12. Heritage and Historical Resources

The purpose of **Chapter 12, Heritage and Historical Resources** of the Environmental Impact Statement (EIS) is to characterize the existing environment, Project-environment interactions and potential residual Project and cumulative effects of the Project on Historic and Heritage Resources, including archaeological resources, built heritage resources, and cultural heritage landscapes. Per the Environmental Impact Statement (EIS) Guidelines for the Project, heritage and historical resources may include:

- Historic and archaeological resources including sites of archaeological potential to Indigenous Peoples
- Palaeontological resources
- Architectural resources
- Burial, cultural, spiritual, and heritage sites (Newfoundland & Labrador 2024)

The Project has the potential to cause adverse effects on these components of the social environment through direct (i.e., disturbance, destruction or alteration) or indirect (i.e., shadows, isolation, obstruction of views, change in land use, and land disturbance) impacts to identified heritage resources during the construction of the mine. Changes to Heritage and Historic Resources are of importance to the local community and Indigenous communities. Therefore, the Heritage and Historic Resources assessment consequently provides information that is used to support the assessments of other socio-economic VECs, where applicable.

Supporting documents used to inform this chapter include:

- Historic and Heritage Resources Baseline Report (Annex 4A)
- Cultural Heritage Screening Report (Annex 4B)
- Chapter 22
- Kami Iron Ore Project Environmental Impact Statement, Volume I, Part II (Alderon 2012)

12.1 Approach to the Effects Assessment

The methods and assessment presented in this chapter were developed in consideration of the requirements under the provincial *Environmental Protection Act* (NL EPA), with specific consideration of the requirements set out in the provincial Environmental Impact Statement Guidelines (EIS Guidelines) for the Project issued by the Minister of Environment and Climate Change (Annex 4A and 4B). A table of concordance to the EIS Guidelines is provided in the Executive Summary. The assessment of heritage and historical resources followed the overall effects assessment approach and methods (Chapter 4, Effects Assessment Methodology).

The EIS prepared by Alderon in 2012 was reviewed to understand the previously completed baseline conditions for heritage and historical resources (Alderon 2012). Alderon's findings were used to inform the Historic and Heritage Resources Baseline Report (Annex 4A; Archaeological Resources) and Cultural Heritage Screening Report (Annex 4B; Built Heritage Resources and Cultural Heritage Landscapes).

Where possible, comparison to the outcomes of the assessment of heritage and historical resources completed within the previous EIS have been made to highlight where effects on known or potential archaeological resources, built heritage resources, or cultural heritage landscapes have been reduced through consideration of environmental design features and mitigation or where new adverse effects may be introduced and require additional consideration in Project planning.

12.2 Integrating Engagement from Indigenous Groups and Local Stakeholders

Champion has been engaging with potentially effected Indigenous groups and local community stakeholders since the acquisition of the Project in 2021. The overall approach and methods for the incorporation of engagement feedback into the EIS is discussed in detail in Chapter 22.

Specific meetings occurred between May 21 and June 2, 2024 regarding Traditional land use and historical and cultural resources. The recognition of the contribution made in the previous EIS (Alderon) was stated as an important piece to be factored into the current Project. As the current Project is considered very similar to what was previously released, it was the desire for most Indigenous groups that the information collected in the previous EIS was recognized and incorporated into this Project.

Issues and concerns related to heritage and historical resources raised by Indigenous groups and local stakeholders and how these issues and concerns were addressed through the assessment are summarized in Table 12-1, including cross references to where comments were considered or addressed in the EIS.

Table 12-1: Summary of Issues and Concerns Related to Heritage and Historical Resources by Indigenous Groups and Local Stakeholders

Comment Theme	How it is Addressed in the Assessment	Where it was Addressed in the Assessment	Indigenous Group or Local Stakeholder	Raised in Alderon EIS (Yes/No)
Interest in cultural heritage reports	Throughout its engagement efforts in 2024, Champion discussed with all identified Indigenous groups if there was any new information to be integrated into the Kami Mining Project regarding the location of the Kami Mining Project or the land use. No concerns or new information were presented to Champion during these engagements.	Cultural Heritage Screening Report (Annex 4B)	— Innu Nation — Innu Takuaikan Uashat mak Mani-Utenam — Naskapi Nation of Kawawachikamach	No
Interest in cultural heritage reports	Throughout its engagements efforts in 2024, Champion discussed with all identified Indigenous groups on if there was any new information to be integrated into the Kami Mining Project regarding the location of the Kami Mining Project or the land use. NCC expressed its desire to update its 2014 land use study for the current EIS submission.	Cultural Heritage Screening Report (Annex 4B, Recommendations)	NCC	No

12.3 Assessment Scoping

This section identifies key issues for heritage and historical resources, defines and provides a rationale for the selection of VECs, identifies the measurable parameters selected for the assessment, and defines assessment boundaries for the Historic and Heritage Resources Baseline Report (Annex 4A; Archaeological Resources) and Cultural Heritage Screening Report (Annex 4B; Built Heritage Resources and Cultural Heritage Landscapes).

12.3.1 Key Issues

Key issues often relate to the potential environmental, social, economic, and health impacts of a proposed project. Key issues identified for the project reflect the primary concerns raised by regulatory authorities, Indigenous groups, and local stakeholders, including local residents, cabin owners, business owners and other interested parties.

To identify key issues related to heritage and historical resources, the following sources were reviewed:

- Section 4.1 of the EIS Guidelines, which summarized key issues from regulatory agencies and feedback received on the Project Registration and draft EIS Guidelines
- The record of engagement (Chapter 22), which captures engagement input received through meetings, phone calls, letters, and interviews
- Past experience with mining projects in Labrador
- The key issues identified in the previous Kami EIS

- Heritage registers, historical maps/aerial imagery, previous archaeological research and assessments carried out within, or in proximity to, the Project area, and input from regulatory agencies were used to identify known and potential heritage and historical resources

Key issues related to heritage and historical resources include the following:

- The alteration, loss, damage, disturbance or destruction of known heritage and historical resources
- A change in the access, value or importance of known heritage and historical resources

12.3.2 Valued Environmental Components and Measurable Parameters

Heritage and historical resources was selected as a VEC because it was identified as a key issue in the provincial EIS Guidelines. No conditions specific to heritage and historical resources were noted in the 2014 ministerial decision for the Project (Department of Environment and Conservation 2014). Valued environmental components (VECs) are aspects of the biophysical, cultural, and socio-economic environments that are considered to have scientific, social, cultural, economic, historical, archaeological, or aesthetic importance (Beanlands and Duinker 1983). VECs are identified to be of concern by the proponent, scientists, government agencies, Indigenous Peoples, or the public (CEA Agency 2018). The selection of appropriate VECs allows an Environmental Assessment to be focused on those aspects of the biophysical, cultural, and socio-economic environments that are of greatest importance, and facilitates decision making by regulatory agencies with respect to a project. The following factors were considered when identifying VECs for the Project:

- the Project-specific provincial EIS Guidelines
- regulatory requirements, standards and guidelines
- consideration of key issues raised through consultation with regulatory agencies, Indigenous groups, and local stakeholders
- potential for interaction with the Project and degree of interaction, including presence, abundance, and amount of spatial overlap of a VEC with the Project
- sensitivity of a VEC to potential Project effects and level of damage or harm that could be realized should an adverse effect occur
- species conservation status or concern (e.g., rarity, sensitivity, uniqueness)
- ecological and socio-economic/cultural value to communities, regulatory agencies, and the public
- recent experience with similar projects in Labrador and other jurisdictions in Canada
- avoidance of redundancy with another VEC (i.e., if two potential VECs represent the same issues, mitigation actions, and potential effects from the Project, only one was selected as a VEC for the assessment)

Heritage and historical resources include sites and objects of historic, archaeological, cultural, spiritual, and paleontological importance. In Newfoundland and Labrador, the protection of resources falls under the authority of the Provincial Archaeology Office (PAO) of the Department of Tourism, Culture, Arts and Recreation. The *Historic Resources Act* (1990), administered by the PAO, prohibits a person from moving, destroying, damaging, defacing, altering, adding to, marking, interfering with, and removing from a provincial historic site or registered provincial cultural resource archaeological objects, buildings, monuments, things or other structures located on, in or under a provincial historic site or registered provincial cultural resource (Government of Newfoundland and Labrador 1990). Section 13(1)(a) of the *Historic Resources Act* allows the Minister of Tourism, Culture, Arts and Recreation to order an impact assessment if it is their opinion that an operation or activity that may be undertaken by a person will or is likely to result in the alteration, damage or destruction of or otherwise adversely affect historic resources or palaeontological resources.

Project construction activities resulting in ground disturbance have the potential to impact heritage and historical resources. Therefore, in accordance with the *Historic Resources Act* the consideration of archaeological resources, built heritage resources, and cultural heritage landscapes is required for the Project. Through the completion of comprehensive baseline programs and any as required preservative or mitigative measures, heritage and historical resources will be protected.

Measurable parameters are used to characterize changes to attributes of the environment from the Project, other human developments, and natural factors. The changes in measurable parameters are used to assess change and predict overall effects on VECs. Two measurable parameters were identified and used for the heritage and historical resources:

1. Alteration of heritage and historical resources
2. Loss, destruction or damage of heritage and historical resources

Table 12-2 summarizes the heritage and historical resources VECs, the rationale for selection, and measurable parameters.

Table 12-2: Valued Environmental Components, Rationale for Selection, and Measurable Parameters

VEC	Rationale for Selection	Measurable Parameters	Linkages to other VECs
Heritage and Historical Resources	The *Historic Resources Act* (1990) prohibits any unauthorized interference with known heritage and historical resources	— Alteration of heritage and historical resources, inclusive of archaeological resources, paleontological resources, built heritage resources (architectural resources), and cultural heritage landscapes (cultural, spiritual, and heritage sites) — Loss, destruction or damage of heritage and historical resources	Land and resource use VEC

12.3.3 Assessment Boundaries

Assessment boundaries define the spatial and temporal extents of the assessment for each VEC. The spatial boundaries for heritage and historical resources are defined in Table 12-3 and shown in Figure 12-1 and consist of the SSA.

