13.4

Source: (Statistics Canada 2023)

Note: Reference year is 2020

Note:

The category men+ includes men, as well as some non-binary persons. The category women+ includes women, as well as some non-binary persons.

Labour Market Composition

According to 2021 Census data, LSFN's regional workforce is concentrated in public administration (35%), health care and social assistance (24%), and educational services (13%), followed by construction (11%). Women+ tend to work in care-based sectors such as health and education, while men+ are overrepresented in construction and trades. The most common occupations include positions in education, law, and social services (25%), trades and transport (22%), and sales and service (16%), highlighting the community's reliance on both public sector employment and skilled trades (Statistics Canada 2023).

Sources of Income

The income composition for LSFN's on-reserve population and the Province of Ontario is presented in Table 10.8-4. The total population of LSFN had a lower percentage of market income (65%) and employment income (61.6%) compared to Ontario (82.9%; 77.5% respectively).

Men+ made up a higher proportion of the market income and employment income compared to women+ in both LSFN and Ontario. LSFN's on-reserve population had a higher percentage of government transfers (35.2%), defined as payments received from federal, provincial, or municipal programs such as pensions, social assistance, or employment insurance, compared to Ontario (17.1%), with women+ receiving a higher amount of government transfers compared to men+ in both LSFN and Ontario (Statistics Canada 2023e; Statistics Canada 2023d).

In addition to community-specific income characteristics, household income stability for LSFN community members is influenced by broader regional economic conditions. In October 2025, the Ear Falls sawmill, a major employer within the Kenora District, announced its closure, affecting approximately 150 unionized positions.

The closure was characterized as a community-level disruption within Ear Falls and the surrounding regional labour market, reflecting the region's reliance on resource-sector employment (CBC News 2025).

While the sawmill was not located on a LSFN reserve, and no information was available at the time of writing to indicate direct employment or income effects for Lac Seul community members, the closure represents a source of broader regional economic uncertainty. Such regional labour market changes may influence income stability, employment availability, and service demand over time; however, any community-specific implications for LSFN remain uncertain.

Table 10.8-4: Income Composition - Lac Seul First Nation and Ontario, 2025

Income Composition	Total	Men+	Women+
LSFN			
Market Income (%)	65.0	73.0	59.0
Employment Income (%)	61.6	69.0	56.0
Government Transfers (%)	35.2	27.2	42.0
Ontario			
Market Income (%)	82.8	87.0	77.8
Employment Income (%)	67.4	71.4	62.3
Government Transfers (%)	17.1	13.0	22.3

Source: Statistics Canada 2021

Note: Reference year is 2020

Definitions:

- Market income includes earnings from employment, self-employment, investments, private pensions, and other market sources.
- Employment income refers specifically to wages, salaries, and net income from self-employment.
- Government transfers include benefits such as the Canada Child Benefit, Old Age Security, Employment Insurance, and social assistance.

Note: The category men+ includes men, as well as some non-binary persons. The category women+ includes women, as well as some non-binary persons.

Education Level

Levels of educational attainment in LSFN have limited secondary and post-secondary completion among adults aged 15 and over, according to 2021 Census data. Gender disparities are also apparent, particularly in trades and academic pathways.

The key education outcomes for LSFN, with comparative data for WFN and ANA provided in Table 10.8-5 includes:

- 51.9% of LSFN adults had no high school diploma or equivalency certificate, with slightly higher rates among women+ (53.1%) than men+ (52.9%).
- 25.9% of LSFN adults had a secondary school diploma, and 11.1% had obtained a college or non-university certificate, with women+ more likely to reach this level (14.1%) than men+ (10.0%).

- 3.7% of LSFN adults held a university certificate or diploma at the bachelor level or above, again with higher representation among women+ (4.7%) than men+ (2.9%).
- 5.2% of LSFN adults had an apprenticeship or trades certificate, all of whom were men+.

These figures suggest persistent gaps in educational access and outcomes in the LSFN community, particularly at the high school level. As noted by the LSFN education department, students must leave the community to attend high school in Sioux Lookout, with daily transportation provided.

While there is a High School Support Program operating (as described in Section 10.5.2.2.2.5), barriers such as mental health, unstable housing, or family responsibilities contribute to inconsistent attendance and early withdrawal (Davis 2025). Engagement input indicated that some students may experience challenges related to social inclusion and accessibility within the education system, including barriers associated with transportation arrangements and experiences that affect their sense of belonging. These challenges are not captured in completion rates alone, but shape overall educational trajectories.

While these trends are not unique to the community, they are more pronounced here than in neighbouring Indigenous communities. For example, WFN reported lower high school non-completion rates (33.3%), and ANA had higher university-level attainment (4.8%), though also faced greater challenges at the secondary level with 61.4% of adults lacking a high school diploma (Statistics Canada, 2023).The LSFN education department highlighted that expanded support for land-based learning and language revitalization through Language Keepers and outdoor education programs are intended to improve student engagement and cultural connection, particularly for younger students (Davis 2025).

It is important to recognize that publicly available statistics may not fully capture on-reserve realities or the role of community-based learning and Indigenous Knowledge systems. As such, these figures should be interpreted as a broad indication of formal attainment patterns rather than a complete picture of educational experience within the community.

Table 10.8-5: Education Characteristics - Lac Seul First Nation, Wabauskang First Nation, and Asubpeeschoseewagong Netum Anishinabek 2025

Education Level	LSFN			WFN			ANA		
	Total	Men+	Women+	Total	Men+	Women+	Total	Men+	Women+
Population 15 years and over	675	350	320	45	20	25	410	200	210
No high school diploma or equivalency certificate (%)	51.9	52.9	53.1	33.3	50.0	60.0	61.4	60.0	64.2
Secondary (high) school diploma or equivalency certificate (%)	25.9	28.6	25.0	33.3	50.0	40.0	19.3	2.0	19.0
Apprenticeship or trades certificate or diploma (%)	5.2	8.6	0.0	0.0	0.0	0.0	3.6	5.0	0.0

Education Level	LSFN			WFN			ANA		
	Total	Men+	Women+	Total	Men+	Women+	Total	Men+	Women+
College, or non-university certificate (%)	11.1	10.0	14.1	33.3	0.0	40.0	9.6	10.1	9.5
University certificate below bachelor level (%)	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0
University certificate or diploma at bachelor level or above (%)	3.7	2.9	4.7	0.0	0.0	0.0	4.8	5.0	7.1

Source: (Statistics Canada 2023b; Statistics Canada 2023d; Statistics Canada 2023g).
Note: Reference year is 2020
Note: The category men+ includes men, as well as some non-binary persons. The category women+ includes women, as well as some non-binary persons
Statistics Canada lists the community as “Grassy Narrows” (for corresponding census subdivision English River 21 (Indian reserve)); however, this report uses the preferred name as ANA when presenting data.

Economic Opportunity and Inequality

The high prevalence of low income, moderate income inequality, and income decile patterns indicating concentration in lower income brackets suggest that economic vulnerability is widespread and that financial outcomes vary across households and demographic groups. Gender-based differences in low-income prevalence and reliance on government transfers further indicate that economic conditions are not experienced uniformly, and that access to stable market income may be constrained for some groups.

Economic Development

LSFN has pursued a range of business ventures, partnerships, and infrastructure projects that support on-reserve employment and community development. These initiatives strengthen economic self-sufficiency and contribute to the broader well-being of residents.

LSFN coordinates many of its joint ventures and business enterprises through Shared Spirits Limited Partnership (SSLP), which serves as a collaborative economic development vehicle with Wabauskang First Nation.

Key business and partnership initiatives include joint ventures:

- Shared Spirit Joint Ventures: Outland Dexterra.
- Boart, DOMCO, Northern Mat and Bridge, Obish Construction, Perron Contracting, Synterra Security Solutions, and Wisk Air
- Band member-owned businesses: Anderson Electric Inc., Keesic Health Strategies, Northern Development Resources, Tim Horton’s Red Lake, and Yutzy Contracting.
- Local amenities: Red Pine Convenience Store, Golden Eagle Convenience, Irv’s Snack Shak, and the CKZY-FM radio station.

- Major projects contributing to local economic resilience include:
  - West Red Lake Gold Mines: A Project Agreement with Pure Gold Mining Inc. regarding the Madsen Red Lake Mine.
  - Forestry: Management of the Lac Seul Forest through Obishikokaang Resources Corporation, promoting employment and sustainable development.
  - Construction: Ongoing infrastructure initiatives such as road upgrades, a proposed arena / conference centre, and new, educational and elder or youth spaces.
- Infrastructure Partnerships: Participation in Waynikaneyap Power transmission projects and ownership in the Obishikokaang Waasiganikewigamig hydroelectric station.
- Water Infrastructure: Upgrades to the Whitefish Bay and Kejick Bay water treatment plants, improving access to clean water and supporting community health and emergency services.
- Tourism: Development of Mahkwa Lodge and protection of Lac Seul Islands Conservation Reserve, supporting sustainable tourism and economic diversification.

These projects demonstrate the community's ongoing investment in economic diversification, service delivery, and long-term self-sufficiency, all of which are essential components of community well-being (Lac Seul First Nation 2023k; Ontario Parks 2025; S. Burnett & Associates Limited 2020b; Rody 2023; Mahkwa Lodge n.d.; Acadia Broadcasting 2020; NorthWest Healthline 2025; PureGold Mining 2023; Ontario Power Generation 2019)

Barriers to Employment and Economic Participation

Economic participation is a key determinant of community well-being, influencing access to stable income, housing, education, and health services. For LSFN community members, several factors are likely to affect labour force engagement and income stability:

Childcare Access as a Barrier to Employment

LSFN -specific childcare data are currently unavailable, the absence of licensed childcare services outside of school-based programs was noted in previous baseline assessments and may be a contributing factor to lower labour force participation within the community.

Interviews with regional service providers in the region consistently identified limited access to licensed childcare as a considerable constraint on employment, particularly for women+, single parents, and low-income households (Ramasaywak 2025; Parrish 2025). In Red Lake and Ear Falls, for example, existing childcare programs are characterized by long waitlists, limited capacity, and insufficient hours to accommodate full-time employment.

As of 2025, the average cost of childcare in Ontario has been reduced to approximately $22 per day, or $6,600 annually, under the Canada-Wide Early Learning and Child Care agreement (Government of Ontario 2024). This represents a considerable reduction from previous averages of $7,557 in 2023 and $11,500 in 2018. However, cost reductions alone do not address structural gaps in service availability, particularly in rural and Indigenous Nations communities. Other systemic barriers identified through interviews and regional data include:

- Limited transportation options, which restrict access to jobs located outside the community;

- Lack of nearby job training or certification programs, limiting skill development;
- A shortage of on-reserve employment opportunities that align with the skills, interests, and schedules of community members;
- Seasonal and project-based employment, particularly in sectors such as mining, construction, and forestry, can lead to workforce shortages in other sectors, as available labour is drawn toward higher-paying jobs.

An interview with Lac Seul's Home and Community Care Program (HCCP) outlined employment potential within the caregiving sector. New roles like Driver and Activity Coordinator have been created to address staffing shortages and reduce reliance on PSWs.

These positions are seen as accessible, entry-level opportunities for community members, especially youth, elders, or individuals returning to the workforce. Flexible or part-time arrangements have also helped with retention. Staff emphasized the importance of outreach, partnership with programs like Ontario Works, and making job postings more inclusive and approachable (e.g., avoiding unnecessary formal education requirements) to broaden recruitment and support community employment goals (Chisel 2025).

10.8.2.2.2.2 Housing

Housing is a key determinant of community well-being, shaping residents' health, safety, and overall quality of life. Access to safe, adequate, and affordable housing supports social stability and enables participation in education, employment, and community life.

As of the 2021 Census, LSFN had a total of 320 occupied private dwellings on-reserve, with 255 identified as band housing (provided by the band). Of the available housing, 65 dwellings (20.3%) were reported to need major repairs, higher than the provincial average of 5.7%.

Overcrowding and housing suitability remain persistent challenges:

- 16.9% of households classified as not suitable for their size
- 18.3% reporting more than one person per room, both well above provincial averages.

Housing tenure data shows that 68% of households live in band-owned housing, 26% in rented dwellings, and 7% in owner-occupied homes, indicating a strong reliance on community-managed housing. The homeownership rate increased to 7.8% in 2021, up 0.7 percentage points from 2016 (Statistics Canada 2022).

The Lac Seul First Nation Ke-nawind Housing Development Authority was established in 2002 and, manages 120 rental units, in addition to providing a home ownership program for community members. Future plans for the Authority include enhancing employee skill sets, personal finance workshops for tenants, as well as the approval to construct six new homes (Lac Seul First Nation 2023e).

In 2017, the federal government allocated over $1.45 million to LSFN for housing improvements. This funding facilitated the construction of three new triplexes and serviced building lots, with the community contributing an additional $250,000. Furthermore, $195,000 was provided for the renovation of ten existing homes to meet health and safety standards and enhance fire protection. These initiatives were recognized with the Community Housing Recognition Award at the 2017 First Nations Housing Conference, highlighting LSFN's leadership in developing comprehensive housing policies and sustainable housing solutions (Indigenous and Northern Affairs Canada 2017).

Housing Affordability and Access

LSFN service providers outlined the growing demand for rental housing, affordable homeownership programs, and increased shelter capacity to serve vulnerable populations. Seniors, women+ experiencing domestic violence, and individuals with disabilities were identified as being particularly at risk of housing insecurity (Stirling-Kattler 2025; Kocis 2025) LSFN reported long waitlists to access adequate housing (Kocis 2025). Housing in the Lac Suel communities are not open to outsiders; only LSFN community members can access housing 'on reserve'.

Housing is an existing issue across the region. Interviews with regional service providers such as the Kenora Sexual Assault Centre, Northwest EMS, and the OPP reinforced that housing scarcity extends beyond vulnerable individuals to affect critical service delivery. These organizations cited challenges in recruiting and retaining qualified staff due to high housing costs and limited availability. It was reported that organizations had lost educator hires due to unaffordable or inaccessible housing, while the OPP noted that transient populations and housing insecurity are increasingly tied to mental health and safety concerns (Wesley 2025; Hamilton 2025; Hall & Lamme 2025). Findings from the 2024 Point-in-Time (PIT) Count conducted by the Kenora District Services Board (KDSB) highlighted the increasing housing pressures in the region.

As of October 2024, 500 individuals were identified as experiencing homelessness in the Kenora District, including 325 in the City of Kenora alone. This reflects a 168% increase in homelessness in Kenora since the 2021 PIT count (Kenora District Services Board 2024). The data further show that 76 individuals were residing in encampments and that 164 respondents had slept in jail, prison, or a remand centre the night before the count.

The PIT count also found that:

- 81 individuals cited low income as the main barrier to securing housing.
- 89% of respondents expressed a desire to be housed.
- 144 of 249 respondents identified as First Nations or Métis (58%), with the actual proportion potentially higher due to non-responses.
- 109 respondents had completed only some high school; with non-responses, the percentage could reach 67%.

The KDSB reported that the waiting list for housing in the Kenora District increased by 354% since 2011, highlighting the scale of the housing crisis (Kenora District Services Board 2024)

Homelessness studies may not capture everyone experiencing housing insecurity. People who are couch-surfing, living in overcrowded homes, staying temporarily with friends or family, or in unsafe housing situations are often missed in traditional counts.

Supportive and Emergency Housing

The HCCP highlighted how housing quality affects caregiving, safety, and wellness for vulnerable community members. Staff described ongoing challenges related to overcrowding, couch surfing, and inaccessible or unsafe housing conditions (e.g., mould, unshovelled ramps, pest issues), which are especially hazardous during severe weather. Many clients live alone, and HCCP staff frequently take on responsibilities typically handled by family or landlords, such as escorting clients to appointments or performing check-ins.

The planned Independent Living Complex will address some of these needs but will require 24/7 staffing and increased operational capacity.

The team emphasized that without stronger housing infrastructure, home care delivery remains reactive and strained, particularly for elders and those with chronic health conditions (Chisel 2025).

Access to regional supportive and emergency housing plays a critical role in community well-being by helping individuals maintain safety, dignity, and social stability during periods of acute housing insecurity These services are especially vital for women+, Indigenous residents, and individuals with complex needs who may lack other forms of support, and may require specialized housing.

For detailed descriptions of shelter infrastructure, bed capacity, and service utilization rates, refer to Section 15.5.1.3.2, Accommodation and Lodging in Community Services and Infrastructure (Red Lake Indian Friendship Centre n.d.).

10.8.2.2.2.3 Cost of Living and Traditional Economy

Although specific cost of living index data is unavailable for the LSFN community, regional data from Northwestern Ontario indicates elevated costs for goods, services, and utilities due to geographic remoteness, limited transportation access, and a shorter construction and service season. The Ontario Ministry of Health acknowledges elevated travel and living costs in the north through initiatives such as the Northern Health Travel Grant (Government of Ontario 2025).

Many Indigenous communities, particularly those who are remote, and/or in an area with limited employment and income opportunities will participate in traditional economy activities. The Indigenous traditional economy is a land-based, community-centered economic system built on:

- Subsistence Activities – hunting, fishing, trapping, and gathering plants (e.g. medicinal, firewood, cooking) may replace and / or augment food sources and / or supplement household income
- Reciprocity and Sharing - this economy emphasizes sharing resources with family, Elders, and community members where giving creates social bonds, supporting collective well-being.
- Stewardship of the Land – maintaining balance so species and ecosystems regenerate (‘taking only what you need”) and viewing land and resources as a living relative, not a commodity (Seven Grandfather Teachings)
- Governance and Cultural Values – informed by Elders' knowledge, Band Councils, and cultural protocols.

Measuring Indigenous traditional economy is complex because it does not fit neatly into Western economic metrics like Community Wellness Index, Gross Domestic Product or income. Instead, it is described using qualitative and holistic information that reflect cultural, ecological, and social values.

10.8.2.2.3 Community Cohesion

Community cohesion refers to the strength of relationships, sense of belonging, mutual trust, and shared values that connect individuals within a community. It is a key dimension of community well-being, particularly in smaller and rural Indigenous communities, where close interpersonal ties, informal support networks, and cultural continuity play a central role in resilience and day-to-day quality of life. Community cohesion can support resiliency against economic and health-related stressors by fostering collective care, intergenerational support, and a sense of safety and inclusion.

As noted in a confidential report prepared for LSFN, flooding of traditional manoomin beds occurred in the 1930s as part of federal hydroelectric projects. These floods resulted in nearly 20 percent of LSFN lands being flooded without consent and submerged many of the manoomin beds traditionally used for harvesting. While this reduced number of local harvesting areas, other sites remain accessible. Harvesting continues to bring community members together, providing opportunities to share knowledge, strengthen relationships, and maintain cultural traditions. As a result, the role of manoomin harvesting and the passing on of Indigenous Knowledge from Elders to support community cohesion is expected to continue (Bull, 2015)

While limited quantitative data is available for LSFN, indicators such as low population mobility and the presence of culturally grounded services suggest a stable and interconnected community structure. Programs such as the HCCP emphasize family and neighbourhood-based approaches to elder care, while informal caregiving, such as neighbours supporting childcare needs, reflects the community's reliance on reciprocal support systems. These dynamics highlight the importance of community cohesion in the absence of formal services and highlight the need for safe gathering spaces, cross-generational programs, and culturally appropriate community infrastructure to maintain and strengthen social bonds as the community grows (Chisel 2025).

10.8.2.2.4 Public Safety

Indigenous people in Canada experience higher rates of victimization due to the enduring impacts of systemic racism, colonialism, and past and present government policies. A 2022 report from the Canadian Centre for Justice and Community Safety Statistics outlines key factors contributing to this reality. Some of the issues identified in the report include, but not limited to, the following (Perreault 2022):

- Four in ten Indigenous people experienced sexual or physical violence by an adult before the age of 15, according to self-reported data.
- 26% of Indigenous women+ experienced sexual violence by an adult during their childhood (9.2% for non-Indigenous women+, 5.8% for Indigenous men and 2.8% for non-Indigenous men).
- The homicide rate involving Indigenous victims is six times higher than non-Indigenous victims.
- 8.4% of Indigenous people were victims of sexual assault, robbery or physical assault in 2019, about twice the proportion of non-Indigenous people (4.2%).
- Indigenous people were about twice more likely than non-Indigenous people to have little or no confidence in their local police service.

Additionally, research indicates that one in three Canadian women+ will experience sexual assault in their lifetime, with Indigenous women+ experiencing a higher rate of sexual assault compared to non-Indigenous women+ (Sexual Assault Support Centre, n.d.). While sexual assault data for LSFN population is not available, sexual assault statistics for the regional area include:

- Sexual assaults (430) reported in Northwestern Ontario in 2021, represented an increase of 31% from 2020 (Levesque 2022).
- In Kenora District, there were 211.5 reported sexual assaults per 100,000 of the population in 2020 (Canada Crime Index 2021).

In Canada, there is a relationship between industrial camp populations and a rise in crime, sexual violence, and the trafficking of Indigenous women+ (Keith MacMaster 2020). The remote locations of projects and Indigenous communities result in low reporting rates. In addition, local community health centres lack the resources to address incidents of sexual assault (Prospectors and Developers Association of Canada 2019). However, this is not specific to Indigenous women+ within Indigenous communities, but rural and urban Indigenous women+ that live near resource-intensive areas.

Crime statistics are report to Statistics Canada using the Uniform Crime Reporting Survey. The survey measures the incidence of crime in Canada. The data reflects crimes reported to police and so it does not capture a count of all crimes as some go undetected or unreported to police (Statistics Canada 2024c). Crime statistics for Canada and Ontario are shown in Table 10.8-6.

Table 10.8-6: Crime Statistics for 2019 and 2023 - Canada and Ontario, 2025

	Canada (total, all violations)		Ontario (total, all violations)	
	2019	**2023**	**2019**	**2023**
Actual Incidents	2,440,496	2,526,877	660,927	737,246
Rate per 100,000 population	6,487.49	6,301.79	4,535.11	4,723.40
Total, persons charged (adult & youth)	645,614	591,770	205,148	198,291
(Statistics Canada 2025)				

The Crime Severity Index (CSI) is a measure that analyses severity and number of crimes and is intended to complement other crime statistics such as crime rate and self-reported victimization data. The CSI has a base index value of 100 for 2006 (Statistics Canada 2024b).

- In 2023, the CSI for Canada was 80.5, an increase of 2%, but still lower than in 2006 (Statistics Canada 2024d).
- In Ontario, the CSI in 2023 was 60.9, an increase of 4%, again still much lower than in 2006 (Statistics Canada 2024d).

Statistics Canada only reports CSI for metropolitan areas with populations greater than 100,000, therefore, a CSI for LSFN is not available. However, the Nishnawbe Aski Police Service provides policing to First Nations communities throughout much of Northern Ontario (Nishnawbe Aski Police Service n.d.). In 2023, they reported a CSI of 302.3 for their service area, 241.4 higher than the provincial number (Nishnawbe Aski Police Service 2024).

While the Nishnawbe Aski Police Service does not directly service the LSFN community, they do police the area and communities in much of the rest of northwestern Ontario and so this statistic is meant to show general crime trends in remote communities in this part of the province.

A study conducted by the Liard Aboriginal Women's Society found that women's jobs within the extractive industry jeopardizes their safety. This included exposure to harassment, discrimination and assault in the workplace and within mining camps. It also found that Indigenous and racialized women+ felt that they could not report incidents and felt that authorities (i.e., police, agencies, employers) failed to address violence in the industry. To address these issues, the report recommends that regulatory agencies and the criminal justice system focus on addressing systemic gaps to strengthen protections for workers' safety and human rights (CCSG Associates 2021).

The National Inquiry into Missing and Murdered Indigenous Women and Girls sought to understand the systemic causes of violence against Indigenous women+, girls and 2SLGBTQIA plus people.

The inquiry found that extraction projects lead to increased violence against Indigenous women+ at the hands of non-Indigenous men and increased violence within Indigenous communities. This was associated with the nature of the industry including, transient workers and rotational shift work, as well as harassment and assault in the workplace, substance abuse and addictions, and economic insecurity (National Inquiry into Missing and Murdered Indigenous Women and Girls, 2019b).

The National Inquiry determined that no one knows exactly how many Indigenous women+, girls and 2SLGBTQIA plus people have going missing or been murdered, though it numbers in the thousands (National Inquiry into Missing and Murdered Indigenous Women and Girls 2019a). The National Inquiry made 231 Calls for Justice that cover a range of actions to address violence and crimes against Indigenous women+, girls and 2SLGBTQIA plus people, including (National Inquiry into Missing and Murdered Indigenous Women and Girls 2019c).:

- Governance and Accountability
    - Calls for governments and institutions to take accountability and to create a national action plan that emphasizes accountability and measurable outcomes.
- Public Safety and Justice
    - Calls for reform of policing and the criminal justice system to address biases, racism and lack of responsiveness to Indigenous peoples.
- Cultural and Social Reconciliation
    - Calls for restoring cultures, languages and practices as well as inclusion of Indigenous history, cultures and rights in the Canadian educational system.
- Healing and Wellness
    - Calls for Indigenous-led healing programs and safe spaces for the well-being of Indigenous women+, girls and 2SLGBTQIA plus people.
- Action on Poverty and Marginalization

- Calls for economic, education and social policies that address poverty and marginalization and for increased access to economic opportunities, housing and healthcare.

- Support for Families and Survivors
  - Calls for support systems for the families and survivors of the missing and murdered.

10.8.2.2.5 Access to Land and Resources

Access to community and natural resources, including land, water, food systems, and social infrastructure, are central to community well-being and self-determination for LSFN. For Indigenous communities both on- and off-reserve, access to shared and exclusive resources and cultural landscapes is essential to their identity; a major determinant of physical, mental and spiritual health, and community cohesion (Public Health Agency of Canada 2023).

It was identified by LSFN that historical and contemporary policy decisions have disrupted LSFN's ability to access their traditional territories, from colonial land appropriation to the legacy of residential schools and settlement expansion, such as those seen during the flooding of the area in the 1930s and 1940s. These have also disrupted LSFN's ability to steward the lands and resources they have long relied on. These legacies continue to shape governance and economic frameworks today, disenfranchising traditional use of resources at the risk of the health of local populations (Boska, Joober, & Kirmayer 2015).

10.8.2.2.5.1 Land Tenure and Mineral Resources

Ontario's natural resource and extraction economy present both an opportunity and risk to Indigenous communities, adding pressure to an already historically impacted landscape to practice traditional systems. Approximately 87% of Ontario's landmass is Crown land, the vast majority of which is managed by Ontario's MNR (Government of Ontario 2025). Crown land is made up of numerous tenures, including but not limited to mining and mineral claims, forestry tenures, and managed parks and conservation areas.

Indigenous Peoples often find themselves in the difficult position of seeking participation and inclusion in a rapidly growing resource economy, and seeking protections to their lands, resources, and livelihoods tied to the natural environment (Indigenous Relations and Northern Affairs Canada 2017). While Treaty #3 affirms Indigenous rights to traditional land use (such as hunting, fishing, gathering), industrial development and mining exploration continues to grow in the region. Due to a surge in claims in the Ring of Fire area, mining claims in northern Ontario grew by 30% in 2023, representing additional strain on Indigenous governments and community resource users (Law 2023).

Mineral rights were excluded from the treaty text, limiting community participation and benefit-sharing from resource extraction activities. Historical records indicate that while Indigenous signatories were promised protections within reserve lands, these rights were not extended beyond reserve boundaries and were omitted from the final treaty (Daugherty 1986).

LSFN community members have noted that increased access to remote areas related to mining exploration activity, and tourist outfitters operations at Trout Lake, has impacted trapping and fishing activities in areas where they had previously enjoyed undisturbed access. Increased traffic (vehicles, industry related traffic, quads and snowmobiles) has affected their traplines and trails.

Under Ontario law, mining prospectors are not required to give any notice nor consult with Indigenous groups until after claims have been registered and are in force. From an Indigenous perspective, this system promotes further legal inequity in the region, by enabling land to be occupied without consent, potentially eroding constitutionally protected activity and traditional food systems (Carver 2023).

Additional barriers to economic participation that Ontario Indigenous Nations face include:

- Limited technical capacity to participate, review and respond to the high number of staked claims, including complex permitting and regulatory processes
- Limited access to capital and resources
- Competing social priorities, including protection and stewardship of the land, and social challenges including mental health and addictions, housing crises, access to clean water and food sources (Law 2023).

10.8.2.2.5.2 Food and Water Access

Treaty 3 (Figure 10.1-1) protects, preserves and enhances Treaty and Aboriginal rights. It offers protection to traditional activity, lands and resources, and trapping (The Government of the Anishinaabe Nation in Treaty #3 2025). The region surrounding the Project has an expansive waterbody system that the traditional and cultural activity is inextricably linked to.

The Anishinaabeg connection with water is expressed and explained in the Nibi Declaration produced by the Grand Council Treaty #3. It speaks to the sacred relationship and responsibilities that Anishinaabeg have with water, water beings, and the lakes and rivers (Grand Council Treaty #3 Women's Council 2019). Water access and water quality are notable issues for Indigenous communities in the region.

Industrial development including mining, forestry, and power generation disrupts the relationship and access to water resources for Indigenous communities in the region (Simpson, DaSilva, Riffel, & Sellers 2009). Traditional practices and cultural gathering spaces are generally tied to waterbodies where harvesting, trapping, fishing, and hunting opportunities tend to occur. Current use of land and resources for traditional purposes, and evidence for how use is typically tied to waterbodies is found in Section 10.6.2.

Beyond cultural and traditional use, water systems are tied to economic and food systems in the region. Rivers and lakes were a source for drinking water, fishing, and commercial revenue in the region. Commercial fishing was banned in the English-Wabigoon River system in 1970 when mercury contamination from the Reed Paper mill was discovered and acknowledged, damaging the economy in the region. However, a confidential report prepared for LSFN identified that LSFN community members continue to participate in commercial fishing industries through ecotourism (Brophy 2005).

Many LSFN community members travel to lakes and rivers outside of the English-Wabigoon system to safely fish, harvest aquatic resources and otherwise partake in traditional activity linked to waterbodies, but many continue to fish at home because they do not own their own vehicles or boats, or would not change their habits or way of life at home (Thompson 2018).

The disruption of traditional food sources across the region, including fish, has forced dietary changes, contributing to health issues, shifting cultural practices, and contributed to food insecurity.

Food insecurity remains a public health concern in northwestern Ontario. According to the Northwestern Health Unit (NWHU), approximately 21% of households in the Kenora–Rainy River Districts face food insecurity, which is higher than the provincial average of 19% and the regional average of 19% (Northwestern Health Unit 2024). The monthly cost to feed a family of four in the region reached $1,537.84 in 2024, representing a 9% increase from 2023.

For those living on minimum wage or social assistance, food costs can consume 50% or more of monthly income, leaving minimal funds for housing, transportation, or other basic needs. A summary of regional food insecurity indicators is provided in Table 10.8-7.

While community food programs such as hampers, school nutrition programs, and food banks provide necessary short-term relief, the NWHU emphasizes that these are not long-term solutions and that income-based policy responses are needed to address the root causes of food insecurity. Additional regional challenges include:

- high transportation costs,
- limited grocery competition, and
- increased risk of food spoilage due to long-distance shipping, especially in remote areas.

The Nutritious Food Basket tool used to monitor affordability may also underestimate the true cost of food, as it does not reflect cultural preferences, processed or specialty diets, or real-world conditions such as limited time or access to quality stores (Northwestern Health Unit 2024).

While regional data highlights high levels of food insecurity across Northwestern Ontario, LSFN has taken active steps toward improving food access and sovereignty. The 2022 Lac Seul Community Comprehensive Plan identifies food self-sufficiency as a community priority, with initiatives such as community gardens, support for traditional harvesting practices, and exploration of greenhouse agriculture. These efforts aim to reduce reliance on imported foods, enhance nutritional outcomes, and strengthen resilience through local food systems (Lac Seul First Nation 2022).

Table 10.8-7: Food Insecurity and Cost Indicators for 2024 - Kenora-Rainy River Region, 2025

Indicator	Value
% of households facing food insecurity	21.3%
Provincial average	18.7%
Regional average (Northwestern Ontario)	19.2%
Monthly cost to feed a family of four in 2024	$1,537.84
Year-to-year cost increase (2023 – 2024)	9%
Estimated monthly deficit for Ontario Works /ODSP households	$700
Remaining income for minimum wage families after food + housing	~$599
Source:(Northwestern Health Unit 2024).	

10.8.2.2.5.3 Drinking Water and Wastewater systems

Access to clean and reliable drinking water has increasingly improved in the community in recent years. In 2019, the Obishikokaang Water Treatment Plant was completed in Kejick Bay, lifting an 18-year boil water advisory that had affected the community. The facility currently services approximately 353 residents and includes capacity for future expansion (S. Burnett & Associates Limited 2020b). While this represents a major step forward in public health and infrastructure, the long duration of the previous advisory highlights the importance of sustained investment and monitoring to support water quality over time.

In addition to water access, wastewater infrastructure upgrades are underway in Frenchman's Head, including a new sewage treatment plant and improvements to the collection system (S. Burnett & Associates Limited 2022c).

These improvements, alongside regular solid waste collection and landfill services coordinated by the Indigenous Nation's Public Works Department, contribute to strengthening essential infrastructure across all three Lac Seul communities.

10.8.2.2.5.4 Social Infrastructure and Community Spaces

Access to social infrastructure and community spaces plays an important role in supporting community well-being, particularly in Indigenous communities where gathering places often serve both social and cultural functions. These spaces promote connection, resilience, and cultural continuity, offering environments for recreation, ceremony, intergenerational learning, and support networks.

The Lac Seul Events Centre in Frenchman's Head (described in Section 10.5.2.2.2.1) remains a focal point for these activities, alongside outdoor and land-based gathering areas such as trapper cabins, manoomin harvesting sites, and shorelines. The Events Centre hosts various community events and meetings throughout the year (Lac Seul First Nation 2023c).

The Brian Brisket Memorial Complex in Kejick Bay and the Dora Thomas Memorial Complex in Whitefish Bay provide valued spaces for community gatherings and recreational activities, though both have faced periods of reduced operation or temporary closure for maintenance. Recognizing that families are often the primary support network for elders, HCCP staff stressed the importance of involving extended family and community programs to address loneliness, caregiver burnout, and declining mental health. Community gatherings, grief debriefings, and culturally grounded family engagement strategies were seen as essential tools to sustain both client care and staff well-being (Chisel 2025).

For LSFN, facilities such as event centres and community complexes are important components of social infrastructure that support community well-being and engagement. Recent budget cuts have affected youth programming, and a new director of Youth Services and Community Recreation has been hired to deliver programming for youth across LSFN. The new programming will include land-based and recreational activities with Elder involvement (Kocis 2025).

In 2026, LSFN will be launching a community transit program provided by Blaise Transit to transport community members between the three communities of Lac Seul and Sioux Lookout. These will be accessible vans to help this need for transportation for community members (Kocis 2025).

10.8.2.2.6 Population Dynamics

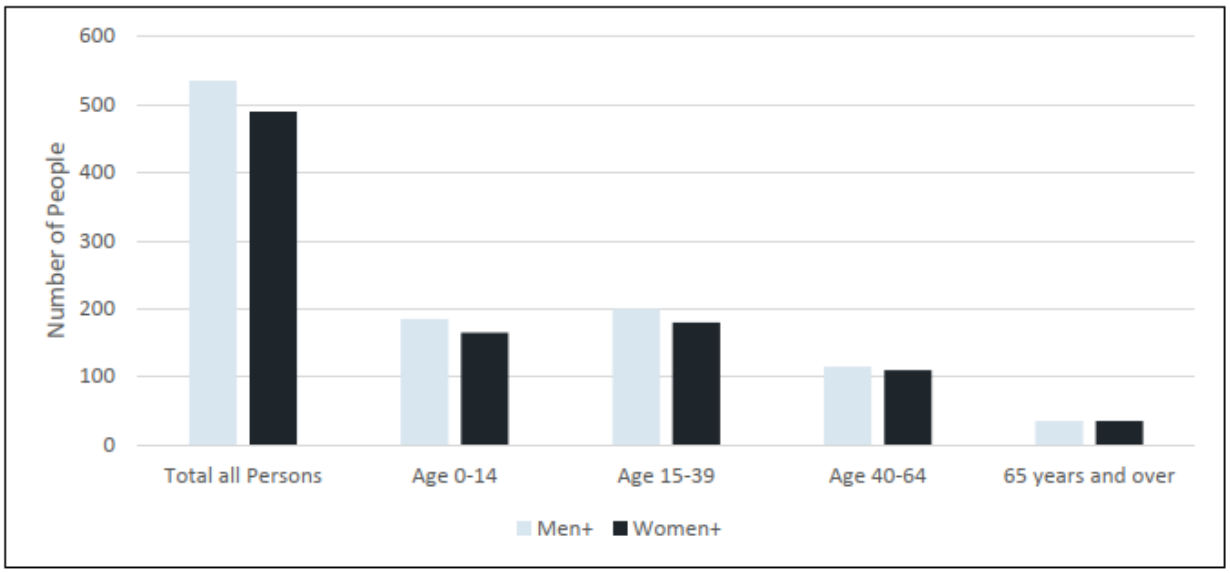
Population size and stability are important in understanding how communities experience economic change, service pressures, and development impacts. In smaller communities, even modest demographic shifts can affect housing, infrastructure needs, and cultural continuity.

10.8.2.2.6.1 Age and Gender

Figure 10.8-2 presents age characteristics for LSFN's on-reserve community population. The 2021 census shows there to be a population of 1,022 individuals, 535 of which identify as men+ and 490 who identify as women+.

According to the 2021 Census, the median age of the on-reserve population of LSFN was 25.6, with the largest age group for both men+ and women+ being 15 to 39 years, followed by 0 - 14 years. The age range of 65 years and over made up the smallest amount of the total population (7%) (Statistics Canada 2023d).

Figure 10.8-2: Age Characteristics – Lac Seul First Nation, 2025



Source: (Statistics Canada 2023d).

10.8.2.2.6.2 Language

Table 10.8-8 presents the language characteristics of LSFN on-reserve communities' population. According to the 2021 Census, the on-reserve population of LSFN is predominantly Anglophone, with 99.5% of the population speaking English only, and 0.5% of the population speaking both French and English. Of the total population, 3.4% spoke an Indigenous language most often at home, with women+ (4.1%) more frequently speaking Indigenous language at home than men+ (1.9%). Algonquian languages made up 100% of the proportion of the Indigenous languages spoken most often at home (Statistics Canada 2023d).

Table 10.8-8: Language Characteristics - Lac Seul First Nation, Wabauskang First Nation, and Asubpeeschoseewagong Netum Anishinabek2025

Indicator	Total	Men+	Women+
LSFN			
Total responses	1,020	535	485
English Only (%)	99.5	100	100
French Only (%)	0	0	0
English and French (%)	0.5	0	0
Indigenous languages spoken most often at home (%)	3.4	1.9	4.1
English spoken most often at home (%)	96.6	97.2	95.9
French spoken most often at home (%)	0	0	0
WFN			
Total responses	55	30	30
English Only (%)	100	100	100
French Only (%)	0	0	0
English and French (%)	0	0	0
Indigenous languages spoken most often at home (%)	9.1	0	0
English spoken most often at home (%)	81.8	66.7	83.3
French spoken most often at home (%)	0	0	0
ANA			
Total responses	585	295	285
English Only (%)	100	100	100
French Only (%)	0	0	0
English and French (%)	0	0	0
Indigenous languages spoken most often at home (%)	9.1	0	0
English spoken most often at home (%)	94.9	96.6	96.4
French spoken most often at home (%)	0	0	0

Note: Reference year is 2020

Note:

Language data for WFN and ANA, two other nearby communities in northwestern Ontario, are also presented in the table This allows for a broader understanding of regional trends across neighbouring First Nations.

- Statistics Canada lists the community as “Grassy Narrows” (for corresponding census subdivision English River 21 (Indian reserve)); however, this report uses the preferred name as ANA when presenting data.
- The category men+ includes men, as well as some non-binary persons. The category women+ includes women, as well as some non-binary persons.
- While data for LSFN, WFN and ANA are shown together here to highlight comparative trends, it is acknowledged that each community has distinct social, cultural, and economic contexts. Community-specific conditions are described in detail in their respective sections.

10.8.2.2.6.3 Migration and Mobility

Mobility data from the 2021 Census indicates that the LSFN community have a stable resident population, with limited internal or external migration over both short- and medium-term periods. his one-year reference period coincided with the COVID-19 pandemic, during which national mobility levels were atypically low due to travel restrictions, public health measures, and broader economic uncertainty.

Of the1,005 on-reserve individuals captured in the one-year mobility data, 95.5% had not moved in the previous year, while five-year data shows that 73.5% remained in place. Mobility is primarily intraprovincial and occurs at a lower rate than in more urban or transient regions. This stability may support strong community cohesion, cultural continuity, and intergenerational ties, all of which are important components of community well-being. However, lower mobility can also reflect systemic barriers to accessing education, employment, housing, or services in other regions. For some residents, the ability to relocate may be limited by financial constraints, housing shortages, or transportation gaps. In the context of regional development, this suggests that any future shifts in cost of living or service pressures may be absorbed primarily by the existing population, with limited opportunities for outward migration or redistribution.

The mobility characteristics for LSFN's on-reserve population are presented in Table 10.8-9. Statistics Canada's data from 2021 demonstrates that most residents did not move within the past year (95.5%). The highest proportion of the total population that moved in the past year was women+ (5.3%), followed by men+ (3.8%) (Statistics Canada 2023d).

Table 10.8-9: Mobility Characteristics - Lac Seul First Nation, Wabauskang First Nation, and Asubpeeschoseewagong Netum Anishinabek 2025

Mobility Characteristics	Total	Men+	Women+
LSFN			
Total responses	1,005	530	475
Did not move in the past year (%)	95.5	97.2	95.8
Moved in the past year (%)	4	3.8	5.3
Moved within Ontario (%)	1	1.9	2.1
Moved into Ontario from a different province (%)	1	0	0
WFN			
Total responses	55	25	30
Did not move in the past year (%)	90.9	100	83.3
Moved in the past year (%)	18.2	40	33.3
Moved within Ontario (%)	18.2	40	33.3
Moved into Ontario from a different province (%)	0	0	0

Mobility Characteristics	Total	Men+	Women+
ANA			
Total responses	580	295	280
Did not move in the past year (%)	95.7	96.6	94.6
Moved in the past year (%)	4.3	1.7	2.6
Moved within Ontario (%)	0	0	0
Moved into Ontario from a different province (%)	0	0	0

Source: (Statistics Canada 2023d)

Note:

- Reference year is 2020
- *The category men+ includes men, as well as some non-binary persons. The category women+ includes women, as well as some non-binary persons.*
- Mobility data for WFN and ANA, two other nearby communities in northwestern Ontario, are also presented in the table This allows for a broader understanding of regional mobility trends across neighbouring First Nations communities.
- While data for LSFN, WFN and ANA are shown together here to highlight comparative trends, it is acknowledged that each community has distinct social, cultural, and economic contexts. Community-specific conditions are described in detail in their respective sections

10.8.3 Potential Effects

For the Community Well-Being criteria, a single potential effect is assessed: change in community well-being. This assessment considers how Project-related activities may influence LSFN community members through regional and downstream pathways.

While the assessment focuses on on-reserve LSFN community members, it recognizes that community well-being extends beyond reserve boundaries, as many services are accessed in regional centres such as Red Lake and Ear Falls. Broader regional service effects are assessed separately in Section 14 (Predicted Changes to Indigenous People living in the Red Lake and Ear Falls Area).

In contrast to the Community Infrastructure and Services assessment, which focuses on physical assets and service capacity, this assessment addresses social and human outcomes, which are considered alongside the cultural information shared through the confidential land use report, and include potential population change, cost of living, access to services, safety, economic opportunity, community cohesion, and cultural continuity, with particular attention to groups that may experience disproportionate effects, including Indigenous women+, girls, and 2SLGBTQIA plus people.

Table 10.8-10 summarizes potential interactions between Project activities and community well-being for LSFN (✓ = potential interaction; – = no interaction). Only potential interactions are carried forward to the phase-based assessment.

Based on community context and distance from the Project, housing-related effects on-reserve were determined to have no interaction (see Section 10.8.2.2.2.2), and are not assessed further; the assessment therefore focuses on:

- Social Determinants:
  - Cost of living and Traditional Economy
  - Access to services (health and social services)

- Public Safety
    - Public safety and gender-based violence
- Economic opportunity and Inequality
- Community Cohesion
    - Household dynamics
- Access to lands and resources

Table 10.8-10: Potential Interactions Between Project Activities and Community Well-being

Project Component / Activity	Change in Community Well-being
Construction Phase	
Site preparation activities	✓
Establishment and operation of water management and treatment facilities	✓
Open pit mining	✓
Underground mining	✓
Management of rock and unconsolidated materials in stockpiles	✓
Establishment of onsite fish habitat and compensation measures	✓
Establishment of onsite aggregate operations	✓
Construction of the starter embankments for the tailings management facility	✓
Construction and operation of buildings and infrastructure	✓
Waste management	✓
Commissioning of the process plant	✓
Power supply	-
Employment and expenditures	✓
Operations Phase	
Underground mining	✓
Mining of the LP Central pit	✓
Management of rock and unconsolidated materials in stockpiles	✓
Process plant operation	✓
Management of desulphurized tailings in the tailings management facility	-
Management of concentrate tailings and contact water in the Viggo management facility	-
Operation of water management and treatment facilities	✓
Construction of a mine water pond	✓
Operation and maintenance of buildings and infrastructure	-
Waste management	✓

Project Component / Activity	Change in Community Well-being
Power supply	-
Progressive reclamation activities	✓
Employment and expenditures	✓
Closure Phase	
Active closure	✓
Passive closure	✓
Final reclamation	✓
Employment and expenditures	✓

Legend: ✓ = Interaction exists
- No interaction exists

10.8.3.1 Construction Phase

The construction phase is expected to occur over a three-year period and will include site preparation, infrastructure development, and mobilization of the construction workforce. For LSFN, the Project is not expected to result in direct physical interactions with the community due to its distance from the Project. However, several indirect or perceived interactions may occur, with implications for the overall well-being of LSFN community members. The potential interactions during construction are explored as contributing interactions to the single potential effect of change in the region's community well-being.

10.8.3.1.1 Cost of Living and Traditional Economy

Current land and resource use for traditional purposes include trapping and plant gathering identified by LSFN (Section 10.6). Cost of living pressures related to food, fuel, and other household goods are already present in many northern and remote communities. Households may obtain goods and services both within the community and from nearby regional centres. Since cost of living is influenced by a range of regional and market factors, it is uncertain to what extent Project construction alone could influence the cost of goods and services experienced by LSFN community members on-reserve.

However, construction activities may raise concerns about environmental disturbance near traditional harvesting areas, which could affect confidence in local food and medicine sources. Additionally, disturbances can reduce the household benefits associated with participating in the traditional economy

Any disruption to access or change in the quality of experience on the land may also influence opportunities for intergenerational knowledge transmission, contributing to gradual shifts in household reliance on market goods and land-based livelihoods.

10.8.3.1.2 Access to Health and Social Services

The Project is not expected to directly interact with service delivery systems within LSFN, as Project components and the expected workforce are located outside of the community. As such, on-reserve access to services is not anticipated to change as a result of Project activities.

If the Project contributes to population changes or changes in demand for regional services within the RSA, LSFN community members who travel off-reserve to access care may face longer wait times or delayed access, especially for services that are already stretched. This could be particularly impactful for Elders and caregivers who face transportation, mobility, or financial barriers. While these effects would be indirect, they may still influence individual and collective well-being by limiting access to time-sensitive or culturally appropriate care. Community services and infrastructure are described in detail in Section 10.5.

At the same time, employment opportunities with the Project (employees will have access to additional resources through the EAP, including telehealth) could lessen reliance on local health and social programs among participating members by improving household income stability and access to workplace supports.

Overall, potential effects are expected to be experienced primarily through regional service pathways rather than direct changes within the community.

10.8.3.1.3 Public Safety and Gender-Based Violence

No direct interactions with public safety or gender-based violence (including, but not limited to, the consideration of change to drug and alcohol use) are anticipated on-reserve in LSFN during construction. However, the Project will bring a temporary influx of non-local workers into the region, which may elevate broader safety concerns, particularly among Indigenous women+, girls, and 2SLGBTQIA plus people. These concerns reflect ongoing systemic safety risks and the national crisis of missing and murdered Indigenous women+ and girls.

10.8.3.1.4 Economic Opportunity and Inequality

The Project is expected to create a number of temporary construction jobs, providing increase in labour income and valuable work experience for local and regional workers. These opportunities may enhance individual and household financial well-being and stimulate local economic activity through increased consumer spending. When paired with inclusive measures, the Project has the potential to broaden participation and foster skills development that lasts beyond construction. However, without measures, systemic barriers may prevent equitable access and reinforce existing inequalities. In the absence of inclusive hiring strategies, systemic barriers such as lack of childcare, limited transportation options, or credentials may limit access for certain groups. Additionally, economic benefits may not translate to household or community-wide improvement if workers leave low-paying jobs for higher income but temporary work, or if income inequality between workers and non-workers widens. The Project cannot directly control these choices, but its influence on the regional labour market is a relevant consideration for assessing broader well-being.

10.8.3.1.5 Community Cohesion

The construction phase may influence community identity and cohesion by disrupting land-based practices that are central to LSFN cultural continuity and collective well-being in the LSA For LSFN, community cohesion is closely tied to the ability to access, steward, and transmit knowledge.

Additionally, the project could create social division amongst LSFN community members (those who support or work at Project, versus those who oppose the Project).

10.8.3.1.6 Household Dynamics

Project-related employment opportunities may provide LSFN community members with improved income stability, allowing some households to reduce debt, meet basic needs, and pursue new opportunities in education, housing, or mobility. However, unlike communities located closer to the PA where workers would be able to access the Great Bear Project-provided bus in and out of the Project on a daily basis, LSFN community members would not be able to return home daily, they would be on rotation (meaning they would be away from the reserve).

As a result, rotational work schedules and long-distance travel may create additional strain on caregivers and family units, especially where childcare is limited or elder care responsibilities fall disproportionately on women+. Extended separations may reduce time for family connection and contribute to emotional fatigue or role strain within the household.

In some cases, increased income may also lead to differences in financial status or autonomy between partners or family members, which can introduce power imbalances or tensions. These effects may be exacerbated by substance use, social isolation, or limited mental health support during work rotation off-site periods, particularly for transient workers returning to the community without structured supports in place.

While improved income can contribute positively to family well-being, the spatial and logistical demands of employment away from the community may deepen existing stressors and reduce caregivers' ability to balance work and family responsibilities. Over time, these dynamics may influence family cohesion, workforce participation, and broader aspects of community well-being.

10.8.3.1.7 Access to Lands and Resources

Not all aspects of Access to Lands and Resources (see Section 10.8.2.2.5) will have interactions with the Project, specifically regarding drinking water and wastewater (no Project-related interaction is anticipated). However, the ability to access, steward, and harvest consumables from lands and waters remains an important determinant of community well-being for LSFN community members, and will be altered by the Project. While Section 10.6 and Section 10.7 provide detailed assessment of these interactions, it is acknowledged that land-based resource access is interconnected with mental, physical, cultural, and economic well-being

Project-related infrastructure, population growth, or perceived reductions in safety and privacy during the construction phase may discourage land users from accessing culturally important spaces for activities such as trapping and plant harvesting. Access to harvesting areas is maintained within the LSA, but temporary disturbances during construction could change the availability or quality of resources.

Changes to use of land and waterways resources (food, water, and/or social aspects) may alter land-user dynamics, strain sensitive ecosystems, and contribute to perceived or real displacement from important areas. Community well-being is also shaped by the availability of traditional food systems.

Change to access to land-based food and medicines through restrictions and reductions of harvesting sites in the PA may deepen existing food insecurity, limit cultural continuity, and contribute to negative health outcomes, particularly where store-bought food is expensive or nutritionally inadequate. These effects are expected to vary by user group and geography but are broadly understood to influence community cohesion, identity, and individual wellness.

10.8.3.2 Operations Phase

The operations phase is anticipated to occur over a 26-year period. While no population growth or direct workforce presence is expected in LSFN, several indirect or perceived interactions may continue to influence community well-being. Several indirect and perceived influences identified during construction are expected to continue over the long-term, and relate primarily to confidence in land and resource use, access to traditional territories, and ongoing reliance on regional services.

Long-term operational activity may reinforce community concerns regarding environmental change, including the collection and consumption of resources, and cultural continuity, particularly where the landscape remains altered or access to important cultural areas is perceived as reduced. Family and household pressures associated with rotational employment may persist, as some members continue to work away from the community for extended periods. Broader social and economic trends, such as uneven participation in employment and persistent service capacity constraints in regional centres, may continue to influence overall well-being for LSFN community members.

10.8.3.3 Closure Phase

The closure phase is expected to occur over approximately three years following the end of operations. Activities will be smaller in scale than those during construction but will share similar characteristics, such as equipment use and temporary changes in traffic and sound.

For LSFN, direct interactions with Project closure activities are expected to remain limited; however, indirect and perceived effects may continue to influence community well-being. The demobilization of the workforce and the end of Project-related employment could lead to temporary financial stress and loss of income stability for households that benefited from construction or operations. This may contribute to emotional stress, particularly for Project employees, contractors and/or business who provided goods/services to the Project, caregivers or single-parent households, and could affect short-term inequalities within the community.

At the same time, the conclusion of operations may reduce workforce-related safety concerns (e.g., harassment of women+, girls, and/or members of the 2SLGBTQIA plus community, substance use, trafficking, and/or increased Project-related crime) and allow for gradual improvement in social stability.

Confidence in land and water quality will remain a key determinant of recovery, influencing whether community members resume harvesting and other traditional practices in reclaimed areas. Over the long-term, reclamation and re-vegetation activities may gradually restore access to lands and resources and support cultural revitalization if trust in environmental outcomes is rebuilt.

Community cohesion during closure will depend on the continuity of engagement and transparency from Great Bear Resources. Reduced communication or lack of clarity around long-term commitments could erode trust and reinforce perceptions of external dependency. Conversely, visible follow-through on training, diversification, and legacy infrastructure programs could strengthen relationships and enhance confidence in post-project transition.

10.8.4 Mitigation and Enhancement

Mitigation measures for community well-being consider both direct and indirect effects, and includes Project design measures, workforce policies, community partnerships, Indigenous engagement, and regionally targeted supports.

The goal of these measures is to reduce the magnitude, duration, and likelihood of adverse residual effects on social determinants of health, household dynamics, public safety, and overall well-being for both Indigenous and non-Indigenous communities.

For community well-being, mitigation approaches reflect a combination of:

- Physical design measures (e.g., construction of worker accommodations, on-site medical and recreation facilities, separation of workforce from community to reduce direct interaction);
- Programmatic measures (e.g., workforce training, cultural awareness programming, gender-based violence protocols, community engagement and advisory groups); and
- Service supports (e.g., partnerships with Indigenous service providers, coordination with local agencies, funding to expand community services where needed).

Table 10.8-11 outlines mitigation measures thematically, aligning with Project interactions. These mitigation measures are anticipated to apply across all Project phases unless otherwise specified.

Attached Table 10.1-1 include mitigation measures applicable to the management of effects on pVCs and fVCs that are linked to community well-being of LSFN. It includes relevant plans, policies, and measures from predictive reporting on linked pVCs and fVCs. These will be applied for effects management.

Table 10.8-11: Project Design, Mitigation, and Enhancement Measures for Community Well-being – Lac Seul First Nation

Potential Effect	Project Design, Mitigation and Enhancement Measures
Change in Community Well-being	<u>Camp Operations and Services:</u> A camp complex will be established on the Property. The camp will accommodate 1,000 people during construction and then scaled down to approximately 300 people during operations. A portion of the workforce will come from outside the local community and work on a rotational basis. Great Bear Resources will also continue discussions with local municipalities to discuss potential housing and / or infrastructure initiatives in the region. The camp complex will include recreation, and a non-denominational spiritual space.

Potential Effect	Project Design, Mitigation and Enhancement Measures
	Camp Operations and Services ("dry" camp): Maintain a “dry” camp, managed through Human Resources (HR) policy and specific Health and Safety measures
	Camp Operations and Services (health care): Project HR and medical staff will be specifically trained to recognize, prevent, and appropriately respond to incidents of violence, harassment, or trauma, in alignment with established protocols. Provide emergency response and basic health services on site to reduce workforce-related pressures on local social and healthcare services. On-site medical facilities and staff will be in place to address health services for emergencies, injuries, and other routine needs. Medical personnel will be trained on supports that are available through Employee Assistance Program (EAP), Telus telehealth (or similar service/provider), and local/regional providers to foster connected health care on and off-site. Information about these services and supports (available to employees and their immediate families), will be posted in a visible location at the medical facilities and accommodations. Create access to Telus telehealth or similar provider for employees (and immediate family members) throughout the life of the Project helping to alleviate pressures on local services.
	Camp Operations and Services (PPE provision): Provision of required PPE including but not limited to boots, reflective clothing, gloves, and hard hats.
	Camp Operations and Services (site security): Controlled site access, perimeter security, and monitoring technology to deter and detect potential issues. Site security will be maintained and consistent with other Ontario mining operations. Access will be limited to Great Bear Resources’ workers and contractors, and approved visitors. Security guardhouses will be positioned where appropriate Cameras, routine patrols and other methods will be utilized to monitor and ensure site security. Workers will be housed in separate accommodations by gender with locked access (e.g., keys) for each room and a separate mining dry / change rooms. Ongoing monitoring will occur throughout the mine life and policies will be updated as required.
	Community Financial Support: Sponsor cultural awareness initiatives and social integration programming. Address barriers to training or employment through transport assistance, and inclusive program design. Support regional communities to expand social services and health care services in the region, including mental health and addiction services, and implement an adaptive management approach (as part of the Social Performance Plan) to address additional pressures resulting from the influx of workers and their families. Great Bear Resources will work collaboratively to fund programming through the Friendship Centre and community partners, including programming and supports to promote physical and mental health outcomes for Indigenous adults and youth. Establish and maintain Community Liaison Committee to monitor changes and service capacities and / or the effectiveness of mitigation measures.

Potential Effect	Project Design, Mitigation and Enhancement Measures
	Continue to partner with community organizations and educational institutions to support youth programming through summer camps and in-school programming, provide workshops, tours and presentations to youth that promote careers and opportunities in Mining and STEM fields. Partner with local Indigenous communities to evaluate community health and well-being to prevent negative pathways associated with the Project from developing.
	Community Partnerships: Collaborate with Friendship Centre, Kenora Sexual Assault Centre, and other safety advocates to support community-based safety networks. Partner with the Friendship Centre, the Evolution Centre, and other community organizations to co-develop inclusive events that reflect local traditions and cultural practices.
	Education and training (Project): Provide voluntary health and wellness seminars, nutrition and substance use seminars for interested employees through the EAP. Provide opportunities for youth with vocational skills, including those that prepare them for local job markets and mining-related knowledge. Provide budgeting and financial literacy tools available to all employees through the EAP, including a combination of organized workshops during working hours and optional individual supports that employees and their families can access on their own time. Deliver mandatory Cultural Awareness training for employees and contractors (including supervisors and managers) on safety, harassment awareness and prevention, and MMIWG2S+ and human trafficking awareness training.
	Education and Training (Region): Provide bursaries and targeted mentorship. Mentorship programs may include new hire initiatives which pair up new employees with a senior staff member who will provide guidance and support during the onboarding process, internships and summer programming for youth. Deliver training locally using mobile facilities and simulators. Implement job-matching, retraining programs, and economic diversification supports in anticipation of closure. Great Bear Resources has committed to the establishment of the Industrial Research Chair (IRC) in Mineral Exploration with Lakehead University. Great Bear Resources recognizes the importance of this research and its potential to drive advancements in mineral exploration, which directly supports our business and the broader mining sector in northwestern Ontario and the community in which we operate. In addition, Great Bear Resources has, and will continue to support STEM and training strategy to focus on a range of opportunities including apprenticeship opportunities, on-the-job training, work readiness, and scholarships and bursaries. Great Bear Resources will offer training to local Indigenous job seekers and contractors. Great Bear Resources are committed to working with local suppliers, including Indigenous owned businesses, to develop their capacity to effectively compete and win business while meeting the Company's standards for ethical conduct, due diligence, quality of goods and services, health and environmental safety.

Potential Effect	Project Design, Mitigation and Enhancement Measures
	Identify critical roles and recruitment barriers; provide job-readiness scholarships / bursaries Develop equity-based hiring protocols, Indigenous procurement policies, and job coaching programs.
	Inclusive and Local Hiring Strategy (Project policies): Reduce employment barriers by offering on-the-job training for "almost qualified" candidates and providing entry-level skills development.
	Inclusive and Local Hiring Strategy: Provide timely workforce projections to communities and vendors to support planning. Collaborate with regional providers to support recruitment and job-sharing. Increase local household income by prioritizing regional employment, ensuring that wages remain within the community and support local businesses. This helps enhance quality of life for residents while reinforcing economic resilience. Identify critical roles and recruitment barriers; provide job-readiness scholarships/bursaries. Develop equity-based hiring protocols, Indigenous procurement policies, and job coaching programs. Partner with Indigenous training and employment organizations to support employment of Indigenous workers, provide training, priority hiring and work towards continuous improvement including training and employment opportunities for Indigenous women+.
	Procurement and Business Opportunities: Provide timely workforce projections to communities and vendors to support planning. Coordinate with regional and Indigenous suppliers to reduce supply strain and inflationary effects. Great Bear Resources is committed to working with local suppliers, including Indigenous owned businesses, to develop their capacity to effectively compete and win business while meeting the Company's standards for ethical conduct, due diligence, quality of goods and services, health and environmental safety. Great Bear Resources will offer training to local Indigenous job seekers.
	Social Closure Plan: Support consistent communication and planning throughout closure with emphasis on legacy, continuity, and shared decision-making. Develop a community transition plan in consultation with local Indigenous communities and groups so that decisions are made with integrity, based on cultural, spiritual and Indigenous well-being in mind. The plan will include collaborative planning, implement job-matching, retraining programs, financial literacy workshops, and economic diversification supports in anticipation of closure.
	Transportation Management: Buses may be offered if there is sufficient interest (e.g., from the Red Lake Municipal Airport and from Ear Falls and Red Lake as well as local Indigenous communities) to limit personal vehicle traffic on the road, and reduce the risk of driver fatigue and travel during poor weather conditions. Car-pooling will also be encouraged, as appropriate. Busing may also be utilized to gather contractors and employees from larger hubs (i.e., Thunder Bay and Winnipeg) during the construction phase to consolidate transportation to and from the Project. Provision of buses reduces commuting burdens for employees and contractors and has the potential to support other community services.

10.8.5 GBA Plus Considerations

The Project will focus on hiring working aged adults from within the LSA. While there is benefit to hiring local and limiting the social issues associated with outside workers (e.g., increased crime, no community social responsibility, shadow populations placing demands on services which are not funded by their tax dollars), there is the potential to shorthand household and community caregivers, meaning there are few able-bodies adults to help with chores, and / or family and community duties.

As presented in Appendix X, the GBA Plus subgroups who could experience negative affects due to rotation schedule include:

- Indigenous women+ in caregiving roles (caring for Elders, children) will have less support in the home if their partner, and / or family members are away from home for weeks at a time.
- Less inter-community support available if working adults are away from the community for extended periods (e.g. less help driving Elders or Youth to appointments, taking Elders or Youth onto the land).

Great Bear Resources will make efforts to support time off requests if and where possible, and support important cultural events, however, the day-to-day absence of key community members can have a profound impact on close-knit communities.

Additionally, Indigenous communities value their rights and ability to access traditional lands and resources to participate in cultural practices, including but not limited to hunting, fishing, and collecting medicine. These practices are essential to their individual and community well-being.

Often these practices are also vehicles for transmission of knowledge, wherein the next generation is taught ways of living and knowing, and for the community to come together. When community members work in the resource sector, they are required to work long hours, and often, work away from home. This results in a reduced ability to participate in, and support land-based activities.

As presented in Appendix X, the GBA Plus subgroups who could experience negative effects by work schedules include:

- Indigenous people. The inability to participate in land-based activities not only impacts those who are away from the community working, and their overall well-being, but it can impact those who are dependent on them to access traditional lands, and can degrade community cohesion. This includes Indigenous men+, women+, Elders and youth.

Great Bear Resources will make efforts, where feasible to support cultural activities and time off requests, however, the operation of the facility may supersede requests, and limit their Indigenous employee's ability to leave.

10.8.5.1 Indigenous Women, Indigenous Youth

While large projects like mines bring economic opportunities to rural / remote areas, the work is predominantly men+ with trades training, who regularly work 12+ hour days, or stay in camp on for a two-on-one-off rotation. The rates of women+ who work in these sectors is low.

Woman have reported not feeling safe, and harassed when working in primary resource sectors, and / or are unable to pursue these opportunities due to caregiving duties and little to no support resources. As presented in Appendix X, the GBA plus subgroups who could be negatively affected by employment alienation include:

- Indigenous women+ with concerns over their safety and well-being, and / or with limited household support resources. The inability to access good paying jobs can result in economic dependency. Economic dependency can lead to household tensions, and result in partners, typically women+, staying in abusive relationships as they do not have the resources to leave.
- Indigenous youth who are intimated by the work environment, and / or due to location, have not trained in a trade are unable to access the jobs associated with primary resource. Additionally, the higher wages associated with industry can lead to economic disparity, which can lead to tension across close-knit communities.

Great Bear Resources will provide polices and protocols which promote workplace inclusivity and safety.

10.8.6 Residual Effects After Mitigation

After implementation of mitigation measures assessment and characterization of potential residual effects on on-reserve LSFN community well-being are assessed using the methodology outlined in Section 6. Further details on residual effect criteria ratings that are specific to CWB are defined in Section 6 and in Section 10.3.2.

The attached Table 10.1-1 summarizes the results of the assessment for the linked pVC and fVC components. Detailed description on the methods, existing conditions, mitigation measures, and residual effects can be found in their respective sections.

Based on the assessment of linked pVCs and fVCs, the residual residual after mitigation considered as part of the assessment of residual effects on community well-being include:

- Local and Regional Economy (pVC)

There are no other pVCs and fVCs listed in Table 12.1-1 linked to community well-being.

10.8.6.1 Characterization of Residual Effects after Mitigation – Lac Seul First Nation

While no direct residual effects on LSFN's community well-being are expected as a result of Project-related activities, indirect residual effects may occur. This reflects the reliance of some LSFN community members on regional services located within the RSA and the use of areas within the LSA for traditional purposes. Section 14 presents the assessment of regional components related to housing, access to services, emergency response, and safety.

Table 10.8-12 summarizes the indicators used to assess residual change in the region's community well-being following the implementation of mitigation and enhancement measures.

Table 10.8-12: Potential Residual Effects Community Well-being – Lac Seul First Nation

Indicator	Potential Residual Effect Remaining (Y/N)
Indicators	
Housing Availability and Affordability	N
Cost of Living and Traditional Economy	Y
Access to Services (Health and Social)	Y (Regional)
Household dynamics	N
Public Safety and Gender-Based Violence	N
Community Cohesion	N
Access to land and resources	Y
Population Dynamics	N/A
Economic Opportunity and Inequality	Y

10.8.6.1.1 Change in the Region's Community Well-being - Cost of Living and Traditional Economy

Following implementation of Project design features and mitigation measures, no direct residual effects on the cost of goods and services in the LSFN community are anticipated, as residents primarily access essential goods either on-reserve or through regional hub centres such as Kenora. However, indirect residual effects may occur due to changes to the traditional economy. Restrictions to land access or perceived environmental risks may lead to changes in participation in traditional harvesting activities. This could change household expenditure on store-bought food or reduce supplemental income from activities such as fur trading or craft production.

Based on the criteria outlined in Section 10.4.3.3, the residual effect is not considered significant. Attributes are rated as Level I or Level II (see Table 10.8-13). This outcome reflects that, while the Project may contribute to perceived or indirect effects on traditional harvesting and household costs, these are expected to be limited in scale and reversible. Planned mitigation and monitoring measures are expected to effectively reduce risks to cost of living and traditional economic stability.

Table 10.8-13: Characterization of Negative Residual Effects for Cost of Living and Traditional Economy - Lac Seul First Nation

Criteria	Category	Rationale
Ecological or Social Context	Level I	Criteria may or may not be sensitive, and can support the predicted change with typical mitigation measures.
Magnitude	Level I	Measurable Project-related change that may disrupt the social and/or economic conditions of local Indigenous people but can be effectively managed with mitigation measures.
Geographic Extent	Level I	Effect is restricted to the LSA.
Duration	Level II	Effect occurs over the medium term: more than three years but less than 31 years
Frequency	Level II	Effect occurs intermittently or regularly
Reversibility	Level I	Effect is fully reversible during the Project phases.
Timing	Level I	Effects do not occur during a sensitive period, or related effects are fully mitigated.

10.8.6.1.2 Change in the Region's Community Well-being - Access to Services (Health, Social, and Education Services)

Population growth linked to Project development may worsen existing barriers to accessing health, social, and education services in the region. For LSFN, no direct effect is anticipated on community-based services. However, some community members rely on regional specialized services located in regional centres such as Sioux Lookout, Dryden, or Thunder Bay. If Project-related population change contributes to longer wait times, reduced service availability, or added pressure on regional systems, LSFN community members who travel for care may experience delays or changes to access, particularly for services already operating at or near capacity. These impacts, while indirect, may compound existing inequities in access and negatively affect individual and community well-being.

Based on the criteria outlined in Section 10.4.3.3, the residual effect on access to services is not considered significant, as most attributes are rated as Level I (see Table 10.8-14). While the Project may contribute to changes in demand for specialized services in regional hubs, which could indirectly affect LSFN community members' access to off-reserve care, these effects are expected to be low in magnitude, intermittent, and reversible with appropriate programming and continued engagement. Potential emotional stress or increased demand for culturally appropriate mental health supports is also considered to be of low consequence, given the absence of direct interaction with on-reserve services and the community's demonstrated resilience and service infrastructure.

Table 10.8-14: Characterization of Negative Residual Effects for Access to Services - Lac Seul First Nation

Attribute	Category	Rationale
Ecological or Social Context	Level I	Criteria may or may not be sensitive, and can support the predicted change with typical mitigation measures.
Magnitude	Level I	Measurable Project-related change that is insufficient to alter the social and/or economic conditions of local Indigenous people.
Geographic Extent	Level II	Effect extends beyond the LSA but within the RSA.
Duration	Level II	Effect occurs over the medium term: more than three years but less than 31 years.
Frequency	Level II	Effect occurs intermittently or regularly.
Reversibility	Level I	Effect is fully reversible during the Project phases.
Timing	Level I	Effects do not occur during a sensitive period, or related effects are fully mitigated.

10.8.6.1.3 Change in the Region's Community Well-being - Access to Land and Resources

As described in Section 10.6.2, some LSFN community members who access the PA and surrounding areas (in the CULRTP LSA) for harvesting, including for culturally important furbearers and plant species, may experience changes in access, availability of culturally important harvesting sites and areas due to Project infrastructure, and quality of harvesting activities due to sensory disturbances (sound, dust, light, visual changes) across all Project phases. Temporary or longer-term avoidance of certain areas may occur, particularly where harvesting quality or cultural experience is changed from Project activities and infrastructure. These changes may contribute to reduced opportunities for intergenerational knowledge transfer, cultural continuity, and land-based wellness practices that are important to community well-being. However, mitigation measures, including culturally appropriate reclamation, Indigenous-led monitoring, and ongoing engagement, are expected to support restoration of access and harvesting quality after re-vegetation occurs in the PA. As a result, the residual effect is characterized as Level I, with low magnitude, localized extent, and intermittent frequency. While effects may extend across multiple Project phases, they are anticipated to be reversible, particularly if Indigenous land use priorities are integrated into closure planning. This characterization reflects a precautionary but non-significant outcome, assuming that mitigations are implemented effectively and collaboratively. The residual effect characterization is summarized in Table 10.8-15.

Table 10.8-15: Characterization of Negative Residual Effects for Access to Land and Resources - Lac Seul First Nation

Attribute	Category	Rationale
Ecological or Social Context	Level I	Criteria may or may not be sensitive, and can support the predicted change with typical mitigation measures.
Magnitude	Level I	Measurable Project-related change that is insufficient to alter the social and/or economic conditions of local Indigenous people.
Geographic Extent	Level I	Effect is restricted to the LSA.
Duration	Level II	Effect occurs over the medium term: more than three years but less than 32 years.
Frequency	Level II	Effect occurs intermittently or regularly.
Reversibility	Level I	Effect is fully reversible during the Project phases.
Timing	Level I	Effects do not occur during a sensitive period, or related effects are fully mitigated.

10.8.6.1.4 Change in the Region's Community Well-being - Economic Opportunity and Inequality

The Project is expected to generate new economic opportunities through job creation and increased regional spending, particularly during the construction and operations phases. For LSFN community members, these opportunities may support household income stability, debt reduction, and access to improved quality of life. However, given the community's geographic distance from the Project, access to employment may require relocation or extended time away from home, which can limit participation for individuals with caregiving responsibilities or other barriers. If systemic barriers are not addressed, certain groups may be disproportionately excluded from Project benefits.

At Project closure, the loss of direct and indirect employment opportunities could result in income instability and reduced community-level spending, particularly if transitions are not supported through advance planning or workforce development. Nevertheless, the residual effect is not considered significant, as the magnitude is expected to be low, and the potential for benefit-sharing, training programs, and collaborative employment planning can mitigate long-term economic disruption. Most attributes are rated Level I (Table 10.8-16), and the outcome is considered reversible with appropriate engagement and supports.

Table 10.8-16: Characterization of Negative Residual Effects for Economic Opportunity and Inequality - Lac Seul First Nation

Attribute	Category	Rationale
Ecological or Social Context	Level I	Criteria may or may not be sensitive, and can support the predicted change with typical mitigation measures
Magnitude	Level I	Measurable Project-related change that is insufficient to alter the social and/or economic conditions of local Indigenous people.
Geographic Extent	Level II	Effect extends beyond the LSA but within the RSA.
Duration	Level II	Effect occurs over the medium term: more than three years but less than 31 years.
Frequency	Level II	Effect occurs intermittently or regularly.
Reversibility	Level I	Effect is fully reversible during the Project phases.
Timing	Level I	Effects do not occur during a sensitive period, or related effects are fully mitigated.

10.8.7 Significance of Residual Effects

For all key themes, the ecological or social context and magnitude of the effects due to Project-related activities to Region's Community Well-being are low (Level I) and either restricted to the LSA (Level I) or extends beyond the LSA but within the RSA (Level II). The effect will occur once (Level I), and will occur over the medium term of more than three years but less than 32 years (Level II) and fully reversible at closure (Level I). The residual effect is therefore not significant.

10.8.8 Confidence

The prediction confidence assignment reflects the information available through Project-specific TKLUS reports, publicly available data (statistical websites, government pages, previously completed EA / IS reports), understanding of the effectiveness of applicable mitigation measures, and outcomes of other pVCs and fVCs. The assessment is informed by substantial primary and secondary information and robust analysis however, as noted in the assessment, there are some instances where the information collected had data gaps or lacked detail.

The overall confidence in residual environmental effect and significance predictions for community well-being is moderate. As additional information continues to be shared through Great Bear Resources' ongoing consultation with local Indigenous communities over Project life, relevant information will be incorporated into Project planning as practical.

10.9 Health

The fVC Indigenous Peoples is inclusive of health consistent with the TISG (Section 6.3). Project-related changes to upstream of environmental, social, economic and cultural conditions may interact with Indigenous health. The assessment of Indigenous health expands upon pVCs and fVCs assessments provided in other Impact Statement sections to evaluate and interpret how the findings of these assessments may influence the biophysical and social determinants of health.

The objective of the health assessment summarized in this section is to assess potential Project-related changes to health of Indigenous communities identified as participants in the Impact Statement (LSFN, WFN, ANA, NWOMC and Indigenous people living in Red Lake and Ear Falls [RLEF]). To achieve this objective, detailed studies were completed to inform a holistic assessment of potential beneficial and adverse effects, that are appended to the Impact Statement:

- Human Health and Ecological Risk Assessment (HHERA; Appendix N-1)
- Health Impact Assessment (HIA; Appendix N-2).

The HHERA evaluated potential Project-related health effects on human and ecological receptors due to Project-related changes to air and multi-media (i.e., soil, water and traditional foods) quality. The HIA evaluated a wide range of biophysical and social determinants of health. The HIA drew on the findings from other assessments to understand the changes to upstream environmental, social, economic and cultural conditions that have the potential to influence Indigenous health, including the results of:

- HHERA for the assessment of biophysical determinants of health
- Assessment of changes to pVCs and fVCs with pathways to health
- Assessments of Community Services and Infrastructure (CSIN), CULRTP and CWB, associated with the fVC Indigenous Peoples.

Health is a complex and multi-faceted concept. *"[The World Health Organization's] WHO's definition of health is the most commonly used and cited definition in the field of HIA. This definition asserts that health is 'a state of complete physical, mental and social wellness and not merely the absence of disease or infirmity.' In 1986, the WHO further clarified that health is 'a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities.' Expanding its understanding of health, the WHO has defined mental health as 'a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community"* (Health Canada 2024a).

According to the WHO, *"many factors combine together to affect the health of individuals and communities. Whether people are healthy or not, is determined by their circumstances, environment and personal behaviours. To a large extent, factors such as where we live, the state of our environment, genetics, our income and education level, and our relationships with friends and family all has considerable impacts on health"* (WHO 2017). Stemming from a large body of literature, the social determinants of health help explain why health inequities exist, and how non-medical factors help to determine health outcomes for both the individual and population groups (Marmot 2005; PHAC 2011; Mancini and Sala 2018).

It is understood that health is viewed holistically by Indigenous communities, which is based on the interconnected nature of physical, mental, spiritual, and emotional health and wellness (Lewis et al. 2021). It is also recognized that cultural diversity exists across First Nations and Métis peoples, and that many Indigenous perspectives on health and wellness are unique and distinct. Therefore, how different communities define health, and what factors determine positive health outcomes, may vary.

The Indigenous health assessment evaluates the following determinants of health, reflected in the structure of the existing conditions and effects assessment detailed in Appendix N-2:

- Biophysical determinants of health, including:
  - Air Quality
  - Multi-media Environmental Quality
  - Access and Availability of Water
  - Access and Availability of Traditional Foods
    - Sensory Disturbances: Sound, Vibration and Light
- Social determinants of health, including:
  - Economics (Employment, Income and Education)
  - Housing
  - Access to Health and Social Services
  - Food Security
  - Mental Wellness and Personal Behaviours
  - Actual and Perceived Public Safety (Accidents and Malfunctions)
  - Safety of Indigenous Women and Girls

The assessment of Indigenous health draws on a set of quantitative and qualitative indicators to form the basis for evaluating changes in Indigenous health. The HIA (Appendix N-2) which is relied upon for the assessment of Indigenous health, drew on a variety of sources (qualitative and quantitative) to assess potential beneficial and adverse effects to health while incorporating existing conditions data, peer-reviewed scientific literature, publicly available data, community-specific information, and Indigenous knowledge where available and pertinent. A GBA Plus lens was applied through the entirety of the assessment to consider the unique experiences of diverse population subgroups (e.g., Elders, youth, women+).

For Indigenous health, a single comprehensive assessment was completed that relies on the combined findings of the HHERA (Appendix N-1) and HIA (Appendix N-2) for all participating Indigenous communities (i.e., LSFN, WFN, ANA, NWOMC and RLEF). This subsection includes the assessment and discussion of Indigenous health overall, presenting findings for all five Indigenous communities.

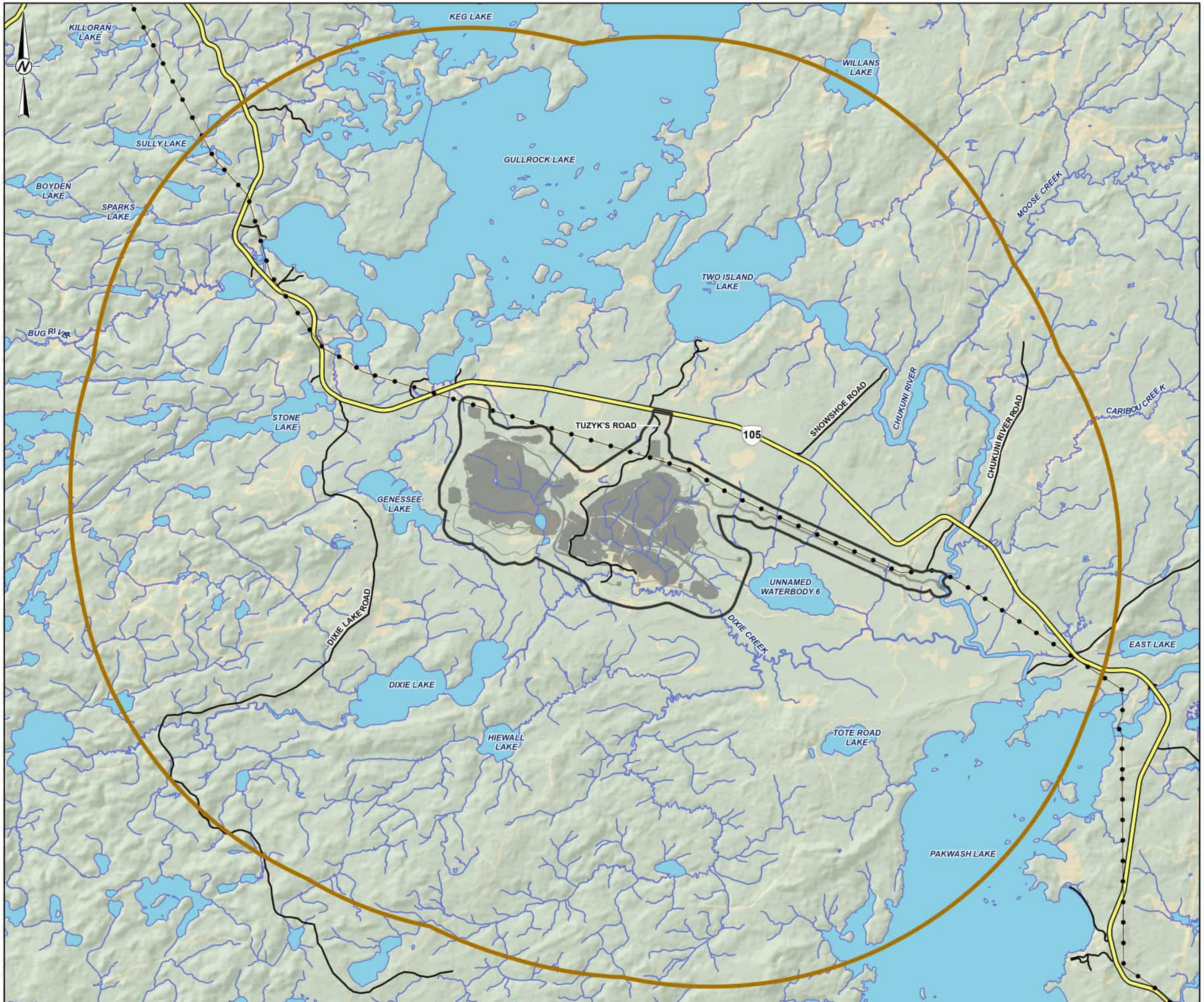
10.9.1 Spatial Boundaries

There are three study areas used as spatial boundaries for the Impact Statement (Section 6.4). They are the PA, the LSA and the RSA. The spatial boundaries used for the assessment of health are shown in Figure 10.9-1 and Figure 10.9-2 for biophysical determinants of health, and in Figure 10.9-3 for social determinants of health.