The SSA includes the proposed infrastructure for the Project (i.e., the Project footprint) with an additional buffer to reflect existing uncertainty in the final design of the Project and so that adverse effects on VECs are not underestimated (i.e., the SSA area is twice as large as the anticipated Project footprint). The SSA is constrained to avoid certain features, including major lakes, the Québec-Labrador provincial border and sensitive features, like the Wahnahnish Lake Protected Public Water Supply Area. The SSA represents the smallest scale of assessment and an area where the potential direct effects of the anticipated Project can be assessed accurately and precisely. The SSA represents the scale to which most or all effects on heritage and historical resources from the Project are anticipated.

The LSA and RSA provides a broader context for the assessment of Project effects and provides an appropriate scale to assess cumulative effects from the Project combined with existing conditions and other RFDs. However, Project interactions with heritage and historical resources are not anticipated to expand beyond the SSA. The heritage and historical resources Baseline Report (Annex 4A) includes a desktop screening of archaeological potential in the SSA. The Cultural Heritage Screening Report (Annex 4B) includes a desktop screening for built heritage resources (architectural resources) and cultural heritage landscapes (cultural, spiritual, and heritage sites) in the SSA.

Table 12-3: Description of the Assessment Boundaries for Heritage and Historical Resources

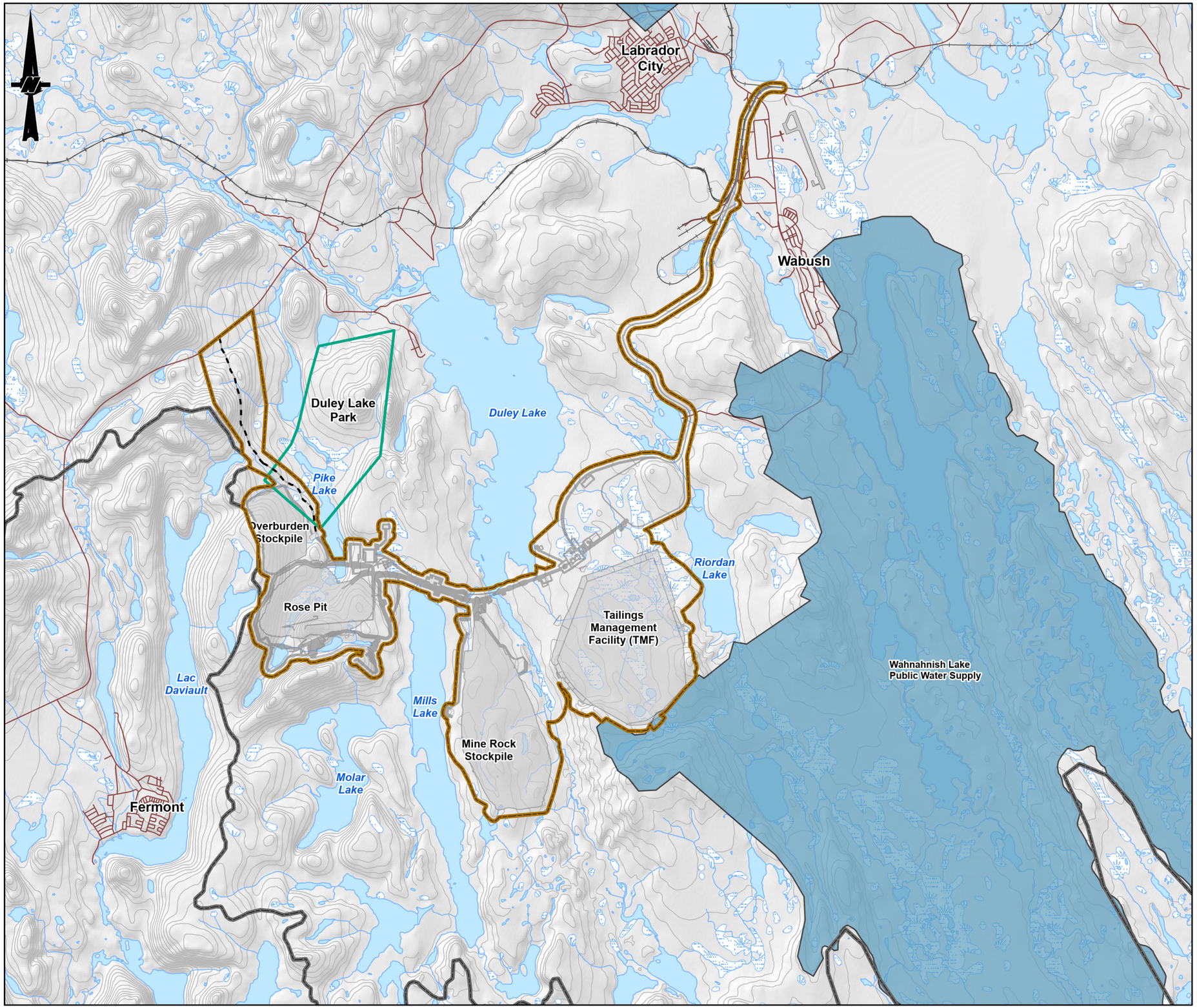
Study Area	Area (ha)	Description/Rationale
SSA	4,323	Includes the Project footprint plus additional buffered areas to incorporate a level of uncertainty into the Project design so that effects are not underestimated. The site assessment area was defined using bounding points around the outermost components of the Project footprint. The SSA represents the scale to which most or all effects on heritage and historical resources from the Project are anticipated.
LSA and RSA	N/A	The LSA and RSA provide broader context for the assessment of potential effects. However, Project interactions with archaeological resources, built heritage resources, and cultural heritage landscapes are not anticipated in the LSA or RSA for this spatial boundary is not considered in the heritage and historical resources Baseline Report or the Cultural Heritage Screening Report.

The temporal scope of the assessment focuses on the 40-year period from initial construction to the end of decommissioning and rehabilitation (i.e., closure) as defined by the following Project phases:

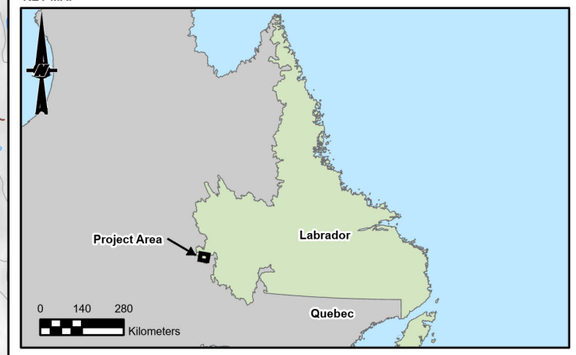
- **Construction Phase (referred to as Construction):** includes site preparation, mine, process plant and site infrastructure development, and commissioning the structures, systems, and components. The duration of Construction is expected to be four years.
- **Operations and Maintenance Phase (referred to as Operations):** includes the mining and milling of iron ore, production and shipment of iron ore concentrate, tailings management, management of mine rock, waste management, water management, release of treated effluent, site maintenance and transportation of staff and materials to and from the site. Operations initiates with one year of pre-development mining (i.e., ramp-up) and concludes when processing is complete and is expected to be 26 years.

- **Decommissioning and Rehabilitation Phase (referred to as Closure)**: includes accelerated flooding of the Rose Pit, re-establishment of passive surface water drainage following the pit-flooding period, and recontouring and revegetating disturbed areas. Physical infrastructure that is not required during post-closure monitoring and for other activities required to achieve the Project's decommissioning criteria and to return the Project site to a safe and stable condition will be removed. The active Closure Phase is expected to be 10 years in length.

Regarding heritage and historical resources, effects on archaeological resources, built heritage resources, and cultural heritage landscapes are limited to the construction phase of the Project since mitigation measures for these VECs must be implemented in advance of land disturbance, alteration, or demolition. The Cultural Heritage Screening Report confirmed that there are no protected built heritage resources or cultural heritage landscapes within the SSA. Accordingly, no temporal boundaries are required to address built heritage resources or cultural heritage landscapes. Archaeological potential was identified within the LSA in the heritage and historical resources Baseline Report, based on previous assessments. Several proposed Project impact areas were not included in previous assessments and will require additional Heritage Resource Impact Assessments. However, impacts to potential archaeological resources will be mitigated in advance of the construction phase of the Project.



KEY MAP



SCALE 1:20,000,000

LEGEND

PROJECT DATA

- Site Study Area (SSA)
- Project Footprint
- Potential Access Road

BASEMAP INFORMATION

- Duley Lake Park
- Railway
- Road
- Watercourse
- Contour
- Bog/Wetland
- Waterbody
- Labrador/Quebec Boundary
- Public Water Supply

0 1,000 2,000 4,000

1:85,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - NEWFOUNDLAND AND LABRADOR
2. IMAGERY CREDITS:
3. COORDINATE SYSTEM: NAD 1983 UTM ZONE 19N

CLIENT

CHAMPION IRON MINES LTD.

PROJECT

KAMI IRON ORE MINE PROJECT (KAMI PROJECT)
WABUSH, NL

TITLE

HERITAGE AND HISTORICAL RESOURCES SPATIAL BOUNDARIES

CONSULTANT

Kami

YYYY-MM-DD	2025-06-26
DESIGNED	----
PREPARED	GM
REVIEWED	DSK
APPROVED	HS

PROJECT NO.	CONTROL	REV.	FIGURE
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12.4 Existing Environment

The existing environment for heritage and historical resources generally formed the basis against which the residual Project and cumulative effects were assessed. The existing environment also represents the outcome of historical and current environmental and socio-economic pressures that have shaped the observed condition of heritage and historical resources. Environmental and socio-economic pressures or factors were either natural (e.g., weather, wildfire, predation, disease, climate change) or human related (e.g., industrial development, forestry, changing business models, fishing, hunting).

Two baseline studies were conducted to support the characterization of the heritage and historical resources existing environment. These studies were designed to gather information on the known and potential archaeological and historic sites, built heritage resources and cultural heritage landscapes. The two studies include:

- Historic and Heritage Resources Baseline Report (Annex 4A; Archaeological Resources)
- Cultural Heritage Screening Report (Annex 4B; Built Heritage Resources and Cultural Heritage Landscapes)

A summary of heritage and historical resources VEC components how they are addressed is presented in Table 12-4.