For biophysical determinants of health, the spatial boundaries are defined as:

- **PA:** the Project footprint including all temporary and permanent areas associated with the mine site development, as well as an outside buffer to allow flexibility for design optimizations prior to construction and over the mine life. The PA is approximately 3,349 hectares (ha) in size.

- **LSA:** is the area within which Project-related effects may reasonably be expected to occur and can be predicted or measured with a reasonable degree of accuracy and confidence. The LSA extends beyond the PA and is intended to capture potential direct effects from the Project (such as emissions, discharges and habitat loss) and indirect effects resulting from the Project.
    - The LSA for biophysical determinants of health is adopted from the HHERA LSA, and represents a combination of both the air quality and surface water system LSAs. The LSA encompasses the area adjacent to the PA to capture the maximum predicted ground-level concentrations due to the Project and where air quality can be predicted or measured with a reasonable degree of accuracy. This zone includes the leased claims boundary and extends approximately 10 km from the main area of the PA (excluding a buffer for the Chukuni River pipelines or pump house). For surface water, the LSA includes sub-watersheds of Dixie Creek that intersect with the PA, as well as the Chukuni River (the receiving environment). It also includes the Chukuni River upstream to the Snowshoe Rapids Dam, and downstream to the outlet of Pakwash Lake.
- **RSA:** encompasses the LSA and is used to provide regional context. The RSA extends beyond the PA and encompasses the LSA and, where appropriate, extends further to support a regional context in the assessment of potential Project effects. It is the maximum geographical extent or zone of influence in which potential effects from the Project are assessed.
    - The RSA for biophysical determinants of health is adopted from the HHERA RSA, which represents a combination of both the air quality RSA which is 10 km further than the LSA, and surface water system RSA which encompasses the LSA and extends into the Dixie Creek watershed, encompassing Dixie Lake and Hiewall Lake. Upstream, it follows the Chukuni River to include Two-Island Lake, Gullrock Lake, Keg Lake and Red Lake. Downstream, the RSA continues through Pakwash Lake and along the Chukuni River to its confluence with the English River.



LEGEND

- GREAT BEAR PROJECT FOOTPRINT
- PROJECT AREA
- LOCAL STUDY AREA FOR BIOPHYSICAL DETERMINANTS OF HEALTH - HEALTH IMPACT ASSESSMENT
- HIGHWAY
- LOCAL ROAD
- EXISTING TRANSMISSION LINE
- WATERCOURSE
- WATERBODY

0 1 2 4

1:105,000 KILOMETRES

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)
1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
3. SITE PLAN BASED ON INFORMATION PROVIDED BY GREAT BEAR RESOURCES, DECEMBER 2024 / JUNE 2025.
4. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

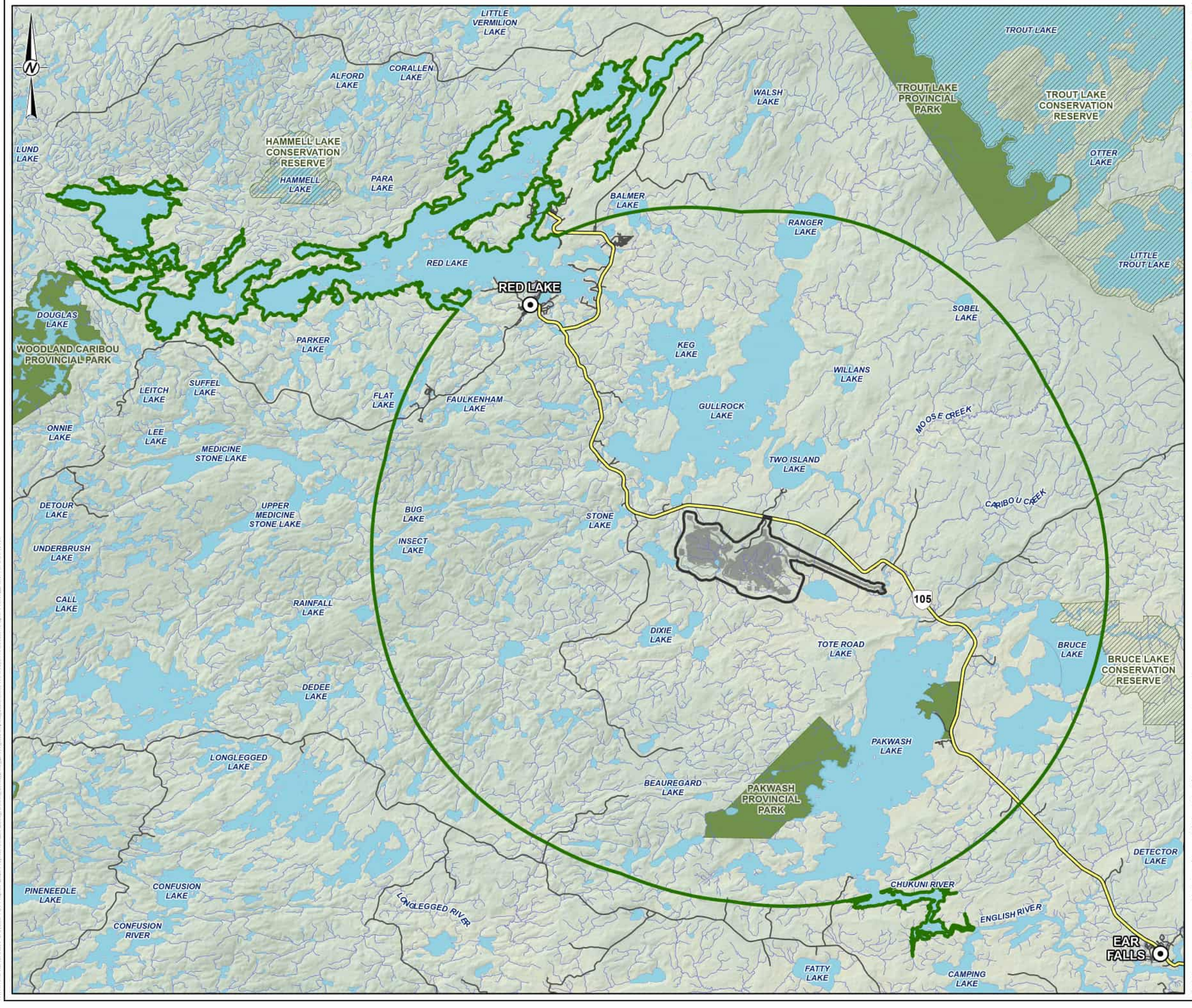
PROJECT
GREAT BEAR PROJECT

TITLE
LOCAL STUDY AREA FOR BIOPHYSICAL DETERMINANTS OF HEALTH - HEALTH IMPACT ASSESSMENT

CONSULTANT
wsp

YYYY-MM-DD	2026-03-31
DESIGNED	----
PREPARED	MD
REVIEWED	----
APPROVED	----

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	10.9-1



LEGEND

- GREAT BEAR PROJECT FOOTPRINT
- PROJECT AREA
- REGIONAL STUDY AREA FOR BIOPHYSICAL DETERMINANTS OF HEALTH - HEALTH IMPACT ASSESSMENT
- TOWN
- CONSERVATION RESERVE
- PROVINCIAL PARK
- HIGHWAY
- LOCAL ROAD
- WATERCOURSE
- WATERBODY

0 2.5 5 10

1:250,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
3. SITE PLAN BASED ON INFORMATION PROVIDED BY GREAT BEAR RESOURCES, DECEMBER 2024 / JUNE 2025.
4. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
REGIONAL STUDY AREA FOR BIOPHYSICAL DETERMINANTS OF HEALTH - HEALTH IMPACT ASSESSMENT

CONSULTANT

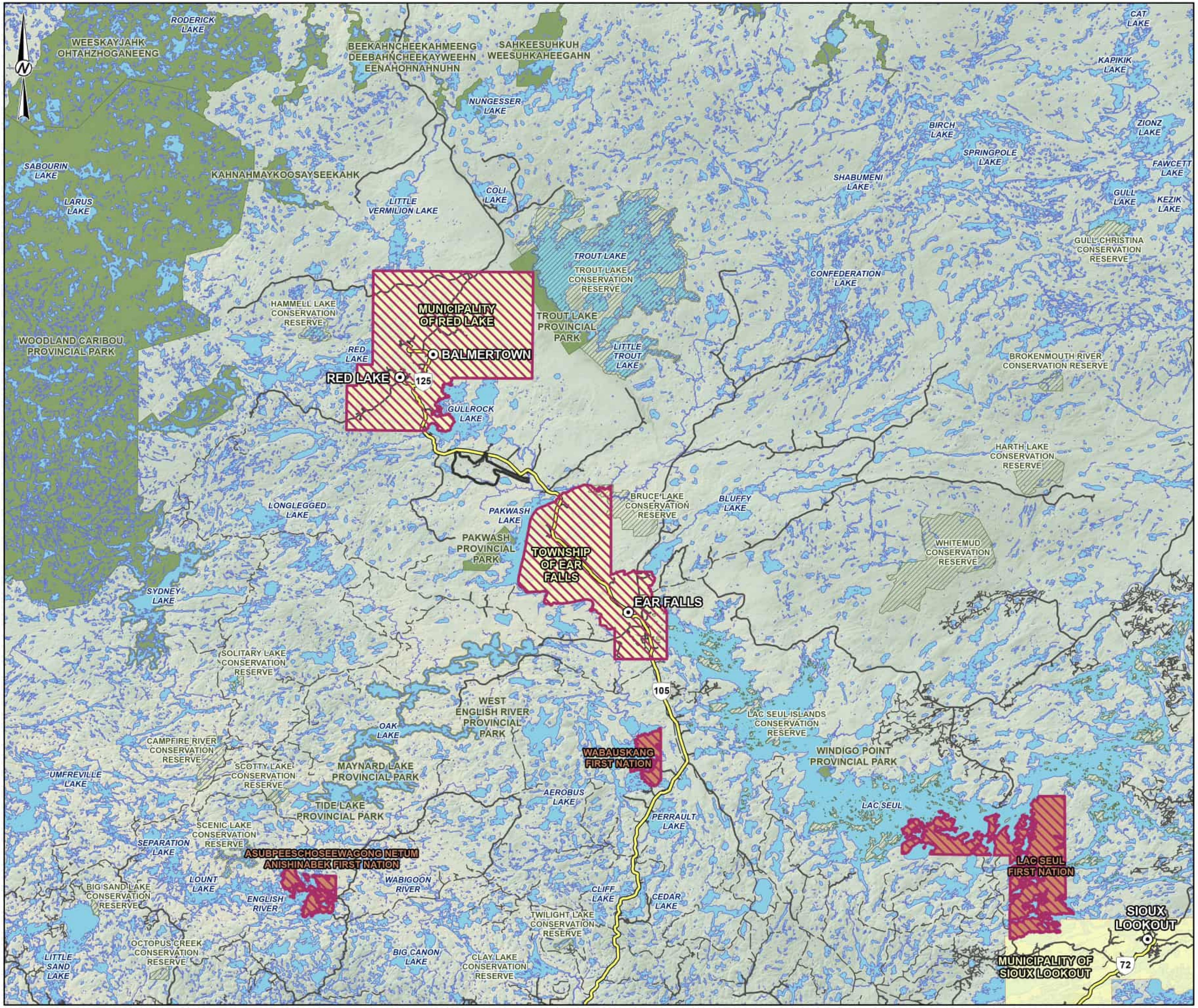
YYYY-MM-DD	2026-03-31
DESIGNED	----
PREPARED	MD
REVIEWED	----
APPROVED	----

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	10.9-2

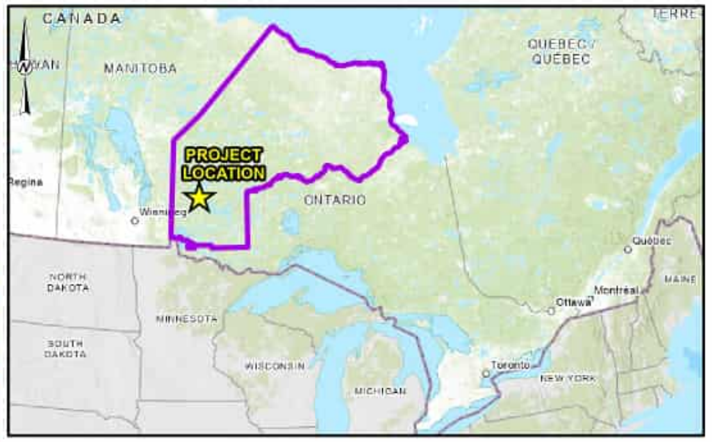
For social determinants of health, the spatial boundaries are defined as:

- **PA** (the same as for biophysical determinants of health): the footprint of the Project including all temporary and permanent areas associated with the mine site, as well as a buffer to allow flexibility for design optimizations prior to construction and over the mine life.
- **LSA:** is the area within which Project-related effects may reasonably be expected to occur and can be predicted or measured with a reasonable degree of accuracy and confidence. The regions that the Project's socio-economic demands are expected to influence, possibly causing direct, indirect and / or induced effects on Indigenous health, include the Indigenous communities of LSFN, WFN, ANA, NWOMC, and RLEF.
    - The LSA boundary is same as applied for community well-being (Section 10.8)
- **RSA:** encompasses the LSA and is used to provide regional context. The region surrounding the LSA and the PA may also experience direct, indirect, and / or induced effects on Indigenous health due to the socio-economic demands of the Project. The RSA for Indigenous health, specifically the social determinants, is the District of Kenora.
    - The RSA boundary is same as applied for community well-being (Section 10.8).

The boundaries used for assessment of biophysical and social determinants of health are the same as utilized in the HIA (Appendix N-2).



REGIONAL STUDY AREA OVERVIEW



SCALE: 1:30,000,000

LEGEND

- PROJECT AREA
- TOWN
- FIRST NATION RESERVE
- LOWER TIER MUNICIPAL BOUNDARY
- CONSERVATION RESERVE
- PROVINCIAL PARK
- HIGHWAY
- LOCAL ROAD
- RESOURCE / RECREATION ROAD
- WATERBODY
- LOCAL STUDY AREA FOR SOCIAL DETERMINANTS OF HEALTH - HEALTH IMPACT ASSESSMENT
  - LAC SEUL FIRST NATION
  - WABAUSKANG FIRST NATION
  - ASUBPEESCHOSEEWAGONG NETUM ANISHINABEK FIRST NATION
  - TOWNSHIP OF EAR FALLS
  - MUNICIPALITY OF RED LAKE
- REGIONAL STUDY AREA FOR SOCIAL DETERMINANTS OF HEALTH - HEALTH IMPACT ASSESSMENT (SHOWN IN OVERVIEW MAP)
  - DISTRICT OF KENORA

0 7.5 15 30

1:700,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
2. WATERCOURSES AND WATERBODY ACQUIRED FROM LAND INFORMATION ONTARIO (MNRF) AND MODIFIED TO MATCH AERIAL IMAGERY AND LIDAR.
3. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.
4. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES

PROJECT
GREAT BEAR PROJECT

TITLE
SPATIAL BOUNDARIES FOR SOCIAL DETERMINANTS OF HEALTH - HEALTH IMPACT ASSESSMENT

CONSULTANT

YYYY-MM-DD	2026-03-31
DESIGNED	----
PREPARED	MD
REVIEWED	----
APPROVED	----

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031271	0001	A	10.9-3

10.9.2 Existing Conditions

Health is assessed through consideration of upstream conditions and changes to biophysical and social determinants of health; therefore, the indicators identified in Table 10.3-1, including existing conditions for these indicators, are collectively considered in the assessment of the determinants of health, in accordance with HIA guidelines (Health Canada, 2024a). The existing conditions for these determinants are described in detail in the relevant Impact Statement sections and appendices, the Human Health and Ecological Risk Assessment (Appendix N-1), and in the Health Impact Assessment (Appendix N-2).

A summary of existing conditions for Indigenous health, including physical health (e.g., chronic conditions, communicable diseases and demographics), health-related behaviours (e.g., food consumption, physical activity and substance use) and mental wellness (e.g., depression, stress / anxiety and perception of risk) are summarized below, along with the methods used to characterize baseline conditions. Further details, including community-specific profiles, are provided in the Baseline Health Profile included as Attachment A of Appendix N-2. Socio-economic conditions and community resources are reported in the Socio-economic Baseline Study (Appendix O-1).

It is important to note that the data presented are primarily from publicly available sources, with some local data from a community survey. Limited data on Indigenous health at the community-level were available to Great Bear Resources; therefore, the data presented may not necessarily be representative of the individual Indigenous communities being assessed (i.e., LSFN, WFN, ANA, NWOMC and RLEF). The information provided in this section is intended to reflect Indigenous health overall in the region and is assumed to be generally applicable to the local identified communities. Where possible, Indigenous-specific data were used; however, in the absence of these data, general population data were also included.

10.9.2.1 Methods

Baseline health-related information was identified from both publicly available sources, and confidential reports prepared by Indigenous communities in the region provided to Great Bear Resources. In addition to population health indicators (e.g., burden of disease, birth rates, injuries, and mental health rates and status), Indigenous-specific indicators such as land-based health, cultural continuity, community relationships, language and knowledge preservation, and spiritual wellness were also described. The existing (baseline health) conditions characterization was informed by primary (data collection) and secondary (desktop) research using a broad range of information sources, including:

- Data collected from local community members, including Indigenous members, via a Great Bear Project Community Health Survey administered in 2024 (details provided in Attachment A of Appendix N-2)
- Interviews with organizations within some of the local communities to investigate the tangible and intangible impacts that may occur during the development phases of the Project (records of contact from community engagement interviews completed for the Socio-economic Baseline Study; Appendix O-1)
- Municipal, provincial and federal government publications (e.g. policy and planning materials, government reports, municipal websites and plans)
- Statistical publications (e.g., Statistics Canada Community Profiles from both 2016 and any available 2021 data, and the results of the National Household Survey)

- Relevant publicly available information (e.g., community organization websites, business websites, primary and grey literature, and letters from Indigenous communities to government agencies)
- Media articles, including websites.

The baseline characterization also draws on information from the Socio-economic Baseline Study (Appendix O-1).

Baseline conditions were characterized using a tiered hierarchy of information sources. Indigenous knowledge studies, community-provided information, and consultation inputs were prioritized where available. Second, local First Nations specific health data were used, primarily sourced from publications by the Sioux Lookout First Nations Health Authority (SLFNHA). Third, to supplement these sources, regional health data from Public Health Ontario's NWHU were also considered, recognizing that these data are not specific to Indigenous health but to the general population in the area.

The smallest geographical scale for which health data are available through Public Health Ontario are public health units. The LSA and RSA communities fall within the NWHU. The boundaries of the NWHU encompasses several communities, including LSFN, WFN, ANA, NWOMC, the Municipality of Red Lake, the Township of Ear Falls, and the District of Kenora. Accordingly, unless otherwise stated, the health statistics presented throughout this section are drawn from the RSA's corresponding public health unit - NWHU.

Public health data for the NWHU are largely drawn from the database of statistics available through Statistics Canada and Public Health Ontario, which in turn have been sourced from the following: National Ambulatory Care Reporting System; the Ministry of Health and Long-Term Care; IntelliHealth, Discharge Abstract Database; Vital Statistics Mortality; Healthy Babies Healthy Children Integrated Services for Children Information System; Reporting Sub-System; the Ministry of Children, Community and Social Services; Statistics Canada; and the Canadian Community Health Survey (CCHS). Age-standardized rates have been adjusted by Public Health Ontario to the 2011 Canadian population.

It is recognized that public health datasets often do not fully capture people living on First Nations reserves or in small, remote communities, and are constrained by sampling limitations. As a result, some indicators presented in this section may underrepresent true health conditions within the local Indigenous communities and should be interpreted with this limitation in mind. The use of regional health data was not intended to replace or supersede Indigenous knowledge, community-led research, or community-specific health information. Rather, it complements those sources by providing additional context and addressing data limitations where they may exist. The limitations associated with applying regional datasets to community-level health characterization are further discussed in Appendix N-2.

In addition to compiling information from publicly available resources and databases, a Great Bear Project Community Health Survey was administered to collect primary data in order to better understand specific aspects of community health and wellness, including: community demographics; priority issues of importance; perceptions of health and wellbeing status; and to gather some information related to ways the land is used in the areas surrounding the Project. This survey was administered online and designed to collect information from local residents, including residents who identify as Indigenous.

The findings provide only a snapshot of information provided by some Indigenous participants and may not be representative of the interests, opinions, and values of the local Indigenous communities as a whole, or the interests, opinions, and values of individuals within those communities.

As applicable, health status information is sufficiently disaggregated and analyzed to support the analysis of potential effects to underrepresented groups and support GBA Plus. In addition, a summary of historical and current conditions related to Indigenous health is provided.

Unless explicitly stated, references to results being higher or lower throughout this section indicate comparative differences only and should not be interpreted otherwise.

10.9.2.2 Description

The description of existing conditions for health also requires consideration of the upstream environmental, social, cultural, and economic conditions that influence health and wellness. Therefore, health is connected (directly and / or indirectly) to other pVCs and fVCs and technical appendices, including:

- Air Quality (Section 7.2)
- Sound (Section 7.3)
- Vibration (Section 7.4)
- Groundwater Quantity (Section 7.5)
- Surface Water Flows and Levels (Section 7.6)
- Water Quality (Section 7.7)
- Vegetation Communities (Section 7.8)
- Wild Rice (Section 7.9)
- Moose (Section 7.10)
- Other Wildlife (Section 7.11)
- Species at Risk (Section 7.12)
- Local and Regional Economy (Section 7.16)
- Fish and Fish Habitat (Section 8)
- Migratory Birds (Section 9)
- Community Services and Infrastructure (Sections 10.5, 11.5, 12.5, 13.5 and 14.5)
- Current Use of Lands and Resources for Traditional Purposes (Sections 10.6, 11.6, 12.6, 13.6 and 14.6)
- Community Well-Being (Sections 10.8, 11.8, 12.8, 13.8 and 14.8)
- Night-Time Light Levels Baseline and Predictive Assessment (Appendix G)
- Socio-economic Baseline Study (Appendix O-1)
- HHERA (Appendix N-1).

A description of existing conditions of the linked pVCs, fVCs, and technical appendices listed above, as they relate to the biophysical and social determinants of health, is presented in Section 6 of the HIA (Appendix N-2). Collectively, the information from the upstream pVCs, fVCs, and technical appendices informed the existing conditions of the biophysical and social determinants of health.

In addition, the description of existing conditions for Indigenous health includes data and information on current health status and conditions within the LSA and RSA, as shaped by interrelated environmental, cultural, mental health, and socio-economic factors, with land-based practices, family and relationships, and cultural continuity identified as important indicators of health and wellness. This information is summarized below and detailed in Attachment A of Appendix N-2.

10.9.2.2.1 Historical Health Context

This section provides a summary of information for each of the local Indigenous communities that is relevant to health, including historical information. Further detail is provided in Attachment A of Appendix N-2.

Colonialism in Canada has operated as an interconnected system of laws, institutions, and policies, including the residential school system, that displaced First Nations, Inuit and Métis peoples from their lands, suppressed their cultures and governance systems, and undermined self determination (PHAC 2024). Many current health disparities observed in Indigenous populations are attributed to colonialism in Canada (PHAC 2024; SLFNHA 2024a). While there are common themes, such as land dispossession, forced assimilation and intergenerational trauma, there are also distinct forms for Indigenous groups, such as treaties and the *Indian Act* for First Nations, forced relocations and epidemics for Inuit, and land scrip and exclusion from treaties for Métis (PHAC 2024).

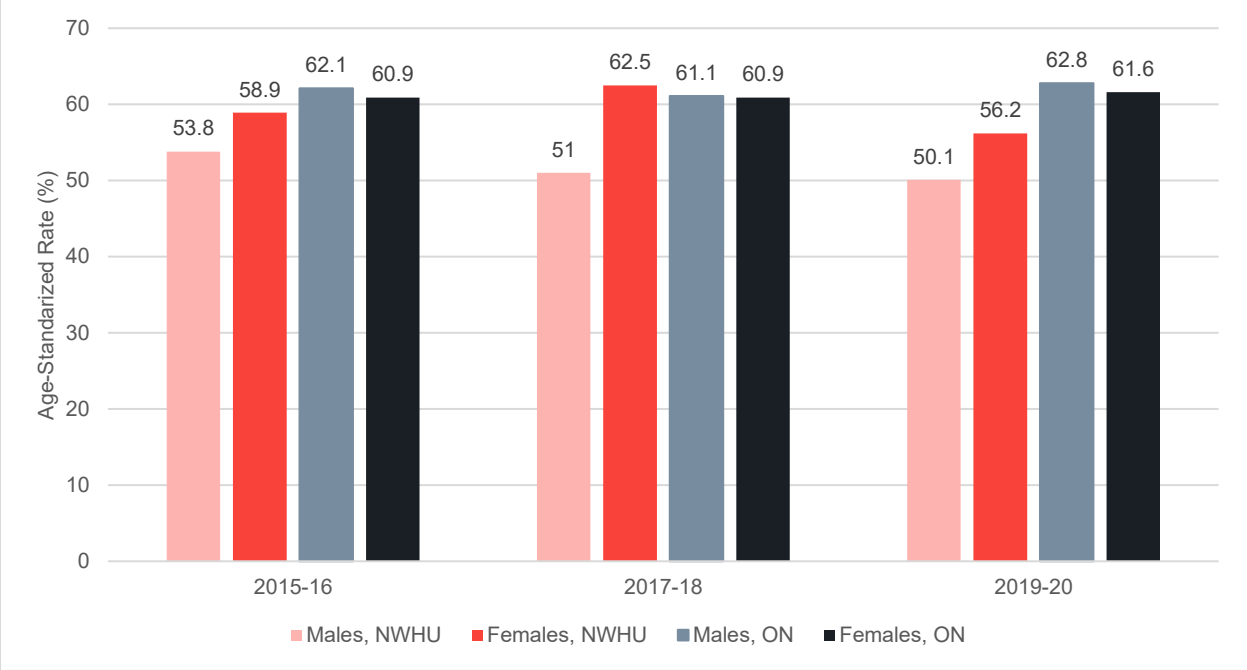
In a confidential report prepared for LSFN, some members described the effects of colonialism on their community. For example, community members shared how even the creation of the reserve boundaries had an impact, as the creation of these boundaries restricted their way of life and their culture to exist within artificial or colonial lines. They discuss how these impacts and the impacts of language loss and the residential school system are felt through generations. For ANA, colonial policies have *"led to intergenerational trauma and the loss of language, cultural teachings, and self-sufficiency"* (GNFN ANA 2025). For Métis populations in Canada, *"the root cause of poorer health outcomes suffered by the Métis lies in inter-generational family and individual experiences of trauma caused by colonial policies and adversity in their childhood"* (Métis National Council 2025). Perspectives on colonization from confidential reports prepared for WFN or community websites were not available. These examples are not intended to fully capture the complex history of colonial impacts on Indigenous people, but instead to highlight some of the distinct ways colonialism has shaped and continues to shape their experiences.

10.9.2.2.2 Perceptions of Health and Wellness

This section provides an overview of perceptions of health in the NWHU, in comparison to provincial averages. Figure 10.9-4 presents the age-standardized rates of respondents to the CCHS, from the NWHU and the province of Ontario, who reported a good or excellent perception of their overall health. The rates of males in the NWHU who reported a good or excellent perception of their overall health slightly declined from 2015-2016 to 2019-2020, and were lower than the rates for females in the NWHU (not statistically validated).

In addition, the rates for males in the NWHU were also lower than rates for males in the province (only significantly lower for the 2017-2018 and 2019-2020 period; no significant difference in the 2015-2016 period) (Ontario Agency for Health Protection and Promotion 2023a). The rates of females in the NWHU who reported a good or excellent perception of their overall health was relatively steady throughout the years. The rates for females in the NWHU were lower than the rates for females in the province in 2015-2016 and 2019-2020, however rates for females were not significantly lower than provincial rates.

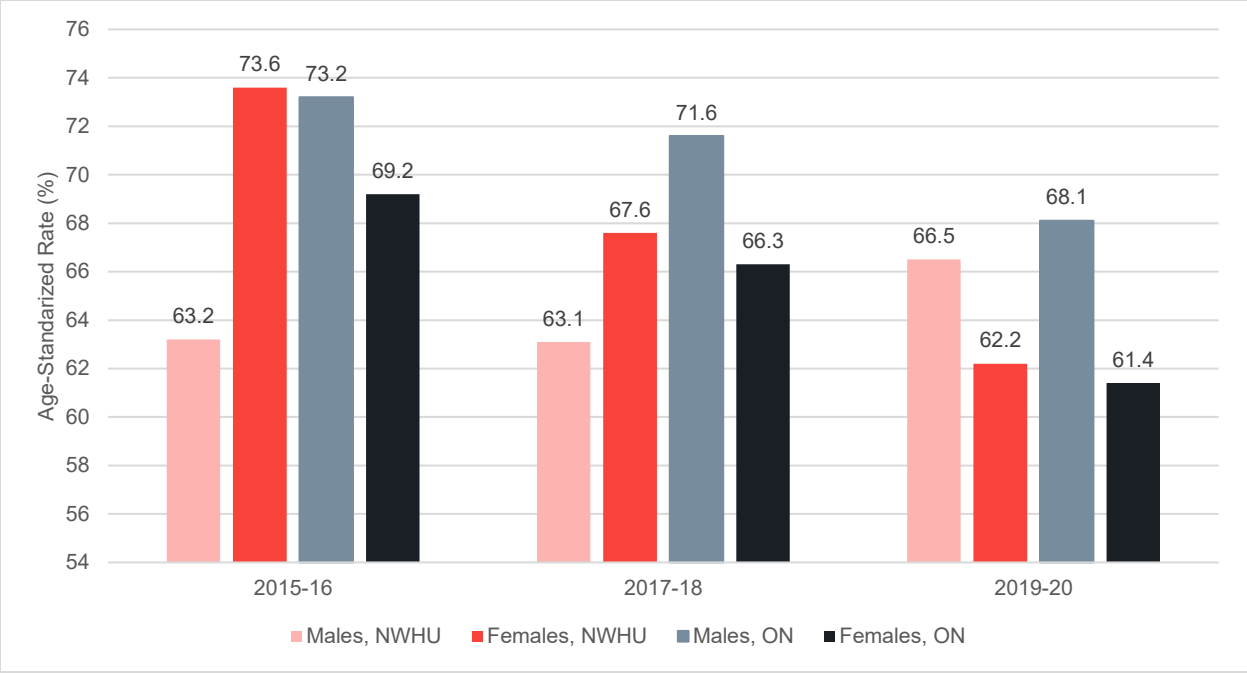
Figure 10.9-4: Perceived Health is Good or Excellent, Northwestern Health Unit and the Province of Ontario, 2015-2020



Source: (Ontario Agency for Health Protection and Promotion 2023a)

Figure 10.9-5 presents the age-standardized rates of respondents to the CCHS from the NWHU and the province who reported a good or excellent perception of their mental health. The rates of females in the NWHU who reported a good or excellent perception of their mental health were higher than the provincial average, while the rates for males were lower than the provincial average between 2015-2016 to 2019-2020 (Ontario Agency for Health Protection and Promotion 2023a). The rates of females in the NWHU who reported a good or excellent perception of their mental health were higher than the rates for males in NWHU in 2015-2016 and 2017-2018 and were lower than the rates for males in the NWHU in 2019-2020.

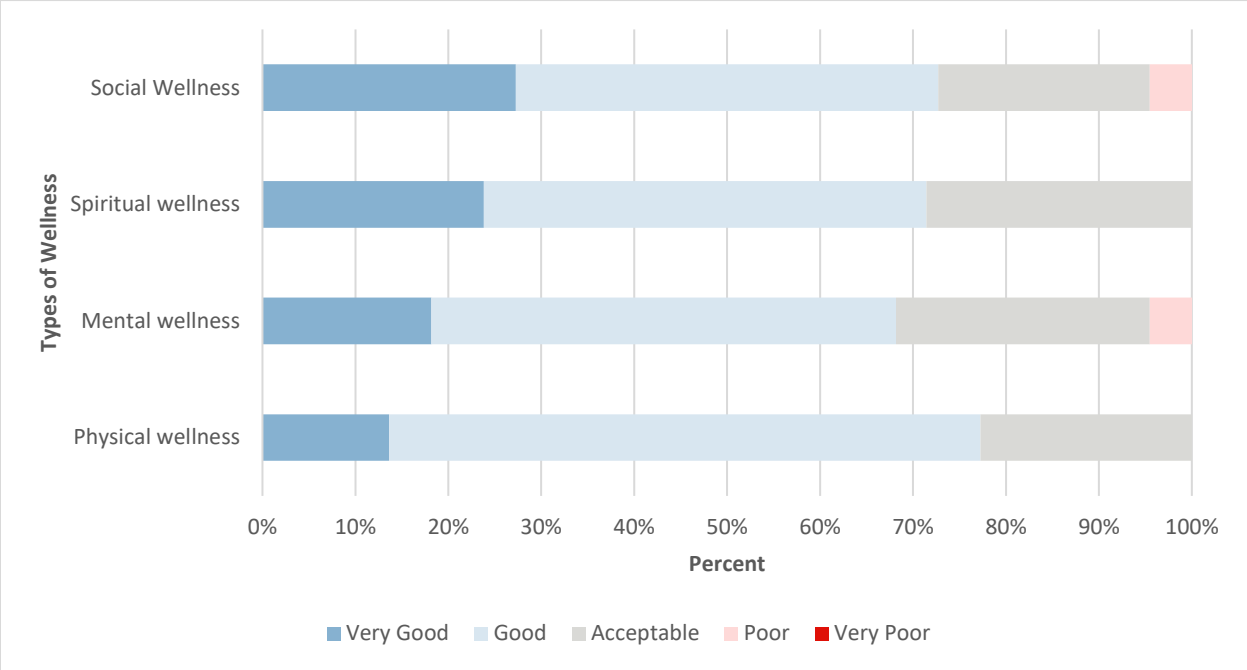
Figure 10.9-5: Perceived Mental Health is Good or Excellent, Northwestern Health Unit and the Province of Ontario, 2015-2020



Source: (Ontario Agency for Health Protection and Promotion 2023a)

The Great Bear Project Community Health Survey asked survey respondents to rate their current feelings of health and well-being for the following categories: physical, mental, spiritual, and social wellness on a scale from very good to very poor. Most self-identified Indigenous respondents selected positive answers (i.e., very good or good) across all categories, followed by neutral (i.e., acceptable), and negative (poor), as presented in Figure 10.9-6. No respondents selected very poor in any of the four categories queried.

Figure 10.9-6: Current State of Health and Well-Being, Self-Identified Indigenous Respondents (n=22)



Source: Great Bear Project Community Health Survey (Attachment A of Appendix N-2)

10.9.2.2.3 Lifestyle and Behaviours

Detailed information regarding lifestyle and behaviour is presented in Attachment A of the HIA (Appendix N-2) including referencing to source information. Data on lifestyles and behaviours were available for Métis people in Canada, and for the general public in the RSA health units' catchment areas (i.e., NWHU), in comparison to provincial averages.

Smoking rates among Métis adults in Ontario declined between 2007 and 2014, whereas the smoking rate among non-Indigenous adults remained relatively constant (Métis National Council 2022). In 2015-2016 and 2017-2018, males and females in the NWHU had higher rates of current daily smoking than the provincial averages, with higher rates of smoking among males for both NWHU and Ontario (Ontario Agency for Health Protection and Promotion 2023b).

NWHU had higher rates of self-reported age-standardized rates of heavy drinking than the province in 2015-2016 and 2017-2018, with rates among males being higher than rates among females in both the NWHU and the province (Ontario Agency for Health Protection and Promotion 2023c).

Despite similar levels of physical activity across all age groups and genders when compared with Ontario, NWHU reports self-reported obesity rates that are approximately twice the provincial average among individuals aged 45 and older in 2021, primarily among males. When disaggregated by age, those in age groups 45 to 64 and 65+ in the NWHU were significantly higher than their Ontario counterparts, whereas those aged 18 to 44 in the NWHU were similar to their Ontario counterparts (Ontario Agency for Health Protection and Promotion 2023d).

10.9.2.2.4 Hospitalizations and Safety

Hospitalizations and safety statistics provide an overview of injury and illness trends in the region.

The leading causes of hospital admissions for adults 20 years of age and older, among Sioux Lookout area First Nations were injuries (15% of hospital admissions) followed by digestive system issues (14%) (SLFNHA 2019a).

With respect to the causes of intentional injuries resulting in Sioux Lookout area First Nations hospital admissions for adults aged 20 years and older between 2012-2016, assault accounted for 49% of intentional injuries, followed by self-poisoning (40%) (SLFNHA 2019a).

The leading reasons for emergency department visits for adults 20 years of age and older, among Sioux Lookout area First Nations between 2012-2016 were: signs, symptoms and abnormal lab findings (21%); injuries (15%); and mental health, musculoskeletal system, and respiratory system (9% each) (SLFNHA 2019a).

Attachment A of Appendix N-2 provides additional information regarding hospitalization and safety in Sioux Lookout area First Nations and in the NWHU.

10.9.2.2.5 Chronic and Communicable Diseases

Chronic health conditions represent an existing and ongoing concern within Indigenous communities in northern Ontario.

Rates of diabetes-related hospital visits and diabetes-related deaths among Indigenous populations are approximately four times higher than the Ontario average. First Nations individuals age 20 and above from Sioux Lookout area were seen in the emergency department for diabetes at a rate three times the Ontario average (SLFNHA 2019a). In addition, First Nations from Sioux Lookout area individuals age 20 and above were admitted to hospital for diabetes at a rate four times the Ontario average (SLFNHA 2019a).

In contrast, regional public health data from the NWHU indicate lower reported prevalence rates of asthma and hypertension compared to provincial rates in 2020 (Ontario Agency for Health Protection and Promotion 2023e). The rates of hospitalization for asthma for males in NWHU between 2012 and 2019 were lower than the rates for women in NWHU, and for males in Ontario (Ontario Agency for Health Protection and Promotion 2023f). The rates of hospitalization for asthma for females in NWHU increased sharply in 2014, 2016 and 2019 as compared to the previous year.

The rates of hospitalization for cardiovascular disease in NWHU and the province were compared between 2012 and 2021. The rates for males in the NWHU showed a slight decreasing trend during this period and were higher than the rates for females in NWHU and males in the province (Ontario Agency for Health Protection and Promotion 2023f).

The rate of Human Immunodeficiency Virus (HIV) for both males and females in Ontario from 2013 to 2022 is generally stable, with males having higher rates than females over these years. In contrast, the rates for males and females in the NWHU display more noticeable fluctuations, with some periods of increase and decrease. Overall, males had higher rates than females in most years, although the NWHU rates appear more variable compared to Ontario (Ontario Agency for Health Protection and Promotion 2023g).

Attachment A of Appendix N-2 provides additional information regarding chronic and communicable disease trends in Sioux Lookout area First Nations and in the NWHU.

10.9.2.2.6 Mental Health and Substance Use

Mental health and substance-related disorders are consistently identified in local health reports as a priority area of concern and a large contributor to health service utilization in the region (SLFNHA 2024b; NWHU and Yusuf 2023; MNP LLP 2020). Slightly over one third of diagnoses for Sioux Lookout area First Nations nursing station visits related to mental health and substance use were substance-related or for addictive disorders (33.5%) (SLFNHA 2024b).

As stated in SLFNHA (2024b): *"Between 2015 to 2020 across the community nursing stations, more women than men visited nursing stations to seek help for substance use / addictive disorders (55.3 females vs. 44.7 males per 1000 visits) and self-harm / suicidal attempts (71.9 females vs. 28.1 males per 1000 visits). However, both men and women had similar numbers of visits for anxiety disorders."*

When examining emergency department visit rates for intentional self-injury for Sioux Lookout area First Nations and regional health units between 2011-2021, rates for Band members both on- and off-Reserve were generally higher than the provincial average and rates for the NWHU (SLFNHA 2024b).

Emergency department visit rates per 1,000 population for mental health and substance use for Sioux Lookout Band Members on- and off-reserve rates were generally higher than the provincial average and rates for the NWHU between 2011-2021 (SLFNHA 2024b).

The Red Lake and Ear Falls 2020 Community Safety and Well-Being (CSWB) Plan further identifies substance use and mental health as top community priorities, noting that hospitalizations due to mental health conditions are higher in Red Lake and Ear Falls than provincial levels (MNP LLP 2020). In particular, youth and young adults in the region are experiencing higher rates of mental health issues (e.g., hospitalizations and emergency departments related to self-injury and / or substance use) than their Ontario counterparts (Mergler et al. 2023; MNP LLP 2020; NWHU and Yusuf 2023; SLFNHA 2018, 2024b).

With respect to self-reported prevalence of anxiety disorders in the NWHU in comparison to the province of Ontario, females were more likely than males to report anxiety in both the NWHU and the province (Ontario Agency for Health Protection and Promotion 2023h).

A report published by the Northern Policy Institute and authored by Parsons (2022) examined the homelessness, addiction, and mental health crisis in northern Ontario. The report uses data from district social services administration boards (DDSABs) in northern Ontario communities and regions. DDSABs are required to conduct detailed enumerations of their homeless populations every two years, in accordance with a new requirement that began in 2018 under the Housing Services Act (Parsons 2022). The report highlights how the rising rates of homelessness and substance use in northern Ontario suggest a growing trend of mental health crises among vulnerable populations (Parsons 2022). In 2021, the District of Kenora region reportedly had 3.1 homeless individuals per 1,000 persons, which was the third highest of the regions included in the study and represent larger homeless populations than some of the most populus cities in Ontario (Parsons 2022). In the District of Kenora, 65% and 75% of homeless individuals in 2021 reported they struggled with mental health and addiction, respectively (Parsons 2022).

Given the high percentage of homeless individuals reporting to be struggling with addiction, it is noteworthy that opioid-related emergency department visits and deaths between 2017 and 2021 more than doubled in in the NWHU (Parsons 2022).

Attachment A of Appendix N-2 provides additional information regarding mental health and substance use trends for Indigenous communities in the region and the NWHU.

10.9.2.2.7 Cancer and Mortality

A report titled Kayamowemakak Ahkosiwin Tipacimowin Cancer in Sioux Lookout area First Nations 2006-2022 (SLFNHA 2025), examined cancer trends in Sioux Lookout area First Nations. During most single years between 2006 and 2020, using age-standardized rate measures, the overall cancer incidence (new cases) rates among Sioux Lookout area First Nations, which includes LSFN and WFN, were lower than the rates seen in other public health units (Thunder Bay District Health Unit and NWHU), and Ontario (SLFNHA 2025).

Métis National Council (2022) summarizes current trends in cancer and tobacco-related risk factors for Métis populations in Canada. Research suggests that cancer rates among Métis populations are comparable to, or higher than, those observed among non-Indigenous populations. Mazereeuw et al. (2018) as cited in (Métis National Council 2022), examined cancer incidence and mortality using data from the Canadian Census Health and Environment Cohort (1992–2009). Their analysis found that, when all cancer types and both sexes were considered together, overall cancer incidence among Métis adults was similar to that of non-Indigenous adults. However, statistically significant higher relative risks of cancer were identified for Métis adults for breast, lung, liver, laryngeal, gallbladder, and cervical cancers. In contrast, lower relative risks were observed among Métis people for colorectal cancer among women, as well as for melanoma and leukemia when men and women were considered together. Differences in incidence for other cancer types were not statistically significant (Métis National Council 2022).

A report published by the SLFNHA (Mamow Ahyamowen 2020) examined mortality and chronic health conditions among members of 59 First Nations communities in Northern Ontario. It compared mortality trends to the Ontario population overall and highlights key health challenges and inequities faced by First Nations communities. Although SLFNHA serves 33 First Nation communities in the Sioux Lookout region in Ontario, Canada, including LSFN and WFN, this report was published by the Mamow Ahyamowen (everyone's voices) Partnership, which is an epidemiology partnership of 11 First Nations organizations collectively serving 78 communities across northern Ontario. 59 communities participated in this analysis including ANA and LSFN (Mamow Ahyamowen 2020). It is noted that WFN and NWOMC were not participants in this analysis and as such, the data may not be representative of these communities. Members of Mamow Ahyamowen communities are more likely to die before retirement age (65 years old) than the overall Ontario population, with the average age at death among Mamow Ahyamowen communities being 54 years old compared to 74 years old for Ontario. The most common causes of death among Mamow Ahyamowen community members between 1992 and 2014 included injuries, circulatory, cancer, and diabetes related deaths. Mamow Ahyamowen communities have more deaths due to injuries and diabetes than Ontario overall, whereas circulatory and cancer deaths showed similar rates to Ontario overall. More people in Mamow Ahyamowen communities tend to have diabetes when they die compared to Ontario overall, and women were more likely to have a history of diabetes when they die compared to men (Mamow Ahyamowen 2020).

Cancer incidence rates (all types) show a general downward trend for both males and females in the NWHU between the years of 2010-2014, though there are some year-to-year fluctuations. In comparison, the rates in Ontario for both genders remain relatively steady, with only a slight decline over time. Overall, cancer incidence rates for both males and females were relatively higher than rates in the NWHU for both males and females between 2010-2014 (Ontario Agency for Health Protection and Promotion 2023i).

Attachment A of Appendix N-2 provides additional information regarding cancer and mortality characteristics in the region.

10.9.2.2.8 Food Security

Food security remains a key determinant of health for Indigenous communities in northern Ontario, and food insecurity represents a public health concern in northwestern Ontario. For many First Nations communities, colonization and the imposition of colonial policies have disrupted traditional food knowledge and practices. These interventions have resulted in a shift away from longstanding Indigenous food systems toward reliance on market foods, which are commercially produced, store-bought items that are imported into communities from retailers (SLFNHA 2024a).

The average monthly cost of food in Sioux Lookout area First Nations estimated to be between 37% and 69% higher than the average monthly cost for other municipalities elsewhere in northern Ontario (SLFNHA 2024a). In addition, the NWHU reported food insecurity rates in the Kenora-Rainy River Districts (21%) as being slightly higher than provincial and regional averages (19%) (NWHU 2024).

In 2011, the First Nations Food Nutrition and Environment Study (FNFNES) assessed food security in First Nations communities using the Household Food Security Survey Module and results are summarized in a report titled FNFNES Ontario Regional Report (2011–2012) (Chan et al. 2014). It is noted that LSFN, WFN, NWOMC, and RLEF were not participants in this study; however, ANA participants were included. The highest household food insecurity rate (52%; 34% moderately and 18% severely) was reported among First Nations households located in the Boreal Shield / Subarctic Ecozone 1 (which encompasses northern First Nations including ANA) compared to other Ontario ecozones in the study (Chan et al. 2014). In Ontario (all ecozones), when asked if their household would like to have more traditional food, most adults (73%) said that they would (Chan et al. 2014).

Rates of food insecurity in the NWHU (2018-2020) were higher than provincial averages, with 79.9% of households in the NWHU being food secure compared to 83.3% of households in the province (Ontario Agency for Health Protection and Promotion 2023j).

Attachment A of Appendix N-2 provides additional information regarding food security trends in the region.

10.9.3 Potential Effects

The potential interactions between proposed Project-related activities and Indigenous health are used to identify potential effects (positive and negative), and whether these effects are direct or indirect.

For each Project phase, a detailed overview of the Project's potential interactions (direct and indirect) with Indigenous health is presented in Table 10.9-1. All Project activities were identified as having a potential interaction with Indigenous health.

The potential interactions are considered to be applicable to each of the Indigenous communities being assessed (LSFN, WFN, ANA, NWOMC and RLEF).

Table 10.9-1: Potential Interactions Between Project Activities and Indigenous Health

Project Component / Activity	Change in Health (Indigenous Peoples)
Construction Phase	
Site preparation activities	Yes
Establishment and operation of water management and treatment facilities	Yes
Open pit mining	Yes
Underground mining	Yes
Management of rock and unconsolidated materials in stockpiles	Yes
Establishment of onsite fish habitat and compensation measures	Yes
Establishment of onsite aggregate operations	Yes
Construction of the starter embankments for the TMF	Yes
Construction and operation of buildings and infrastructure	Yes
Waste management	Yes
Commissioning of the process plant	Yes
Power supply	Yes
Employment and expenditures	Yes
Operations Phase	
Underground mining	Yes
Mining of the LP Central pit	Yes
Management of rock and unconsolidated materials in stockpiles	Yes
Process plant operation	Yes
Management of desulphurized tailings in the TMF	Yes
Management of concentrate tailings and contact water in the VMF	Yes
Operation of water management and treatment facilities	Yes
Construction of a mine water pond	Yes
Operation and maintenance of buildings and infrastructure	Yes
Waste management	Yes
Power supply	Yes
Progressive reclamation activities	Yes
Employment and expenditures	Yes
Closure Phase	
Active closure	Yes
Passive closure	Yes

Project Component / Activity	Change in Health (Indigenous Peoples)
Final reclamation	Yes
Employment and expenditures	Yes

Notes:
Yes = Interaction exists
No = No interaction exists
TMF = Tailings Management Facility; VMF = Viggo Management Facility

The assessment of potential effects on Indigenous health relied on two main approaches, HHERA (Appendix N-1) and HIA (Appendix N-2). In order to understand and interpret the potential effects sections below, a brief description of these two methodologies is required. Additional details can be found in the technical appendices (Appendix N-1 and N-2).

For Indigenous health, a single comprehensive assessment was completed that relies on the combined findings of the HHERA (Appendix N-1) and HIA (Appendix N-2) for all participating Indigenous communities (i.e., LSFN, WFN, ANA, NWOMC and RLEF). This subsection includes the assessment and discussion of Indigenous health overall, presenting findings for all five Indigenous communities.

In order to interpret the potential effects sections below, a brief summary of relevant HHERA and HIA methodologies have been provided:

10.9.3.1 HHERA Methodology

For changes to air, multi-media environmental quality and access and availability of traditional foods, the potential effects assessment relies on findings from the HHERA. A brief summary of HHERA inputs, assumptions, methodology and results are provided herein. See Appendix N-1 for additional details. In addition, a Mercury Bioaccumulation Study for Downstream English River to Wabigoon System Waterbodies is included as Appendix T, some data from which was incorporated in the HHERA, as detailed in Appendix N-1.

Project activities may emit chemical parameters into air (through fugitive dust, vehicle exhaust and direct facility emissions) and water (through permitted emissions and runoff). Consequently, human and / or ecological receptors around the Project may be exposed to parameters of potential concern (POPCs) originating from the Project present in environmental media through inhalation, ingestion, incidental ingestion, dermal contact, and ingestion of food items.
The HHERA, which consists of a human health risk assessment (HHRA) and an ecological risk assessment (ERA), evaluates cumulative exposure via relevant pathways to determine potential health risks from the Project. The HHERA evaluates exposures and associated risks for baseline (i.e., existing conditions) and for each Project phase
(i.e., construction, operations and closure).

The HHERA process involves four fundamental steps, problem formulation, exposure assessment, toxicity assessment, and risk characterization. The results of the HHERA are determined as part of the risk characterization step. This involves qualitatively and / or quantitatively evaluating the potential risks by comparing the results of the exposure assessment with the findings of the toxicity assessment to determine whether there is potential for POPCs to pose adverse human or ecological health effects.

- For human health, risk estimates for non-carcinogenic (i.e., threshold) POPCs are expressed as a hazard quotient (HQ). When considering multiple exposure pathways through cumulative exposure including background exposures, an HQ of less than 1.0 indicates that exposures would not be expected to result in adverse human health effects (Health Canada 2024b).
- For carcinogenic (i.e., non-threshold) POPCs, risk estimates are expressed as incremental lifetime cancer risk (ILCR), and were compared to a target risk value of 1-in-100,000 (i.e., 1.0E-05) (Health Canada 2024b).
- For diesel particulate matter (DPM), in addition to calculating ILCRs, Health Canada (2016) recommends an approach to provide an estimate of additional lung cancer mortality (ALCM) associated with additional DPM emissions related to the Project for chronic exposure. The ALCM values are compared against a benchmark value of 1, representing an incremental cancer risk of 1-in-100,000.
- For ecological health, risk estimates were expressed as HQs and compared to a target risk value of 1.0 because baseline or background exposures were included in the ERA.

The HHERA included both an inhalation and multi-media assessment to evaluate the potential effects to Indigenous health associated with changes to air quality and multi-media environmental quality (i.e., exposure to air, groundwater, surface water, and through the consumption of traditional foods) from Project activities.

The inhalation assessment considered exposure from Project-related air emissions that could occur at the maximum point of impingement (MPOI: a non-static location which represents the highest predicted ground level air concentrations anticipated along the Leased Claims Boundary of the PA) and at PORs within the LSA and RSA through the inhalation of outdoor air. It was conservatively assumed that the Indigenous Resident was present 100% of their time at each long-term (chronic) POR and up to 24 hours of their time at each short-term (acute) POR, which included locations identified as part of Indigenous knowledge. The locations selected to represent potential exposure from Project-related air emissions are detailed in the HHERA inhalation assessment (Appendix N-1). included:

Initial Air Quality PORs: PORs 1-29 were (selected by the air quality discipline; as reported in Appendix D-2), and consist of primarily long-term stay locations (e.g., cottage, cabin, lodge, camp), with the exception of POR1, which is a short-term stay storage area.

Additional PORs: PORs 30-41 were selected in the HHERA to represent additional areas that were either identified in available confidential TKLUS reports or were identified to account for the potential for exposure on water bodies not otherwise identified in TKLUS reports. PORs 30-38 and 40 consist of primarily short-term stay TKLUS locations (e.g., fishing area, gathering area and cultural area) identified through TKLUS reports or chosen to represent exposure on water bodies. POR 39 is an overnight stay location. For completeness and to represent a worse-case area near Red Lake, POR41 was added near Red Lake as a long term stay location within the RSA.

MPOI: a non-static location which represents the highest predicted ground level air concentrations anticipated along the Leased Claims Boundary of the PA. It is noted that human receptors (e.g., Indigenous Resident) in the LSA are not expected to spend an appreciable amount of time at the MPOI and, therefore, the short-term and long-term stay and TLKUS locations represented by PORs more accurately represent potential exposure.

For both assessments, the Indigenous Resident (receptor) was considered representative of Indigenous individuals who are assumed to reside in and / or harvest traditional foods in the LSA or RSA year-round for their entire lifetime; however, the HHERA focused on exposures and risks in the LSA. The multi-media assessment considered two types of Indigenous Residents to capture exposures from varying levels of traditional foods consumption:

- **Indigenous Resident (Heavy Consumer):** The heavy consumer Indigenous resident was based on a receptor that consumes high amounts of traditional foods (i.e., 95th percentile consumption rates).
- **Indigenous Resident (Average Consumer):** The average consumer Indigenous resident was based on a receptor that consumes average amounts of traditional foods (i.e., mean consumption rates) and was considered to represent the general Indigenous population.

For the assessment of non-carcinogens (i.e., threshold) POPCs, the toddler lifestage (the most sensitive life stage due to their exposure rates relative to body weight) and adult lifestage were evaluated; and a woman of childbearing age was also evaluated given the potential presence of developmental toxicants (i.e., mercury). For the assessment of carcinogens (i.e., non-threshold) POPCs, a composite receptor was evaluated which incorporates exposure through all lifestages: infant, toddler, child, teen, and adult (or Elder).

Additional details on the HHERA methodology, including inputs, assumptions and modelling approach are provided in Appendix N-1.

10.9.3.2 HIA Methodology

The assessment of effects (beneficial and adverse) on Indigenous health was also informed by an HIA (Appendix N-2) following established best-practices in the field, including Health Canada's Interim HIA guidance for designated projects (Health Canada 2024a). The HIA (Appendix N-2) included an assessment of potential effects using available evidence (primary and secondary), established indicators, and a combination of quantitative and qualitative approaches, to identify Project effects on Indigenous health. This approach aims to weave together Indigenous knowledge, and other information that has been obtained through engagement with the local Indigenous communities, with publicly available data, information and established impact assessment methods. The HIA relies on a large number of inputs to support the assessment of Project-related effects on Indigenous health. Full details on the methodology of the HIA are provided in Appendix N-2 and are briefly summarized below.

The HIA process follows a prescriptive set of steps that are intended to provide a framework for the assessment of potential beneficial and adverse effects on human health and wellness. These steps include: screening, scoping, assessment (and a baseline health profile), mitigations and enhancements, reporting, monitoring and evaluation. These steps are described in detail in Appendix N-2.

The assessment step involves systematically determining the potential health effects (both beneficial and adverse) from Project activities, including understanding the distribution of those effects across communities and subgroups, and an indication of required mitigation and / or enhancement measures needed based on assessment findings. A combination of quantitative and qualitative assessment methods are used to identify, characterize and assess potential effects both at the individual determinant level and to support an overall assessment for health. Key components of the assessment step, as outlined in the interim HIA guidance (Health Canada 2024a) are:

- Development of a Baseline Health Profile to gain an understanding of existing health conditions and population health status (Attachment A of Appendix N-2).
- Identification of potential effects to predict whether health effects (direct or indirect) may occur as a result of the Project, as well as the extent of these effects. In doing so, it is important to consider which groups are likely to benefit, which groups may be adversely affected, and which groups may be unaffected by the Project (includes GBA Plus).
- Apply an assessment framework to assess Project-related effects. An assessment framework provides a consistent and transparent approach for assessing Project-related effects. Assessment criteria are selected based on the jurisdiction (i.e., Health Canada 2024a), project context and site information, scientific evidence and community feedback.

As a result of the assessment step, the HIA identifies specific mitigation and enhancement measures based on assessment of individual determinants of health but also based on the holistic evaluation of overall health and wellness. Mitigation measures are features of a project intended to eliminate, reduce, control or offset the adverse effects of a project.

The following sections present the results of the assessment of Indigenous health including the HHERA (Appendix N-1) and HIA (Appendix N-2).

10.9.3.3 Construction Phase

The construction phase is expected to occur over a three-year period and will include site preparation, infrastructure development, and mobilization of the construction workforce. Activities during construction include, but are not limited to, open pit and underground mining, management of rock and unconsolidated materials in stockpiles, and construction of buildings and infrastructure. Site preparation activities for the mine site area include clearing, grubbing, bulk earthworks and the establishment of onsite road infrastructure. The potential interactions during construction are explored as contributions to the potential effect of an overall change in Indigenous health.

10.9.3.3.1 Air Quality

As stated in Section 7.2 (Air Quality), air quality during construction may be influenced by changes in particulate, silica, metals, nitrogen dioxide (NO_2), sulphur dioxide (SO_2), carbon monoxide (CO), DPM, volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs) and other air parameters due to emissions from the operation of equipment (e.g., generators), material handling, and the use of unpaved surfaces associated with site preparation activities, construction and development of mine infrastructure (including blasting) and operation of the construction camp. Additionally, emissions from the operation of a concrete batch plant, cemented rockfill plant, and paste plant may interact with air quality.

Project interactions with air could result in elevated concentrations of POPCs in outdoor air, which could subsequently be inhaled by Indigenous people. The HHERA evaluated potential human health risks from POPCs from the inhalation of outdoor air as part of the HHERA inhalation assessment. The results of the HHERA inhalation assessment are presented below in Table 10.9-2 and Table 10.9-3, with full details provided in the HHERA (Appendix N-1).

Table 10.9-2: Acute Non-Carcinogenic Risk Estimates (Hazard Quotients) for Indigenous Receptor

POPC	Exposure Period	Receptor Group	Baseline	Project-Alone (2)		Project + Baseline (2)		POR with Max HQ
				Construction / Active Closure (1)	Operations	Construction / Active Closure (1)	Operations	
NO_2 (3)	1-Hour	MPOI (4)	0.06	0.64	0.87	0.70	0.93	N/A
NO_2 (3)	1-Hour	Initial Air Quality POR (5)	0.06	0.56	0.57	0.62	0.63	POR1
NO_2 (3)	1-Hour	Additional POR (6)	0.06	0.63	0.64	0.70	0.70	POR33 - Construction / Active Closure POR39 - Operations
DPM	1-Hour	MPOI (4)	0.046	**2.8**	**2.9**	**2.9**	**2.9**	N/A
DPM	1-Hour	Initial Air Quality POR (5)	0.046	0.46	0.42	0.51	0.47	POR21
DPM	1-Hour	Additional POR (6)	0.046	0.23	0.22	0.28	0.27	POR39

Notes:

1 Air emissions associated with the Project during active closure are assumed to be the same as during construction.

2 Air emissions associated with the Project are assumed to be 0 during post-closure (following Project decommissioning)

3 The CCME CAAQS for NO_2 is based on the maximum average of predicted 98th percentile results from three consecutive years (CCME 2025). The matching statistic was selected as the EPC for NO_2 for the MPOI and each POR for each Project phase. This is consistent with the approach applied by the Air Quality assessment (Appendix D-2).

4 MPOI: a non-static location which represents the highest predicted ground level air concentrations anticipated along the Leased Claims Boundary of the PA. It is noted that human receptors (e.g., Indigenous Resident) in the LSA are not expected to spend an appreciable amount of time at the MPOI and, therefore, the short-term and long-term stay and TLKUS locations represented by PORs more accurately represent potential exposure.

5 Initial Air Quality POR: PORs 1-29 were (selected by the air quality discipline; as reported in Appendix D-2), and consist of primarily long-term stay locations (e.g., cottage, cabin, lodge, camp), with the exception of POR1, which is a short-term stay storage area.

6 Additional POR: PORs 30-41 were selected in the HHERA to represent additional areas that were either identified in available confidential TKLUS reports or were identified to account for the potential for exposure on water bodies not otherwise identified in TKLUS reports. PORs 30-38 and 40 consist of primarily short-term stay TKLUS locations (e.g., fishing area, gathering area and cultural area) identified through TKLUS reports or chosen to represent exposure on water bodies. POR 39 is an overnight stay location. For completeness and to represent a worse-case area near Red Lake, POR41 was added near Red Lake as a long term stay location within the RSA.

CAAQS = Canadian Ambient Air Quality Standards; CCME = Canadian Council of Ministers of the Environment; DPM= diesel particulate matter; MPOI= maximum point of impingement; N/A = not applicable; NO_2= nitrogen dioxide; POPC= parameter of potential concern; POR= point of reception.

Gray shade and bold = HQ is above risk target of 1.

Table 10.9-3: Chronic Carcinogenic Risk Estimates (Incremental Lifetime Cancer Risks and ALCM) for Indigenous Receptor

POPC	Exposure Period	Receptor Group	Construction / Active Closure[2]	Operations	Total ILCR[1,3]	POR with Maximum ILCR	Total ALCM[4]
DPM	Annual	Initial Air Quality POR [5]	1.2E-06	4.3E-06	5.5E-06	POR4	0.08 to 0.80
DPM	Annual	Additional POR [6]	1.7E-06	4.9E-06	6.6E-06	POR39	0.09 to 0.95
Acceptable ILCR or ALCM			<1.0E-05			N/A	1

Notes:

1 Incremental lifetime cancer risk is based on a lifespan of 80 years.

2 Air emissions associated with the Project during active closure are assumed to be the same as during construction.

3 Air emissions associated with the Project are assumed to be 0 during post-closure (following Project decommissioning).

4 Total ALCM is the sum of the ALCM for the construction, operations and closure phases that were assumed to emit DPM.

5 Initial Air Quality POR: PORs 1-29 were (selected by the air quality discipline; as reported in Appendix D-2), and consist of primarily long-term stay locations (e.g., cottage, cabin, lodge, camp), with the exception of POR1, which is a short-term stay storage area.

6 Additional POR: PORs 30-41 were selected in the HHERA to represent additional areas that were either identified in available confidential TKLUS reports or were identified to account for the potential for exposure on water bodies not otherwise identified in TKLUS reports. PORs 30-38 and 40 consist of primarily short-term stay TKLUS locations (e.g., fishing area, gathering area and cultural area) identified through TKLUS reports or chosen to represent exposure on water bodies. POR 39 is an overnight stay location. For completeness and to represent a worse-case area near Red Lake, POR41 was added near Red Lake as a long term stay location within the RSA.

ALCM = additional lung cancer mortality; DPM = diesel particulate matter; ILCR= incremental lifetime cancer risk; N/A = Not applicable; POPC = parameter of potential concern; POR= point of reception

Gray shade and bold = ILCR is above risk threshold of 1 in 100,000 (1.0E-05) or ALCM is above the target risk threshold of 1 in 100,000 (i.e., 1).

As shown in Table 10.9-2 above, the HHERA inhalation assessment reported HQs above the target HQ of 1 for DPM only at the MPOI during the construction phase for Project Alone and Project+Baseline. As shown in Table 10.9-2 and Table 10.9-3 above, HQs for short-term NO_2 exposure were below the target HQ of 1 and estimated ILCRs and ALCMs for chronic DPM exposure were below the target ILCR of 1.0E-05 (i.e., 1 in 100,000) and target ALCM of 1. As such, potential risks associated with short-term NO_2 and chronic DPM exposure in air were negligible.

The MPOI is a theoretical point that is a non-static location, where maximum air concentrations are predicted outside of the Project property boundaries, in close proximity to the PA. As the MPOI is a conservative assumption that varies and is typically used for the human health worst-case scenario, individuals are not likely to be exposed to concentrations that relate to exposures above the risk target (i.e., HQ above 1). The HHERA inhalation assessment reported that although HQs above the target HQ of 1 were identified at the MPOI, the frequency of these instances was low during construction / active closure (i.e., 0.13% at the MPOI), which equates to less than 24 hours (i.e., 1 day) of HQs above the target in a year.

With respect to DPM, the majority of the toxicological evidence is related to respiratory and cardiovascular health effects. Health Canada (2016) has reviewed results from controlled human exposure studies to establish the critical effect point of departure (POD) for short-term exposures to DPM and observed increases in airway resistance in mildly asthmatic individuals and respiratory inflammation in healthy individuals exposed to 100 micrograms per cubic metre ($\mu g/m^3$) DPM based on short-term exposure (Mudway et al. 2004; Behndig et al. 2006, 2011; Riedl et al. 2012; Stenfors et al. 2004; as cited in Health Canada 2016). This concentration was selected as the critical effect and POD. The maximum predicted 1-hour concentration of DPM for Project+Baseline (i.e., construction / active closure) was 28.3 $\mu g/m^3$, which was below the POD of 100 $\mu g/m^3$. Therefore, potential risks to the Indigenous Resident from Project-related DPM exposure during construction were considered to be low, given that the predicted concentrations were below the POD of 100 $\mu g/m^3$, the predicted frequency of DPM concentrations above targets was low (less than 1 day / year), conservative assumptions were used in the air quality assessment, the assumption that all particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) vehicle combustion was related to DPM is conservative, and people are not expected to be at the MPOI for extended periods that would constitute risk.

Overall, Project activities are not anticipated to pose risks to the Indigenous Resident from exposure to POPCs in air during construction. These findings are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF. Given the HHERA process considers conservative assumptions related to the amount of time people are assumed to be present outdoors (i.e., 100% of their time), adverse health effects to Indigenous people are not expected from acute or chronic exposure to Project-related changes in air quality (i.e., NO_2 and DPM levels) during construction.

While Indigenous health is not expected to be directly affected by Project interactions with air quality during construction, it is important to acknowledge that Indigenous views on wellness are holistic and include complex connections to the environment and all living things. It is possible that perception issues related to air quality may indirectly change or limit the amount of time spent outdoors by Indigenous communities, including for traditional land practices. The effect of changes in traditional land use on Indigenous health is assessed via multi-media environmental quality and access and availability of traditional foods.

Mitigation measures and monitoring plans are expected to be protective of Indigenous health during construction. For example, as discussed in Section 7.2 (Air Quality), Great Bear Resources plans to actively manage emissions from the Project. While the HHERA did not identify adverse effects to Indigenous people's health from Project activities via the inhalation of outdoor air, these measures are expected to continue mitigating potential effects from exposure during construction. Given the HHERA is based on predicted data, additional measures were proposed to monitor air quality parameters in order to validate assumptions, if needed. Data sharing agreements with local Indigenous communities, and support of Indigenous environmental monitoring programs were also identified. Mitigation and enhancement measures for health are presented in Section 10.9.4. Additional details, including specific mitigations for air quality are presented in Section 7 of Appendix N-2.

Overall, direct effects on Indigenous health from changes to air quality as a result of Project activities during construction are not anticipated; however, mitigation and enhancement measures presented in Section 10.9.4 are required to validate assumptions and promote Indigenous participation in environmental monitoring and data sovereignty.

10.9.3.3.2 Multi-media Environmental Quality

As stated in Section 7.2 (Air Quality), Project interactions which could potentially effect soil, surface water and traditional foods as a result of deposition from airborne emissions include emissions from the operation of equipment, material handling, and the use of unpaved surfaces, construction and development of mine infrastructure and operation of the construction camp. Additionally, operation of a concrete batch plant, cemented rockfill plant, and paste plant are anticipated to interact with soil, surface water and traditional foods as a result of deposition from airborne emissions during construction.

As stated in Section 7.7 (Water Quality), Project interactions which could potentially effect surface water and traditional foods quality during construction include erosion and sedimentation effects to local water features, fugitive dust emissions and subsequent deposition on surface water features, changes to existing catchment areas and associated catchment loading to surface water features, and blasting residue impacting runoff and dewatering water quality.

Project interactions with soil and / or surface water could result in elevated concentrations of POPCs in these media which can result in direct contact by Indigenous people (e.g., incidental ingestion, ingestion, dermal contact and / or inhalation of soil particulates), and / or can be taken up by plants and animals, and subsequently ingested by Indigenous people. The HHERA (Appendix N-1) evaluated potential human health risks from direct contact with soil (incidental ingestion, dermal contact, inhalation of soil particulates), surface water (ingestion of drinking water, incidental ingestion, dermal contact), and ingestion of traditional foods which were assumed to have taken up POPCs from soil and / or surface water as part of the multi-media assessment. The results of the human health multi-media assessment are presented in Table 10.9-4, Table 10.9-5, Table 10.9-6 and Table 10.9-7 below, with full details provided in the HHERA (Appendix N-1).

Table 10.9-4: Maximum Non-Carcinogenic Risk Estimates (Hazard Quotients) for Indigenous Receptor (Average Consumer, Toddler)

POPC	Baseline	Project + Baseline				Project Alone			
		Construction	Operations	Closure	Post Closure	Construction	Operations	Closure	Post Closure
Inorganic Arsenic	**3.4**	**3.4**	**3.4**	**3.3**	**3.3**	0.0084	0.012	0.013	0.0083
Inorganic Mercury (1)	0.30	0.30	0.32	0.32	0.30	0.0012	0.020	0.020	0.0022
Methylmercury (1)	**1.9**	**1.9**	**1.9**	**1.9**	**1.9**	0.0063	0.049	0.052	0.013
Selenium	0.11	0.11	0.11	0.11	0.12	0.0037	0.0058	0.0088	0.024

Notes:

1 Inorganic mercury and methylmercury risk estimates were calculated as the sum of HQs for fish and surface water pathways (estimated from the Mercury Bioaccumulation Study for Downstream English River to Wabigoon System Waterbodies report [Appendix T]) and HQs for other assessed exposure pathways (estimated from the HHERA multi-media assessment [Appendix N-1]).

For Baseline and Project + Baseline, HQ values > 1.0 are shaded and **bolded**.

For Project Alone, HQ values > 0.2 are shaded and **bolded**.

HHERA = Human Health and Ecological Risk Assessment; HQ = hazard quotient; POPC = parameter of potential concern.

Table 10.9-5: Maximum Non-Carcinogenic Risk Estimates (Hazard Quotients) for Indigenous Receptor (Heavy Consumer, Toddler)

POPC	Baseline	Project + Baseline				Project Alone			
		Construction	Operations	Closure	Post Closure	Construction	Operations	Closure	Post Closure
Inorganic Arsenic	**4.6**	**4.6**	**4.5**	**4.4**	**4.3**	0.018	0.020	0.020	0.010
Inorganic Mercury (1)	1.0	1.0	**1.1**	**1.1**	1.0	0.0032	0.073	0.074	0.0062
Methylmercury (1)	**6.8**	**6.8**	**6.9**	**6.9**	**6.8**	0.019	0.18	0.18	0.041
Selenium	0.44	0.45	0.45	0.47	0.47	0.014	0.021	0.035	0.085

Notes:

1 Inorganic mercury and methylmercury risk estimates were calculated as the sum of HQs for fish and surface water pathways (estimated from the Mercury Bioaccumulation Study for Downstream English River to Wabigoon System Waterbodies report [Appendix T) and HQs for other assessed exposure pathways (estimated from the HHERA multi-media assessment [Appendix N-1]).

For Baseline and Project + Baseline, HQ values > 1.0 are shaded and **bolded**.

For Project Alone, HQ values > 0.2 are shaded and **bolded**.

HHERA = Human Health and Ecological Risk Assessment; HQ = hazard quotient; POPC = parameter of potential concern.

Table 10.9-6: Non-Carcinogenic Risk Estimates (Hazard Quotients) for the Adult Female Indigenous Receptor (Average and Heavy Consumer)

Receptor	POPC	Baseline	Project + Baseline				Project Alone			
			Construction	Operations	Closure	Post Closure	Construction	Operations	Closure	Post Closure
Indigenous Resident (Average Consumer)	Inorganic Mercury (1)	0.21	0.21	0.21	0.21	0.21	0.00088	0.016	0.016	0.0015
	Methylmercury (1)	0.97	0.97	1.0	1.0	0.97	0.0047	0.027	0.028	0.0091
Indigenous Resident (Heavy Consumer)	Inorganic Mercury (1)	0.56	0.57	0.60	0.60	0.56	0.0020	0.040	0.040	0.0041
	Methylmercury (1)	**3.5**	**3.6**	**3.7**	**3.6**	**3.5**	0.013	0.10	0.10	0.032

Notes:

1 Inorganic mercury and methylmercury risk estimates were calculated as the sum of HQs for fish and surface water pathways (estimated from the Mercury Bioaccumulation Study for Downstream English River to Wabigoon System Waterbodies report [Appendix T) and HQs for other assessed exposure pathways (estimated from the HHERA multi-media assessment [Appendix N-1]).

For Baseline and Project + Baseline, HQ values > 1.0 are shaded and **bolded**.

For Project Alone, HQ values > 0.2 are shaded and **bolded**.

HHERA = Human Health and Ecological Risk Assessment; HQ = hazard quotient; POPC = parameter of potential concern.

Table 10.9-7: Carcinogenic Risk Estimates (Incremental Lifetime Cancer Risks) for Indigenous Receptor (Average Consumer and Heavy Consumer, Lifetime Composite)

Receptor	POPC	Construction	Operations	Closure	Post Closure	Total ILCR
Indigenous Resident (Average Consumer)	Inorganic Arsenic	1.8E-08	1.5E-07	1.8E-08	1.2E-07	3.1E-07
Indigenous Resident (Heavy Consumer)		4.2E-08	3.3E-07	3.5E-08	2.1E-07	6.8E-07

Notes:

ILCR values > 10E-05 are shaded and **bolded**.

ILCR = incremental lifetime cancer risks; POPC = parameter of potential concern.

As presented in Table 10.9-4 and Table 10.9-5, the human health multi-media assessment identified non-carcinogenic risks (i.e., HQs above the target HQ of 1.0) from exposure to inorganic arsenic for both the average and heavy consumer Indigenous resident (toddler) for baseline and when accounting for Project+Baseline for the construction phase. When accounting for Project-Alone contributions, HQs were below the target HQ of 0.2 for construction and are considered negligible. This indicated that Project+Baseline HQs above the target HQ of 1 are associated with the background conditions (i.e., baseline) rather than the Project, and the Project is not expected to increase arsenic-related human health risks for the average consumer or heavy consumer Indigenous resident living, working, and recreating in the LSA and RSA during construction. For the Indigenous resident, the maximum HQs were observed for the toddler life stage (most sensitive life stage for non-carcinogenic exposure to arsenic) and surface water exposure (i.e., ingestion as drinking water, incidental ingestion, dermal contact) was the primary exposure pathway. Surface water exposure accounted for approximately 83% of the arsenic HQs for the average consumer toddler Indigenous resident, and approximately 62% of the arsenic HQs for the heavy consumer toddler Indigenous resident. Surface water exposure represents a conservative assumption in the HHERA as surface water in the RSA and LSA was assumed to be the only source of drinking water for Indigenous resident receptors.

Arsenic was additionally assessed as a carcinogen as presented in Table 10.9-7. The calculated ILCR values for the lifetime composite Indigenous resident receptor were below the target ILCR of 1.0E-05 (i.e., 1-in-100,000) for both the average and heavy consumer Indigenous resident for the construction phase, and for the total ILCR for an 80-year lifetime. As such, unacceptable carcinogenic risks are not expected from the Project.

For the assessment of mercury, a Mercury Bioaccumulation Study for Downstream English River to Wabigoon System Waterbodies (Appendix T) was conducted to evaluate potential risks to human health associated with fish and surface water consumption, based on predicted changes in fish tissue mercury and methylmercury concentrations resulting from treated effluent discharge from the Project. For both Indigenous resident receptors (average and heavy consumer), baseline HQ values for inorganic mercury and / or methylmercury often were greater than the target HQ of 1, indicating potential health risks under existing conditions, which is reflected in the existing local fish consumption advisories from the Ontario Ministry of Environment, Conservation and Parks. However, Project-related contributions were calculated to be negligible, with Project-related HQ values below the target HQ of 0.2. It should be noted that the Mercury Bioaccumulation Study for Downstream English River to Wabigoon System Waterbodies report (Appendix T) focused only on exposure pathways of ingestion of fish and surface water. Therefore, the HHERA multi-media assessment of mercury focused on exposures from other media, and the HHERA multi-media HQs were combined with the HQs calculated in the Mercury Bioaccumulation Study for Downstream English River to Wabigoon System Waterbodies to estimate total mercury related HQs from the sources of exposure related to the Project site.

For inorganic mercury, as presented in Table 10.9-4, for the average consumer Indigenous resident (toddler), baseline and Project+Baseline HQs were below the applicable target HQ of 1 for these assessment cases, and Project-Alone HQs were below the applicable target HQ of 0.2. Therefore, Project-related risks are considered to be negligible for the average consumer from exposure to inorganic mercury. For the heavy consumer (toddler), as presented in Table 10.9-5, predicted maximum HQs were equal to the target HQ of 1 for baseline and Project+Baseline and below the target HQ of 0.2 when accounting for Project-Alone

contributions and considered negligible for construction. The maximum HQs were observed for the toddler lifestage (most sensitive lifestage for non-carcinogenic exposure to inorganic mercury) and the primary exposure pathway contributing to the HQs was ingestion of fish, accounting for approximately 96% of HQs for the heavy consumer toddler Indigenous resident. For inorganic mercury, a female adult (of child-bearing age) was also evaluated to represent sensitive populations for exposure to developmental toxicants. As presented in Table 10.9-6, for the adult female baseline and Project+Baseline HQs were below the target HQ of 1, and Project-Alone HQ values were below the target HQ of 0.2. As such, the Project is not expected to increase inorganic mercury-related health risks for the average consumer or heavy consumer Indigenous Resident living, working, and recreating in the LSA and RSA during construction.

As presented in Table 10.9-4 and Table 10.9-5, the human health multi-media assessment identified non-carcinogenic risks (i.e., HQs above the target HQ of 1.0) from exposure to methylmercury for both the average and heavy consumer Indigenous resident (toddler) for baseline and when accounting for Project+Baseline for the construction phase. When accounting for Project-Alone contributions, HQs were below the target HQ of 0.2 for construction and are considered negligible. This indicated that Project+Baseline HQs above the target HQ of 1 are associated with the background conditions (i.e., baseline) rather than the Project. For methylmercury, a female adult (of child-bearing age) was also evaluated to represent sensitive populations for exposure to developmental toxicants. As presented in Table 10.9-6, the baseline and Project+Baseline HQ for the adult female life stage was above the target HQ of 1 for the heavy consumer but lower than for the toddler heavy consumer (Table 10.9-4, Table 10.9-5). The baseline and Project+Baseline HQs for the average consumer were below 1.0. When accounting for Project-Alone contributions, maximum methylmercury HQ values for the adult female were below the target HQ of 0.2 for both heavy and average consumers. Therefore, Project-Alone HQs are considered negligible. Exposure to methylmercury via dietary consumption pathways, specifically fish ingestion, was the primary (i.e., greater than 95%) exposure pathway contributing to HQs. The Project is not expected to increase methylmercury-related human health risks for the average consumer or heavy consumer Indigenous Resident living, working, and recreating in the LSA and RSA during construction.

No risks were identified for selenium for the average or heavy consumer Indigenous resident based on HQs for baseline and Project+Baseline which were below the target HQ of 1.0 or Project-Alone, which were below the target HQ of 0.2. Therefore, the Project is not expected to increase selenium-related human health risks for the average consumer or heavy consumer Indigenous Resident living, working, and recreating in the LSA and RSA during construction.