Table 12-4: Summary of Heritage and Historical Resources VEC Components

VEC Component	Where Addressed	Notes
Historic and archaeological resources including sites of archaeological potential to Indigenous Peoples	Archaeological resources are addressed in the Historic and Heritage Resources Baseline Report (Annex 4A).	Archaeological potential is present in the SSA (see methodology in Section 12.5.1, Historic and Heritage Resources Baseline Report [Archaeology Resources, and key findings in Section 12.10).
Palaeontological resources	EIS Chapter 22, Engagement Kami Iron Ore Project Environmental Impact Statement, Volume I, Part II, Section 21 (Alderon 2012).	The 2012 Kami Iron Ore Project EIS included desktop research and consultation to assess the potential for the identification of fossils in the Project Development Area (PDA) (Alderon 2012: 21-2). It was concluded that there are no known fossils or sites within or adjacent to the PDA and this component of the VEC was not carried forward in the 2012 EIS (Alderon 2012: 21-2). No known or potential palaeontological resources were noted during engagement activities completed in 2024 and 2025 for the Project. Accordingly, Champion concurs with Alderon's 2012 findings and this component of the VEC is not addressed further in this EIS.
Architectural resources	Architectural resources are addressed in Cultural Heritage Screening Report (Annex 4B).	The 2012 Kami Iron Ore Project EIS included desktop research, which determined that there are no architectural resources within or adjacent to the PDA. To verify these findings, Champion completed a Cultural Heritage Screening Report in 2024 (Annex 4B). No built heritage resources (architectural resources) were identified within the SSA. Accordingly, Champion concurs with Alderon's 2012 findings and this component of the VEC is not addressed further in this EIS.
Burial, cultural, spiritual and heritage sites	Burial, cultural, and heritage sites are addressed in Historic and Heritage Resources Baseline Report (Annex 4A), Cultural Heritage Screening Report (Annex 4B), and EIS Chapter 22, Engagement. The Kami Iron Ore Project EIS, Volume I, Part II (Alderon 2012) was also referenced.	No known burial, cultural, or heritage sites in the SSA were identified through engagement (EIS Chapter 22, Engagement), the Cultural Heritage Screening Report (Annex 4B), or in the Historic and Heritage Resources Baseline Report (Annex 4A). The Cultural Heritage Screening Report was circulated to Indigenous communities as part of the Project Registration and no concerns related to cultural, spiritual, and heritage sites in the SSA were raised. The 2012 Kami Iron Ore Project EIS (Alderon 2012) did not identify any burial, cultural, or heritage sites in the SSA. However, it was noted that two sites of cultural/spiritual importance to the Innu are present in the RSA: — Traditional gathering site for the Innu on Menihek Lake, located approximately 110 km northeast of the Project (Alderon 2012: 21-23) — Large Innu burial site on Ashuabipi Lake, located approximately 70 km south of the Project (Alderon 2012: 21-23) These sites are not considered further in this EIS since they are located at a great distance from the SSA and will not be impacted by the Project.

12.5 Methods

12.5.1 Historic and Heritage Resources Baseline Report (Archaeological Resources)

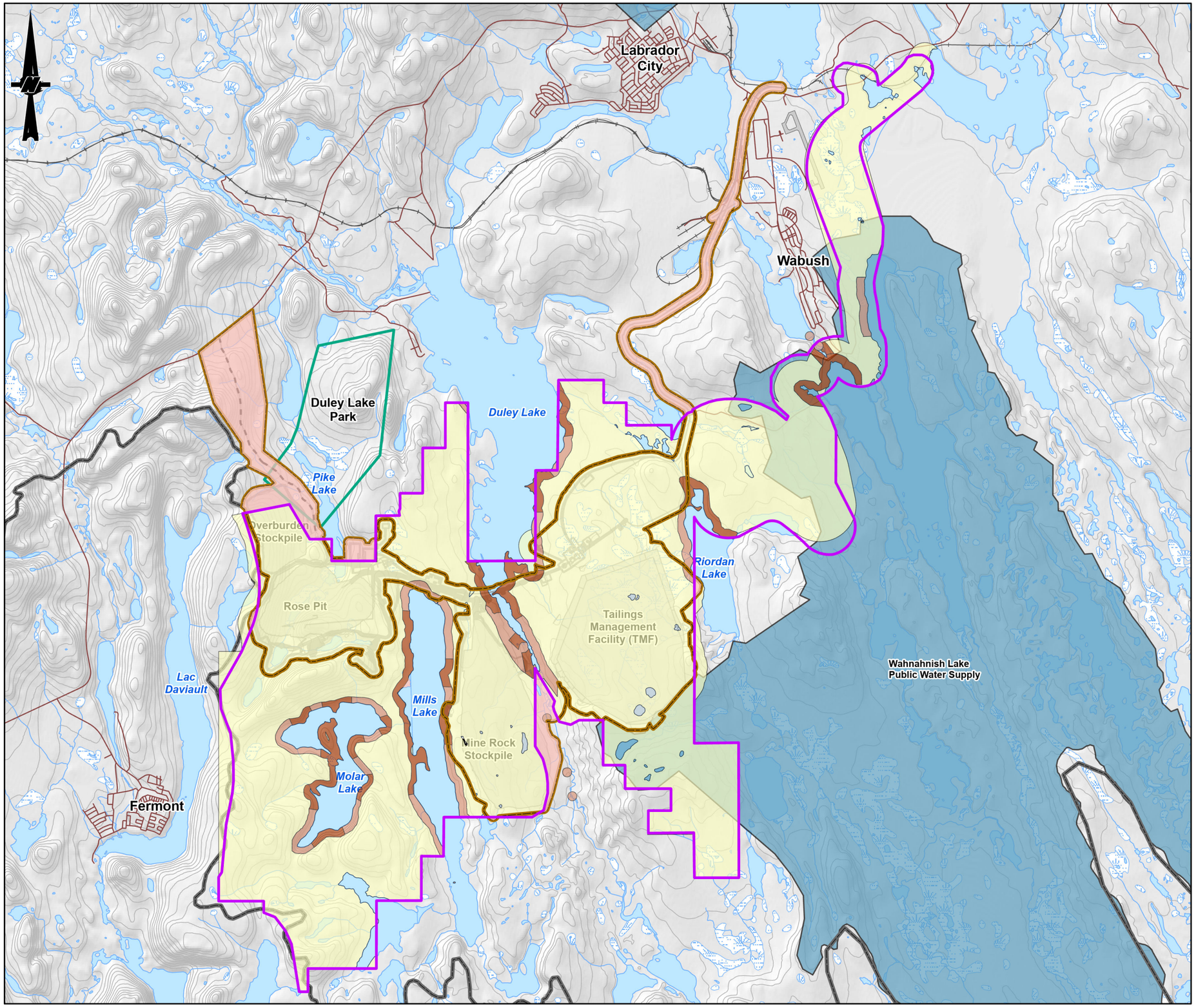
A Historic and Heritage Resources Baseline Report (Annex 4A) was completed to identify known or potential archaeological constraints to development. The undertaking was limited to a desktop study and thus, a PAO permit was not required. The background research explored the land-use history of the SSA and its environs. The goals were to identify known archaeological and historic sites and to delineate areas of archaeological potential. Environmental attributes and historical settlement and development patterns of the LSA and RSA were reviewed to provide the necessary information for evaluating the area's archaeological potential. The desktop study focused primarily on previous archaeological research and assessments carried out within, or in proximity to, the SSA. Areas within the SSA that have archaeological potential and/or require archaeological assessment prior to ground disturbance are presented in Figure 12-2.

According to the PAO, there are no known archaeological resources within, or near, the immediate SSA. However, previous archaeological investigations have demonstrated the region's archaeological significance with respect to Maritime Archaic, Intermediate Period, Recent Period, Innu, and Naskapi cultures (Loring 1992; McCaffrey 2006; Schwarz 2007; Thomson 1984).

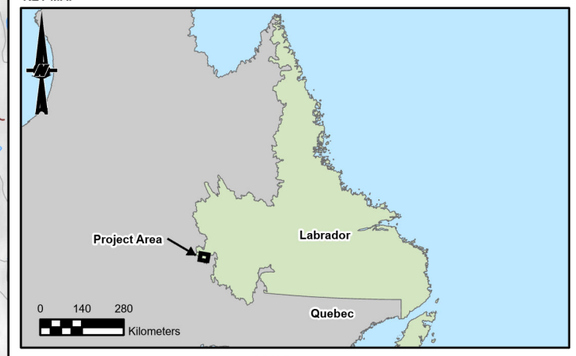
An Historic Resources Overview Assessment (HROA) was completed for the 2011 SSA. The HROA consisted of background research, visual assessment, and limited subsurface testing in select areas determined to exhibit high archaeological potential (Stassinu 2012). Several additional areas of high archaeological potential were identified within the 2011 SSA, but outside of planned Project impacts at that time. The remainder of the 2011 SSA was determined to exhibit low archaeological potential, and no further archaeological investigation was required in those areas.

The 2011 HROA concluded that additional field assessment may be required, in areas of high archaeological potential, once the Project design was finalized (Stassinu 2012). Based on a review of the most recent Project design plans, three proposed impact areas intersect with areas of high archaeological potential, specifically: the Waldorf River outflow crossing, Mine Rock Stockpile, and West Basin (along eastern shore of Mills Lake). Additional archaeological investigations in these areas will be limited to actual impact areas once designs are finalized. The review also identified several proposed impact areas that were not included in the 2011 HROA.

The 2025 SSA differs from the 2011 LSA; however, there is significant overlap. The 2025 SSA is based on the most recent Project design plans plus a buffer to account for a level of uncertainty into the Project design so that effects are not underestimated.



KEY MAP



SCALE 1:20,000,000

LEGEND

PROJECT DATA

- SITE STUDY AREA (SSA)
- 2011 ASSESSMENT AREA
- AREAS TO BE ASSESSED PRIOR TO GROUND DISTURBANCE
- POTENTIAL ACCESS ROAD

2011 POTENTIAL RATINGS

- LOW
- MODERATE
- HIGHER

BASEMAP INFORMATION

- DULEY LAKE PARK
- RAILWAY
- ROAD
- WATERCOURSE
- CONTOUR
- BOG/WETLAND
- WATERBODY
- LABRADOR/QUEBEC BOUNDARY
- PUBLIC WATER SUPPLY

0 1,000 2,000 4,000

1:85,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - NEWFOUNDLAND AND LABRADOR
2. IMAGERY CREDITS:
3. COORDINATE SYSTEM: NAD 1983 UTM ZONE 19N

CLIENT

CHAMPION IRON MINES LTD.