Overall, multi-media environmental quality is influenced by a number of interrelated factors that both directly and indirectly affect downstream environmental conditions. The available evidence from upstream pVCs and HHERA results indicated that for the multi-media POPCs, health risks from Project activities are not anticipated during construction. While baseline (i.e., existing conditions) risks were identified for some POPCs, incremental risks from Project activities are negligible. These findings are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF.

While physical health is not expected to be directly affected by Project interactions with multi-media environmental quality during construction, it is important to acknowledge that Indigenous people in the region view health as a holistic balance including complex and connections to the environment and all living things.

Potential effects to health associated with multi-media environmental quality should be interpreted in the context of the interconnectedness of physical, mental, emotional and spiritual health. It is possible that perception issues related to environmental quality may change or limit the consumption of traditional foods by local Indigenous communities during construction. Traditional food diets contain high levels of essential nutrients (Batal et al. 2021b; McCartan et al. 2020). Evidence suggests that traditional food diets promote greater cardiovascular health, have protective action against some cancers, autoimmune and thyroid diseases, support maintenance of bone and immune health and can decrease incidence of diabetes, obesity and other diet-related diseases (Batal et al 2021a; FNHA n.d.; Kuhnlein et al., 2001; Marushka et al. 2021). Traditional food practices are also beneficial to health via opportunities for physical activity (Samson and Pretty 2006). Additionally, traditional food systems contribute to the cultural identity, social cohesion, and nutritional wellness of Indigenous communities, all of which are intricately tied to each other and to their overall Indigenous health and community wellness (Earle 2011a). While not quantifiable in the same manner as food quality and nutrition, traditional food collection and consumption also plays an important role in spiritual and cultural wellness (Batal et al. 2021a; Samson and Pretty 2006).

Mitigation measures and monitoring plans are expected to be protective of Indigenous health during construction. For example, as discussed in the CULRTP assessments (Sections 10 to 14), Great Bear Resources supports Indigenous-led monitoring and is currently funding a community-based Chukuni Watershed Aquatic Monitoring Program. Another program that will be provided to employees and their families is the Annual Fitness and Mental Health Benefit fund ($500 per annum) which will provide funding that can be used for purchasing equipment needed for harvesting (hunting, fishing, foraging) traditional foods. In addition, given the HHERA is based on predicted data, environmental quality (air, water, fish) monitoring programs are proposed in order to validate assumptions. Data sharing agreements with local Indigenous communities, and support of Indigenous environmental monitoring programs were also identified. Mitigation and enhancement measures for health are presented in Section 10.9.4. Additional details, including specific mitigations for multi-media environmental quality are presented in Section 7 of Appendix N-2.

Overall, direct effects on Indigenous health from changes to multi-media environmental quality as a result of Project activities during construction are not anticipated; however, mitigations and enhancements presented in Section 10.9.4 are required to minimize potential indirect effects related to perception of environmental quality to avoid disruption to traditional food practices.

10.9.3.3.3 Access and Availability of Water

Changes to access and availability of water as a result of Project activities is impacted by both groundwater and surface water quantity. It is noted that water quality was also considered in the HIA, through the assessment of changes to multi-media environmental quality.

As discussed in Section 7.5 (Groundwater), Project interactions which could potentially effect groundwater quantity (i.e., flows and levels) during construction include dewatering activities associated with excavations, mine development and construction of water management facilities. Excavations below the groundwater table will result in the underground facilities acting as local sinks for groundwater. Further, management of contact water will result in changes in surface water catchment areas, and the development of facilities and stockpiling activities will have an effect on infiltration rates to groundwater. These activities are expected to result in a reduction in groundwater quantity and groundwater contributions to some surface watercourses and waterbodies within or adjacent to the PA during construction.

As discussed in Section 7.6 (Surface Water Flows and Levels), in addition to a reduction in groundwater contributions to surface water as described above, Project interactions which could potentially affect surface water flows and levels during construction include collection and treatment of Project contact water resulting in changes to surface water runoff quantities and patterns materially contributing to local water features within the LSA, primarily on and near the PA. Additionally, diversion of non-contact water for the establishment of fish habitat compensation measures and starter embankments for the TMF will interact with the watershed areas contributing flows to surface waterbodies and watercourses within the LSA. Reductions in flow are expected in waterbodies throughout the LSA and RSA during construction; however, these reductions are not expected to be observable. As discussed in Section 7.6 (Surface Water Flows and Levels), during construction, there will be permanent alteration to a number of very small unnamed waterbodies and watercourses within the PA. The effects to fish and fish habitat resulting from these permanent changes are proposed to be mitigated (Section 8 [Fish and Fish Habitat] and Appendix L-2).

Access and availability of water is influenced by a number of interrelated factors that both directly and indirectly affect upstream environmental and cultural conditions. Access and availability of water is inextricably linked to Indigenous traditions, culture and identify (McGregor 2008; Martinez-Cruz 2024). Changes to access and availability of water allows for cultural continuation and supports a sense of cultural identity, which can fortify community cohesion and improve individual mental health and wellbeing (NCCIH 2016). Perceived reduction or change in experience to access of water can result in avoidance of the use of waters. This may influence Indigenous health and wellness through changes to cultural ceremonies, traditions and identity linked to water. The link between access and availability of water, mental health, and community cohesion is further discussed through the assessment of mental wellness and personal behaviours.

The Project will result in changes to access and availability of water within the PA, LSA and RSA. There is no confirmed use of water within the PA by the local Indigenous communities, and changes to access and availability of water in the RSA and LSA are either not observable, or are being mitigated. However, the connection that Indigenous people have with water may result in indirect effects on Indigenous health and wellness for some individuals; no measurable deviation from baseline population-level health resulting from Project activities is anticipated following implementation of mitigation measures. These findings are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF. Mitigations, as described in Section 7.5 and Section 7.6 (Groundwater and Surface Water Flows and Levels), are proposed, and will minimize changes to access and availability of water. Data sharing agreements with local Indigenous communities, and support of Indigenous environmental monitoring programs were identified as mitigation measures required to minimize perception issues surrounding Indigenous use of lands and waters. Mitigation and enhancement measures for health are presented in Section 10.9.4. Additional details, including specific mitigations for access and availability of water are presented in Section 7 of Appendix N-2.

It is noted that changes to groundwater and surface water quantity (i.e., flows and levels) can result in changes to aquatic habitats, which can impact both aquatic life species themselves and humans who rely on these species as traditional foods. These topics are assessed through access and availability of traditional foods and food security.

10.9.3.3.4 Access and Availability of Traditional Foods

Dust and vibration related to Project construction have the potential to affect wildlife, fish, and vegetation, and subsequently, the availability of traditional foods, affecting Indigenous people's health and wellness.

In terms of traditional foods availability, potential effects and interactions during construction identified within the linked biophysical pVCs and fVCs (Air Quality, Sound, Vibration, Water Quality, Vegetation Communities, Wild Rice, Moose, Other Wildlife, SAR, Fish and Fish Habitat and Migratory Birds) may influence a change in availability of traditional foods by altering ecosystems that support traditional harvesting activities. Specifically, water levels and flows within waterbodies in the PA may be altered by mine activities or related infrastructure and nearby waterbodies and waterways will receive treated effluent discharged from the Project. For wildlife, modeling indicates only marginal disturbance and habitat loss within the PA, with no expected population-level effects on any species, including moose and boreal caribou. For migratory birds, vegetation removal and ground-disturbing site preparation activities may alter habitat abundance, connectivity, and quality, while noise, dust, and water drawdown may further affect birds within the PA and immediately surrounding areas. For vegetation, site preparation and associated changes in groundwater conditions will lead to localized direct and indirect impacts on vegetation communities, which may also influence Indigenous availability of traditional food resources. For fish, site preparation will directly affect fish habitat and fish communities. Changes to upstream ecological conditions in the PA, and immediately surrounding areas, may lead to changes in availability of traditional foods which in turn, may affect Indigenous health (Earle 2011a). It has been well-established that traditional food systems, land-based practices, and community cohesion have the potential to influence Indigenous health and wellness.

Fish, wildlife, and plants species utilized for traditional food consumption by Indigenous communities in the region were identified through both confidential reports and publicly available resources (Chan et al. 2014; ANA 2024). According to these sources, commonly reported foods for traditional food consumption in the region include but are not limited to moose, birds including waterfowl (goose, ducks), fish (walleye, lake whitefish, northern pike), berries, and traditional plants. A more fulsome list of traditional food species commonly consumed by each Indigenous community is detailed in the HIA (Section 4.4 of Appendix N-2).

Many Indigenous communities understand that fish, wildlife, plants, and water are interconnected and interdependent, such that changes to one component of the environment may affect the health, availability, and use of traditional foods as part of a broader, living system. Therefore, changes in air and water quality could have the potential to indirectly affect Indigenous health via changes in availability of traditional foods. The HHERA (Appendix N-1) considered this potential effect through the evaluation of potential health risks to fish, wildlife, and plants due to POPC emissions associated with Project activities. The results of the HHERA ecological multi-media assessment demonstrated that air and / or water quality changes associated with Project activities were not expected to result in unacceptable risks to plants, mammals and birds, or aquatic communities, suggesting that the availability of traditional foods is not expected to be impacted.

In terms of traditional foods access, for some communities, traplines and harvesting may occur within the PA (for LSFN and RLEF) and LSA; therefore, construction-related disturbance could reduce access to traditional foods for those Indigenous communities who harvest within the PA (LSFN and RLEF). Access to harvesting areas is maintained within the LSA.

These changes to access may affect Indigenous health (Earle 2011a), which is inherently linked to traditional food systems, land-based practices, and community cohesion.

Perceptions of contamination, whether from the Project or historical developments, can lead to avoidance of traditional land use practices, further disrupting access of traditional foods, even without any identified health risk from the Project (Waasegiizhig Nanaandawe'iyewigamig 2020). For example, in the Great Bear Project Community Health Survey, a few self-identified Indigenous respondents from Red Lake or Ear Falls indicated that they believe the Project may affect their fishing and foraging activities in areas near the Project (Attachment A of Appendix N-2). It is noted however, that according to the FNFNES, time constraints, absence of a hunter in the household, and lack of equipment and / or transportation were the top reported barriers to accessing traditional foods among First Nations households in Ontario (Chan et al. 2014). Overall, changes in access to traditional foods may influence health through disruptions in diet, cultural practices, community cohesion, and overall wellness during the construction phase (Batal et al. 2021b; Earle 2011a, 2011b; Salerno et al. 2021; Simpson et al. 2009). Perception of contamination, and participation in land-based practices as it relates to cultural continuity is further discussed in the assessment of mental wellness and personal behaviours.

Access and availability of traditional foods is influenced by a multitude of interrelated factors that both directly and indirectly affect upstream environmental, social, cultural and economic conditions. For Indigenous communities, Project related construction activities that lead to wildlife habitat alteration, vegetation removal, and sensory disturbance may limit access for Indigenous community members who previously harvested within the PA (LSFN and RLEF). Pre-existing sociocultural barriers to access of traditional foods, such as on-going effects of colonization, cost, time constraints, lack of traditional knowledge and skills (Chan et al. 2014), and perception of contamination (Waasegiizhig Nanaandawe'iyewigamig 2020) may be further influenced by Project development. Changes to wildlife distribution, plant harvesting areas and migratory bird habitat, and potential indirect changes to fish and aquatic systems may disrupt availability of traditional foods. These disruptions to availability of traditional foods may have implications for nutrition (Batal et al. 2021a, 2021b; Earle 2011a), physical activity (Earle 2011a), cultural continuity, and mental health (Batal et al. 2021a; Earle 2011a, 2011b; Salerno et al. 2021; Simpson et al. 2009). For example, studies have noted that disruptions to accessing the land and cultural practices can lead to mental stress for community members and reduced dietary and physical activity benefits (Salerno et al. 2021; Shandro et al. 2017).

Mitigation measures and monitoring plans are expected to be protective of Indigenous health during construction (e.g., the Wild Rice Enhancement Project; the conducting of moose surveys; and the Fish Habitat Offset and Compensation Plan). While upstream pVCs and fVCs did not identify adverse effects to Indigenous people's health from Project activities per se, the measures proposed for upstream pVCs and fVCs are expected to continue mitigating potential effects from disruptions to access and availability of traditional foods during construction. In addition, data sharing agreements with local Indigenous communities, support of Indigenous environmental monitoring programs, and support for Indigenous-led education and training for land-based activities were also identified. Mitigation and enhancement measures for health are presented in Section 10.9.4. Additional details, including specific mitigations for access and availability of traditional foods are presented in Section 7 of Appendix N-2.

As described above, access to harvesting areas is maintained within the LSA, but temporary disturbances during construction could change the availability of resources.

Therefore, as described in the CULRTP assessments (Sections 10 to 14), the Project is expected to temporarily disrupt access (LSFN and RLEF only), availability, and / or experience for at least one type of land-based practice (hunting and trapping or plant gathering) for each Indigenous community after the application of mitigation measures. As such, available information indicates that changes in access and availability of traditional foods (e.g., changes in harvesting patterns due to land disturbance and perception issues and ecosystem alteration) will likely occur as a result of Project activities during construction, and that this change may affect Indigenous health and wellness for some individuals (Earle 2011a, 2011b; Simpson et al. 2009; Waasegiizhig Nanaandawe'iyewigamig 2020); however, no measurable deviation from baseline population-level health resulting from Project activities is anticipated following implementation of mitigation measures. These findings are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF.

Changes in access and availability of traditional foods are also linked to social determinants of health such as economics (employment, income and education), food security, and mental wellness and personal behaviours.

10.9.3.3.5 Sensory Disturbances: Sound, Vibration and Light

The primary noise emissions from the Project are expected to originate from equipment and infrastructure such as stationary equipment and mobile equipment fleet operating at different areas of the mine, and ventilation systems. During the construction phase noise will be primarily sourced from the power generator, haulage routes with high truck traffic and primary drills. Vibration will be generated related to blasting activities.

Potential effects and interactions during construction identified within upstream Section 7.3 (Sound), Section 7.4 (Vibration) and Appendix G (Light) may influence a change in sensory disturbance, that lead to annoyance (Health Canada 2024c) or disrupt sense of place (Salerno et al. 2021). Noise modelling was carried out to predict the potential changes to baseline sound levels at 29 selected sound PORs, as outlined in the Section 7.3 (Sound). Predicted sound levels were compared to provincial and federal guidelines. In addition, the Project-related change in the sound environment and the related increase in the percentage of percent highly annoyed (%HA) were evaluated. Predicted sound levels at all of the identified PORs were predicted to be below the federal and provincial criteria after the application of mitigation measures as described in Section 7.3 (Sound). In addition, the change in %HA meets Health Canada limit of 6.5% (Health Canada 2023e) which means that changes to sound levels are not expected to trigger noise complaints from PORs, and effects associated with a higher %HA (i.e., annoyance) are not expected.

A mechanism will be established for the Project for receiving and responding to noise complaints in a timely manner during construction, operations and closure phases. A framework for a follow-up noise monitoring program for the Project is provided in Section 20 (Environmental Management and Follow-Up Program). Monitoring will be required as a condition of provincial approval(s).

Similarly, vibration from blasting was predicted to remain within Health Canada's air overpressure guidelines at all 29 PORs, after implementation of mitigations (e.g., blast management plan) described in Appendix E-3 and in the Section 7.4 (Vibration). Although potential changes for underwater ground vibration and water overpressure were identified, changes to upstream conditions (i.e., fish and fish habitat) will be managed such that no residual effects to fish and fish habitat were identified.

Project-related artificial lighting during construction is required for safety and effective working. Light trespass was not predicted to be above the recommended thresholds (i.e., Commission Internationale d'Éclairage Lighting Zones) at any assessed PORs (Appendix G). Generally, the difference between existing and predicted skyglow was comparable to the seasonal variability seen between baseline measurement. The predictive light assessment (Appendix G) indicated that nuisance effects are not expected and should be manageable through use of responsible outdoor lighting practices.

Overall, with Project design and the application of mitigation measures identified in the Impact Statement, potential effects to Indigenous health and wellness from changes in sound, vibration, and light such as annoyance (Health Canada 2024c), disruptions to sense of place (Salerno et al. 2021), or sleep disturbance (WHO 2009; Candolin 2024; Cao et al. 2023; Chepesiuk 2009), are not anticipated. These findings are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF.

It is noted however, that mining activities may result in sensory disturbance (noise, visual and dust) which could impact sense of place and quality of experience during harvesting activities in the LSA, and immediately adjacent to the PA.

10.9.3.3.6 Economics (Employment, Income and Education)

Project activities during construction are anticipated to result in a temporary population increase of 1,000 workers during construction and 1,300 during peak construction. The Project will create temporary employment and contracting opportunities, providing increases in labour income and valuable work experience for members participating in the workforce. As described in the CWB assessments (Sections 10 to 14), these opportunities may enhance individual and household financial stability and contribute to the local and regional economy through increased consumer spending. Economic modelling for the Project, as described in Section 18 (Summary of Benefits), has estimated that annual direct, indirect and induced effects generated during the assessment period include on average $570 million per year, 3,430 persons employed in an average year, labour compensation averaging $280 million per year, and $190 million per year in government revenues on average.

During construction, economics can be influenced by factors such as cost of living and traditional economy. As stated in the CWB assessments (Sections 10 to 14), Indigenous people in the region already face elevated costs for food, fuel, and housing due to limited supply chains and regional market conditions. The Project is expected to impact the cost of living in the area, including in Red Lake and Ear Falls, contributing to existing pressures during peak construction or hiring periods. Project-related activity may temporarily increase demand for certain goods and services during construction in these communities, which is expected to result in localized affordability pressures for residents, particularly those on fixed or lower incomes. For LSFN, WFN and ANA, as reported in the CWB assessments, no measurable change in the cost of goods and services is anticipated on-reserve. However, construction activities, may also raise concerns about environmental disturbance near traditional harvesting areas, which could affect confidence in local traditional food and medicine sources. This may in turn change community reliance on market-based goods and services over time and affect household expenditures and perceived cost of living. For local Indigenous communities, reduced confidence or access to traditional harvesting areas could also influence their participation in land-based livelihoods, affecting their participation in traditional economy.

Due to the complexities associated with Indigenous people's health and changes to the environment and landscapes, potential effects associated with cost of living and / or traditional economy are also discussed in relation to access and availability of traditional foods and food security.

The demand for labour is expected to create more job opportunities, which can also influence access to health and social services in the region during construction. As presented in the CWB assessments (Sections 10 to 14), Project workforce accommodations are expected to be off-reserve, therefore, Project workers and relocated families in Red Lake and Ear Falls are anticipated to increase the demand for childcare, mental health support and education, which already face staff shortages and capacity constraints. Services may not be able to fully absorb the additional demand associated with population growth or increased service needs during construction; this is further discussed as part of access to health and social services. Education services may also be affected by the arrival of new families, as the Red Lake and Ear Falls school systems already face challenges with recruiting and retaining teachers due to limited housing and service infrastructure. Further, transportation barriers remain a challenge for Indigenous students traveling from more remote locations. For ANA, WFN and LSFN, no direct effects to service systems on-reserve are expected, but there is a potential for indirect strain on regional service systems, particularly for members who travel to other regional centres for services. Members who access these services may face longer wait times, reduced availability and delayed access due to the increased demand of regional services. This is a particular concern for elders and caregivers who face transportation, mobility, or financial barriers. This could result in deepened inequities in access and availability for populations already experiencing systemic barriers. Increased earnings during construction may also improve household stability and financial security for some families (and lessen strain on local services within the communities), but rotational work schedules and long periods of separation can strain relationships and caregiving capacity. Uneven income distribution and limited childcare options may also deepen existing stressors, heighten household / emotional stress and increase responsibilities for caregivers. Differences in income within households can create added strains and imbalances, affecting family dynamics.

As reported in the CWB assessments (Sections 10 to 14), Project construction is also expected to generate employment and training opportunities, improving income stability for some residents and their families. Broad regional benefits through employment and labour income are expected during construction. However, unequal access to jobs due to barriers such as childcare, transportation, or qualifications may reinforce existing inequities. Wage inequality between project workers and other residents could also contribute to uneven distribution of benefits and localized economic polarization. In general, the demand for labour is expected to increase local and regional employment levels and labour income, and the demand for goods and services are expected to create opportunities for local and regional businesses to participate through procurement and contracting, further generating employment opportunities.

Employment and income play a large role in shaping health outcomes, as financial stability determines an individual's ability to access the resources necessary for maintaining a healthy lifestyle (Darin-Mattson et al. 2017). Income is one of the most significant determinants of overall health and wellness, and financial insecurity contributes to increased rates of chronic disease, mental illness, and overall poorer health outcomes (CPHA n.d.). Research further indicates that higher income levels and greater educational attainment are strongly associated with better health outcomes, highlighting the importance of supporting education initiatives with resource development (PHAC 2018).

This is especially significant because conditions such as arthritis, asthma, diabetes, and obesity occur at higher rates among First Nations and Métis adults compared to non-Indigenous adults (PHAC 2018). Employment also plays an important role in supporting self-esteem and self-worth, which can in turn enhance mental health and reduce the prevalence of addictions (NCCIH 2020). Low self-rated mental health is more frequently reported among individuals with lower incomes, lower education attainment, and those working in unskilled occupations (PHAC 2018). Income and employment also are also linked to access to health care, but especially social services. Many social assistance programs, including mental health supports, are outside of or only partially covered by Canadian universal health care. Affordability can be one of the most significant barriers for accessing adequate mental health services, as not being able to afford to pay was one of the most frequently reported reasons for having unmet or partially met mental health needs (Statistics Canada 2019). It is also noted that while higher income can influence individual personal behaviours such as substance use or increased domestic violence (Ruddell and Ray 2018), education such as financial literacy can help support better health outcomes.

Overall, the economic opportunities (including employment, income and education) resulting from Project activities have the potential to support a range of health benefits through increased income to support individuals and their families, improvements in mental health through stable employment and wages, and disposable income that can be used for cultural practices and recreation and leisure. Regionally, the economic influx will help support local and regional businesses, and provides education, training and mentorship opportunities for Indigenous youth and adults. While the findings above are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF, it is noted that at the time of producing this report, ANA had not responded to requests for interviews; it is unknown if their community members will be seeking economic opportunities with the Project. Therefore, it is unknown if their community members will benefit from the Project even though they may be affected by certain economic indicators such as cost of living, traditional economy or access to regional health and social services. While increased income is one of the top determinants of health, it can also influence personal behaviours such as substance use, gambling and domestic violence. Existing economic conditions vary among the communities which can further influence existing barriers and vulnerabilities associated with employment, income and education. For individuals not employed in mining or a comparable high-paying industry, the higher cost of living can pose a considerable challenge.

While economic changes due to the Project is expected to result in a net positive benefit to Indigenous health overall, the implementation of carefully designed mitigations are key to mitigating harmful effects and enhancing the economic benefits of the Project. Mitigation and enhancement measures for health are presented in Section 10.9.4. Additional details, including specific mitigations for economics are presented in Section 7 of Appendix N-2. Great Bear Resources has indicated that commercial project agreements are in progress with LSFN, WFN and NWOMC to minimize adverse social impacts and maximize economic opportunities for Indigenous communities. While the specifics of these agreements are confidential, the agreements are assumed to provide economic benefit to on-reserve communities and off reserve band members. To support economic development, Great Bear Resources plans to support community-driven economic development by partnering with local and Indigenous communities and prioritizing local hiring and procurement, as described in Section 18 (Summary of Benefits).. Great Bear Resources has also committed to inclusive and culturally appropriate employment practices (e.g., equity-based hiring, Indigenous procurement policies, partnerships with Indigenous organizations, financial literacy support, etc.).

Overall, available information indicates that changes in economics will likely occur as a result of Project activities during construction. While a net positive effect is expected as a result of economic changes (e.g., economic opportunities and income stability), some adverse effects (e.g., cost of living, boom-bust cycle, uneven income distribution, personal behaviours) may affect Indigenous health and wellness for some individuals. However, no measurable deviation from baseline population-level health resulting from Project activities is anticipated. While these findings are applicable to the local Indigenous communities, individual community benefits will depend on several factors including their ability and willingness to participate in economic opportunities (e.g., employment, Project agreements, local businesses) noting the pre-existing barriers that may impede participation in employment and other opportunities. Mitigation and enhancement measures for health are presented in Section 10.9.4.

10.9.3.3.7 Housing

The construction phase of the Project is anticipated to result in a temporary population increase of 1,000 workers during construction and 1,300 during peak construction. As stated in the CSIN and CWB assessments (Sections 10 to 14), the influx of non-local workforce associated with the Project during construction is expected to result in short-term population growth which may impact demand for housing and temporary accommodations. The Project on-site camp is designed to accommodate approximately 1,000 people on a temporary basis during construction. If on-site accommodations are not available at the time when workers are needed, particularly during early construction activities, or if non-local workers relocate with their families who will not be accommodated on-site, there may be short-term demand for off-site housing or other temporary accommodations (i.e., hotels, motels, lodges). The Project will aim to source workers locally where possible and minimize the need for off-site accommodations through the on-site work camp.

The CSIN and CWB assessments (Sections 10 to 14) concluded that no changes to housing during construction are anticipated on-reserve for LSFN, WFN and ANA due to distance from the Project, and because on-reserve housing is reserved for members of the Indigenous communities only. Population changes and housing pressures are anticipated to be limited to regional hubs in Kenora District including Red Lake and Ear Falls. During construction, the increased Project-related workforce may intensify existing regional housing availability and affordability pressures, and may increase demand for certain goods and services contributing to localized affordability pressures, particularly for renters, low- to moderate-income households, and individuals already experiencing housing precarity. This may exacerbate socio-economic divides by reinforcing existing barriers to secure and affordable housing for certain groups, including Indigenous people, women and youth. Contrarily, for those individuals employed by the Project, and their families, improved income stability is expected which may improve housing opportunities. However, unequal access to jobs due to barriers such as childcare, transportation, or qualifications may reinforce existing inequities.

Housing is influenced by a number of interrelated factors that both directly and indirectly affect upstream social and economic conditions. Access to housing of adequate condition is linked to better mental health outcomes, as it supports decreased stress, better sleep and nutrition and improved personal safety (CMHA 2014). The available evidence from upstream pVCs (Local and Regional Economy) and fVCs (Indigenous Peoples – CSIN and CWB assessments) indicated that no Project effects to population growth, housing availability and affordability, or cost of living are anticipated for LSFN, WFN or ANA communities on-reserve. The Project is anticipated to result in population growth in the region associated with the Project workforce which could intensify existing housing concerns for RLEF and the NWOMC.

As such, mitigation measures were identified as part of the CSIN and CWB assessments (Section 10 to 14) to minimize potential increased need for housing. These mitigations, including the on-site camp accommodations, community financial support for housing, local hiring objectives, and education and training to support local hiring, are expected to help limit the extent of Project-related housing challenges. Mitigation and enhancement measures for health are presented in Section 10.9.4. Additional details, including specific mitigations for housing are presented in Section 7 of Appendix N-2.

Overall, no changes to housing are expected on-reserve, and given this upstream finding, a change in Indigenous health and wellness for LSFN, WFN and ANA is also not expected. While mitigation measures are expected to limit the extent of Project-related housing pressures in Kenora District including Red Lake and Ear Falls, given the existing precarity of the housing scenario, changes to housing may result from the Project with potential adverse effects to Indigenous health and wellness for some individuals; no measurable deviation from baseline population-level health resulting from Project activities is anticipated. These findings are applicable to NWOMC members living in Red Lake and Ear Falls and RLEF.

10.9.3.3.8 Access of Health and Social Services

Construction activities are anticipated to result in a temporary population influx of 1,000 workers to the region. As described in the CWB assessments (Sections 10 to 14), during construction, the Project workforce and any relocated families are expected to rely on community-based health, social and education services for non-emergency and specialized care. These systems already face staff shortages and capacity constraints, which may be compounded by population changes during construction. Local service providers have indicated that certain health and social programs such as elder care, home support, and community transportation, are already operating near or at capacity, particularly for vulnerable or aging members. Added demand for childcare, mental health support, and education could contribute to longer wait times and reduced access, particularly for Indigenous residents who may already face barriers to culturally appropriate or geographically accessible care. This includes Elders and caregivers who may face transportation, mobility, or financial barriers.

The Project is not expected to directly interact with service delivery systems on-reserve for LSFN, WFN and ANA due to the distance between the communities and the planned off-reserve Project workforce accommodations; however, regional service access may be affected, particularly for Indigenous individuals and families who travel off-reserve to access these services. As reported in the CWB assessments (Sections 10 to 14), while a variety of social services operate within LSFN, certain services are often still lacking in-community, such as emergency women's shelters, or maternity and birthing services. For WFN, hospital services are not located within the community, and the closest major hospital (Red Lake Margaret Cochenour Memorial Hospital) is located approximately 108 km away. Similarly, the closest centre offering specialized health, mental health, and social services for ANA is in the City of Kenora, although it is noted that the Mercury Care Home and Wellness Centre is currently being developed for ANA members. There are services dedicated to Métis that provide culturally specific mental health services and are tailored to Métis citizens, but access to these regional services within the RSA remains limited and may not be able to fully absorb additional demand associated with population growth needs during construction. In addition, education services may also be affected by the arrival of new families as increased enrollment may outpace available classroom space, staff capacity, or specialized programming, including supports for students with special needs or culturally relevant curriculum.

Overall, the change in temporary or permanent population from the Project in the region during the construction phase, may contribute to a higher demand for these already limited health and social services.

Access to good quality health care allows individuals to prevent and treat disease and preserve or improve their health (Gulliford et al. 2002; WHO 2024). For people with chronic conditions, including mental health challenges, long waits for medical care can lower quality of life, delay effective treatment, and in some cases increase mortality risks (Ali et al. 2025). As described in the CWB assessments (Sections 10 to 14), while the change in access to health and social services may not affect on-reserve service delivery systems in LSFN, WFN and ANA, members of these communities currently access specialized care in the region. In addition, geographic remoteness of reserves is a major challenge for accessing adequate health and social care services (PDAC 2022) and creates a barrier for timely treatment. While equipped with some services, Red Lake and Ear Falls do not have the same level of service provision as larger population centres. For instance, in Red Lake there are currently no withdrawal management, residential addictions treatment facilities, or mental health centres providing psychiatric or psychological services, requiring members to travel to Kenora or Thunder Bay for these services (MNP LLP 2020). Also, while Red Lake has two shelters, only one is specifically for women experiencing domestic and sexual violence. Conditions are more challenging in Ear Falls, where residents must travel to Red Lake to access most social services. These challenges would affect RLEF and NWOMC members living in Red Lake and Ear Falls who rely on these services.

Geographic isolation combined with limited healthcare infrastructure can worsen existing health issues (Manifold 2024), particularly given that Indigenous populations in northern Ontario experience higher rates of chronic conditions such as diabetes and heart disease (Manifold 2024). This reiterates the need for adequate and appropriate health and social services, and the importance of access to these services. This is also reflected in the Great Bear Community Health Survey results for the Project (Attachment A of Appendix N-2), where about 83% of people in Red Lake and Ear Falls and nearby areas said that access to services is very important to their community.

Appropriate services and programs are particularly important for Indigenous women and girls during industrial development as there have been well documented evidence of negative outcomes, such as domestic violence, for this population. Health care-related services often fail to provide the support needed for victims of physical and sexual abuse or violence (National Inquiry into Missing and Murdered Indigenous Women and Girls 2019). Project interactions and their resulting potential health effects for Indigenous women and girls are further discussed in the assessment of safety of Indigenous women and girls.

Further, access to health care is not equally or universally available to Indigenous people across Canada (NCCIH 2019). While Project activities during construction can improve household financial security that can be put towards transportation to access specialized care, better insurance coverage for health and social supports, or access to childcare options, equitable health care for Indigenous people remains an issue nationally. Differences in funding, racism or discrimination when accessing care, and culturally unsafe care are challenges Indigenous people continue to face. Further, mental health disparities for Indigenous people are rooted in historical factors such as colonialism and adverse intergenerational impacts (Statistics Canada 2024a). As described in the CWB assessments (Sections 10 to 14), the added demand for health and social services during construction may deepen inequities in access and availability for populations already experiencing systemic barriers.

With respect to the influx of workers into the area during construction, the potential for this population increase to put additional pressure on regional services depends in part on Project design and camp accommodations. Health service leaders have reported that worker accommodation arrangements can directly affect local health services (Oke and Wilson 2024). Oke and Wilson (2024) found that projects with well-managed work camps, access to high-quality on-site medical clinics, or a workforce drawn from the local population or that is permanently settled in the community, were generally much less disruptive to regional health services. Without well-managed camps, their research identified that extractive industry projects can result in increased demand on emergency departments, primary care services, and healthcare staffing as the main sources of pressure on local health systems. These findings highlight the importance of effective camp management and the provision of on-site health services to reduce potential impacts on regional healthcare capacity.

During construction, regional changes to access to health and social services due to Project activities may result in adverse effects to Indigenous health for some individuals; however, no measurable deviation from baseline population-level health resulting from Project activities is anticipated following implementation of mitigation measures. These findings are applicable to the local Indigenous communities, including regional effects for LSFN, WFN, ANA, and local effects to NWOMC and RLEF. Proactive planning and mitigation measures can help workers obtain appropriate levels of care in-camp to avoid straining regional systems and provide Indigenous community members the appropriate financial supports to access additional health and social services they may need. Mitigation measures and monitoring plans related to access to health and social services are expected to be protective of Indigenous health during construction. As discussed in Section 18 (Summary of Benefits), Great Bear Resources plans to develop local partnerships aligned with community-identified priorities to provide benefits to communities from the Project. Recent support from Great Bear Resources included funding for health care equipment, facility upgrades, recruitment efforts, and social service initiatives, including a $200,000 contribution to local health care. To further support Indigenous health and wellness, Great Bear Resources has committed to implementing other measures such as Telus telehealth or similar services for employees and immediate family members, medical management and response to track on-site medical responses and referrals for off-site health services, and develop an employee benefits program that includes medical, mental and dental services for employees and their families. This is in addition to an established Employee Assistance Program (EAP) that will be available to employees and their families to alleviate pressures on local health-supportive services (e.g., mental health, addiction counselling and prescriptions). This is expected to improve timely access to care and help minimize pressure on regional health and social services resulting from Project activities during construction.

Overall, available information indicates that changes in access to health and social services will likely occur as a result of Project activities during construction. Potential adverse effects for some individuals (e.g., strain on service delivery and inequitable care) may affect Indigenous health and wellness. Mitigation and enhancement measures for health are presented in Section 10.9.4. Additional details, including specific mitigations for access to health and social services are presented in Section 7 of Appendix N-2.

10.9.3.3.9 Food Security

Food security during the construction phase could be indirectly influenced by changes in multi-media environmental quality, access and availability of traditional foods, and economics.

As discussed in the assessment of multi-media environmental quality, the available evidence from upstream pVCs (Air Quality, Water Quality) and the HHERA (Appendix N-1) results indicated that health risks from Project activities are not anticipated during construction since incremental risks from Project were below the target HQ of 0.2 for all Project phases and considered negligible in comparison to baseline risks. While physical health is not expected to be directly affected by Project interactions with multi-media environmental quality during construction, it is important to acknowledge that Indigenous people in the region view health as a holistic balance including complex connections to the environment and all living things. Potential effects to health associated with multi-media environmental quality (as an input to food security) should be interpreted in the context of the interconnectedness of physical, mental, emotional and spiritual health. Despite the HHERA findings predicting negligible risks from Project activities, perception issues related to environmental quality may indirectly change or limit the consumption of traditional foods by local Indigenous communities during construction. Self-imposed limitations on traditional food consumption may impact food security associated with both a decreased diet supplementation with traditional foods and costs associated with increased reliance on market foods.

As described in the CWB assessments (Sections 10 to 14) and discussed in the assessment of access and availability of traditional foods, Indigenous people who previously accessed the PA and who access the LSA immediately adjacent to the PA for harvesting may experience changes in access and availability of hunted and trapped species, and impacts to quality of experience due to sensory disturbance during construction. Changes to access to land-based food and medicines, including reduced participation in traditional economy, may deepen existing food insecurity, limit cultural continuity, and contribute to adverse health outcomes, particularly where store-bought food is expensive or nutritionally inadequate.

As described in the CWB assessments (Sections 10 to 14), the increased workforce-related population may increase demand for certain goods and services during construction, contributing to localized affordability pressures for residents, particularly those on fixed or lower incomes. These affordability and income changes can reduce economic resources and contribute to sustained or worsening food security. However, for those individuals employed by the Project, and their families, improved income stability is expected which may improve food security. Unequal access to jobs, however, due to barriers such as childcare, transportation, or qualifications, may reinforce existing inequities.

Collectively, food security is influenced by a multitude of interrelated factors that both directly and indirectly affect upstream environmental, social, cultural and economic conditions. Food security, which is often closely tied to an individual's socio-economic status, plays a crucial role in health because when people have sufficient financial resources, they can access a diverse range of nutritious foods, which can support better diet quality and reduce chronic disease risk (Ziso et al. 2022). Indigenous communities across Canada currently experience higher than average levels of food insecurity than the non-Indigenous population (Batal et al. 2021b; Tarasuk et al. 2019). Food security represents a public health concern in northwestern Ontario, with food insecurity in the Kenora-Rainy River Districts reported to be higher than provincial and regional averages (NWHU 2024). Given that the most prominent cause of food insecurity is poverty, the importance of distribution of additional economic supports in alleviating this disparity is critical. The available evidence from pVCs and fVCs suggests that food security could be positively affected by the Project via economic supports (income, employment, benefit agreements) that allow Indigenous families to have access to healthier and more diverse foods.

However, food security may also be adversely impacted through perception issues and / or changes in access and availability (i.e., alterations to ecosystems, sensory disturbances in gathering/hunting areas) of some wildlife, fish and / or plants that may change or limit the consumption of traditional foods by local Indigenous communities and potentially exacerbate existing food insecurity concerns in the region.

Simultaneously, increased population during construction which may impact affordability due to increased demand for certain goods and services may add further stress for food insecure individuals. Access to traditional foods is an important strategy for addressing food security (Skinner et al. 2013; Banerji et al. 2023; SLFNHA 2019b), as traditional foods can be an affordable and high nutritional value source of food, alternative to high cost, low nutritional value market foods. Reduced use of traditional foods can increase reliance on market foods which can impact food security based on affordability and quality of the market foods attainable to an individual or household. Market foods in Northern Ontario are higher in cost than those in the rest of Ontario, and significantly more so in remote regions of northern Ontario in comparison to urban centres (SLFNHA 2024a; NWHU 2024). These high costs can result in reduced access to market foods in general, and / or reduced access to high nutritional value market foods (i.e., fresh produce) which are often more costly than foods with poorer nutritional value (i.e., processed foods).

Overall, for those Indigenous people employed by the Project and their families, Project activities are anticipated to improve food security through increased income allowing for access to adequate amounts of, and higher nutritional quality, foods. For Indigenous households not employed by the Project, Project activities that interact with cost of living may add additional strain to food security for some individuals; however, no measurable deviation from baseline population-level health resulting from Project activities is anticipated. These findings are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF. Mitigations will be required to minimize potentially adverse effects related to perception to avoid disruption to traditional food practices and traditional economy (e.g., funding for Indigenous-led education and training for land-based activities), minimize effects to cost of living and maximum economic benefits (e.g., local hiring policies). While economic changes due to the Project may result in an overall benefit to Indigenous health, the implementation of carefully designed mitigations are key to mitigating adverse effects and enhancing the benefits of the Project. Great Bear Resources has indicated that commercial project agreements are in progress with LSFN, WFN and NWOMC to minimize adverse social effects and maximize economic opportunities for Indigenous communities. Mitigation and enhancement measures for health are presented in Section 10.9.4. Additional details, including specific mitigations for food security are presented in Section 7 of Appendix N-2.

10.9.3.3.10 Mental Wellness and Personal Behaviours

Mental wellness and personal behaviours during the construction phase is influenced by a multitude of interrelated factors that both directly and indirectly affect upstream environmental, social, cultural and economic conditions. Collectively, these conditions have the potential to affect Indigenous health at the individual and community level.

The available evidence suggests that Project activities may have a beneficial effect of mental wellness via economic support (e.g., income, employment and agreements) during construction. As discussed previously, economic opportunities can improve food security (Myrette and Riva 2021), and in some cases, reduce barriers (via economic benefit) to participation in traditional harvesting practices, by providing means of purchasing hunting, fishing and harvesting equipment (Chan et al. 2014). Economic development, coupled with environmental stewardship and self-determination, is a key determinant of Indigenous health (Loppie and Wein 2022). Therefore, providing opportunities for training, education, and employment for local Indigenous communities is an important way to enhance and support Indigenous health via mental wellness and personal behaviours.

Indigenous health via changes in mental wellness and personal behaviours, may also be indirectly influenced by Project activities during construction through potential changes to traditional food systems (Batal et al. 2021b), environmental dispossession and solastalgia (e.g., the feeling of loss and grief tied to sense of place.) (Ninomiya et al. 2023; Salerno et al. 2021; Tobias and Richmond 2014), family dynamics and relationships (Parker et al. 2018; Myrette and Riva 2021) and potential changes to access to health and social services (Parker et al. 2018; Wheatley 2024).