PROJECT

KAMI IRON ORE MINE PROJECT (KAMI PROJECT)
WABUSH, NL

TITLE

PREVIOUS HISTORIC RESOURCES OVERVIEW ASSESSMENT BOUNDARIES AND RESULTS

CONSULTANT

Kami

YYYY-MM-DD	2025-06-26
DESIGNED	----
PREPARED	JM
REVIEWED	DSK
APPROVED	HS

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12.5.2 Cultural Heritage Screening Report (Built Heritage Resources and Cultural Heritage Landscapes)

The 2012 Kami Iron Ore Project EIS included desktop research, which determined that there are no architectural resources within or adjacent to the PDA. To verify these results, a Cultural Heritage Screening Report (Annex 4B) was completed to establish the presence, or absence, of protected built heritage resources (architectural resources) and cultural heritage landscapes (cultural, spiritual, and heritage sites) in the SSA. The study was completed through a combination of desktop data collection and information gathering conducted through correspondence with applicable regulatory agencies.

Information gather was conducted with the following agencies:

- Heritage Foundation of Newfoundland and Labrador;
- Ministry of Tourism, Culture, Arts and Recreation Register of Provincial Historic Sites; and
- Office of Indigenous Affairs and Reconciliation, Government of Newfoundland & Labrador.

To identify protected heritage properties, the following online sources were reviewed:

- Canadian Heritage Rivers List (Canadian Heritage Rivers System n.d.)
- Heritage Foundation of Newfoundland and Labrador Heritage Property Register (Heritage NL 2025)
- Ministry of Tourism, Culture, Arts and Recreation List of Archaeology Sites (Government of Newfoundland and Labrador n.d.)
- Ministry of Tourism, Culture, Arts and Recreation Provincial Historic Sites Register (Government of Newfoundland and Labrador n.d.)
- Parks Canada Heritage Railway Stations of Canada Database (Government of Canada 2024)
- Parks Canada Directory of Federal Heritage Designations (Government of Canada 2023)
- UNESCO World Heritage List (UNESCO 1992-2025)

The results of the desktop analysis and input from regulatory agencies determined there are no protected built heritage resources or cultural heritage landscapes within the SSA. This confirms the conclusions of the 2012 EIS prepared by Alderon, which also did not identify architectural resources, cultural sites, spiritual sites, or heritage sites in the SSA. Given these findings, no further work is recommended from a cultural heritage perspective. To support this conclusion, the Cultural Heritage Screening Report was circulated to Indigenous communities as part of the Project Registration and no concerns related to cultural, spiritual, and heritage sites in the SSA were raised.

12.6 Effects Assessment

The effects assessment for the Heritage and Historical Resource VEC is presented in the following sections. The methods used in assessing effects for this VEC are presented in Section 12.5.1. The effect pathway screening, residual Project effect analysis and residual cumulative effect analysis for the Heritage and Historical Resource VEC is completed in Section 12.5.2

12.6.1 Methods

12.6.1.1 Effect Pathway Screening

Interactions between Project components or activities, and the corresponding potential changes to measurable parameters were identified by an effect pathway screening that was then used to inform the residual Project and cumulative effect analyses for the heritage and historical resources VEC. The first part of the analysis was to identify the potential effects pathways for each phase of the Project. Each pathway was initially assumed to have an interaction that would result in potential effects on the heritage and historical resources VEC.

Potential pathways from Project activities to the heritage and historical resources VEC were identified using the following:

- Review of the Project Description (Chapter 2) and scoping of potential effects by the EIS team for the Project;
- Input from engagement (Chapter 22);
- Scientific knowledge;
- Review of EISs for similar mining projects, including the previous Kami EIS (Alderon 2012);
- Previous experience with mining projects; and
- Consideration of key issues (Section 12.3.1, Key Issues).

Potential adverse effects of the Project were then identified and practicable mitigation was applied to avoid, minimize and/or rehabilitate effects on the heritage and historical resources VEC. Avoidance and minimization are widely recognized as the preferred option for archaeological resources, built heritage resources, and cultural heritage landscapes. Avoidance designs and actions integrated into the Project were developed iteratively by the Project's EIS team. The effectiveness of mitigation measures proposed for each effect pathway was assessed to determine whether the mitigation would address the potential Project effect such that the pathway was eliminated, would result in a negligible adverse effect on heritage and historical resources or show that residual adverse effects on archaeological resources, built heritage resources, or cultural heritage landscapes from the Project remained.

This effect pathway screening was a preliminary assessment that was intended to focus the effects analysis on effect pathways that required a more quantitative or comprehensive assessment of effects on VECs. Using scientific knowledge, feedback from consultation, logic, experience with similar developments, and an understanding of the effectiveness of mitigation (i.e., level of certainty that the proposed mitigation would work), each effect pathway was categorized as one of the following:

- **No effect pathway:** The effect pathway could be removed (i.e., the effect would be avoided) by avoidance measures and/or additional mitigation so that the Project would result in no measurable environmental change relative to existing conditions or guideline values (e.g., air, soil, or water quality guidelines), and, therefore, would have no residual effect on heritage and historical resources (e.g., impacts to archaeological resources will be mitigated through Stage 1-4 archaeological assessment and impacts to built heritage resources or cultural heritage landscapes will be mitigated through the development of property-specific conservation measures).
- **Negligible effect pathway:** With the application of mitigation, the effect pathway could result in a measurable but minor environmental change relative to existing conditions or guideline values, but the change is sufficiently small that it would have a negligible residual effect on the heritage and historical resources VEC. Therefore, further detailed assessment of the residual effect is not warranted as the effect pathway would not be expected to result in a significant residual Project or cumulative effect on heritage and historical resources.
- **Residual effect pathway:** Even with the application of mitigation, the effects pathway is still likely to result in a measurable environmental change relative to existing conditions or guideline values that could cause a greater-than-negligible adverse or positive effect on heritage and historical resources and warrants additional assessment.

Project interactions determined that no effect pathway or negligible effect pathways were not carried forward for further assessment. Residual effect pathways that could result in changes to the environment with one or more associated measurable parameter and have the potential to cause a greater than negligible effect on heritage and historical resources VEC were carried forward to the residual Project effects analysis and residual cumulative effects analysis .

12.6.1.2 Residual Project Effect Analysis

The residual effects analysis measures and describes the effects of the Project on archaeological resources, built heritage resources, and cultural heritage landscapes relative to existing conditions. As described in Section 12.3.3, Assessment Boundaries, no temporal boundaries beyond the construction phase were identified for Heritage or Historical Resources so this effects assessment is limited to the construction phase of the Project. Residual effects are described for each of the measurement indicators for the residual effect pathways identified.

The residual effects analysis used a reasoned narrative to describe anticipated changes to each measurable parameter caused by the Project. This narrative description of anticipated effects is the foundation for the residual effects classification. Residual effects are summarized or classified in tabular form using effects criteria, which is intended to provide structure and comparability across VECs assessed for the Project. The residual effects classification uses nature, magnitude, geographic extent, duration, timing, frequency, reversibility, and probability of occurrence as criteria. The approach to classify each residual effect criterion is provided in Table 12-5. Following classification of residual Project effects, the analysis also evaluates the significance of residual Project effects using threshold criteria or standards beyond which a residual effect is considered significant. The definition of a significant effect for heritage and historical resources is provided in Section 12.6.1.4, Significance Determination.

Table 12-5: Definitions Applied to Effects Criteria Classifications for the Assessment of Heritage and Historical Resources

Criterion	Rating	Definition
Nature	Positive	Change in measurable parameter results in net improvement or benefit to heritage and historical resources
	Neutral	Change in measurable parameter results in no change to heritage and historical resources
	Adverse	Change in measurable parameter results in net degradation or loss to heritage and historical resources
Magnitude	Qualitative narrative or numeric quantification	Change in measurable parameter is described by effect size (e.g., irreversible disturbance of an archaeological site or irreversible demolition or alteration to a built heritage resource or cultural heritage landscape) – Low: No change to setting or building fabric. The change is slight and has a minor or negligible effect to the resource. – Moderate: A change that significantly modifies the building or setting. – High: Permanent and irreversible destruction of an archaeological site, built heritage resource, or cultural heritage landscape. The resource is totally altered and there are comprehensive changes to the setting.
Geographic extent	Site Assessment Area	Change in measurable parameter is confined to the SSA
	Local	Change in measurable parameter extends outside the SSA but within the LSA
	Regional	Change in measurable parameter extends beyond the LSA but is confined to the RSA
	Beyond regional	Change in measurable parameter extends beyond the RSA
Duration	Qualitative narrative or numeric quantification	Change in measurable parameter is described by effect duration (e.g., months, years, decades, permanent) – Short term: Effect is limited to the Construction phase or Closure phase of the Project. – Medium: Effect occurs through the duration of the Project. – Long Term: Residual effect extends beyond the life of the Project.
Timing	Qualitative narrative or numeric quantification	Change in measurable parameter is described with a focus on seasonality (e.g., as applicable with description of how seasonal aspects may affect a VEC or not applicable, where seasonal aspects are unlikely to affect a VEC)
Frequency	Occasional	Change in measurable parameter is expected to occur rarely (e.g., once or a few times)
	Periodic	Change in measurable parameter is expected to occur consistently at regular intervals or associated with temporal events (e.g., during hot, dry climatic conditions)
	Continuous	Change in measurable parameter is expected to occur all the time
Reversibility	Reversible	Change in measurable parameter is reversible within a clearly defined time period
	Irreversible	Change in measurable parameter is predicted to influence the component indefinitely
Probability of occurrence	Unlikely	Change in measurable parameter is not expected to occur, but not impossible
	Possible	Change in measurable parameter may occur, but is not likely
	Probable	Change in measurable parameter is likely to occur, but is uncertain
	Certain	Change in measurable parameter will occur
Ecological and Socio-economic Context	Qualitative narrative or numeric quantification	Change in measurable parameter is described by the perception of an effect that considers sensitivity and resilience of VECs (ecological context), and the cultural and social significance placed on certain VECs and the unique values, customs or aspirations of local communities or Indigenous groups

12.6.1.3 Residual Cumulative Effect Analysis

The cumulative effects assessment builds on the results of the residual Projects effects assessment and considers the incremental changes that were predicted to have a likely residual adverse effect on heritage and historical resources. This would include the effects of past and current projects or past climate-related changes (e.g., forest fires), which contribute to existing conditions upon which residual Project effects are assessed. For the EIS, the description of the existing environment characterizes the environment already affected by past and current projects and activities; therefore, the cumulative effects assessment focused on analyzing the effects of other reasonably foreseeable developments (RFDs) in combination with the Project. Although positive residual effects are characterized in the residual Project effects analysis, they are not carried forward to the cumulative effects analysis, as the Project benefits from other past, present and RFDs or activities are unlikely to be known or publicly disclosed (e.g., Benefit Agreements with Indigenous groups or local community stakeholders).

The cumulative effects assessment followed a three-step process:

- Identify RFDs and potential cumulative effects that overlap in time and space with residual effects;
- Identify and describe any additional mitigation measures, if applicable;
- Characterize residual cumulative effects, using the same criteria defined for the residual Project effects analysis (Section 12.6.1.2, Residual Project Effect Analysis).

Chapter 4 provides a list of known RFDs and physical activities with potential residual effects that could overlap spatially and temporally with the Project's residual environmental effects. Figure 4-4 (Chapter 4) presents the location of all 6 of the known RFDs. This list was considered in the identification of RFDs for the assessment of cumulative effects on heritage and historical resources. Following the identification of applicable RFDs, residual Project effects on heritage and historical resources were evaluated for temporal and spatial overlap with the effects of RFDs to identify potential cumulative effects. The evaluation was completed qualitatively based on publicly available information (e.g., Project Registrations or EIS reports) describing the environmental effects of RFDs. If effects from these RFDs overlapped spatially or temporally with the residual Project effects on heritage and historical resources, then potential cumulative effects were identified. If no spatial or temporal overlap existed for the residual Project effects and RFDs identified in Chapter 4, then a cumulative effects assessment was not required.

Based on the assessment of potential cumulative effects, an assessment was made regarding whether additional mitigation measures, beyond those proposed for the Project, were required to address potential cumulative effects. Where applicable, additional mitigation measures were identified.

Residual cumulative effects were characterized using the same criteria assessed for residual Project effects (Section 12.6.1.2).

Following classification of residual cumulative effects, the analysis also evaluated the significance of residual Project effects using threshold criteria or standards beyond which a residual environmental effect was considered significant. The definition of a significant effect for the heritage and historical resources is provided in Section 12.6.1.4.

12.6.1.4 Significance Determination

The significance of adverse residual Project and cumulative effects on heritage and historical resources was evaluated by following the approach provided in Chapter 4, Section 4.8 (Significance Determination). A significant adverse residual effect on heritage and historical resources is defined as outlined below.

Archaeological Resources:

- **Direct Impact:** A permanent or irreversible negative effect on an archaeological resource (known or unknown) that results in the loss of the resource and/or the resource's context. Direct impacts include excavation, destruction or alteration.
- **Indirect Impact:** An impact that is the result of an activity on or near an archaeological resource (known or unknown) that may adversely affect the context or attributes and/or future access to the resource. Indirect impacts include capping, burial, or submergence.

Built Heritage Resources and Cultural Heritage Landscapes:

- **Direct Impact:** A permanent or irreversible negative affect on the cultural heritage value or interest (CHVI) of a built heritage resource or cultural heritage landscape that results in the loss of a heritage attribute. Direct impacts include destruction or alteration.

- **Indirect Impact:** An impact that is the result of an activity on or near a built heritage resource or cultural heritage landscape that may adversely affect the cultural heritage value or interest and/or heritage attributes of a property. Indirect impacts include shadows, isolation, direct or indirect obstruction of significant views or vistas [heritage attributes], a change in land use, or land disturbances.

12.6.2 Effect Pathway Screening

The effect pathway screening predicts potential effects pathways that are then evaluated considering proposed mitigation to predict whether the effect pathway had the potential to cause residual adverse or positive effects. The effectiveness of mitigation measures proposed for each effect pathway was assessed to determine whether the mitigation would address the potential Project effect such that the effect pathway was eliminated or would result in a negligible adverse effect on a VEC. As described in Section 12.6.1.1, Effect Pathway Screening, each effect pathway was categorized as one of the following:

- **No effect pathway** (i.e., avoidance measures and/or mitigation results in no residual effect on heritage and historical resources);
- **Negligible effect pathway** (i.e., mitigation results in negligible effect on heritage and historical resources); or
- **Residual effect pathway** (i.e., effect that is greater than negligible and carried forward for further assessment).

The effects pathway screening is summarized in Table 12-6. The subsections following the table provide rationale used to assign potential effects on the no effect pathway and negligible effect pathway categories and list residual effect pathways. As shown in Table 12-6, there are no Negligible or Residual effect pathways identified for the Heritage and Historical Resources VEC, so these effect pathways are not described.

Table 12-6: Potential Effects Pathways for Heritage and Historical Resources

Project Components/Activities	Effects Pathway	Environmental Design Features, Mitigation or Enhancement Measures	Effect Pathway Screening
Project components/activities that may result in disturbance, demolition, or alteration of an archaeological resource, built heritage resource, or cultural heritage landscape during the construction phase of the Project: **Construction:** — Site preparation, including vegetation clearing and earthworks — Quarry development and excavation of aggregate — Handling and storage of overburden — Road development, including culverts and bridge installation — Construction of facilities and infrastructure — Construction of TMF starter dam — Handling and storage of mine rock — Construction of water management infrastructure — Dewatering activities — Power generation — Operating mobile mining equipment — Site traffic, including transportation of rationale and materials to and from site — Employment and procurement **Operation and Maintenance:** — Open pit mining, including blasting and crushing ore and mine rock — Operating mobile mining equipment — Handling and storage of overburden, mine rock and ore — Operation and management of the TMF — Processing iron ore concentrate — Pit dewatering and site water management — Handling, storage and discharge of non-contact water — Handling, storage, treatment and discharge of contact water — Water intake for fresh water and process water — Sewage collection, treatment and surface discharge — Progressive reclamation — Railcar loading and transportation — Site traffic, including transportation of rationale and materials to and from site — Worker accommodations, mine services area, and office operation — Employment and procurement **Closure:** — Accelerated pit flooding — Removal of infrastructure, restoration and revegetation of facilities and infrastructure — Site traffic, transportation of personnel and materials to and from the site	Pathways to Potential Effects include: **Archaeological Resources:** — A change in understanding of the presence of archaeological resources, built heritage resources, or cultural heritage landscapes. — Direct or indirect land disturbances or removal of archaeological resources from original context — Capping or submergence of an archaeological resource **Built Heritage Resources and Cultural Heritage Landscapes:** — Direct impacts to built heritage resources or cultural heritage landscapes: — Destruction of any, or part of any, significant heritage attributes or features from a built heritage resource or cultural heritage landscape. — Alteration that is not sympathetic, or is incompatible, with the historic fabric and appearance of a built heritage resource or cultural heritage landscape — Indirect impacts to built heritage resources or cultural heritage landscapes: — Shadows created that alter the appearance of a heritage attribute or change the viability of a natural feature or plantings, such as a garden; — Isolation of a heritage attribute from its surrounding environment, context or a significant relationship; — Direct or indirect obstruction of significant views or vistas within, from, or of built and natural features; — A change in land use such as rezoning a battlefield from open space to residential use, allowing new development or site alteration to fill in the formerly open spaces. — Land disturbances such as a change in grade that alters soils, and drainage patterns that adversely affect an archaeological resource.	Recommendations and additional studies: — Complete additional archaeological assessment prior to construction and disturbance of areas of archaeological potential, per the recommendations contained in the Historic and Heritage Resources Baseline Report (Annex 4A) General mitigation measures for archaeological resources, built heritage resources, and cultural heritage landscapes: — Where additional archaeological resources, built heritage resources, or cultural heritage landscapes are identified through information gathering or fieldwork: — Notify the project team and client — Identify next steps and additional reporting, as warranted — Develop a chance finds procedure for the project — Design the Project in a manner that avoids or minimizes direct effects on archaeological resources, built heritage resources, and cultural heritage landscapes, where appropriate. Mitigation measures for archaeological resources: – Prior to ground disturbance, any areas not previously assessed will be subjected to archaeological assessment. – Prior to ground disturbance, any areas identified as exhibiting high archaeological potential will be subjected to further archaeological investigation as identified by the licensed archaeologist and confirmed by the PAO – Key construction and operational staff will be trained to recognize archaeological artifacts, such as Indigenous material culture (e.g., lithics, ground stone, ceramics) and Euro-Canadian cultural material (e.g., ceramics, glassware) in the event chance finds are made during Project construction and operation. Staff training will also include a brief history of the potential and documented historical use and occupation of the Project area. – A "Chance Find Procedure" will be implemented that will include that all activities in the area of the find will cease immediately until a licensed archaeologist is able to carry out a proper evaluation, working under permit and guidance from the NF PAO. – An "Accidental Discovery of Human Remains" protocol will be implemented. The protocol will designed in advance of construction and will include input and direction from the PAO and local Indigenous communities if human remains are encountered, all activities cease immediately and local police are notified. No built heritage resources or cultural heritage landscapes were identified in the SSA. However, if the SSA is expanded then additional Cultural Heritage Screening is required to assess the presence or absence of built heritage resources (architectural resources) and cultural heritage landscapes (cultural, spiritual, and heritage sites) in consultation with Indigenous communities, local stakeholders, and provincial agencies.	No Effect Pathway

12.6.2.1 No Effect Pathways

The following Project interactions are predicted to result in no effect pathway to heritage and historical resources and are not carried forward in the assessment. No further consideration of Negligible effects or Residual effects are described given the below findings.

A change in understanding of the presence of archaeological resources, built heritage resources, or cultural heritage landscapes

No residual effects on archaeological resources were identified since mitigation measures will be implemented in advance of the construction phase of the Project. Additionally, key construction and operational staff will be trained to recognize archaeological artifacts, such as Indigenous material culture (e.g., lithics, ground stone, ceramics) and Euro-Canadian cultural material (e.g., ceramics, glassware) in the event chance finds are made during Project construction and operation. Procedures will be put in place for accidental discovery of archaeological remains and/or human remains.