Some communities in the region (i.e., in the Sioux Lookout area) are experiencing pre-existing mental health and substance use challenges, with higher hospitalization rates for mental health and substance use compared to other local communities in northern Ontario (NWHU and Yusuf 2023; SLFNHA 2024b). In a confidential report prepared for NWOMC, while community members expressed that the Project may bring positive economic benefits (which can lead to beneficial influences on mental health outcomes), there was concern about an influx of workers and issues related to drugs and alcohol. While these issues are complex and may be attributed to a myriad of personal and social factors, research has shown that without effective mitigation strategies in place, resource development more broadly can affect mental wellness and personal behaviours through various pathways of effect, including those related to family dynamics (Parker et al. 2018) and substance use challenges (Aalhus et al. 2018; Gibson et al. 2017).

Notably, research has shown that positive mental health outcomes are strongly linked to active community participation and effective collaboration throughout project development and implementation (Salerno et al. 2021). Positive mental health outcomes can result from the creation of jobs themselves or secondary economic effects when there is investment into local community development, education and training, as well as culturally appropriate and community-specific mitigation measures (Salerno et al. 2021). In confidential reports, LSFN, WFN, and NWOMC expressed the desire for local hiring initiatives. Additionally, WFN and LSFN community members suggested that a method of building trust was to support economic prosperity outside of the mine.

A common theme that has emerged within publicly available reports, confidential reports, and various community engagement activities was the desire for investment in education and training for youth and children. Existing mental health outcomes across Indigenous communities within the LSA are disproportionately affecting youth and young adults, including in the NWHU as a whole in Sioux Lookout area First Nations, which includes LSFN and WFN, in ANA, and in RLEF (NWHU and Yusuf 2023; SLFNHA 2024b; SLFNHA 2018; MNP LLP 2020; Mergler et al. 2019, 2023).

Preserving culture through various mediums (e.g., language and knowledge transmission; supporting participation in land-based activities and learning) has been shown to have protective effects on mental health (Carrier et al. 2022; Lines et al. 2019; NCCIH 2016; Task Group on Mental Wellness 2021). Therefore, mitigation and enhancement measures that include mental health protective factors such as education and training initiatives that involve targeting youth, are important considerations for the Project.

As indicated in the sections above, Project activities during construction have the potential to cause changes to mental wellness and personal behaviours (via changes in employment and economics, family wellness, land-based practices, intergenerational trauma, substance use); although, these effects are highly subject to individual variability. As family, community, and relationships with each other are foundational to Indigenous health (Métis National Council 2025; SLFNHA 2016), Project-related changes to mental wellness and personal behaviours during construction may therefore result in a mix of both beneficial and adverse effects to Indigenous health.

Mitigation measures and monitoring plans are expected to be protective of Indigenous health during construction. The implementation of carefully designed mitigation and enhancement measures are key to mitigating potential adverse effects and maximizing the benefits of the Project, such as an inclusive and local hiring strategy, prioritizing Indigenous hiring, education and training, employee benefits programs, supporting Indigenous procurement and business opportunities, and operation of a dry camp.

The likelihood of beneficial effects on mental wellness and personal behaviours outcomes is largely based on the planning, design and implementation of mitigation measures that improve the upstream conditions (environmental, social, economic, cultural) that influence Indigenous health and wellness. In general, beneficial mental health effects from major projects are associated with meaningful engagement and effective partnerships (Salerno et al. 2021). Given Indigenous communities generally within the RSA (e.g., Sioux Lookout area First Nations) may be currently experiencing higher rates of mental health challenges and substance use challenges than their Ontario counterparts, supporting initiatives that aim to mitigate potential Project effects and support mental health resiliency and healing outside of the mine, should be considered to support alleviating this disparity. Therefore, funding for Indigenous-led education and training for land-based activities and support of Indigenous environmental monitoring programs were also identified. Mitigation and enhancement measures for health are presented in Section 10.9.4. Additional details, including specific mitigations for mental wellness and personal behaviours are presented in Section 7 of Appendix N-2.

Overall, both beneficial (e.g., via economic development and increased material resources due to employment) and adverse (e.g., via environmental dispossession, negative health behaviours) changes to mental wellness and personal behaviours may affect Indigenous health and wellness for some individuals during construction, with potential effects being highly subject to individual variability. However, no measurable deviation from baseline population-level health resulting from Project activities is anticipated.. These findings are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF. Mitigations and enhancements presented in Section 10.9.4 are required to minimize adverse effects.

10.9.3.3.11 Actual and Perceived Public Safety (Accidents and Malfunctions)

The risk for accidents and malfunctions to occur is introduced due to the development of the Project; however, the nature of events that may occur will differ between construction and operations, being lower during construction.

The potential types of accidents and malfunctions that are most applicable to human health are those that would result in a spill, such as those related to dam, ditch, or pipeline failure. The residual risk rankings for the potential accident types that were assessed in Section 16 (Effects of Potential Malfunctions and Accidents), including those related to a spill, ranged from very low to low. Given that the likelihood of the scenarios had a rare (1/1,000 to 1/10,000 events per year) or unlikely (1/100 to 1/1,000 events per year) likelihood of occurrence, interactions between the Project and Indigenous health via changes to actual public safety are not anticipated at this time. This is assuming that the development and effective implementation of contingency planning and mitigation measures listed in Section 16 (Effects of Potential Malfunctions and Accidents) are carried out.

In terms of perception, perceived public safety due to accidents and malfunctions, including emotional and social stress, is influenced by a multitude of interrelated factors. The available evidence, including community feedback and primary and grey literature sources (Ninomiya et al. 2023; Salerno et al. 2021; Shandro et al. 2017), suggests that perceived changes in safety, even in the absence of direct incidents, may affect community health and wellness. This is largely due to the introduction of a potential risk of spill-related accidents or malfunctions as a result of Project development, even if the actual risk of such events is negligible.

Should an accident or malfunction occur, Indigenous health and wellness could be impacted both directly and indirectly at varying magnitudes for varying durations, depending on the nature of the event. Indirect interactions with Indigenous health and wellness may occur because the development and construction of the Project introduces the possibility (via new infrastructure) of anthropogenic accidents and malfunctions occurring in the vicinity of the Project relative to existing conditions. As such, indirect or perceived changes to public safety due to accidents and malfunctions could occur and may influence community health and wellness. These indirect or perceived influences relate primarily to concerns over environmental contamination and potential perceived disruptions in traditional land and resource use, which may in turn influence Indigenous health via changes in actual and perceived safety (accidents and malfunctions) including emotional and social stress factors.

It is acknowledged that there is inherent uncertainty associated with the potential effects of accident and malfunctions scenarios, making it difficult to fully characterize the potential health effects associated with the Project. Broader social and cultural factors, such as historical mistrust and pre-existing emotional and social stress factors associated with industrial development, may continue to influence and in some cases exacerbate, overall health effects for Indigenous communities.

Mitigation measures and monitoring plans are expected to be protective of Indigenous health during construction. As discussed in Section 16 (Effects of Potential Malfunctions and Accidents), an emergency response plan for the Project will be implemented and will include the communication of plans as may be required for each type of accident and malfunction. Great Bear Resources has also developed a Community Grievance Procedure specific to the Great Bear Gold Project site. With the design and application of contingency planning and mitigation measures, the resulting effects on Indigenous health via changes in actual and perceived safety, including emotional and social stress factors, are expected to be negligible for LSFN, WFN, NWOMC, and RLEF. Potential effects on Indigenous health (i.e., emotional and social stress) due to changes in the perception of safety during construction may occur for some individuals within the ANA community; largely due to historical mistrust and pre-existing emotional and social stress associated with industrial development. However, no measurable deviation from baseline population-level health resulting from Project activities is anticipated.

While upstream technical inputs did not identify adverse effects to Indigenous people's health from Project activities per se, the measures proposed for upstream technical disciplines are expected to continue mitigating potential effects from changes to actual and perceived public safety during construction. In addition, environmental data sharing agreements with local Indigenous communities, support of Indigenous environmental monitoring programs, and public safety communications were also identified as health measures to minimize adverse effects due to changes in perceived safety. Mitigation and enhancement measures for health are presented in Section 10.9.4. Additional details, including specific mitigations for perceived safety due to accidents and malfunctions are presented in Section 7 of Appendix N-2.

Overall, the potential for effects on Indigenous health during construction due to changes in actual and perceived public safety, including emotional and social stress, is largely dependent on Great Bear Resources' continued engagement and transparency with the local Indigenous communities and the efficacy of Project design, mitigation measures and emergency response planning.

10.9.3.3.12 Safety of Indigenous Women and Girls

Construction phase activities are anticipated to result in a temporary population increase of 1,000 workers during construction and 1,300 during peak construction. As stated in the CWB assessments (Sections 10 to 14), no direct interactions with public safety or gender-based violence are anticipated on-reserve for LSFN, WFN, ANA during construction. However, the Project will bring a temporary influx of non-local workers into the region, including in Red Lake and Ear Falls, which may elevate broader safety concerns, particularly among Indigenous women, girls, and 2SLGBTQQIA+ people. These concerns reflect ongoing systemic safety risks and the national crisis of Missing and Murdered Indigenous Women and Girls. The influx of new and transient workers may affect safety and the perception of safety, particularly for Indigenous women, girls, and 2SLGBTQQIA+ individuals.

Human trafficking and sexual exploitation risks were raised by local service providers, consistent with regional trends documented in the Final Report on Missing and Murdered Indigenous Women and Girls (National Inquiry into Missing and Murdered Indigenous Women and Girls 2019). These concerns may not always be captured through quantitative data but are central to the lived experience and perceived safety in the community. The NCCIH (2020) reports that impacts such as domestic violence and sexual abuse *"differentially affect the health of Indigenous girls and women, a population already experiencing high rates of domestic abuse, sexually transmitted diseases and pregnancies."* For individuals and groups who already experience disproportionate vulnerability to gender-based violence, increased presence of non-local and transient workers may contribute to heightened fear or unease within the community. This may also intersect with broader historical and systemic factors that contribute to lower levels of trust in public safety systems among some Indigenous and vulnerable populations. Even in the absence of actual incidents, perceived increases in risk can have adverse effects on mental wellness, personal security, and overall community cohesion.

For Indigenous health, there can be both direct and indirect effects on health and wellness in instances where the safety of Indigenous women, girls, and 2SLGBTQQIA+ individuals is compromised, whether in the community or in the workplace. There are direct impacts including the possibility of injury (through sexual assault and violence), death and / or mental health effects (National Inquiry into Missing and Murdered Indigenous Women and Girls 2019).

In addition, *"the systems and institutions that Indigenous people reach out to for health care-related support often fail to provide the support needed and, in doing so, often deepen these health concerns"* (National Inquiry into Missing and Murdered Indigenous Women and Girls 2019). These incidents do not only affect the individual, but also their families and broader communities.

A study of Indigenous women employed in natural resource industries in Canada found that *"sexual harassment and misconduct is common in field operations"* and that *"there was a huge difference between what would be tolerated by management in corporate offices and on mine sites"*, specifically referring to incidents of both physical and verbal sexual harassment (Baruah and Biskupski-Mujanovic 2023). Study respondents suggested that development and enforcement of strict sexual harassment policies at mine camps and pre-arrival training for employees about what constitutes harassment and abuse is important (Baruah and Biskupski-Mujanovic 2023). Mitigating such incidents from occurring is the foundation of the calls to action that are listed in the Final Report on Missing and Murdered Indigenous Women and Girls. Five calls to action were specifically directed at extractive and development industries. In addition, IAAC commissioned a study in response to the National Inquiry (i.e., MMIWG) and provided further recommendations to mitigate adverse effects to Indigenous women, girls and 2SLGBTQQIA+ individuals (IAAC and Narratives Inc. n.d.). Collectively, these sources have informed the mitigations listed below in Section 10.9.4.

Overall, safety of Indigenous women and girls is influenced by a number of interrelated factors that both directly and indirectly affect upstream social and cultural conditions. Safety of Indigenous women and girls is directly linked to health as both violations of physical safety (e.g., through violence, harassment) and perceptions of safety can influence both physical and mental health and wellness. The available evidence from upstream social conditions (i.e., public safety and gender-based violence) and primary and grey literature, including the National Inquiry into MMIWG, indicated that health effects from Project activities (namely the influx of workers) are possible during construction, especially if incidents occur at camp and / or in community that compromise the safety of Indigenous women and girls. While baseline information highlighted that the issues surrounding the national crisis of MMIWG are not specific to a single region or project, they have the potential to be exacerbated with development in remote northern areas.

Mitigation measures and monitoring plans are expected to minimize risks to the safety of Indigenous women and girls during construction; however, they cannot completely eliminate the possibility of incidents occurring. Mitigation and enhancement measures for health are presented in Section 10.9.4. Additional details, including specific mitigation for safety of Indigenous women and girls are presented in Section 7 of Appendix N-2. Mitigations include site security (e.g., separate and locked accommodations for women at camp), mandatory cultural awareness training for employees, tracking incidents in the workplace and protective grievance processes for workers, among others. It is noted that Kinross' Code of Business Conduct and Ethics (Kinross 2025) states that harassment will not be tolerated and Kinross will take disciplinary action against anyone found to be in violation. In community, mitigations include in collaboration with Indigenous communities and local law enforcement to discuss safety considerations regarding the influx of additional workforce into the area. Collectively, these mitigations are expected to help minimize the likelihood of incidents occurring at camp and in community. It is acknowledged that should incidents occur, the physical and mental health consequences for the affected individual(s), and their families, is substantial.

Overall, effects on Indigenous health from changes to safety of Indigenous women and girls as a result of Project activities during construction are possible if incidents were to occur. However, no measurable deviation from baseline population-level health resulting from Project activities is anticipated following implementation of mitigation measures. These findings are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF. Mitigations and enhancements presented in Section 10.9.4 are required to address potential effects by minimizing risks to safety of Indigenous women and girls both at camp and in community.

10.9.3.4 Operations Phase

The operations phase is anticipated to occur over a 26-year period. Several direct, indirect or perceived interactions may continue to influence Indigenous health identified during construction are expected to continue during operations. These relate primarily to confidence in land and resource use, access to traditional territories, Project workforce and ongoing reliance on regional services. The source of the Project interactions during operations are associated with the operation of the mine and related infrastructure (e.g., generators), processing of ore and management of rock and tailings, and operation of a concrete batch plant, cemented rockfill plant, and paste plant. The potential interactions during operations are explored as contributions to the potential effect of an overall change in Indigenous health.

10.9.3.4.1 Air Quality

Potential changes to air quality are expected to continue during operations. NO_2 and DPM were also identified as POPCs during the operations phase and carried forward into the HHERA inhalation assessment (Appendix N-1). The results of the HHERA inhalation assessment for the operations phase are presented below, with full details in the HHERA (Appendix N-1). The results of the HHERA inhalation assessment are presented in Table 10.9-2 and Table 10.9-3 in the discussion of construction in Section 10.9.3.1 above, with full details provided in the HHERA (Appendix N-1).

As shown in Table 10.9-3, the HHERA inhalation assessment reported HQs above the target HQ of 1 for DPM only at the MPOI during the operations phase for Project Alone and Project+Baseline. Potential risks associated with short-term NO_2 exposure or chronic DPM exposure in air were negligible.

The MPOI represents a worst-case scenario; therefore, individuals are not likely to be exposed to concentrations that would result in HQs above the target HQ of 1 and result in potential risks to human health. The HHERA inhalation assessment reported that although HQs above the target HQ of 1 were identified at the MPOI, the frequency of these instances was low during operations (i.e., 0.15% at the MPOI), which equates to less than 24 hours (1 day) of HQs above the target in a year.

The findings for DPM during operations are similar to construction. Adverse risks to health for the Indigenous Resident based on short-term exposure are not expected as the maximum predicted 1-hour concentration of DPM for Project+Baseline (i.e., during operations) was 28.6 $\mu g/m^3$, which was below the critical effect and POD of 100 $\mu g/m^3$ for which the majority of DPM toxicological studies have observed increases in airway resistance (Mudway et al. 2004; Behndig et al. 2006, 2011; Riedl et al. 2012; Stenfors et al. 2004; as cited in Health Canada 2016).

Potential risks to the Indigenous Resident from Project-related DPM exposure during operations were considered to be low given the predicted concentrations are below the POD of 100 µg/m^3, the predicted frequency of DPM concentrations above targets are low (less than 1 day / year), conservative assumptions were used in the air quality assessment, the assumption that all $PM_{2.5}$ vehicle combustion was related to DPM is conservative, and people are not expected to be at the MPOI for extended periods that would constitute risk.

As such, Project activities are not anticipated to pose risks to the Indigenous Resident from exposure to POPCs in air during operations. These findings are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF. While physical health is not expected to be directly affected by Project interaction with air quality during operations, perception issues related to air quality may affect the amount of time spent outdoors by Indigenous communities during the 26-period of operations, including traditional land use practices. Mitigation measures and monitoring plans are expected to be protective of Indigenous health during operations. Mitigation and enhancement measures for health are presented in Section 10.9.4. Additional details, including specific mitigations for air quality are presented in Section 7 of Appendix N-2.

Overall, direct effects on Indigenous health from changes to air quality as a result of Project activities during operations are not anticipated; however, mitigations and enhancements presented in Section 10.9.4 are required to validate assumptions and promote Indigenous participation in environmental monitoring and data sovereignty.

10.9.3.4.2 Multi-media Environmental Quality

As stated in Section 7.2 (Air Quality), Project interactions which could potentially effect soil, surface water and traditional foods as a result of deposition from airborne emissions are the same as those expected for construction. As stated in Section 7.7 (Water Quality), Project interactions which could potentially affect surface water quality during operations include discharge of treated Project contact water, fugitive groundwater seepage, treatment and discharge of domestic sewage, and fugitive dust emissions and subsequent deposition on surface water features.

The results of the HHERA multi-media assessment for the operations phase are presented in Table 10.9-4, Table 10.9-5, Table 10.9-6 and Table 10.9-7 in Section 10.9.3.1 above, with full results provided in the HHERA (Appendix N-1). The results of the human health multi-media assessment for the operations phase resulted in the same conclusions described for construction, with HQs for operations calculated as essentially equal to or below HQs calculated for construction.

As presented in Table 10.9-4 and Table 10.9-5, non-carcinogenic risks (i.e., HQs above target HQ 1.0) were identified from exposure to inorganic arsenic for both the average and heavy consumer Indigenous resident (toddler) for baseline and Project+Baseline for operations, with surface water exposure as the primary contributing pathway (approximately 83% of the HQs for average consumer toddler Indigenous resident; approximately 62% of the HQs for heavy consumer toddler Indigenous resident [same as construction]). However, when accounting for Project-Alone contributions, HQs were below the target HQ of 0.2 for operations and considered negligible. This indicated that Project+Baseline HQs above the target HQ of 1 are associated with the background conditions (i.e., baseline) rather than the Project, and the Project is not expected to increase arsenic-related human health risks for the average consumer or heavy consumer Indigenous resident living, working, and recreating in the LSA and RSA during construction.

Carcinogenic effects from inorganic arsenic, as presented in Table 10.9-7, are the same as described for the construction phase wherein the calculated ILCR values for the composite receptor was below the target ILCR of 1.0E-05 (i.e., 1-in-100,000) for both the average and heavy consumer Indigenous resident for the operations phase and for the total 80-year lifetime composite. As such, unacceptable carcinogenic risks are not expected from the Project.

In the HHERA, multi-media assessment HQs for mercury (inorganic and methylmercury) were combined with the HQs calculated in the Mercury Bioaccumulation Study for Downstream English River to Wabigoon System Waterbodies (Appendix T) to estimate total mercury related HQs from the sources of exposure related to the Project site. These total HQs are presented in Table 10.9-4, Table 10.9-5 and Table 10.9-6. For inorganic mercury, as presented in Table 10.9-4, for the average consumer Indigenous resident (toddler) baseline and Project+Baseline HQs were below the applicable target HQ of 1 for these assessment cases, and Project-Alone HQs were below the applicable target HQ of 0.2. As such, risks for the average consumer were considered to be negligible during operations. For the heavy consumer Indigenous resident (toddler), as presented in Table 10.9-5, the HQ was above the target HQ of 1 for Project+Baseline for operations, driven by the ingestion of fish exposure pathway (accounting for approximately 96% of HQs; same as construction). However, when accounting for Project-Alone contributions, the HQ was below the target HQ of 0.2 for the heavy consumer for operations and considered negligible. As presented in Table 10.9-6, for the average and heavy consumer adult female baseline and Project+Baseline HQs were below or equal to the target HQ of 1, and Project-Alone HQ values were below the target HQs of 0.2 and considered negligible. The female adult was evaluated to represent sensitive populations for exposure to developmental toxicants. As such, the Project is not expected to increase inorganic mercury-related health risks for the average consumer or heavy consumer Indigenous Resident living, working, and recreating in the LSA and RSA during construction.

As presented in Table 10.9-4 and Table 10.9-5, non-carcinogenic risks (i.e., HQs above target HQ of 1.0) were identified from exposure to methylmercury for the average and heavy consumer Indigenous resident (toddler) for baseline and Project+Baseline for operations, with dietary consumption pathways, specifically fish ingestion as the primary exposure pathway contributing to HQs (i.e., >95%; same as construction). However, when accounting for Project-Alone contributions, HQs were below the target HQ of 0.2 for operations and considered negligible. As presented in Table 10.9-6, baseline and Project+Baseline HQs for the adult female life stage were below or equal to the target HQ of 1 for the average consumer and above the target HQ of 1 for the heavy consumer, but lower than HQs for the toddler (Table 10.9-4, Table 10.9-5). When accounting for Project-Alone contributions, methylmercury HQ values for the adult female were below the target HQ of 0.2. This indicated that Project+Baseline HQs above the target HQ of 1 are associated with the background conditions (i.e., baseline) rather than the Project, and the Project is not expected to increase methylmercury-related human health risks for the average consumer or heavy consumer Indigenous resident living, working, and recreating in the LSA and RSA during construction.

No risks were identified for selenium for the average or heavy consumer Indigenous resident based on HQs for baseline, Project+Baseline or Project-Alone for operations. Therefore, the Project is not expected to increase selenium-related human health risks for the average consumer or heavy consumer Indigenous Resident living, working, and recreating in the LSA and RSA during construction.

Consistent with the construction phase, for the multi-media POPCs, baseline (i.e., existing) conditions are driving risk for human health. The incremental Project risks for each phase are below the target HQ of 0.2 applicable for Project-Alone contributions, representing a negligible change from baseline risks. For carcinogenic effects of inorganic arsenic, ILCR values are below the target threshold of 1.0E-05 (i.e., 1-in-100,000). As such, Project activities are not anticipated to pose risks to the Indigenous Resident during operations. These findings are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF.

While physical health is not expected to be directly affected by Project interactions with multi-media environmental quality during operations, it is important to acknowledge that Indigenous people in the region view health as a holistic balance. It is possible that perception issues related to environmental quality may change or limit the consumption of traditional foods by local Indigenous communities during operations. Mitigation measures and monitoring plans are expected to be protective of Indigenous health during operations. Mitigation and enhancement measures for health are presented in Section 10.9.4. Additional details, including specific mitigations for multi-media environmental quality are presented in Section 7 of Appendix N-2.

As such, direct effects on Indigenous health from changes to multi-media environmental quality as a result of Project activities during operations are not anticipated; however, mitigations and enhancements presented in Section 10.9.4 are required to minimize potential indirect effects related to perception of environmental quality to avoid disruption to traditional food practices.

10.9.3.4.3 Access and Availability of Water

As stated in Section 7.5 (Groundwater), Project interactions which could potentially effect groundwater quantity are the same as those expected for construction. A reduction in groundwater levels from mine dewatering will reduce groundwater contributions to surface water, which will be reflected in some surface watercourses and waterbodies within or adjacent to the PA during operations.

As stated in Section 7.6 (Surface Water Flows and Levels), Project interactions which could potentially effect surface water flows and levels are the same as those expected for construction, with the additional activity water takings from the Chukuni River during operations. Reductions in flow in watercourses will continue and increase during the operations phase, but will continue to not be observable. The temporary reduction in flow is expected to cause a small change in water level in a portion of Dixie Creek; however, the reduction in average annual water level may by less than 5 centimetres [cm]) which is unlikely to be identifiable from natural variation. Changes are considered temporary and reversible as flows and water levels are restored after closure. Observable changes in surface water levels are not expected for other waterbodies or watercourses with the exception of the unnamed waterbodies and watercourses within the PA which will be permanently altered during construction.

On-going changes to access and availability of water during long-term operations may continue to reinforce community concerns regarding perceived environmental change. This can result in avoidance of the use of local waters potentially leading to indirect effects on Indigenous health and wellness for some individuals through interruption of cultural ceremonies, traditions and identity linked to water. Potential adverse effects related to community cohesion, cultural continuity, mental health, intergenerational knowledge transfer, land-based healing, and ceremonial activities noted in construction are expected to continue in operations, particularly where the landscape remains altered or access to waters are perceived as reduced.

However, no measurable deviation from baseline population-level health resulting from Project activities is anticipated following implementation of mitigation measures. These findings are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF. The complex interaction between environmental quality, perception and possible avoidance is further discussed in relation to multi-media environmental quality and food security. Mitigations and enhancements presented in Section 7.5 and Section 7.6 (Groundwater and Surface Water Flows and Levels, respectively) are proposed and will minimize changes to access and availability of water. Data sharing agreements with local Indigenous communities, and support of Indigenous environmental monitoring programs were identified as mitigation measures required to minimize perception issues surrounding Indigenous use of lands and waters. Mitigation and enhancement measures for health are presented in Section 10.9.4. Additional details, including specific mitigations for access and availability of water are presented in Section 7 of Appendix N-2.

10.9.3.4.4 Access and Availability of Traditional Foods

During operations, similar interactions as the construction phase will continue, and potential effects to health via changes to access and availability of traditional foods for Indigenous people may occur. Project-related activities during operations may continue to disrupt access and / or availability of traditional foods, including changes in harvesting patterns due to land disturbance, perception issues and other barriers, as well as ecosystem alteration.

During the operations phase, access to areas within the PA will be restricted for safety and security reasons, however, access to land and resource areas within the LSA will remain unrestricted during Project operations. Therefore, changes to access of traditional foods for those Indigenous communities who harvest within the PA (LSFN and RLEF) may occur. Anticipated potential effects from Project activities also include direct and indirect changes to availability of plants and wildlife, respectively, as well as diminished quality of experience due to sensory disturbance in the LSA, immediately adjacent to the PA. Therefore, effects to Indigenous health identified for the construction phase due to changes to access and / or availability of traditional foods, may continue throughout the mine life.

In addition, operational activities could affect fish, wildlife, and plants due to potential changes in air and water quality and in turn, indirectly affect Indigenous health. The HHERA considered this potential effect pathway to assess potential effects on fish, wildlife, and plants due to POPC emissions associated with Project activities (Appendix N-1). The results of the HHERA (Appendix N-1) demonstrated that air and / or water quality changes associated with Project activities are not expected to result in unacceptable risks to plants, mammals and birds, or aquatic communities, suggesting that the availability of traditional foods is not expected to be impacted.

Mitigation measures and monitoring plans for the operations phase are expected to be protective of Indigenous health during operations. Mitigation and enhancement measures for health are presented in Section 10.9.4. Additional details, including specific mitigations for access and availability of traditional foods are presented in Section 7 of Appendix N-2.

As described in the CULRTP assessments (Sections 10 to 14), long-term operational activity may reinforce community concerns regarding environmental change and cultural continuity, particularly where the landscape remains altered or access to important cultural areas is perceived as reduced and may continue to influence overall health for Indigenous people.

Overall, available information indicates that changes in access and availability of traditional foods (e.g., changes in harvesting patterns and ecosystem alteration) will likely occur as a result of Project activities during operations, and this change may affect Indigenous health and wellness for some individuals (Earle 2011a, 2011b; Simpson et al. 2009; Waasegiizhig Nanaandawe'iyewigamig 2020);however, no measurable deviation from baseline population-level health resulting from Project activities is anticipated following implementation of mitigation measures. These findings are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF. Changes in access and availability of traditional foods are also linked to other health indicators including economics (employment, income and education), food security, and mental wellness and personal behaviours.

10.9.3.4.5 Sensory Disturbances: Sound, Vibration and Light

During the peak production and underground production operations modelling periods, sound levels predicted under the worst-case hour scenario (LAeq-1hr [A-weighted equivalent sound level], dBA) meet the provincial and federal guidelines at all PORs in the LSA and RSA, during daytime and evening / nighttime periods. In addition, the change in %HA is predicted to meet the Health Canada guideline (2023e) of 6.5% for the operations phase, which means that changes to sound levels are not expected to trigger noise complaints from PORs. Blasting operations are within applicable guidelines and there is no change to vibration at the PORs. Therefore, effects to Indigenous health during the operations phase due to due to sound (e.g., annoyance) and vibration are not anticipated. For light, the difference between existing and predicted skyglow during operations was comparable to the seasonal variability seen between baseline measurement. Therefore, potential effects to Indigenous health due to light (e.g., sleep disturbance) are not anticipated. These findings are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF.

Mining-related activities may result in sensory disturbance during the operations phase (noise, visual and dust) which could impact sense of place and quality of experience during harvesting activities in the LSA, and immediately adjacent to the PA.

Mitigation measures and monitoring plans are expected to be protective of Indigenous health during operations, such as noise control measures, the blast management plan, and light control measures and best practices. In addition, a mechanism will be established for receiving and responding to noise complaints in a timely manner during all Project phases.

10.9.3.4.6 Economics (Employment, Income and Education)

During operations, Project-related employment and contracting opportunities will continue to provide increased income to individuals working for the Project and their families. Peak employment is anticipated to reach approximately 1,100 workers during operations when both the open pit and underground mines are active; however, the workforce is expected to decrease to approximately 700 workers during the underground mining-only operations (after approximately year 9).

Although no population growth or direct workforce is anticipated on-reserve for LSFN, WFN and ANA, Project operations are expected to affect the local and regional economy (including RLEF and NWOMC) through temporary job creation and increased regional spending during operations. As described in the CWB assessments (Sections 10 to 14), this is also anticipated to increase labour income, provide valuable work experience for Indigenous members participating in the workforce, and strengthen income stability.

The workforce is expected to stabilize during operations; thus, most potential interactions identified during construction are likely to persist or evolve over time.

Income is a key determinant of health, and higher earnings during operations can reduce financial stress, enhance self-esteem, and support improved mental health, including a reduced prevalence of addictions (NCCIH 2020). Increased income may also alleviate community-level poverty and enable participation in cultural and traditional practices, which promote healthier lifestyles and reduce the risk of obesity-related conditions such as diabetes and cardiovascular disease (NCCIH 2020). However, income is not the sole economic influence on health. Income, education, and occupational skill levels are closely linked, and individuals with lower socio-economic status consistently experience higher rates of chronic conditions, including arthritis, asthma, diabetes, and obesity (PHAC 2018). Therefore, initiatives that support education and skills development during operations is key to increased employment opportunities, higher income over the long-term and better health. Increased consumer spending during operations can raise demand for goods and services, supporting improved health and social services and in turn, better health outcomes (NCCIH 2020). However, for some individuals, higher incomes may exacerbate substance use issues, potentially increasing risks of domestic violence, family disruption, and safety concerns for Indigenous women and girls (NCCIH 2020). Further, due to the expected demand for certain goods and services during operations, a temporary increase in the cost of living for communities that already face elevated costs for food, fuel and housing can contribute to localized affordability pressures.

During operations, potential effects to Indigenous health due to changes in economics (employment, income, education) from the Project are expected to be positive overall as steady employment and contracting opportunities could support income stability, local business activity and workforce skill development. However, higher income could also lead to negative health behaviours (e.g., substance use) for some individuals, and sustained operations may reinforce community concerns about affordability, service capacity, and long-term population change, as described in the CWB assessments (Sections 10 to 14). Further, for individuals not employed in mining or a comparable high-paying industry, the higher cost of living can pose a considerable challenge. While the findings above are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF, it is noted that at the time of producing this report, it is unknown if ANA members will be seeking economic opportunities with the Project.

The implementation of carefully designed mitigations and enhancements are key to mitigating adverse effects and enhancing the economic benefits of the Project. Mitigation and enhancement measures for health are presented in Section 10.9.4. Additional details, including specific mitigations for economics are presented in Section 7 of Appendix N-2. Great Bear Resources has indicated that commercial Project agreements are in progress with LSFN, WFN and NWOMC, which will continue to provide economic benefits to communities throughout operations. Great Bear Resources has also committed to support economic development and the ability for Indigenous people to gain economic benefit from the Project. One key commitment that will influence the operations phase is the effort to increase the labour force and business capacity by supporting training and hiring of Indigenous people, particularly in the operations phase (Section 18). This and other commitments, including supporting equitable benefits (employment, training, income equality) for Indigenous women, retirement planning and support, an employee benefits program, and Indigenous-led education and training for land-based practices, have the potential to improve conditions related to Indigenous health.

Overall, available information indicates that changes in economics will likely occur as a result of Project activities during operations. While a net positive effect is expected as a result of economic changes (e.g., economic opportunities and income stability), some adverse effects (e.g., cost of living, boom-bust cycle, uneven income distribution, personal behaviours) may continue to affect Indigenous health and wellness for some individuals. However, no measurable deviation from baseline population-level health resulting from Project activities is anticipated following implementation of mitigation measures. Mitigations and enhancement measures for health are presented in Section 10.9.4.

10.9.3.4.7 Housing

The Project is expected to result in sustained population growth in the Red Lake and Ear Falls area due to a long-term workforce presence during operations. Peak employment is anticipated during operations (when LP Central pit and underground mines are active simultaneously) is 1,100 workers, which is less than peak construction employment. When only underground mining is underway, the workforce is expected to decrease to approximately 700 workers.

During operations, the on-site camp reduces to a capacity of 300 intended to house a portion of the workforce on a rotational basis. Operational staff are expected to be accommodated while on-shift. As the on-camp site is not intended to house workers while off rotation, some workers may acquire permanent off-site residences to use while off rotation. Some mine personnel will have fixed hours weekly rather than rotational shift work and will not be accommodated by the on-site camp, therefore these personnel will reside off-site permanently. Accommodations for occasional short-term contractors are expected to be met by the on-site camp. Non-local workforce related housing pressures expected during construction will continue in operations, with the demand for permanent housing being dependent on the proportion of the operations workforce that is sourced from the local population compared to non-local hires. No change to on-reserve housing for LSFN, WFN or ANA is anticipated during operations. The influx of workforce related population in Kenora, including Red Lake and Ear Falls, may result in increased demand for permanent housing and rental accommodations which can add additional strain to existing housing availability and affordability concerns. Given the existing limitations, even modest additional demand for housing and accommodations could intensify existing challenges.

As stated in the CWB assessments (Sections 10 to 14), affordability concerns related to increase demand for goods and services resultant from Project-related population growth noted in construction are anticipated to continue through operations. These affordability changes can reduce economic resources available for securing suitable housing. However, employment and income stability throughout operations may improve housing opportunities for individuals employed by the Project, and their families.

Mitigation measures were identified as part of the CSIN and CWB assessments (Section 10 to 14) to minimize potential increased need for housing during operations, as well as to minimize disruption to cost of living. These mitigations are expected to limit the extent of housing and cost of living challenges. Mitigation and enhancement measures for health are presented in Section 10.9.4. Additional details, including specific mitigations for housing are presented in Section 7 of Appendix N-2.

Overall, during operations no changes to housing are expected on-reserve, and given this upstream finding, a change in Indigenous health and wellness for LSFN, WFN and ANA is also not expected.

Given the existing precarity of the housing scenario in Kenora district including Red Lake and Ear Falls, while mitigation measures are expected to minimize effects, changes to housing may result from the Project with potential adverse effects to Indigenous health for some individuals; no measurable deviation from baseline population-level health resulting from Project activities is anticipated. These findings are applicable to NWOMC members living in Red Lake and Ear Falls and RLEF.

10.9.3.4.8 Access to Health and Social Services

The operations phase will result in sustained workforce presence in the region, potentially contributing to ongoing regional service demands. Peak employment is anticipated to reach approximately 1,100 workers during operations when both the open pit and underground mines are active; however, the workforce is expected to decrease to approximately 700 workers during underground mining operations.

While no population growth or direct workforce is expected on-reserve for LSFN, WFN and ANA, potential effects to regional health and social services are anticipated. The extended duration of activities during operations means that potential effects related to access to services identified during construction may persist or evolve over time during operations. As such, there may be both direct and indirect effects to Indigenous people's health for individuals that rely on regional health and social services, due to ongoing Project activity in the region. Existing barriers associated with timely access to health and social services within the region due to geographic location, capacity and staff constraints, and lack of childcare options to attend medical appointments, are expected to continue with the additional workforce during operations. These challenges can directly influence Indigenous people's health outcomes particularly in emergency medical or crisis (mental health) situations.

For Indigenous people living off-reserve in Red Lake and Ear Falls, or for Métis living within these communities, potential effects to Indigenous health related to access to services during operations is expected to continue even as the Project workforce stabilizes. While a portion of the workforce will reside in on-site accommodations, other workers and their families may relocate to nearby communities, placing ongoing pressure on existing service systems. Community members living on-reserve who travel to Red Lake and Ear Falls to access municipal, provincial, and non-profit health, social and emergency services may continue to be exposed to the potential regional service pressures. With respect to on-site camp accommodations, strong management strategies and the adequate provision of on-site medical services is critical to reduce the impact on regional healthcare services (Oke and Wilson 2024).

Both the CWB and CSIN assessments (Sections 10 to 14) acknowledge that steady employment and contracting opportunities during operations could support income stability and local business activity (including health and social services), community stability, encourage workforce retention and support incremental improvements in municipal revenues and location service delivery capacity over time. It is noted however, that despite some improvements, participation barriers may continue to limit equitable access for some residents.

During operations, potential effects to Indigenous health due to changes in access to health and social services is expected to be similar to construction and experienced primarily through access to regional services rather than direct changes within on-reserve communities. While there may be limited beneficial effects from Project-related changes that can improve service delivery over time (e.g., employment and employee benefits), adverse effects associated with regional constraints on the service delivery system or reinforcing systemic barriers related to access to services are expected due to added demand on services from the Project workforce.

Therefore, community health will be shaped more by long-term adjustments in economic, social, and demographic conditions across Red Lake and Ear Falls and surrounding areas.
These findings are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF. Great Bear Resources has committed to establish several initiatives that are expected to have several key social benefits, including supporting local initiatives that can contribute to better health outcomes for Indigenous people. Mitigation measures and monitoring plans are expected to be protective of Indigenous health during operations. These include medical management and response to track on-site medical responses and referrals for off-site health services, and an employee benefits program that includes coverage for health care including medical, mental and dental services for employees and their families. Mitigation and enhancement measures for health are presented in Section 10.9.4. Additional details, including specific mitigations for access to health and social services are presented in Section 7 of Appendix N-2.

Overall, available information indicates that changes in access to health and social services will likely occur as a result of Project activities during operations. While beneficial effects (e.g., employment and employee benefits) may occur for some individuals, potential adverse effects on the regional service system due to Project activities (e.g., further strain on capacity / service delivery and inequitable care) may affect Indigenous health and wellness; however, no measurable deviation from baseline population-level health resulting from Project activities is anticipated following implementation of mitigation measures. Mitigations and enhancement measures for health are presented in Section 10.9.4.

10.9.3.4.9 Food Security

Given that Indigenous people in the region view health as a holistic balance including complex and connections to the environment and all living things, potential effects to health associated with multi-media environmental quality and access and availability of traditional foods (as an input to food security) should be interpreted in the context of the interconnectedness of physical, mental, emotional and spiritual health. While HHERA (Appendix N-1) results indicate that incremental risks from Project were below the target HQ of 0.2 for all Project phases and considered negligible in comparison to baseline risks and physical health is not expected to be directly affected by Project interactions during operations, perception issues related to environmental quality may indirectly change or limit the consumption of traditional foods by local Indigenous communities during operations. Further, Indigenous people who previously accessed the PA and access the LSA immediately adjacent to the PA for traditional harvesting practices may experience changes in access and availability of hunting and trapped species and effects to quality of experience due to ongoing sensory disturbances related to Project activities; therefore, temporary or longer-term avoidance of certain areas may occur. Self-imposed limitations on traditional food consumption based on perception may impact food security associated with both a decreased diet supplementation with traditional foods and costs associated with increased reliance on market foods.

As stated in the CWB assessments (Sections 10 to 14), affordability concerns related to increase demand for goods and services resultant from Project-related population growth noted in construction are anticipated to continue through operations. Changes to traditional economy (i.e., reduced income from traditional economy and increased reliance on higher cost market goods) related to perceived changes to the environment are also expected to continue through operations. These affordability changes can reduce economic resources and strain food security particularly those on fixed or lower incomes. However, Project-related income and economic opportunities for Indigenous individuals and their families may improve food security.

Unequal access to jobs, however, due to barriers such as childcare, transportation, or qualifications, may reinforce existing inequities during operations, continued from construction.