The Cultural Heritage Screening Report (Annex 4B) prepared for the Project did not identify protected built heritage resources or cultural heritage landscapes in the SSA. However, if the SSA is expanded then additional Cultural Heritage Screening is required to assess the presence or absence of built heritage resources (architectural resources) and cultural heritage landscapes (cultural, spiritual, and heritage sites) in consultation with Indigenous communities, local stakeholders, and provincial agencies.

Direct or indirect land disturbances or removal of archaeological resources from original context

No residual effects on archaeological resources were identified since mitigation measures will be implemented in advance of the construction phase of the Project. Additionally, key construction and operational staff will be trained to recognize archaeological artifacts, such as Indigenous material culture (e.g., lithics, ground stone, ceramics) and Euro-Canadian cultural material (e.g., ceramics, glassware) in the event chance finds are made during Project construction and operation. Procedures will be put in place for accidental discovery of archaeological remains and/or human remains.

Direct impacts on built heritage resources or cultural heritage landscapes (destruction or alteration)

The Cultural Heritage Screening Report (Annex 4B) prepared for the Project did not identify protected built heritage resources or cultural heritage landscapes in the SSA. Accordingly, no effect pathways related to destruction or alteration of a built heritage resource or cultural heritage landscape were identified.

Indirect impacts on built heritage resources or cultural heritage landscapes (shadows, isolation, obstruction of a significant view, a change in land use, or land disturbance)

The Cultural Heritage Screening Report (Annex 4B) prepared for the Project did not identify protected built heritage resources or cultural heritage landscapes in the SSA. Accordingly, no effect pathways related to shadows, isolation, obstruction of a significant view, a change in land use, or land disturbance were identified. However, if the SSA is expanded then additional Cultural Heritage Screening is required to assess the presence or absence of built heritage resources (architectural resources) and cultural heritage landscapes (cultural, spiritual, and heritage sites) in consultation with Indigenous communities, local stakeholders, and provincial agencies.

12.6.2.2 Negligible Effect Pathways

No negligible effects on archaeological resources, built heritage resources, or cultural heritage landscapes were identified since mitigation measures will be implemented in advance of the construction phase of the Project. In addition, no temporal boundaries were identified for the Heritage and Historical Resource VEC.

12.6.2.3 Residual Effect Pathways

No residual effects on archaeological resources, built heritage resources, or cultural heritage landscapes were identified since mitigation measures will be implemented in advance of the construction phase of the Project. In addition, no temporal boundaries were identified for the Heritage and Historical Resource VEC.

12.7 Prediction Confidence and Uncertainty

A key element of a comprehensive Environmental Assessment is the prediction of future conditions of the environment as a result of the Project from previous and existing projects and activities and RFDs. Given that environments change naturally and continually through time and across space, assessments of effects and predictions about future conditions embody some degree of uncertainty (CEA Agency 2018).

The purpose of the Prediction Confidence and Uncertainty section is to identify the key sources of uncertainty and qualitatively describe how uncertainty was addressed for heritage and historical resources to increase the level of confidence that effects would not be larger than predicted, including the potential need for monitoring and adaptive management that can reduce uncertainty over time (Section 4.10).

Confidence in effects analyses can be related to many elements for heritage and historical resources, including the following:

- adequacy of the baseline data for providing an understanding of the existing conditions
- the nature, magnitude, and spatial extent of future fluctuations in ecological, cultural, and socio-economic variables, independent of effects from the Project and other developments (e.g., climate change, fire, flood)
- understanding of Project-related effects on complex social-ecological systems that contain interactions across different scales of time and space (e.g., how and why the Project would influence wildlife and Indigenous Land and Resource Use)
- knowledge and experience with the type of effect in the system
- knowledge of the effectiveness of proposed Project environmental design features or mitigation for avoiding or minimizing effects
- uncertainties associated with the exact location, physical footprint, activity level, and the timing and rate of future developments

The Heritage and Historical Resources Baseline Report (Annex 4A) noted areas of high archaeological potential that were identified within the LSA during previous assessment but fell outside of planned Project impacts at that time. The review concluded that additional field assessment may be required, in areas of high archaeological potential, once the Project design was finalized. Based on a review of the most recent Project design plans, three proposed impact areas intersect with areas of high archaeological potential, specifically: the Waldorf River outflow crossing, Mine Rock Stockpile, and West Basin. The review also identified several proposed impact areas in the current SSA that were not included in the 2011 LSA. Archaeological assessment for these areas will be completed in advance of the construction phase of the Project. In addition, an "Accidental Discovery of Artifact or Human Remains" protocol is recommended for the Project to mitigate risks associated with encountering unknown archaeological resources.

At present, no protected built heritage resources or cultural heritage landscapes in the SSA were identified in the Cultural Heritage Screening Report (Annex 4B) or through Engagement (Chapter 22). The Cultural Heritage Screening Report (Annex 4B) included information gathering with the Heritage Foundation of Newfoundland and Labrador, Ministry of Tourism, Culture, Arts and Recreation Register of Provincial Historic Sites, and Office of Indigenous Affairs and Reconciliation, Government of Newfoundland & Labrador to gather perspectives on the presence, or absence of heritage and historical resources in the SSA. None were identified. In addition, the Cultural Heritage Screening Report includes a recommendation to circulate the document to Indigenous communities being engaged as part of the Project to gather Indigenous perspectives on the SSA as part of the Project.

12.8 Monitoring, Follow-Up, and Adaptative Management

This section presents a summary of the identified monitoring and follow-up required to confirm effects predictions and address uncertainty identified in Section 12.7, Prediction Confidence and Uncertainty.

Specifically, the following next steps are recommended:

- Conduct additional archaeological assessment for areas of archaeological potential in advance of the construction phase of the Project;
- Develop and implement an "Accidental Discovery of Artifact or Human Remains" protocol for the Project; and,
- Additional archaeological assessment and cultural heritage screening are required if the SSA is expanded beyond the areas assessed in the Heritage and Historical Resources Baseline Report (Annex 4A) or Cultural Heritage Screening Report (Annex 4B).

12.9 Predicted Future Conditions Should the Project Not Proceed

The predicted future condition of the environment for heritage and historical resources if the Project does not proceed is that potential archaeological resources, built heritage resources, and cultural heritage landscapes will remain in situ and undisturbed, where present.

12.10 Key Findings and Conclusions

This chapter characterized the existing environment, Project-environment interactions and potential residual Project and cumulative effects of the Project on Historic and Heritage Resources, including archaeological resources, built heritage resources, and cultural heritage landscapes. The Project has the potential to cause adverse effects on these components of the social environment through direct or indirect impacts to identified heritage resources during the construction of the mine. Changes to heritage and historical resources are of importance to the local community and Indigenous communities. Therefore, the heritage and historical resources assessment consequently provides information that is used to support the assessments of other socio-economic VECs, where applicable.

Supporting documents used to inform this chapter include:

- Heritage and Historical Resources Baseline Report (Annex 4A)
- Cultural Heritage Screening Report (Annex 4B)
- Chapter 22
- Kami Iron Ore Project Environmental Impact Statement, Volume I, Part II (Alderon 2012)

The 2012 EIS prepared by Alderon concluded that no palaeontological or architectural resources are present in the PDA and that these components of the Heritage and Historic Resources VEC were not carried forward. Champion concurs with these findings. No conditions specific to heritage and historical resources were noted in the 2014 ministerial decision for the Project (Department of Environment and Conservation 2014).

The effects assessment determined that no effect pathways are anticipated to heritage and historical resources since mitigation for archaeological resources, built heritage resources, and cultural heritage landscapes will be completed in advance of the construction phase of the Project. In addition, no temporal boundaries were identified for heritage and historical resources.

The following next steps are recommended for this VEC:

1. Conduct additional archaeological assessment for areas of archaeological potential in advance of the construction phase of the Project.
2. Develop and implement an "Accidental Discovery of Artifact or Human Remains" protocol for the Project.
    a. The protocols will be developed with direct input from PAO and local Indigenous communities.
    b. Protocols will include orientation and training for construction personnel, points of contact and lines of communication in case of accidental discovery, and descriptions of potential mitigation measures including but not limited to avoidance and protection or full archaeological mitigation.
    c. The developed protocols will be included in the Environmental Protection Plan (EPP) for the Project.
3. The Cultural Heritage Screening Report (Annex 4B) determined that there are no built heritage resources (architectural resources) or cultural heritage landscapes (cultural, spiritual, and heritage sites) in the SSA. At present, no further cultural heritage assessment is recommended.
4. Additional archaeological assessment and cultural heritage screening are required if the SSA is expanded beyond the areas assessed in the Heritage and Historical Resources Baseline Report (Annex 4A) or Cultural Heritage Screening Report (Annex 4B).


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13. Indigenous Land and Resource Use

The purpose of **Chapter 13** of the EIS is to characterize the existing environment, Project-environment interactions, and potential residual Project and cumulative effects on Indigenous Land and Resource Use. Traditional use of land and resources by Indigenous Peoples can be defined as the practices, customs and traditions that distinguish the culture of an Indigenous group and were practised prior to European contact or, in the case of the Métis, "prior to effective European control" (Government of Canada 2025). Aboriginal Rights, protected under the *Constitution Act, 1982*, include the right to practise Traditional activities, which can include, for example, hunting for food, fishing for food, social and ceremonial purposes, gathering plants for medicinal purposes, and use of areas for transfer of knowledge of cultural practices or travel routes. Land and resource use by non-Indigenous people is considered as a VEC in **Chapter 14, Other Land and Resource Use**.

The assessment of effects on land and resource use by the Indigenous groups considered (identified in Section 13.2) focuses on current use and the potential of the Project to cause adverse effects by modifying existing use of the SSA and the LSA (defined in Section 13.3.3), resulting in changes to conditions that facilitate current land and resource use by Indigenous groups. For example, Project effects on such VECs as fish and fish habitat (**Chapter 9**), vegetation, wetlands and protected areas (**Chapter 10**) and wildlife (**Chapter 11**) can influence changes in Traditional Land and Resource Use. In turn, changes in Indigenous Land and Resource Use may also influence other VECs considered in the EIS, such as a change in fish availability, vegetation or wildlife.

The requirements in the provincial EIS Guidelines for the Project issued by the Newfoundland and Labrador (NL) Minister of Environment and Climate Change (GNL 2024) involve a variety of socio-economic issues to be addressed in the EIS, including issues related to Indigenous Land and Resource Use. These other issues have been divided among the VECs selected for the socio-economic environment to reflect the best fit based on content (Table 13-1).

Table 13-1: Socio-economic Valued Environmental Components and Issues Addressed

Valued Environmental Component	Issues Addressed
Indigenous Land and Resource Use (Chapter 13)	Indigenous governments and organizations
	Indigenous land and resource use
	Traditional, cultural and recreational activities
Other Land and Resource Use (Chapter 14)	Municipalities with municipal plans and development regulations
	Extent of developed and undeveloped land
	Protected public water supply areas
	Parks and protected areas
	Land tenure
	Existing mining operations and planned expansions
	Accessibility of land for potential future mineral exploration and mining
	Current and historical land use for mining, mineral exploration and quarrying activities, including the presence of known mineral occurrences of potential economic significance
	Tourism-generating resources and operators (e.g., outfitter/guiding operators)
	Cabins
	Recreation areas (e.g., trails, multi-use trails, scenic lookouts, natural attractions)
	Recreation activities (e.g., hiking, hunting, fishing, swimming, berry picking)
	Domestic wood harvesting areas
Economy and Employment (Chapter 15)	Employment and employment equity and diversity, including under-represented groups
	Business capacity relative to goods and services

Valued Environmental Component	Issues Addressed
Services and Infrastructure (**Chapter 16**)	Wastewater
	Private, semi-public and public drinking water systems
	Food security
	Housing, accommodations and property values
	Health care and community services, including mental health and addiction services and social programs
	Fire and emergency services
	Education and training services and facilities
	Municipal infrastructure or services and capacity
	Existing electrical infrastructure
	Existing railroad facilities
Community Health and Well-being (**Chapter 17**)	Vibrations, noise emissions and noise levels, including sustained low frequency noise
	Light emissions, including night lighting
	Dust and air emissions
	Landscapes and viewscapes

13.1 Approach to the Effects Assessment

The methods and assessment presented in this chapter were developed in consideration of the requirements under the provincial *Environmental Protection Act*, with specific consideration of the requirements set out in the provincial EIS Guidelines for the Project issued by the Minister of Environment and Climate Change (GNL 2024). A table of concordance to the EIS Guidelines is provided in the Executive Summary. The assessment of effects on Indigenous Land and Resource Use followed the overall effects assessment approach and methods (**Chapter 4, Effects Assessment Methodology**).

Where possible, comparison to the outcomes of the assessment of Indigenous Land and Resource Use completed in the previous EIS (Alderon 2012) has been made to highlight where effects on Indigenous Land and Resource Use have been reduced through consideration of environmental design features and mitigation, or where new adverse effects may be introduced and require additional consideration in Project planning.

13.2 Integrating Engagement from Indigenous Groups

The Project previously underwent an environmental assessment (EA) process between 2011 and 2014. Alderon Iron Ore Corporation (Alderon), the previous owner of the Kami property, consulted with Indigenous groups as part of that process.

The most frequently raised interest and issue topics from Indigenous groups at that time were the following:

- Indigenous employment and business opportunities
- Indigenous consultation
- interaction with existing Aboriginal Rights
- Traditional Land Use activities
- potential effects on wildlife

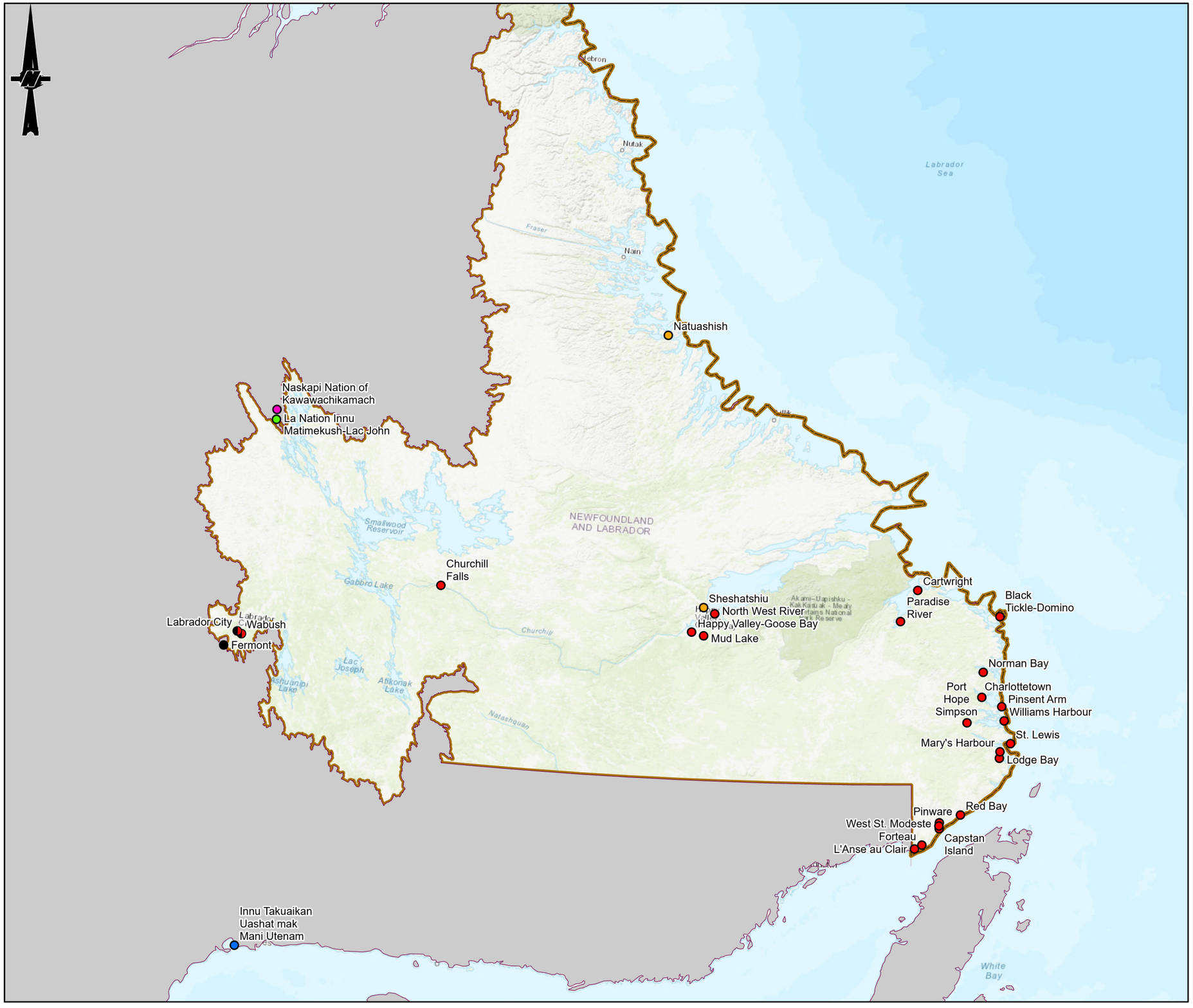
Champion has, similarly, been engaging with potentially affected Indigenous groups since acquisition of the Project in 2021. The overall approach and methods for incorporation of engagement feedback into the EIS are discussed in detail in **Chapter 22, Engagement**.

The province of NL has a duty to consult and, where appropriate, accommodate Indigenous groups when it considers conduct that might adversely effect potential or established Aboriginal or Treaty Rights. During the previous EA, five Indigenous groups were identified by the former Canadian Environmental Assessment Agency as being potential rightsholders (i.e., having potential Aboriginal or Treaty Rights that could be adversely affected by the Project). These are:

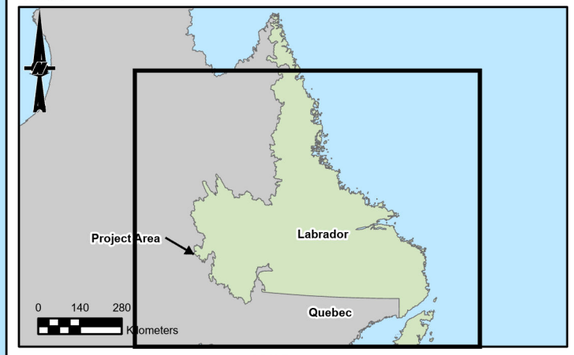
- Innu Nation
- Innu Takuaikan Uashat mak Mani-Utenam (ITUM)
- La Nation Innu Matimekush-Lac John (NIMLJ)
- Naskapi Nation of Kawawachikamach (NNK)
- NunatuKavut Community Council (NCC)

Champion has confirmed with the NL Office of Indigenous Affairs and Reconciliation that the Indigenous groups previously identified as potential rightsholders requiring consultation in 2011 for the previous EA process remain the same.

The communities for each of the identified Indigenous groups are shown in Figure 13-1.



KEY MAP



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Legend

- Labrador/Quebec Boundary
- Community in the Local Study Area
- Community in the Local Study Area / Community Identified by NunatuKavut Community Council
- Innu Nation
- Innu Takuaikan Uashat mak Mani-Utenam
- La Nation Innu Matimekush-Lac John
- Naskapi Nation of Kawawachikamach
- Community Identified by NunatuKavut Community Council

0 40,000 80,000 160,000

1:3,750,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - NEWFOUNDLAND AND LABRADOR
2. COORDINATE SYSTEM: NAD 1983 UTM ZONE 21N

CLIENT

CHAMPION IRON MINES LTD.

PROJECT

KAMI IRON ORE MINE PROJECT (KAMI PROJECT)
WABUSH, NL

TITLE

INDIGENOUS GROUPS OF INTEREST TO THE PROJECT

CONSULTANT

Kami

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PREPARED	GM/MS
REVIEWED	BM
APPROVED	NG

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Issues and concerns related to Indigenous Land and Resource Use raised by the Indigenous groups considered during the current EIS are summarized in Table 13-2. The table also identifies how these issues and concerns were addressed in the EIS, including cross references to appropriate sections of the document. The most frequently raised interest and issue topics during the EA process that Alderon underwent overlap with the issues and concerns raised during the current EA process.