Overall, during operations it is expected that for those Indigenous people employed by the Project, Project activities are anticipated to improve food security through increased income allowing for access to adequate amounts of, and higher nutritional quality, foods. For Indigenous households not employed by the Project, Project activities may add additional strain to food security based on potential reduced participation in traditional food practices and traditional economy, and increased affordability pressure from rising costs of goods and services; however, no measurable deviation from baseline population-level health resulting from Project activities is anticipated. These findings are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF. Mitigations will be required to minimize potentially adverse effects related to perception to avoid disruption to traditional food practices and traditional economy, minimize effects to cost of living and maximum economic benefits. Mitigation and enhancement measures for health are presented in Section 10.9.4. Additional details, including specific mitigations for food security are presented in Section 7 of Appendix N-2.

10.9.3.4.10 Mental Wellness and Personal Behaviours

During operations, similar interactions as the construction phase are expected, and potential effects to Indigenous health via changes to mental wellness and personal behaviours may continue. Although no population growth or direct workforce is anticipated on-reserve for LSFN, WFN, and ANA, Project operations and the continuation of Project activities means that several pathways (both beneficial and adverse) identified during construction may persist or evolve over time, as the workforce is expected to stabilize during operations. It is expected that the mine workers will be working seven working days of 12-hour shifts, followed by seven days off, with a goal that the majority of workers will be from local communities. As a result, potential beneficial effects to mental wellness associated with economic benefit from the Project may continue for some individuals. These relate primarily to economic opportunities such as increased income, education, training and skills, which can improve food security (Myrette and Riva 2021), access to services (e.g., via employment and employee benefits for those employed by the Project), and in some cases, potentially reduce barriers to participation in traditional harvesting practices (e.g., via increased material resources) (Chan et al. 2014). Income is a key determinant of mental health (PHAC 2018; CAMH n.d.; PHAC 2024), and higher earnings during operations can reduce financial stress, enhance self-esteem, and support improved mental health, including a reduced prevalence of addictions (NCCIH 2020).

As described in the CWB assessments (Sections 10 to 14), stable employment and contracting opportunities could support income security and skill development for Indigenous people, assuming local hiring remains prominent and Indigenous people are employed throughout operations; though barriers to participation may continue to limit equitable access. Great Bear Resources has indicated that commercial project agreements are in progress with LSFN, WFN and NWOMC to minimize adverse social impacts and maximize economic opportunities for Indigenous communities. While the specifics of these agreements are confidential, the agreements are assumed to provide economic benefit to on-reserve communities and off-reserve band members. Similar to construction, beneficial pathways of effect to health that relate primarily to economic development, temporary job creation and increased spending within the region, which may in turn, have secondary economic effects for the local communities, may continue during operations (Salerno et al. 2021).

Simultaneously, as described in the CWB assessments (Sections 10 to 14), long-term operations may reinforce community concerns about environmental change and cultural continuity, particularly where access to traditional or ceremonial areas is perceived as reduced. As a result, adverse effects due to changes in mental wellness and personal behaviours may also continue. These relate primarily to participation in traditional activities (including disruption of traditional food systems) environmental dispossession (Ninomiya et al. 2023) and solastalgia (i.e., the feeling of loss and grief tied to sense of place) (Salerno et al. 2021), confidence in land and resource use, housing availability, cost of living, and access to health and social services (for those not employed by the Project) (Myette and Riva 2021). In addition, higher income associated with steady employment during operations may deepen the current mental health and substance use issues within the community (SLFNHA 2024b), as problematic substance use can be related to resource development, through increased stress, access to disposable income, time away from traditional, community, and social practices (Aalhus et al. 2018; Myette and Riva 2021).

As described in the CWB assessments (Sections 10 to 14), family routines and caregiving roles may gradually adapt to rotational work patterns, but these adjustments could influence social cohesion, as daily habits, time on the land, and participation in community activities evolve. In the broader region, social cohesion may also shift as new families and workers relocate to nearby communities, potentially altering local demographics and social networks that Indigenous communities interact with.

Mitigation measures and monitoring plans are expected to be protective of Indigenous health during operations. The implementation of carefully designed mitigations and enhancements, such as education and training, prioritizing Indigenous hiring, community partnerships, and operation of a dry camp, are key to mitigating potentially adverse effects and maximizing the benefits of the Project. In addition, funding for Indigenous-led education and training for land-based activities and support of Indigenous environmental monitoring programs will support mental health resiliency through land-based learning (Carrier et al. 2022; Lines et al. 2019; NCCIH 2016; Task Group on Mental Wellness 2021). A list of mitigation and enhancement measures for health are presented in Section 10.9.4. Additional details, including specific mitigations for mental wellness and personal behaviours are presented in Section 7 of Appendix N-2.

Overall, both potential beneficial changes (e.g., via economic development and increased material resources due to steady employment) and adverse changes (e.g., via environmental dispossession, negative health behaviours) to mental wellness and personal behaviours continue to affect Indigenous health and wellness for some individuals during operations, with potential effects being highly subject to individual variability. However, no measurable deviation from baseline population-level health resulting from Project activities is anticipated following implementation of mitigation measures. These findings are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF. Mitigations and enhancements presented in Section 10.9.4 are required to minimize adverse effects.

10.9.3.4.11 Actual and Perceived Public Safety (Accidents and Malfunctions)

While the risk of accidents and malfunctions during the operations phase is limited and was assessed as very low to low (see Section 16), several indirect or perceived influences on public safety, including emotional and social stress, that were identified during construction may continue to affect health and wellness for some individuals within Indigenous communities during operations. Long-term operational activity occurring without accidents and malfunctions may alleviate some perception issues over time.

The risk of certain accident types will be introduced as mining and operational activities commence, such as the risk of TMF slope failure and pipeline failure. Project design and performance monitoring are key to safeguarding the Project against the risk of an accident or malfunction. The potential for credible accidents and malfunctions, their potential consequences, and detailed descriptions of contingency planning and mitigation strategies applicable are described in Section 16 (Effects of Potential Accidents and Malfunctions) and are expected to be protective of Indigenous health during operations.

Overall, with the design and operational safeguards, and with the application of contingency planning and mitigation measures, resulting effects on Indigenous health via changes in actual and perceived safety due to accidents and malfunctions are expected to be negligible for LSFN, WFN, NWOMC, and RLEF. Potential effects on Indigenous health, namely emotional and social stress, due to changes in the perception of safety during operations may occur for some individuals within the ANA community; largely due to historical mistrust and pre-existing emotional and social stress associated with industrial development. However, no measurable deviation from baseline population-level health resulting from Project activities is anticipated. Environmental data sharing agreements with local Indigenous communities, support of Indigenous environmental monitoring programs, and public safety communications were also identified as measures to minimize adverse effects due to changes in perceived safety. A list of mitigation and enhancement measures for health are presented in Section 10.9.4. Additional details, including specific mitigations for perceived safety due to accidents and malfunctions are presented in Section 7 of Appendix N-2.

10.9.3.4.12 Safety of Indigenous Women and Girls

The operations phase will result in sustained workforce presence in the region. Peak employment is anticipated to reach approximately 1,100 workers during operations when both the open pit and underground mines are active; however, the workforce is expected to decrease to approximately 700 workers during underground mining operations (approximately after year 9).

As stated in the CWB assessments (Sections 10 to 14), no direct interactions with public safety or gender-based violence are anticipated on-reserve in LSFN, WFN, and ANA during operations. However, the Project will sustain a temporary influx of non-local workers into the region, including in Red Lake and Ear Falls, which may continue to elevate broader safety concerns among Indigenous women, girls, and 2SLGBTQQIA+ people. Even in the absence of actual incidents during operations, perceived increases in risk can continue to have adverse effects on mental wellness, personal security, and overall community cohesion.

During operations, there can be direct and indirect effects on health in instances where the safety of Indigenous women, girls, and 2SLGBTQQIA+ individuals is compromised, whether in the community or in the workplace. Should incidents occur, they do not only affect the individual, but also their families and broader communities.

The available evidence shows that health effects from Project activities (continued presence of workforce) are possible during operations, especially if incidents (e.g., violence, sexual harassment) occur at camp and / or in community that compromise the safety of Indigenous women and girls.

Mitigation measures and monitoring plans are expected to continue to minimize risks to the safety of Indigenous women and girls during operations; however, they cannot completely eliminate the possibility of incidents occurring. The mitigations identified for construction, are expected to be continued throughout the operational life of the mine, including measures to protect Indigenous women at camp and Indigenous woman and girls in community. However, it continues to be acknowledged that should incidents occur, the physical and mental health consequences for the affected individual(s), and their families, is substantial.

Overall, effects on Indigenous health from changes to safety of Indigenous women and girls as a result of Project activities during operations are possible if incidents were to occur. However, no measurable deviation from baseline population-level health resulting from Project activities is anticipated following implementation of mitigation measures. These findings are applicable to the local Indigenous communities (i.e., LSFN, WFN, ANA, NWOMC and RLEF). Mitigation and enhancement measures for health are presented in Section 10.9.4. Additional details, including specific mitigations for the safety of Indigenous women and girls are presented in Section 7 of Appendix N-2. These mitigations are required to address potential effects by minimizing risks to the safety of Indigenous women and girls both at camp and in community.

10.9.3.5 Closure Phase

The active closure phase is expected to occur over approximately three years following the end of operations. Similar mining and construction equipment are utilized during this period, but on a much smaller scale. Following the active closure period, there will be a passive closure period which includes occasional maintenance, limited use of mining and construction equipment, and a short final close-out and reclamation period where water treatment infrastructure will be removed. The potential interactions during closure are explored as contributions to the potential effect of an overall change in Indigenous health.

10.9.3.5.1 Air Quality

As discussed in Section 7.2 (Air Quality), air quality during closure may be influenced by emissions from the operation of equipment, material handling, and the use of unpaved surfaces associated with demolition and removal activities. The passive and final closure periods during the closure phase consist predominantly of monitoring activities, with occasional maintenance and limited equipment use, and accordingly, was not specifically assessed for effects to air quality.

As active closure uses similar mining and construction equipment but on a much smaller scale, the potential for air quality effects is adequately captured by the construction and operations phase assessments, and therefore was not quantitatively assessed, as detailed in Section 7.2 (Air Quality). Similarly, the HHERA inhalation assessment (Appendix N-1) evaluated the active closure phase as part of the assessment of construction effects; therefore, risk results (i.e., HQs, ILCRs and ALCMs) for the active closure phase were considered the same as the construction phase. Notable sources of air parameter emissions were not expected after active closure. Given that potential adverse effects on Indigenous health were not expected during construction and operations, changes to air quality during active closure, passive closure, close-out, or post-closure, are also not expected.

These findings are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF. It is also noted that when Project activities have ceased, perception issues related to air quality will diminish.

10.9.3.5.2 Multi-media Environmental Quality

As stated in Section 7.2 (Air Quality), Project interactions which could potentially effect soil, surface water and traditional foods as a result of deposition from airborne emissions are the same as those expected for construction, with interactions during closure associated with demolition and removal activities. As stated in Section 7.7 (Water Quality), Project interactions which could potentially effect surface water and subsequently traditional food quality during closure include discharges from contact water, fugitive groundwater seepage to surface water features, erosion and sedimentation from reclamation activities, and dust deposition on local water features.

The results of the HHERA multi-media assessment for the operations phase are presented in Table 10.9-4, Table 10.9-5, Table 10.9-6 and Table 10.9-7 in Section 10.9.3.1, with full results provided in the HHERA (Appendix N-1). The results of the human health multi-media assessment for closure and post-closure resulted in the same conclusions described previously for construction and operations. For the POPCs (inorganic arsenic, inorganic mercury, methylmercury, inorganic selenium), baseline (i.e., existing conditions) drive risk for human health. The incremental Project risks for each phase are below the target HQ of 0.2 applicable for Project-Alone contributions, representing a negligible change from baseline HQs. The ILCRs values are below the target ILCR of 1E-05 (i.e., 1-in-100,000) for carcinogenic effects of inorganic arsenic. This indicated that Project+Baseline HQs above the target HQ of 1 are associated with the background conditions (i.e., baseline) rather than the Project, and the Project is not expected to increase human health risks for the average consumer or heavy consumer Indigenous resident living, working, and recreating in the LSA and RSA during construction from exposure to inorganic arsenic, inorganic mercury, methylmercury, inorganic selenium during closure or post closure. Collectively, these HHERA findings are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF.

The *Mining Act* requires that a Closure Plan be certified to the Mine Rehabilitation Code, prior to disturbance associated with the mining project. The overall intent of the Closure Plan is to restore the Project to a naturalized condition. As described in the CWB assessments (Sections 10 to 14), confidence in land and water quality will remain a key determinant of recovery, influencing whether members resume harvesting and other traditional practices in reclaimed areas. Over the long term, reclamation and revegetation activities may gradually restore access to traditional lands and support cultural revitalization if trust in environmental outcomes is rebuilt. In this manner, concerns related to perception of environmental quality may diminish overtime.

10.9.3.5.3 Access and Availability of Water

As stated in Section 7.5 (Groundwater), groundwater levels will recover during the closure phase through passive and active filling of mine workings. After closure, groundwater will stabilize to levels similar to baseline.

As stated in Section 7.6 (Surface Water Levels and Flows), after closure the pre-development watershed areas will generally be restored although the changes to local topography will result in some localized reductions and increases. These changes will not be discernible from natural, seasonal water level fluctuations.

Interactions with the health of Indigenous people during closure are similar to those identified during construction and operations. As described in the CWB assessments (Sections 10 to 14), confidence in land and water quality will remain a key determinant of recovery, influencing whether members resume harvesting and other traditional practices in reclaimed areas. Under post-closure conditions, groundwater levels will be restored to levels similar to baseline and the pre-development watershed areas will generally be restored, with the exception of the permanent alterations to some waterbodies and watercourses within the PA. Over the long term, reclamation activities may gradually restore access to traditional lands and support cultural revitalization if trust in environmental outcomes is rebuilt. Mitigations and enhancements during the closure phase will minimize changes to access and availability of water and perception issues surrounding Indigenous use of lands and waters. These findings are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF.

10.9.3.5.4 Access and Availability of Traditional Foods

Interactions similar to those identified during the construction and operation phases will continue during closure activities for the Project community members in the PA, LSA, and RSA. Potential interactions with the Project that result in pathways to potential effects on access and availability of traditional foods will continue to have the potential to affect Indigenous health for some individuals.

The *Mining Act* requires that a Closure Plan be certified to the Mine Rehabilitation Code, prior to disturbance associated with the mining project. The overall intent of the Closure Plan is to restore the Project to a naturalized condition. In such a condition, the Project footprint would eventually provide wildlife habitat, and the potential for typical open space pursuits.
The re-establishment of vegetation communities during closure would allow wildlife to return to the PA and surrounding area. With the closure of the PA and subsequent site rehabilitation supporting the return of wildlife, there is the potential for the PA to be used again for harvesting for food and medicinal purposes. Restoration of harvesting opportunities also contributes to cultural continuity and land-based practices that underpin mental, emotional, and spiritual wellness for Indigenous communities.

As described in the CWB assessments (Sections 10 to 14), confidence in land and water quality will remain a key determinant of recovery, influencing whether members resume harvesting and other traditional practices in reclaimed areas. Over the long term, reclamation and revegetation activities may gradually restore access to traditional lands and support cultural revitalization if trust in environmental outcomes is rebuilt. These findings are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF.

10.9.3.5.5 Sensory Disturbances: Sound, Vibration and Light

Noise emissions are considerably less during the closure phase. After the active closure period, there will be limited equipment or materials movement, and sound, vibration and light levels are expected to revert to the near baseline conditions.

During the closure phase (active closure period), sound levels predicted under the worst-case hour scenario (LAeq-1hr, dBA) meet the provincial and federal guidelines at all modeled PORs, during daytime and evening / nighttime periods. The change in %HA is predicted to meet the Health Canada guideline of 6.5% for the closure phase, which means that changes to sound levels are not expected to trigger noise complaints from PORs. Therefore, effects to Indigenous health due to sound (e.g., annoyance) and vibration are not anticipated.

Light emissions during the closure phase are anticipated to vary according to construction equipment requirements and are expected to be lower than those during the operations phase. Therefore, potential effects to Indigenous health due to light (e.g., sleep disturbance) are also not anticipated. These findings are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF.

10.9.3.5.6 Economics (Employment, Income and Education)

The closure phase will continue employment and contracting but at a substantial reduction from the operations phase. Project activities during the closure phase are expected to result in temporary and short-term population changes. As described in the CWB assessments (Sections 10 to 14), employment levels and labour income will decrease to pre-Project levels during the closure phase, after the active closure period.

While the Project workforce is not expected to reside on-reserve, local effects may be observed for members employed by the Project. Direct Project influence within Red Lake and Ear Falls that were expected during construction and operations, are anticipated to lessen as the workforce in this area declines during closure. As discussed in the CWB assessments (Sections 10 to 14), as employment opportunities decrease, some workers are expected to leave the region, reducing pressure on housing and easing affordability constraints within larger communities such as Red Lake and Ear Falls. Lower population and business activity may also reduce demand for goods and services in Red Lake and Ear Falls. While this may modestly ease cost-of-living pressures, it may also affect small or Indigenous-owned businesses that expanded during operations, contributing to localized economic decline or volatility. Direct interactions with closure activities are expected to be limited for LSFN, WFN and ANA, and no change in cost of goods and services is expected on-reserve for these communities.

With the expected changes in the local and regional economies during closure, potential benefits that were observed from having higher incomes and employment opportunities during construction and operations may return to baseline during the closure phase. Further, households that relied on Project-related income may also face financial stress and income instability during this transition, and limited alternative employment or training options may widen existing inequalities. As noted in the CWB assessments (Sections 10 to 14), these pressures can influence family dynamics and contribute to emotional strain, particularly for those with high care responsibilities or limited financial buffers. This may result in an eventual return to baseline conditions for Indigenous health, unless alternate employment is found or financial literacy training and support has enabled a more secure financial future.

Overall, effects to Indigenous health from changes in economics (employment, income and education) during closure will be largely dependent on the pre-closure transition planning (e.g., re-skilling, and financial literacy and planning) that occurred throughout operations. The loss of a large regional employer is known to have complex societal effects, typically attributed to boom-bust cycles of resource development. However, as effects to health are shaped more by long-term changes in the economic and social conditions within the region, mitigations can reduce barriers to new opportunities after the Project ends. Mitigation and enhancement measures associated with the closure phase are designed to ease the transition to other employment opportunities in advance of mine closure.

Great Bear Resources proposes to address local priorities so that communities can benefit from the Project, including after the mine closes.

With respect to economics, Great Bear Resources plans to support local initiatives that includes working with local suppliers to develop capacity and provide training opportunities, which may extend the benefits of the Project beyond the life of the mine. These initiatives are expected to have ongoing positive effects on the health of Indigenous people during and after closure.

10.9.3.5.7 Housing

As discussed in the CSIN and CWB assessments (Sections 10 to 14), closure activities will include the removal of the on-site work camp. As such, short-term contractors may rely on the limited hotel and motel capacity in the region during closure, adding pressure to existing availability concerns. For the portions of the closure workforce with long-term assignments, housing pressures expected during construction and operations will continue. As the workforce declines through the closure phase, the reduced population will lighten the pressure for housing and rental demand; however, this could result in adverse effects to vacancy rates, and property values. No changes to on-reserve housing for LSFN, WFN or ANA is anticipated during any Project phase.

As stated in the CSIN an CWB assessments (Sections 10 to 14), population reduction as the workforce leaves the region can improve affordability of goods and services but can result in negative effects to small or Indigenous-owned businesses that expanded during operations. Households that relied on Project-related income may face financial stress during this transition, and limited alternative employment or training options may widen existing inequalities, particularly for those with high care responsibilities or limited financial resiliency. Mitigations related to community financial support and social plans for closure will be required to minimize changes to housing resultant from income instability at Project closure.

Overall, no changes to housing are expected on-reserve, and given this upstream finding, a change in Indigenous health and wellness for LSFN, WFN and ANA is also not expected. During closure, regional social and economic conditions will undergo a period of transition. While mitigation plans for closure will limit the extent of changes to housing, given the existing precarity of the housing scenario in Kenora district including Red Lake and Ear Falls, continued changes to housing during closure may result from the Project with potential adverse effects to Indigenous health and wellness for some individuals. However, no measurable deviation from baseline population-level health resulting from Project activities is anticipated. These findings are applicable to NWOMC members living in Red Lake and Ear Falls and RLEF.

10.9.3.5.8 Access of Health and Social Services

The closure phase will result in a substantial reduction in the Project workforce. The withdrawal of a major employer in the region will introduce a period of social and economic adjustment. As employment opportunities decrease, some workers are expected to leave the region, reducing pressure on the health and social services. Less pressure on services can lead to lower wait times, increased capacity, additional assets available for mobile crisis response, and additional childcare options to attend treatment or counselling. This can lead to improved health outcomes for Indigenous people in the region; however, with the loss of economic opportunity from the Project, realized benefits may also diminish ultimately leading to a return to baseline conditions for access to health and social services.

The removal of steady employment and income for some Indigenous people and their families can result in added challenges during closure. In some cases, mine closure has been shown to coincide with higher reporting of stress, anxiety, depression and alcoholism (Shandro et al. 2011).

Households that relied on Project-related income may face financial stress during the closure transition. Therefore, some individuals may seek health and social support services during this transition time, but likely to a lesser extent than the pressures of construction and operations workforces.

Overall, closure-phase Project interactions with Indigenous health related to access to health and social services are expected to be limited and generally improve capacity pressures relative to earlier phases. Since Indigenous health is a complex issue shaped more by long-term changes in the economic and social conditions in the region, and historical injustices associated with colonialism, pre-existing barriers to accessing quality, timely, and culturally appropriate care is expected to remain. Effects to Indigenous health from changes to access to health and social services will depend largely on the pre-closure transition planning (e.g., re-skilling, economic diversification supports, and similar). Mitigation measures and monitoring plans are expected to be protective of Indigenous health during closure.

Great Bear Resources proposes to address local priorities so that communities can benefit from the Project, including after the mine closes. With respect to health and social services, Great Bear Resources plans to support local initiatives that includes funding local and regional health and social services. These initiatives are expected to have ongoing beneficial effects on the health of Indigenous people during and after closure.

10.9.3.5.9 Food Security

The HHERA results indicate that health risks from Project activities are not anticipated during any Project phase given that incremental risks from Project were considered negligible in comparison to baseline risks, and physical health is not expected to be directly affected by Project interactions during closure. Perception issues expected during construction and operations related to environmental quality may continue during closure, but would be expected to diminish over time. Interactions similar to those identified during the construction and operation phases will continue in closure relation to access and availability of traditional foods. Changes to or avoidance of traditional food consumption based on perception during the closure phase may impact food security associated with both a decreased diet supplementation with traditional foods, and costs associated with increased reliance on market foods. With the re-establishment of vegetation communities during closure, wildlife are expected return to the PA and surrounding area. This leads to the possibility of a return of use of the PA for harvesting for food and medicinal purposes. As the availability and reliability of traditional food resources may improve, food security may improve for some individuals. Restoration of harvesting opportunities also contributes to cultural continuity and land-based practices that support mental, emotional, and spiritual wellness for Indigenous communities.

As stated in the CWB assessments (Sections 10 to 14), population reduction as the Project workforce leaves the region can improve affordability of goods and services potentially improving food security for some individuals. However, households that relied on Project-related income may face financial stress during this transition, and limited alternative employment or training options may widen existing inequalities, particularly for those with high care responsibilities or limited financial resiliency. This income instability can result in decreased food security. Through closure activities there is expected improved access to lands and resource areas which can support traditional food consumption, with opportunities for increased income supplementation through traditional economy, thus improving food security. These findings are applicable to the local Indigenous communities, including LSFN, WFN, ANA, NWOMC and RLEF.

The *Mining Act* requires that a Closure Plan be certified to the Mine Rehabilitation Code, prior to disturbance associated with the mining project. The overall intent of the Closure Plan is to restore the Project to a naturalized condition. As described in the CWB assessments (Sections 10 to 14), confidence in land and water quality will remain a key determinant of recovery, influencing whether members resume harvesting and other traditional practices in reclaimed areas. Over the long term, reclamation and revegetation activities may support restoration of traditional practices if trust in environmental outcomes is rebuilt. Mitigations related to restoration of the Project to a naturalized condition, building and maintaining trust in environmental outcomes via Indigenous environmental monitoring, will maximize the potential for food security improvements associated with traditional food consumption. Mitigations such as a social plan for mine closure will act to minimize adverse effects from income instability at Project closure, and project agreements to maximize economic opportunities for Indigenous communities beyond the life of the Project will ease the transition through and beyond post-closure.

10.9.3.5.10 Mental Wellness and Personal Behaviours

As described in the CWB assessments (Sections 10 to 14), the demobilization of the workforce and the end of Project-related employment could lead to temporary financial stress and loss of income stability for households during closure. This may contribute to emotional stress, particularly for caregivers or single-parent households, and could increase short-term inequalities within the community, and potentially worsen mental health outcomes. However, with transferrable skills development, and adequate education and training, including on financial literacy, income from Project-related economic benefits may continue to be realized during and after closure.

The CWB assessments (Section 10 to 14) reported that, at the same time, the conclusion of operations may reduce workforce-related safety concerns (e.g., harassment, substance use, or trafficking) and allow for gradual improvement in social stability and community cohesion. Confidence in land and water quality will remain a key determinant of recovery, influencing whether members resume harvesting and other traditional practices in reclaimed areas. Over the long term, reclamation and revegetation activities may gradually restore access to lands and support cultural revitalization if trust in environmental outcomes is rebuilt. This restoration and possible of improvement of access and availability of traditional lands and resources can lead to improvements to community cohesion and mental health for Indigenous people particularly given their connection to the environment, and the importance of traditional practices. In addition, the closure phase may alleviate any emotional or social stress factor that arose as a result of the construction and operation of the Project.

The CWB assessments (Sections 10 to 14) also stated that changes to community cohesion during closure will depend on the continuity of engagement and transparency from Great Bear Resources. Reduced communication or lack of clarity around long-term commitments could erode trust and reinforce perceptions of external dependency. Conversely, visible follow-through on training, diversification, legacy infrastructure programs, and continued community involvement, could strengthen relationships and enhance confidence in post-project transition.

Overall, both potential beneficial (e.g., via economic development and increased material resources due to steady employment) and adverse (e.g., via environmental dispossession, negative health behaviours) changes to mental wellness and personal behaviours may continue to affect Indigenous health and wellness for some individuals during closure. However, mental wellness and personal behaviours effects are highly subject to individual variability.

Mitigation and enhancement measures associated with the closure phase are designed to ease the transition to other employment opportunities in advance of mine closure.

Great Bear Resources proposes to address local priorities so that communities can benefit from the Project, including after the mine closes. With respect to economics, Great Bear Resources plans to support local initiatives that includes working with local suppliers to develop capacity and provide training opportunities, which may extend the benefits of the Project beyond the life of the mine. These initiatives are expected to have ongoing beneficial effects on the health and mental wellness of Indigenous people during and after closure.

10.9.3.5.11 Actual and Perceived Public Safety (Accidents and Malfunctions)

The risks of certain credible scenarios identified for the construction and operations phases will continue into the closure phase, such as the risk of TMF slope failure and ditch failure. While the risk of certain accident types will be unique to the closure phase, such as the potential for pit lake overtopping, the risk of the assessed potential credible scenarios is expected to remain limited (very low or low).

The conclusion of operations may reduce safety concerns related to accidents and malfunctions, allow for gradual improvement in social stability, and as a result may improve safety perceptions and alleviate emotional and social stress; thereby diminishing potential effects on Indigenous health. As described in the CWB assessments (Sections 10 to 14), confidence in land and water quality will remain a key determinant of recovery, influencing whether Indigenous community members continue or reduce experiences of emotional or social stress. Mitigations such as environmental data sharing agreements and public safety communications will also act to minimize potential adverse effects from changes in perceptions of safety by supporting consistent communication and planning throughout closure.

10.9.3.5.12 Safety of Indigenous Women and Girls

The closure phase will result in a substantial reduction in the Project workforce. As described in the CWB assessments (Sections 10 to 14), employment levels will decrease to pre-Project levels during the closure phase, after the active closure period. The conclusion of operations may reduce workforce-related safety concerns (e.g., violence, harassment, trafficking), particularly for Indigenous women, girls and 2SLGBTQQIA+ individuals, and allow for gradual improvement in social stability and community health and safety. The improvement in both safety and perception of safety could improve the health and wellbeing of Indigenous women and girls in the region. However, it is important to note that the issues surrounding MMIWG are national in scale, existed before the Project, and will likely continue after the project. It is expected that mitigation measures are continued throughout active closure to continue to minimize risks to the safety of Indigenous women and girls.

10.9.4 Mitigation and Enhancement

Mitigation measures for Indigenous health consider both direct and indirect effects, and includes Project design measures, workforce policies, community partnerships, Indigenous engagement, regionally targeted supports as well as monitoring and adaptive management plans. The goal of these measures is to reduce the scale / severity, duration, and likelihood of adverse residual effects on Indigenous health, including changes to the biophysical and social determinants of health for both Indigenous and non-Indigenous communities.

For Indigenous health, mitigation approaches reflect a combination of:

- Physical design measures (e.g., worker accommodations, site security and on-site medical facilities)
- Program and policy measures (e.g., hiring policies, workforce training, cultural awareness programming, employee supports and benefits, incident tracking and grievance reporting)
- Monitoring and adaptive management plans (including but not limited to, environmental quality monitoring inclusive of health parameters, and on-site medical and off-site referral monitoring)
- Community and service supports (e.g., partnerships with Indigenous service providers, coordination with local agencies, funding to expand health-focused community services and programs).

Table 10.9-8 outlines mitigation measures thematically, aligning with Project interactions and the biophysical and social determinants of health. These mitigation measures are anticipated to apply across all Project phases unless otherwise specified. Mitigation measures presented in Table 10.9-8 are not presented in any particular order (e.g., priority), rather they are listed alphabetically. For a description of which mitigations were relevant to each determinant of health, and a rationale for its inclusion and impact on the assessment, please see the HIA (Appendix N-12).

While the measures identified below are the key ones identified and developed for Indigenous health, many other measures identified in the CSIN, CULRTP and CWB assessments, as well as measures identified throughout the Impact Statement in the upstream pVC and fVC sections, are directly or indirectly relevant to Indigenous health, and the upstream conditions that influence health. Appended Table 10.1-1 includes mitigation measures applicable to the management of effects on pVCs and fVCs that are linked to Indigenous health. It includes relevant plans, policies, and measures from predictive reporting on linked pVCs and fVCs. These will be applied for effects management.

Table 10.9-8: Project Design, Mitigation, and Enhancement Measures for Indigenous Health

Potential Effect	Project Design, Mitigation and Enhancement Measures
Change in Health	Air Quality Monitoring**:** Air quality monitoring for the Project will include constituents and related health-based benchmarks (e.g., NO_2 and DPM [as PM2.5]) until assumptions are validated, to trigger action, if needed.
	Camp Operations and Services (health care): Provide emergency response and basic health services to the on-site workforce. On-site medical facilities and staff will be in place to address health services for emergencies, injuries, and other routine needs. Medical personnel will be trained on supports that are available through Employee Assistance Program (EAP), Telus telehealth (or similar service / provider), and local / regional providers to foster connected health care on and off-site. Information about these services and supports (available to employees and their immediate families), will be posted in a visible location at the medical facilities and accommodations. (1)
	Camp Operations and Services (site security): Site security will be maintained and consistent with other Ontario mining operations. Access will be limited to Great Bear Resources' workers and contractors, and approved visitors. Security guardhouses will be positioned where appropriate Cameras, routine patrols and other methods will be utilized to monitor and ensure site security. Workers will be housed in separate accommodations by gender with locked access (e.g., keys) for each room and a separate mining dry / change rooms. Ongoing monitoring will occur throughout the mine life and policies will be updated as required. (1)
	Camp Operations and Services (telehealth): Create access to Telus telehealth or similar provider for employees (and immediate family members) throughout the life of the Project, helping to alleviate pressures on local services. (1)
	Community Financial Support (Access to Services): Great Bear Resources will work collaboratively to fund programming through the Friendship Centre and community partners, including programming and supports to promote physical and mental health outcomes for Indigenous adults and youth. (1)
	Community Financial Support (Access to Services): Support local communities regarding access to social services and health care services in the region, including mental health and addiction services, and implement an adaptive management approach (as part of the Social Performance Plan) to address additional pressures resulting from the influx of workers and their families. (1)
	Community Financial Support (Change in Housing and Accommodations): Great Bear Resources will work collaboratively to support culturally appropriate housing initiatives led by Indigenous and municipal partners. This will include development of a housing strategy and plans for ongoing monitoring of housing capacity issues, and an adaptive management approach (as part of the Social Performance Plan) to address additional pressures imposed from the influx of workers and their families. (1,2)
	Social Closure Plan: Support consistent communication and planning throughout closure with emphasis on legacy, continuity, and shared decision-making. Develop a community transition plan in consultation with local Indigenous communities and groups so that decisions are made with integrity, based on cultural, spiritual and Indigenous well-being in mind.

Potential Effect	Project Design, Mitigation and Enhancement Measures
	The plan will include collaborative planning, implement job-matching, retraining programs, financial literacy workshops, and economic diversification supports in anticipation of closure. (1)
	Community Safety Enhancement: Work in collaboration with Indigenous communities and local law enforcement to discuss safety considerations regarding the influx of additional workforce into the area, including the possibility of increases in violent crime and / or sexual harassment in local communities.
	Education and Training (Project): Deliver mandatory Cultural Awareness training for employees and contractors (including supervisors and managers) on safety, harassment awareness and prevention, and MMIWG2S+ and human trafficking awareness training. (1)
	Education and Training (Project): Provide budgeting and financial literacy tools available to all employees through the EAP, including a combination of organized workshops during working hours and optional individual supports that employees and their families can access on their own time. (1)
	Education and Training (Region): Inclusive and Local Hiring Strategy (hiring policies): Partner with Indigenous training and employment organizations to support culturally appropriate recruitment and retention of Indigenous candidates, to support employment of Indigenous workers, provide training, priority hiring and work towards continuous improvement including training and employment opportunities for Indigenous women. (1)
	Employee Benefits Program: Benefits program will include coverage for health care, prescription drugs, dental and access to in-person and online mental health services for employees and their families.
	Environmental Data Sharing Agreements: GBR will share environmental monitoring data (air, water, fish) with Indigenous communities that request it on an annual basis and provide opportunities (including funds) to conduct their own reviews.
	Environmental Management Committee: Great Bear Resources will work with the environmental management committee(s) and interested Indigenous members throughout the duration of the Project (all phases), to facilitate ongoing communications, sharing and integration of Indigenous knowledge and environmental information, and share and evaluate Project approvals, adaptive management and monitoring plans, and address emerging issues and interests identified by Indigenous Nations. (1)
	Environmental Monitoring: Environmental monitoring programs for surface water and aquatics will include constituents and related health-based benchmarks as considered in the health assessment (such as arsenic, mercury, methylmercury and selenium). Aquatics sampling programs will also include ongoing sampling and testing of fish quality in species identified for human consumption (i.e., walleye / pickerel, lake whitefish, northern pike, trout) as captured.
	Exploration of a Community Health and Well-being Survey: Consider options for Indigenous-led survey and data collection on project related metrics and health indicators, funded by GBR. This program could be further developed as part of the Social Performance Plan.
	Indigenous Environmental Monitoring Programs: GBR is committed to involving Indigenous communities in environmental monitoring activities throughout all phases of the Project, including opportunities for participation in the collection and sharing of environmental monitoring information and results.

Potential Effect	Project Design, Mitigation and Enhancement Measures
	Indigenous Procurement (Local Procurement Policy): Help strengthen Indigenous participation in business opportunities by developing Project procurement policies that support Indigenous economic development and reconciliation.
	Medical Management and Response: Track on-site medical responses needed for employees (anonymously) and referrals for off-site health services. GBR will continue to work with local health care service providers if capacity issues should arise in relation to an influx of employee referrals.
	Project / Benefit Agreements: Economic benefits to Indigenous communities, based on collaborative engagement with local Indigenous communities.
	Public Safety Communications: Involve and consult with Indigenous communities in the development of communications approaches that will identify how important information will get disseminated, including as part of emergency response plans.
	Retirement Planning and Support: Offer a retirement pension plan, Registered Retirement Savings Plan matching or equivalent, to employees to help support longer term financial stability.
	Support for Indigenous-led Education and Training for Land-Based Activities: Support for Indigenous-led education and training for land-based activities (hunting, gathering, plant harvesting) in the region and promote skills and knowledge transmission among Indigenous communities, including Indigenous youth.
	Training and Tracking Incidents of Harassment and Violence in the Workplace: Provide mandatory training on the code of conduct and ethics, with a specific focus on unlawful discrimination, harassment, and workplace violence for all employees and contractors, including supervisors and managers. This training will include clear and specific examples of sexual and gender-based harassment and assault (verbal, physical) and outline steps for action if the perpetrator is a mine worker, supervisor or manager. These policies will also include incident tracking and review, a monitoring plan for policy effectiveness, and an adaptive management process.
	Workplace Incident Reporting (at Camp): Implement the Code of Conduct policy which provides clarity that employees reporting incidents will be protected against wrongful termination or other negative actions.

Notes:

1 Measure may also appear in CULRTP and CWB sub-sections within the Indigenous Peoples Sections 10 to 14.

2 The change in housing is expected to be regional and will not change on-reserve systems. Mitigation is relevant for off-reserve housing in the region, including Red Lake and Ear Falls.

DPM = diesel particulate matter; EAP = Employee Assistance Program; fVC = federal valued component; GBR = Great Bear Resources; HIA = Health Impact Assessment; MMIWG = Murdered Indigenous Women and Girls; MMIWG2S+ = Missing and Murdered Indigenous Women, Girls, Two-Spirit, Transgender, and Gender-Diverse+ peoples; NO_2 = nitrogen dioxide; $PM_{2.5}$ = particulate matter less than 2.5 micrometres; pVC = pathway valued component.

The HIA assumes that all mitigations and follow-up programs from the identified linked pVCs and fVCs, including those throughout the Indigenous Peoples Sections, are in place as planned.

10.9.5 GBA Plus Considerations

In accordance with Health Canada (2024a) guidance, the health assessment takes an equity approach to assessing potential effects by examining the potential distribution of effects across different sub-populations within the Indigenous communities.

The methodology for the GBA Plus approach used in the HIA and the assessment of Indigenous health is outlined in Section 2.4.3.3 of the HIA (Appendix N-2) and is summarized below.

Established best practices in HIA inherently includes consideration of ways that effects from projects, policies, or programmes may be experienced differently among diverse subgroups of the population. The assessment applied a GBA Plus approach by purposefully evaluating how potential health and wellness effects may be influenced by different identity factors and how these factors intersect with local context and lived experience. Where sufficient data were available to do so, the assessment quantitatively evaluated effects to unique subgroups (e.g., consideration of women and children in quantitative risk estimates). Where data were unavailable or insufficient for disaggregation, the HIA qualitatively discussed the potential for effects to be influenced by different identity factors such as gender, age and Indigenous identity.

Therefore, GBA Plus is embedded throughout the HIA (Appendix N-2) since evaluation of the distribution of effects across a community is standard HIA practice. In addition, GBA Plus considerations have been provided in the: discussions related to approach and methodology, baseline health profile, assessment of determinants of health, mitigation and enhancement measures, and the limitations and uncertainty.

The HIA applied a GBA Plus lens that treats Indigenous identity as a central identity factor, and the other factors described herein are discussed within this context. It is recognized that Indigenous identity intersects with the other GBA Plus subgroups that are discussed herein, and this concept is considered throughout the HIA (Appendix N-2). While Indigenous identity is considered broadly for the purposes of the GBA Plus analysis, it is recognized that Indigenous people are not a homogenous group and that First Nations and Métis communities have diverse identities, needs, and lived experiences, which are discussed throughout the HIA as appropriate (Appendix N-2).

Several GBA Plus identity factors were selected based on established best practices, a review of consultation and engagement records, public health data presented in the Baseline Health Profile (Attachment A of Appendix N-2), as well as the demographic and socio-economic information documented in the Socio-Economic Baseline Study (Appendix O-1). It is acknowledged that several additional identity factors, such as religion, ethnicity, geography, race, sexual orientation, and others, are also relevant within a GBA Plus framework. However, within the context of this Project and for the purposes of this assessment, Table 10.9-9 represent the primary subpopulations of analytical focus for the assessment of Indigenous health.

Table 10.9-9: Key GBA Plus Identity Factors Selected for the Assessment of Health

Identity Factor	Description and Subgroups
Gender [(1)]	**Description:** *"Gender refers to an individual's personal and social identity as a man, woman or non-binary person (a person who is not exclusively a man or a woman). Gender includes the following concepts: (i) gender identity, which refers to the gender that a person feels internally and individually; and (ii) gender expression, which refers to the way a person presents their gender, regardless of their gender identity, through body language, aesthetic choices or accessories (e.g., clothes, hairstyle and makeup), which may have traditionally been associated with a specific gender. A person's gender may differ from their sex at birth […]. A person's gender may change over time. Some people may not identify with a specific gender,"* (Statistics Canada 2022). • **Men+:** Individuals whose gender identity aligns with or is associated with masculine roles and social positioning, including cisgender, transgender, and gender-diverse people.

Identity Factor	Description and Subgroups
	• **Women+:** Individuals whose gender identity aligns with or is associated with feminine roles and social positioning, including cisgender, transgender, and gender-diverse people.
Age	**Description:** Age is a key demographic variable used to identify population groups (e.g., children, working-age adults, older adults / Elders) and is derived using the person's date of birth and the reference date (Statistics Canada 2022). • **Youth (children and infants):** Individuals in early developmental stages (individuals under 18 years of age) • **Young adults:** Individuals in transitional life stages typically associated with workforce entry, increased mobility, and evolving socio-economic determinants (individuals 15-29 years of age). • **Older adults and Elders:** Older adults and community-recognized Elders with increased susceptibility to health effects due to age-related physiological changes and cumulative lifetime exposures (individuals 65+ years of age).
Physical Ability	**Description:** The *Accessible Canada Act* defines disability as *"any impairment, including a physical, mental, intellectual, cognitive, learning, communication or sensory impairment — or a functional limitation — whether permanent, temporary or episodic in nature, or evident or not, that, in interaction with a barrier, hinders a person's full and equal participation in society"* (Department of Justice 2022). This identity factor focuses on physical abilities such as those that influence strength, endurance, flexibility, balance, and coordination. • **Individuals with disabilities:** Persons with pre-existing mobility, sensory, cognitive, or functional limitations. • **Individuals with chronic health conditions:** Persons with pre-existing health conditions (e.g., cardiovascular, metabolic, or respiratory diseases).
Socio-economic Status	**Description:** Socio-economic status refers to an individual's level of income, wealth, education, and social standing, and is commonly used to describe a person's or group's economic and social position within society (PHAC 2018). • **Low-income individuals and households:** Populations with constrained material and financial resources where food security and housing needs may be difficult to meet. • **Individuals with low educational attainment or limited labour-market participation:** Populations with lower levels of education (e.g., without a high school diploma) and / or insufficient skill development.
Mental Ability	**Description:** The Accessible Canada Act defines disability as *"any impairment, including a physical, mental, intellectual, cognitive, learning, communication or sensory impairment — or a functional limitation — whether permanent, temporary or episodic in nature, or evident or not, that, in interaction with a barrier, hinders a person's full and equal participation in society"* (Department of Justice 2022). This identity factor focuses on physical, cognitive, psychomotor, and sensory abilities. • **Individuals with pre-existing mental health conditions:** Persons with diagnosed or self-reported mental health challenges (e.g., anxiety, depression) • **Individuals with concurrent substance use (e.g., alcohol, drugs) and mental health challenges:** Populations experiencing co-occurring mental health and substance use disorders.

Notes:

GBA Plus = Gender-based Analysis Plus (sometimes referred to as GBA+)

1 The categories of men+ and women+ were used for analytical simplicity and were adopted from categories used in the census by Statistics Canada (2022a). These categories include cisgender and transgender persons, and non-binary persons are denoted by the + symbol.

A GBA Plus analysis was completed for each determinant of health in the HIA (Appendix N-2). Each identity factor was reviewed to determine whether potential effects, should they occur, were expected to be even or disproportionate to assess how Project-related changes to determinants of health may affect different population subgroups. This assessment drew on available demographic data, baseline health indicators, and evidence from primary and grey literature.

It is important to note that while this section identifies subgroups that have the potential to experience effects uniquely from changes to biophysical and social determinants of health, the analysis should be considered in the context of the potential effects assessment findings. For example, while the GBA Plus analysis for air quality identifies that individuals with pre-existing lung or heart conditions (such as asthma and Chronic Obstructive Pulmonary Disease) are at the highest risk of potential effects related to poor air quality, the results from the HHERA indicate that Project activities are not anticipated to pose risks to the Indigenous communities from exposure to POPCs in air. The analysis below identifies populations that could be disproportionately affected and also discusses the potential health effects, or lack thereof, as identified in the assessment.

10.9.5.1 Gender (Indigenous Women+)

Several of the biophysical and social determinants of health identified gender (Women+) as an important equity consideration in the HIA, and a key identity factor as part of the GBA Plus analysis. For example:

- In Indigenous culture, women are often considered to have a unique relationship to water and additional responsibilities for the care of water (McGregor 2008; Awume et al. 2020; Assembly of First Nations 2023). Given that permanent changes to some waterbodies will occur, the connection that Indigenous people, and specifically Indigenous women, have with water may result in indirect effects on Indigenous health and wellness for some individuals.
- Gender-specific differences in economics are expected to disproportionately affect Indigenous women and girls, and 2SLGBTQQIA+ individuals due to limited job or education / training opportunities, inadequate childcare options to pursue employment, or already face mental health challenges to pursue higher education or employment.
- With respect to housing as a determinant of health, research indicates that domestic violence is a leading cause of housing instability for women and children in Canadian municipalities (Fustic et al. 2019). Existing housing concerns in the region included the limited availability and limited access to transitional and emergency shelter services outside of major centres such as the City of Kenora, with few facilities available in smaller municipalities such as Red Lake. In an interview with the Executive Director of the Kenora Sexual Assault Centre, women experiencing domestic violence were identified as being particularly at risk of housing insecurity (Wesley 2025).
- Gender-specific differences in access to health and social services are expected to disproportionately affect Indigenous women as there are existing gaps in certain women-specific services including women’s shelters or birthing centres. In addition, women often play caregiving roles and cannot always obtain childcare in order to attend appointments.

Further, evidence indicates that health-care services often fail to provide the support needed for Indigenous women and girls who are victims of physical and sexual abuse or violence (National Inquiry into Missing and Murdered Indigenous Women and Girls 2019).

- NWHU data indicates that women (particularly youth and young adults) either match or outnumber male rates across mental illness and substance-related indicators (NWHU and Yusuf 2023). Research also typically shows higher rates of mood and anxiety disorders in women (CAMH n.d.).

10.9.5.2 Age (Indigenous youth, older adults and Elders)

Several of the biophysical and social determinants of health identified age (youth, older adults, Elders) as an important equity consideration in the HIA, and a key identity factor as part of the GBA Plus analysis. For example:

- For multi-media environmental quality, exposure or sensitivity to parameters in the environment may vary by life stage based on the parameter. For methylmercury and selenium, Health Canada recommends TRVs based on age (Health Canada 2025). Appropriate, age-specific TRVs were applied in the HHERA multi-media assessment.
- Youth (children and infants) and the elderly are more vulnerable to potential effects due to noise (e.g., sleep disturbance and speech comprehension) (WHO 2009). However, Health Canada (2023) guidelines for sound and vibration applicable to the Project are protective of vulnerable groups including children to account for such sensitivities.
- As income is an important determinant of health, non-working age individuals (youth, Elders) are less likely to experience financial opportunities via employment, business, or training / education opportunities. Older adults and Elders may also be disproportionately impacted through changes in cost of living and access to health services. Similarly for housing, there is a lack of independent or assisted living options and long-term care availability in the region which contributes to vulnerability among seniors. The 2016 Census for Red Lake shows that the demand for senior housing is projected to grow by 57% between 2016 and 2025 (Statistics Canada 2017). Seniors (i.e., older adults) were identified as being particularly at risk of housing insecurity in Kenora district (Wesley 2025), which would include anyone seeking seniors services in regional hubs.
- Age is also a consideration when it comes to accessing services, where youth and young adults specifically can struggle with mental health and need health and social service supports, particularly within the NWHU, as shown by notably higher rates of mental health challenges for individuals aged 10 to 24 from 2012 to 2021 compared to Ontario (NWHU and Yusuf 2023).

10.9.5.3 Physical Ability (Indigenous individuals with disabilities or chronic conditions)

Several of the biophysical and social determinants of health identified physical ability (individuals with disabilities and/or chronic health conditions) as an important equity consideration in the HIA, and a key identify factor part of the GBA Plus analysis. For example:

- Evidence suggests that individuals with physical health conditions (e.g., disabilities) may have unique challenges accessing employment, income and education given their health may prevent or limit the ability to pursue work or education / training (Employment and Social Development Canada 2022).
- For housing, individuals with disabilities were identified as being particularly at risk of housing insecurity in Kenora district (Wesley 2025).
- Evidence suggests that individuals with pre-existing health conditions requiring ongoing care may have unique challenges accessing health and social services given their health may prevent or limit the ability to make or attend appointments, or travel to get care. The additional demand from Project-related population growth in the region may contribute to longer wait times and reduced access to health services. A lack of access to healthcare for Indigenous populations has shown to lead to poor health outcomes, including lower life expectancies, higher rates of chronic diseases, later- stage diagnoses, increased mental health challenges, higher infant mortality, and greater risks from preventable conditions like obesity (PHAC 2018; CMA 2026).
- In relation to food security, based on the findings of the 2021 Canadian Income Survey, individuals with disabilities were found to be more likely to be food insecure than those individuals without disabilities (Statistics Canada 2024b).
- Individuals with physical disabilities may face barriers to accessing traditional foods. Finally, people with chronic physical health conditions (e.g., chronic pain) are much more likely to also experience mood disorders; although this relationship is bidirectional (i.e., people with a mood disorder are often at higher risk of developing a long-term medical condition) (CAMH n.d.).

10.9.5.4 Socio-economic status (low-income Indigenous individuals and households)

Several of the biophysical and social determinants of health identified socio-economic status (low-income individuals and households) as an important equity consideration in the HIA, and a key identity factor as part of the GBA Plus analysis. For example:

- Low-income individuals and households may be experiencing pre-existing barriers to access of traditional foods due to financial constraints, reduced harvesting capacity, limited access to equipment and transportation, and / or greater reliance on market-based foods (Shafiee et al. 2022; Chan et al. 2014).
- Low or fixed-income individuals and households (e.g., single parents) may also be more affected by Project-related increases in cost of living which can create local affordability pressures for housing or goods and services. Shift work employees who cannot access part-time opportunities for higher education may be limited to pursuing better employment opportunities. The Canadian Public Health Association reports that financial insecurity contributes to increased rates of chronic disease, mental illness, and overall poorer health outcomes (CPHA n.d).
- House insecurity particularly affects low-income households and seniors who pay 30% or more of their income in accommodations (MNP LLP 2020). As of 2023, the average Red Lake resident is spending 53% of their yearly income on housing (Statistics Canada 2023). Red Lake residents also have a higher portion of households in subsidized housing, 20.2% versus 11.7% nationally (Statistics Canada 2023).

- Poverty has been identified in literature as the driving factor for food insecurity (Banerji et al. 2023). Households received social assistance and households below the poverty line are more likely to be food insecure (Banerji et al. 2023, Domingo et al. 2020).
- Canadians in the lowest income group are more likely than those in the highest income group to report poor to fair mental health (CAMH n.d.; PHAC 2018). Similarly, unemployment is associated with higher risk of mental health challenges; although, this relationship is bidirectional (i.e., mental health can also reduce a person's ability to maintain a job) (PHAC 2024).
- Finally, low-income individuals and households may be at higher risk of experiencing safety issues such as domestic violence, and lower-income individuals may be less willing to report issues in the workplace.

10.9.5.5 Mental Ability (Indigenous individuals with mental health conditions)

Several of the social determinants of health identified mental ability (Individuals with pre-existing mental health conditions and / or Individuals with concurrent substance use and mental health challenges) as an important equity consideration in the HIA, and a key identity factor as part of the GBA Plus analysis. For example:

- Research shows that financial security is impacted by risk factors such as mental health (MNP LLP 2020). Underlying issues such as mental health status is expected to have an impact on economics, as mental health conditions may prevent individuals from finding or keeping employment or pursuing higher education, which can reduce financial stresses, enhance self-esteem, or promote healthier lifestyles (NCCIH 2020).
- Mental health status may result in disproportionate barriers to housing. The OPP and shelter staff both reported that mental health and substance use are drivers of homelessness and emergency housing use. The 2021 KDSB Homeless Enumeration Report indicated that 64.7% of respondents cited mental health, and 76.5% cited substance use, as contributing factors to their housing loss (Kenora District Services Board 2021).
- With respect to accessing services, Project-related population growth in the region may create a strain on regional services that are already at or near capacity. Added demand may contribute to longer wait times and reduced access, particularly for individuals who have pre-existing mental health conditions and require ongoing and regular mental health support. These challenges can directly influence Indigenous people's health outcomes particularly in emergency medical or crisis (mental health) situations.
- Intergenerational trauma has been reported in literature to contribute to food insecurity (Banerji et al. 2023). The National First Nations Regional Health Survey, reported that adults who attended or those with a parent or a grandparent who attended a residential school had a higher proportions of severe food insecurity than those who did not (16.4%, 16.2% respectively verses 6.9%) (Banerji et al. 2023).
- Individuals living with a mental illness are about twice as likely to also struggle with a substance use disorder compared with the broader population. In the same way, people with substance use disorders are up to three times more likely to have a mental illness. More than 15% of individuals with a substance use disorder also have a co-occurring mental health condition (CAMH n.d.).

- Finally, individuals with pre-existing mental health conditions may already be experiencing elevated baseline levels of stress and as such, may be more sensitive to changes (e.g., emotional and social stress) from changes to actual and perceived public safety due to accidents and malfunctions (Wong et al. 2024).

Also important to GBA Plus is the concept of intersectionality. Intersectionality is widely recognized as an analytical approach that describes how *"groups of people are not homogeneous, as they have multiple, and diverse intersecting factors that impact how they understand, […] shape their perspectives, ideologies, and experiences,"* (Women and Gender Equality Canada 2022). Intersectionality is key to GBA Plus as it recognizes that there are multiple factors that could influence how an individual or community could experience an effect, which individually may not put them at a disadvantage but combined can lead to higher vulnerability.

In addition to analysis of individual identity factors for each determinant of health, analysis of intersectionality was completed, as detailed in the HIA (Appendix N-2):

- Intersectional effects may occur for individuals who identify with, or are experiencing, a combination of any (or all) of the identified subgroups (i.e., gender, age, physical ability, socio-economic status, mental ability). It is also acknowledged that Indigenous identity intersects with all of the other GBA Plus identity factors discussed. For example, in terms of access to health and social services, a low-income woman with pre-existing health conditions may experience more barriers (e.g., lack of childcare or money for transportation to attend medical appointments that have increasingly higher wait times) compared to either of those groups individually. Indigenous people also continue to face culturally unsafe care, or racism and discrimination when accessing care, which are rooted in historical factors such as colonialism (Statistics Canada 2024a).
- In addition, intersectional effects were also considered across the health determinants. For example, individuals who identify as women+, are within the youth or older adults age group, and are living in low-income households may experience overlapping effects related to housing, food security, access to health and social services, and economic conditions, where barriers or constraints in one determinant can interact with challenges in another. Similarly, youth with pre-existing chronic health conditions, disabilities, and / or mental health conditions may experience intersecting effects related to housing, food security, access to health and social services, and mental wellness and personal behaviours. These interactions highlight how combinations of gender, age, socio-economic status, physical ability, and mental ability can influence how individuals experience the determinants of health differently.

Additional details on intersectionality considerations for each health determinant are provided in the HIA (Appendix N-2). The results of the GBA Plus analysis were considered in the development of mitigation and enhancement measures for health, as detailed in the HIA (Appendix N-2).

10.9.6 Residual Effects after Mitigation

After implementation of mitigation and enhancement measures, assessment and characterization of potential residual effects on Indigenous health are assessed using the methodology outlined in Section 6. Further details on residual effect criteria ratings that are specific to Indigenous health are defined in Section 6 and in Section 10.3.3.

The appended Table 10.1-1 summarizes the results of the assessment for the linked pVC and fVC components. Detailed description on the methods, existing conditions, mitigation measures, and residual effects can be found in their respective sections.

Based on the assessment of these linked pVCs and fVCs, the effects to be considered as part of the assessment of residual effects on Indigenous health include:

- Air Quality
- Sound
- Vibration
- Groundwater
- Surface Water Flows and Levels
- Water Quality
- Vegetation Communities
- Moose
- Other Wildlife
- Species at Risk
- Migratory Birds
- Local and Regional Economy

There are other linked pVCs and fVCs, listed in Table 10.1-1 and Section 10.1, where no change is expected after mitigation measures have been applied. This includes Fish and Fish Habitat and Wild Rice. This means that predicted changes to their existing conditions due to Project activities will be fully mitigated or offset over the Project life cycle. Therefore, those linked effects are not considered in the residual effects assessment for Indigenous health.

10.9.6.1 Characterization of Residual Effects After Mitigation

The changes after mitigation and residual effects for linked pVCs and fVCs, and for the other assessments for the Indigenous Peoples fVC (e.g., CSIN, CULRTP and CWB) are discussed here based on their relevance to and influence on potential residual effects for Indigenous health. The findings from these assessments provided a foundation for identifying whether the change in upstream environmental, social, cultural and economic conditions was sufficient to influence downstream effects on Indigenous health. Overall, based on the findings of the linked pVCs and fVCs, residual effects were identified for CULRTP and CWB for the local Indigenous communities (LSFN, WFN, ANA, NWOMC and RLEF), and residual effects were identified for CSIN for NWOMC and RLEF. Building on this, the HIA assessed potential changes in biophysical and social determinants of health from Project activities to come to an overall understanding of the Project's effect on Indigenous health.

The potential effects assessment for health was conducted using Project information, technical modelling results, existing conditions data, primary and grey literature, government and agency resources, Indigenous knowledge and community-specific information. The key results regarding whether a specific determinant of health contributed to an overall change in Indigenous health, based on the potential effects assessment, are summarized in Table 10.9-10.

Whether a determinant had the potential to contribute to a change in health, was based on the scale of effect (details provided in the HIA; Appendix N-2). The rating for scale of effect included four categories:

- **Negligible:** there is limited to no effect on Indigenous health expected as a result of Project activities for this determinant following implementation of mitigation measures.
- **Minor:** the effect on Indigenous health is expected to be minor; with no measurable deviation from baseline population-level health resulting from Project activities for this determinant following implementation of mitigation measures.
- **Moderate:** the effect on Indigenous health is expected to be moderate following implementation of mitigation measures; measurable deviation from baseline population-level health is possible due to Project activities for this determinant. If the effect is adverse, some support may be required to maintain baseline (current conditions).
- **Major:** the effect on Indigenous health is expected to be major following implementation of mitigation measures; measurable deviation from baseline population-level health is probable due to Project activities for this determinant, with a high degree of support required to mitigate adverse effects in order to maintain baseline levels and / or baseline levels are no longer attainable.

In Table 10.9-10, where a rating of negligible was identified for a determinant, that determinant was not expected to contribute to an overall change in health. Where a rating of minor was identified for a determinant, that determinant was expected to contribute to an overall change in health. Taking a conservative approach, where a rating of minor (i.e., a yes in the table below) was identified for any of the determinants of health, an assumption of potential residual effects for health overall was identified for that community. None of the determinants were characterized as moderate or major based on the findings of the HIA; for additional detail on residual effects approach in the HIA see Section 8.2 of Appendix N-2.

A summary of which determinants of health were predicted to contribute to an overall change in health, thereby indicating potential residual effects, is provided in Table 10.9-10. While the table below presents a high-level summary, the determination of whether residual effects exist or not for each Indigenous community was based on the collective evidence presented and the assessment completed in the HHERA (Appendix N-1) and HIA (Appendix N-2).

Based on the assessment findings, residual effects are identified for each Indigenous community based on an overall change in health (fVC Indigenous Peoples). An assessment of the significance of residual effects (change in health) for each Indigenous community is presented in Section 10.9.7.

Table 10.9-10: Identification of Residual Effects for Health (Indigenous Peoples)

Determinant of Health	Potential Effect Contributing to a Change in Health (after mitigation)? Yes / No [1,2]
	LSFN
Air Quality	No
Multi-media Environmental Quality	No
Access and Availability of Water[7]	Yes
Access and Availability of Traditional Foods[7]	Yes
Sensory Disturbances (Sound, Vibration and Light)	No
Economics (Employment, Income and Education) [3]	Yes
Housing	No
Access to Health and Social Services	Yes [5]
Food Security	Yes
Mental Wellness and Personal Behaviours	Yes
Actual and Perceived Public Safety	No
Safety of Indigenous Women and Girls	Yes
Residual Effect (Change in Health) Remaining after Mitigation? [6]	**Yes**

Notes:

1 Yes = the determinant contributes to an overall change in health for Indigenous Peoples (including perception issues and individual behaviours), with a rating of Minor: the effect on Indigenous health is expected to be minor; with no measurable deviation from baseline population-level health resulting from Project activities for this determinant following implementation of mitigation measures.

2 No = the determinant does not contribute to an overall change in health for Indigenous Peoples, with a rating of Negligible: there is limited to no effect on Indigenous health expected as a result of Project activities for this determinant following implementation of mitigation measures.

3 An overall net positive effect associated with economic changes is expected; however, cost of living (regional) and personal behaviour choices from higher incomes (for some individuals) are reflected here to maintain conservatism.

4 The change in housing is expected to be regional and will not change on-reserve systems; however, direct effects related to changes to housing is expected for Red Lake and Ear Falls (including NWOMC population living in these communities).

5 The change in access to health and social services is expected to be regional and will not change on-reserve systems; however, direct effects related to changes to access to services is expected for Red Lake and Ear Falls (including NWOMC population living in these communities), which will influence LSFN, WFN and ANA members who access services in Red Lake and Ear Falls. This finding aligns with the assessment of Community Well-Being.

6 Residual effects are assessed for adverse effects only and take into account implementation of the upstream pVC and fVC mitigations as well as health mitigations identified in Section 7.

7 The assessment of health does not only consider access to lands and resources, it focuses on a perceptions and personal behaviours indirectly influencing health.

LSFN = Lac Seul First Nation

10.9.7 Significance of Residual Effects

After implementation of mitigation and enhancement measures, an assessment and characterization of potential residual effects on Indigenous health is completed (Table 10.9-11) using the methodology outlined in Section 6 and detailed in Section 2.4.3 of Appendix N-2).

Changes to Indigenous health are directly and indirectly linked to Project activities, through a complex series of changes to upstream environmental, social, cultural and economic conditions, and through behavioural changes related to perceived risks and effects.

While Project-related effects on Indigenous health at the population-level were not identified, effects on health and wellness for some individuals was identified via actual and perceived changes to access and availability of water and traditional foods, cost of living, housing, access to health and social services, food security, mental wellness and safety. Pre-existing systemic limitations may persist, particularly for Indigenous residents and vulnerable groups. However, a change to population-level health, resulting in measurable deviation from baseline, is not anticipated. Given the current barriers being experienced by Indigenous communities in the region, monitoring of population health and wellness over time in the context of Project activities, will support ongoing collaborative efforts between Great Bear Resources, and local and regional partners and help inform adaptive management measures, where applicable.

Table 10.9-11: Characterization of Adverse Residual Effects for Indigenous Health

Attribute	Category (1)	Rationale
	LSFN	
Ecological or Social Context	Level I	Criteria may or may not be sensitive, and can support the predicted change with typical mitigation measures
Magnitude (Health)	Level I	Measurable Project-related changes in environmental exposures and / or social determinants of health are unlikely to result in a material adverse change in population-level health status of local Indigenous people.
Geographic Extent	Level II	Effect extends beyond the LSA but within the RSA.
Duration	Level II	Effect occurs over the medium term: more than three years but less than 32 years.
Frequency	Level II	Effect occurs intermittently or regularly.
Reversibility	Level II	Effect is partially reversible during the Project phases.
Timing	Level I	Effects do not occur during a sensitive period, or related effects are fully mitigated.

Notes:

1 Residual effects are identified for each community based on an overall change in health (fVC Indigenous Peoples).

ANA = Asubpeeschoseewagong Netum Anishinabek; fVC = federal valued component; LSA = Local Study Area; LSFN = Lac Seul First Nation; NWOMC = Northwestern Ontario Métis Community; pVC = pathway valued component; RSA = Regional Study Area; RLEF = Indigenous people living in the Red Lake and Ear Falls area; WFN = Wabauskang First Nation.

As shown in the table above, there is one or more attributes at Level I, and therefore the residual effect to health is not significant for LSFN.

10.9.8 Confidence

The prediction confidence assignment reflects the information available through Project-specific TKLUS reports, publicly available data, understanding of the effectiveness of applicable mitigation measures, and outcomes of other pVCs and fVCs. Reliance on well-established methodologies, conservative modelling assumptions, calculated health risks, published peer-reviewed information, and community-specific data and Indigenous knowledge, all contributed to a higher level of confidence in the overall assessment of health.

Conversely, limitations in the Indigenous knowledge (not provided by all communities) and baseline data for Indigenous health, limitations on the applicability of published information, and inherent limitations associated with predictive modelling contributed to a moderate level of confidence in the overall assessment of health.

The assessment is supported by both the findings of the HHERA and the HIA, which were informed by substantial primary and secondary information and robust analysis. However, as noted above, there are some instances where the information collected had limitations or lacked detail. Therefore, the overall confidence in residual effect and significance predictions for a change in health (fVC Indigenous Peoples) for LSFN, WFN, ANA, NWOMC and RLEF is considered to be moderate.

These limitations and uncertainties associated with the assessment of health overall, including those associated with the upstream inputs (pVCs and fVCs), collectively informed the confidence rating. The confidence rating also informed the development of mitigation and enhancement measures (Section 10.9.4), including monitoring for validation of assessment assumptions and other adaptive management frameworks, where applicable.

As additional information continues to be shared through Great Bear Resources' ongoing consultation with local Indigenous communities over the Project life, relevant information will be incorporated into Project planning as practical.

10.10 Impact on the Exercise or Practice of Rights

Indigenous Peoples in Canada hold two constitutionally protected rights:

- Aboriginal Rights: Rooted in pre-contact customs and traditions, including land use, hunting, fishing, trapping, and harvesting.
- Treaty Rights: Established through agreements with the Crown, affirming rights to self-government, land access, and traditional practices. Treaty #3, which spans the RSA, protects these rights under Section 35 of the *Constitution Act*, 1982.

For LSFN, these include inherent rights guaranteed under Treaty 3, signed on October 3, 1873 at the Northwest Angle. Treaty 3 guarantees the continued right of Anishinaabeg to fish, hunt, trap, and gather throughout the Treaty territory, except on lands "required or taken up for settlement, mining, lumbering, or other purposes" by the Government of the Dominion of Canada (CanLii, 2014)

The proposed Project is located in an area of longstanding LSFN land use. Therefore, it has the potential to impact LSFN's exercise or practice of Treaty and Aboriginal Rights. The TISG states the Impact Statement must:

- identify and describe the Treaty and Aboriginal rights of Indigenous Peoples potentially affected by the Project, including historic, regional, and community context, the geographic extent of traditional territory, the purpose and importance of the rights to the rights-bearing communities (e.g., the practices, customs, beliefs, worldviews, and livelihoods), and information on how rights have already been affected;
- document the Project's potential impacts on the exercise or practice of the rights of Indigenous Peoples or the rights arising from treaties overlapping the PA, as expressed by potentially impacted Indigenous Peoples;
- consider the severity of the impacts on the exercise of rights; and

- document the views of the potentially affected Indigenous Peoples and collaboratively find mutually agreeable solutions for concerns raised about impacts on the exercise of their rights.

In the guidance for assessment of potential impacts on the exercise or practice of Rights of Indigenous Peoples IAAC states "*if an Indigenous community is interested in doing so, they should lead the assessment of impacts on their rights as they are best placed to understand how their rights and relationship with the landscape may be impacted by the Project.*"

Great Bear Resources have funded an independent Anishinaabe-Led Impact Assessment (ALIA) that is a joint undertaking between Lac Seul First Nation and Wabauskang First Nation. As discussed with LSFN (and WFN) on November 5, 2025, Great Bear Resources is of the understanding that the ALIA addresses rights-based concerns for LSFN (Section 10.10) and WFN (11.10). The historical context of LSFN is provided in Section 10.7.2.3.1.

The ALIA is guided by Anishinaabe law, ensuring that the assessment reflects community priorities, lived experience, and Indigenous governance. An additional key undertaking is the Shared Spirits water monitoring program, a partnership between Wabauskang First Nation and Lac Seul First Nation. This initiative brings together science and Anishinaabe knowledge to monitor long-term changes in water quality, aquatic ecosystems, and toxicity risks across the traditional territory.

Attached Table 10.1-1: Summary of Linked pVC and fVC Key Mitigation and Changes After Mitigation

Table 10.1-1: Summary of Linked pVC and fVC Key Mitigation and Changes after Mitigation

Federal Valued Components (fVCs)		
Key Mitigation measures	**Adverse Residual Effects Predicted after Mitigation**	**Change considered for Indigenous Peoples**
Fish and Fish Habitat (Section 8.0)		
In collaboration with Indigenous communities, development and implement of Fish Habitat Offset and Compensation plan, including habitat diversion plans, and fish relocation from affected watercourses.	With the implementation of proposed mitigation and measures in the Fish Habitat Offset and Compensation Plan (FHOCP): • There are no residual effects on fish habitat predicted • Adverse residual effects to fish communities, including those of Indigenous community concern, are not predicted • There are no predicted residual effects to fish health as the changes to water quality will be effectively mitigated by the implementation of the integrated water management and treatment system as contact water released to the environment will meet the WQG PAL.	Change after mitigation linked to: • none
Migratory Birds (Section 9.0)		
Great Bear Resources will implement progressive rehabilitation during operations and closure to replace (where feasible) lost migratory bird habitat Buffers will also be implemented around sensitive habitats. The upland areas around wetlands (e.g., Unnamed Waterbody 6) should be protected for 120 m from the wetland. The 120 m buffer is season-dependent and should be greater than 250 m during the nesting season (April to July for waterbirds	With the implementation of mitigation measures and expected offset via restoration during closure, the residual effect on migratory birds from changes related to the Project are primarily be constrained to the PA but could extend into the LSA: • Change in the abundance of habitat is not significant • Change to connectivity and quality of habitat is not significant • Change to migratory birds density and population is not significant • Change in the risk of mortality for migratory birds is not significant • Change to the abundance of habitat of migratory bird SAR is not significant.	Change after mitigation linked to: • current use of lands and resources for traditional purposes • health

Attached Table 10.1-1 (continued): Summary of Linked pVC and fVC Key Mitigation and Changes After Mitigation

Pathway Valued Components (pVCs)		
Key Mitigation measures	**Changes after Mitigation Predicted**	**Adverse Change after Mitigation with Pathways to Indigenous Peoples**
Air Quality (Section 7.2)		
Mitigation measures include the implementation of a dust management plan, a blasting plan to control emissions of particulate matter and nitrogen oxides, an ambient air quality monitoring plan, and limiting vehicle speeds on-site will provide for active management of emissions from the Project.	The modelled cumulative concentrations for all criteria for all averaging periods are below the respective Ambient Air Quality Criteria during the construction phase, operations phase and closure phase at the extent of the leased claims boundary and at all points of reception in the LSA.	Change after mitigation linked to: • current use of lands and resources for traditional purposes • health
Sound (Section 7.3)		
Mitigation measures include various design features aimed at reducing sound levels, use of enclosures and exhausts for diesel and natural gas generators, use of suitable mufflers on all motorized equipment, regular maintenance of equipment, and the development of a noise management plan.	Sound levels at all of the identified PORs are predicted to be below the federal and provincial criteria after application of mitigation measures. The change in percent highly annoyed meets the Health Canada limit of 6.5%, which means that changes to sound levels are not expected to trigger noise complaints from PORs.	Change after mitigation linked to: • current use of lands and resources for traditional purposes • health
Vibration (Section 7.4)		
Mitigation will include the development and implementation of a blast management plan to guide blasting activities while minimizing vibration levels.	The predicted change to air overpressure and peak particle vibration are well below the provincial limits for all PORs and Fisheries and Oceans Canada (DFO) requirements related to vibration for protection of fish will be met.	Change after mitigation linked to: • current use of lands and resources for traditional purposes • health

Pathway Valued Components (pVCs)		
Key Mitigation measures	**Changes after Mitigation Predicted**	**Adverse Change after Mitigation with Pathways to Indigenous Peoples**
Visual Environment (Appendix O-3)		
None required with planned design and operations measures	A viewshed analysis (Appendix O-3) was conducted to determine the most pronounced visual aesthetics impact on the surrounding area. This assessment included the proposed stockpiles (mine rock stockpile, low grade ore and overburden stockpiles), tailings management facility dams and headframe designs, all based on anticipated maximum heights and extents to maintain a conservative approach. The analysis concluded that visibility of Project facilities will be very restricted, even at their largest scale, typically limited to distant views during later operational stages.	Change after mitigation linked to: • current use of lands and resources for traditional purposes • health
Groundwater (Section 7.5)		
Mitigation measures include limiting the area of disturbance and operating an integrated water management system during construction, operation, and active closure to collect and control contact water, which will be reused in processing to reduce freshwater demand. Water treatment ponds will be lined or placed where seepage can be contained, and grouting will seal exploration drillholes and major fractures to limit underground inflows. A sheetpile or grout wall will also be installed to maintain open pit stability and reduce dewatering effects on Dixie Creek. During closure, the LP Central pit, VMF, and underground workings will be actively filled with redirected site runoff and water from the Chukuni River to accelerate groundwater recovery to baseline conditions.	After implementation of the proposed mitigation measures, there is a reduction of groundwater flows and levels during the construction and operations phases that is mitigated during closure. After the filling of the underground, LP Central pit and Viggo management facility (VMF) with water, groundwater flows and levels will recover to near baseline conditions.	Change after mitigation linked to: • current use of lands and resources for traditional purposes • health

Pathway Valued Components (pVCs)		
Key Mitigation measures	**Changes after Mitigation Predicted**	**Adverse Change after Mitigation with Pathways to Indigenous Peoples**
Surface Water Flows and Levels (Section 7.6)		
Mitigation measures will include collecting contact water across the Project, treatment of contact water and effluent prior to release, the development and implementation of a dust management plan to minimize dust emissions	There is a reduction of surface water flows and levels within the PA and parts of the LSA after implementation of the proposed mitigation measures, during the construction and operations and closure phases that is partially mitigated by closure-related activities. Some local hydrology changes are permanent, resulting from landscape changes from development. Estimated changes to flow and water level in the Chukuni River and further downstream are not observable during any Project phase.	Change after mitigation linked to: • current use of lands and resources for traditional purposes • health
Water Quality (Section 7.7)		
None required with planned design and operation measures	Observable changes in water quality from baseline conditions are constrained to the LSA during all Project phases. In the operations phase, predicted concentrations for all modelled parameters are well below the identified water quality guidelines for protection of aquatic life (WQG PAL), or equivalent to baseline conditions where baseline concentrations are greater than these guidelines (arsenic and phosphorus), with the exception for cobalt concentrations at a node in Unnamed Watercourse 1. During the closure phase (and post-closure), all modelled parameters are predicted to be less than WQG PAL, or equivalent to baseline conditions where baseline concentrations are greater than WQG PAL (arsenic and phosphorus).	Change after mitigation linked to: • current use of lands and resources for traditional purposes • health
Vegetation Communities (Section 7.8)		
Proposed design and mitigation measures, include minimizing the Project footprint, targeted management of invasive species and restoration and revegetation where feasible during operations and closure	With the implementation of the proposed design and mitigation measures, direct changes to vegetation communities after mitigation are expected to be localized to the PA. Indirect effects are expected to be confined to the PA and its immediate surroundings. Restoration and revegetation efforts during closure are anticipated to support the recovery of vegetation communities, with long-term positive outcomes for ecosystem function and diversity, although re-establishment is a long-term process.	Change after mitigation linked to: • current use of lands and resources for traditional purposes • health

Pathway Valued Components (pVCs)		
Key Mitigation measures	**Changes after Mitigation Predicted**	**Adverse Change after Mitigation with Pathways to Indigenous Peoples**
Wild Rice (Manoomin) (Section 7.9)		
Great Bear Resources Project has funded a study by Northern Bioscience and Harris Ecological Consulting, upon the request of LSFN and WFN. The purpose of this study is to help address the loss of historic wild rice (Manoomin) production on Wabauskang Lake. Potential effects on wild rice are anticipated because of an overprint at Unnamed Waterbody 1 by Project infrastructure. The enhancement study is anticipated to offset potential effects on wild rice as a result of the Project. The wild rice enhancement location, on WFN reserve, has been recommended by the WFN and supported by LSFN. The study will develop potential enhancement options for implementation in 2026. In addition to habitat restoration, the project will incorporate education and knowledge-sharing on sustainable harvesting practices, supporting long-term stewardship by community members. This collaborative initiative could support broader wild rice revitalization projects in the future and could be shared with other Indigenous communities in the local area if there is interest, advancing the understanding, and recovery of this culturally and ecologically important plant. Together, these efforts will support a more holistic understanding of Wild Rice habitats, cultural values, and their continued importance to the region.	The zone of changes to Wild Rice is predicted to be within Unnamed Waterbody 1, with mitigation proposed through an offset as part of the Wild Enhancement Project at the WFN reserve.	Change after mitigation linked to: • none

Pathway Valued Components (pVCs)		
Key Mitigation measures	**Changes after Mitigation Predicted**	**Adverse Change after Mitigation with Pathways to Indigenous Peoples**
Moose (Section 7.10)		
None required with planned Project design and operations.	The removal of the PA results in a fractional change to habitat abundance and connectivity. No critical habitat types are eliminated at the regional scale, and overall habitat diversity and connectivity are maintained within the RSA. With the implementation of the proposed design and mitigation measures, changes to the abundance of Moose habitat are not expected after closure. There will be a change in the risk of mortality as wildlife - vehicle collisions are possible when roads and vehicular traffic are present. This will be limited after the active closure period and removed post-closure. Indirect effects to Moose during the construction, operations and closure phases, may extend into the LSA but cease after closure activities end.	Change after mitigation linked to: • current use of lands and resources for traditional purposes • health
Other Wildlife (Section 7.11)		
None required with planned Project design and operations.	Habitat for other wildlife will be reduced within the PA from vegetation removal required for Project development, but habitat losses are low at a regional scale. The closure phase will directly increase functional other wildlife habitat which will continue to increase post-closure. There will be a change in the risk of mortality due to wildlife - vehicle collisions, which are possible when roads and vehicular traffic are present. This will be limited after the active closure period and removed post-closure. Indirect effects to other wildlife during the construction, operations and closure phases, may extend into the LSA but cease after closure activities end.	Change after mitigation linked to: • current use of lands and resources for traditional purposes • health
Species at Risk (SAR) (Section 7.12)		
None required with planned Project design and operations.	Direct habitat losses will occur within the PA during construction, but no critical SAR habitats will be eliminated, and overall habitat diversity will be maintained within the RSA. Therefore, there are no effects on the relative abundance of habitat after mitigation. There will be a change in the risk of mortality due to wildlife - vehicle collisions, which are possible when roads and vehicular traffic are present. This will be limited after the active closure period and removed post-closure. Indirect effects to SAR during the construction, operations and closure phases, may extend into the LSA but cease after closure activities end.	Change after mitigation linked to: • current use of lands and resources for traditional purposes • health

Pathway Valued Components (pVCs)		
Key Mitigation measures	**Changes after Mitigation Predicted**	**Adverse Change after Mitigation with Pathways to Indigenous Peoples**
Land and Resource Use (Section 7.13)		
None required with planned Project design and operations.	Public access to the PA will be prohibited from the onset of the construction phase until following active closure so that construction, operations and closure activities can be carried out safely. In addition, sensory disturbance may potentially cause wildlife and recreational users to avoid the immediate area.	Change after mitigation linked to: • none
Cultural Heritage (Section 7.14)		
A Cultural Heritage Impact Assessment (CHIA) will be prepared for identified CHVI locations (e.g., CHR3) prior to construction. The conservation guidance from CHIA mitigates potential effects to be implemented early in the Project construction	The zone of changes to Wild Rice is predicted to be within Unnamed Waterbody 1, with mitigation proposed through and offset as part of the Wild Enhancement Project at the at the WFN reserve. Note: Indigenous physical and cultural heritage differs from the pVCs of archaeology and cultural heritage as it encompasses both tangible heritage, such as physical places of heritage value, and intangible heritage, such as the customs, practices and teachings that convey cultural knowledge of heritage value.	Change after mitigation linked to: • none For Indigenous interests change after mitigation linked to: • current use of land and resources for traditional purposes • physical and cultural heritage sites, structures or things
Archaeology (Section 7.15)		
Completion of archaeological assessments in accordance with the Ontario Heritage Act and MCM standards and guidelines by licensed archaeologist with Indigenous participation. Identified resources with Cultural Heritage Value or Interest (CHVI) will have mitigation measures developed and implemented (avoidance, protection in place, or excavation / documentation). A Chance Find Procedure in place for unanticipated discoveries during construction, ensuring immediate work stoppage, notification of authorities and Indigenous communities, and appropriate mitigation as required.	With the proposed design and mitigation measures, no changes to the terrestrial archaeological sites or areas of marine archaeological potential are expected.	Change after mitigation linked to: • none

Pathway Valued Components (pVCs)		
Key Mitigation measures	**Changes after Mitigation Predicted**	**Adverse Change after Mitigation with Pathways to Indigenous Peoples**
Local and Regional Economy (Section 7.16)		
None required with planned Project design and operations	The Project will have a net positive effect on the local and regional economy through employment and labour income, opportunities and income for local and regional businesses, and increased revenues to local and regional municipalities. The zone of changes is dominantly within the RSA. The remainder of the potential direct, indirect and induced economic effects are expected to occur in the rest of Ontario and Canada.	Change after mitigation linked to: • none

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