Table 13-2: Summary of Issues and Concerns Related to Land and Resource Use by Indigenous Groups

Comment Theme	How it is Addressed in the Assessment	Where it was Addressed in the Assessment	Indigenous Group	Raised in Alderon EIS (Yes/No)
Concern for environmental protection	Potential effects on air quality, including dust, were assessed in Section 5.5.2. Potential effects on surface water were assessed in Section 8.5.2. Potential effects on groundwater were assessed in Section 7.5.2. Potential effects on fish and fish habitat were assessed in Section 9.5.2. Potential effects on vegetation, wetlands and protected areas were assessed in Section 10.5.2. Potential effects on wildlife were assessed in Section 11.5.2.	Chapter 5, Air Quality and Climate Chapter 7, Groundwater Chapter 8, Surface Water Chapter 9, Fish and Fish Habitat Chapter 10, Vegetation, Wetlands and Protected Areas Chapter 11, Wildlife	ITUM, Innu Nation, NNK	Yes
Changes to air quality (dust) due to waste rock piles	Potential effects on air quality, including dust from mine rock piles, were assessed in Section 5.5.2.	Chapter 5, Air Quality and Climate	ITUM	No
Concerns regarding rivers and streams on the Project property	Potential effects on surface water were assessed in Section 8.5.2.	Chapter 8, Surface Water	ITUM	No
Concerns regarding fish habitat compensation project	Potential effects on fish and fish habitat were assessed in Section 9.5.2.	Chapter 9, Fish and Fish Habitat	NCC	No
Concerns regarding birds and bird habitat	Potential effects on wildlife were assessed in Section 11.5.2.	Chapter 11, Wildlife	NCC	Yes
Respect of confidentiality of land use data	Champion acknowledges the sensitivity of confidential land use information. It encourages sharing of any non-confidential information in the future, through continuation of the relationship.	Chapter 22, Engagement	Innu Nation, ITUM	No
Concern about capacity to review a high number of permitting applications and pressure on consultation process	Champion has discussed permitting requirements with Indigenous groups, as described in Section 22.3. Champion has proposed consultation agreements to meet NL's Consultation Policy on Land and Resource Development Decisions.	Chapter 22, Engagement	Innu Nation	No
Concerns about consultation and engagement process of Government of NL	Champion is completing engagement activities under the NL Aboriginal Consultation Policy (April 2013). While NL has delegated some of the procedural aspects of consultation, NL may perform further consultation activities. Champion has proposed consultation agreements to meet NL's Consultation Policy on Land and Resource Development Decisions.	Chapter 22, Engagement	NIMLJ	No

Comment Theme	How it is Addressed in the Assessment	Where it was Addressed in the Assessment	Indigenous Group	Raised in Alderon EIS (Yes/No)
Concerns about the Nation's autonomy throughout the consultation process	Champion is committed to seeking free, prior and informed consent of Indigenous groups with recognized rights, as described in Section 22.3. Champion has proposed consultation agreements to meet NL's Consultation Policy on Land and Resource Development Decisions.	Chapter 22, Engagement	NIMLJ	Yes
Concerns about draft description of land use	Champion updated sections in the EIS relating to ITUM prior to EIS submission.	Chapter 22, Engagement Chapter 13 (Section 13.4.3.2)	ITUM	Yes
Raising awareness about inclusion of families affected by the Project in the engagement process	Champion will collaborate with ITUM representatives to develop a consultation and engagement plan to address this concern.	Annex 5G, Kami Engagement Plan	ITUM	No
Rejection of NCC claims to Indigenous identity and opposition to engaging with NCC on the Project	Champion acknowledges the feedback. Champion is committed to following the Duty to Consult requirements as outlined by the NLOIAR.	Chapter 22, Engagement	Innu Nation, ITUM, NIMLJ	No
NNK have expressed the importance of recognizing the traditional land of the Naskapis within Labrador West	Champion proposed a consultation agreement to NNK and is waiting for feedback.	Chapter 22, Engagement	NNK	Yes

EIS = Environmental Impact Statement; ITUM = Innu Takuaikan Uashat mak Mani-Utenam; NNK = Naskapi Nation of Kawawachikamach; NCC = NunatuKavut Community Council; NL = Newfoundland and Labrador; NIMLJ = La Nation Innu Matimekush-Lac John; NLOIAR = NL Office of Indigenous Affairs and Reconciliation.

13.3 Assessment Scoping

This section identifies key issues for Indigenous Land and Resource Use, defines and provides a rationale for selection of Indigenous Land and Resource Use as a VEC, identifies the measurable parameters selected for the assessment, and defines the spatial and temporal boundaries for this VEC.

13.3.1 Key Issues

Key issues often relate to the potential environmental, social, economic, and health effects of a project. Key issues identified for the Project reflect the primary concerns raised by regulatory authorities, Indigenous groups and local stakeholders, including residents, cabin owners, business owners, and other interested parties.

To identify key issues related to Indigenous Land and Resource Use, various sources were reviewed:

- Section 4.1 of the final EIS Guidelines, which summarized key issues from regulatory agencies and feedback received on the Project Registration and draft EIS Guidelines
- records of engagement with the Indigenous groups (Chapter 22), which capture engagement input received through meetings, phone calls, letters and interviews
- experience with mining projects in Labrador West
- key issues identified in the previous EIS (Alderon 2012), namely issues raised by Indigenous groups through the prior engagement process
- information, including Traditional knowledge, provided to Champion through engagement with the Indigenous groups
- Aboriginal Rights and title claims affecting the lands where Project components and activities will take place and where their potential effects may occur

Key issues related to assessing effects on Indigenous Land and Resource Use are:

- the alteration, loss, damage or disturbance of plants, wildlife, birds or fish, as well as their habitats
- the contamination of country foods, drinking water supplies, waterways, fish habitat or wildlife
- the restriction in or the loss of access to land and resource use
- the modification of existing use of the LSA as a result of disturbances related to air quality, noise, viewscapes
- the protection of rivers and streams in the Project footprint
- cumulative effects on fishing, wildlife and wildlife habitat
- overlap with Traditional territory and land claims
- Traditional, cultural and recreational activities

13.3.2 Valued Environmental Components and Measurable Parameters

Indigenous Land and Resource Use was selected as a VEC primarily because it was identified as a key issue in the EIS Guidelines. Indigenous Land and Resource Use refers to the practices, traditions and customs that distinguish the culture of an Indigenous group and were practised prior to European contact or, in the case of the Métis, between the post-contact and pre-sovereignty period. Practices include (but are not limited to) harvesting for food, as well as using the land and resources for teaching or ceremonial purposes. Section 35 of the *Constitution Act, 1982,* recognizes and affirms existing Aboriginal and Treaty Rights of the Indian, Inuit and Métis Peoples of Canada, the nature, scope and existence of which have been further defined through various legal decisions, as well as through land claims agreements or treaties between governments and particular Indigenous groups in specific areas.

Various Indigenous groups undertake traditional Land and Resource Use activities within the region within which the Project is situated, and claim rights to these areas of Labrador and Québec. The land claims are at varying stages of progress, negotiation and settlement, including the Labrador Innu (Land Claims Agreement-in-Principle (AIP) concluded, with associated land selection completed) and other groups at differing stages of recognition by both federal and provincial governments.

As noted in Section 13.2, the Indigenous groups to be considered for the current assessment, as confirmed by the Government of NL, are Innu Nation, ITUM, NIMLJ, NNK and NCC. The assessment of Indigenous Land and Resource Use has been informed by engagement with the identified Indigenous groups and carried out with the intention of addressing the requirements of the EA process and as part of Champion's commitment to continue the engagement process begun by the previous Project proponent.

Measurable parameters are used to characterize changes to attributes of the environment by the Project, other human developments and natural factors. The measurable parameters selected for the Indigenous Land and Resource Use assessment follow:

- the area accessible and available for Traditional Land and Resource Use
- the quality of the experience in the area used for Traditional Land and Resource Use due to sensory disturbances and changes in viewscapes
- the quantity and quality of harvested wildlife, fish, and plants as a result of Project effects on the biophysical environment

Table 13-3 states the rationale for selecting Indigenous Land and Resource Use as a VEC, its measurable parameters, and its linkages to other VECs.

Table 13-3: Valued Environmental Component, Rationale for Selection, Measurable Parameters and Linkages to Other Valued Environmental Components

VEC	Rationale for Selection	Measurable Parameters	Linkages to other VECs
Indigenous Land and Resource Use	— The Project may adversely affect land and resources currently used for Traditional purposes.	— Area accessible and available for Traditional Land and Resource Use — Quality of experience in area used for Traditional Land and Resource Use — Quantity and quality of harvests	— Air Quality and Climate (Chapter 5) — Noise, Vibration and Light (Chapter 6) — Surface Water (Chapter 8) — Fish and Fish Habitat (Chapter 9) — Vegetation, Wetlands and Protected Areas (Chapter 10) — Wildlife (Chapter 11) — Heritage and Historical Resources (Chapter 12) — Other Land and Resource Use (Chapter 14)

VEC = valued environmental component.

13.3.3 Assessment Boundaries

Assessment boundaries define the spatial and temporal extents of the assessment of a VEC. The spatial boundaries for Indigenous Land and Resource Use include the SSA, the LSA, and the RSA. The LSA and RSA remain the same as for the previous EIS (Alderon 2012; Chapter 22, Current Use of Land and Resources for Traditional Purposes by Aboriginal Persons).

The SSA includes the proposed infrastructure for the Project (i.e., the Project footprint) with an additional buffer to reflect existing uncertainty in the final Project design, so that adverse effects on VECs are not underestimated. The SSA is constrained to avoid certain features, including major lakes, the Québec-Labrador provincial border, and sensitive features like the Wahnahnish Lake Protected Public Water Supply Area. The SSA represents the smallest scale of assessment where the potential direct effects of the Project can be assessed accurately and precisely.

The LSA is defined as encompassing all Project components and activities and all potential zones of influence of Project-related environmental effects that may reasonably be expected to occur and that may affect Indigenous Land and Resource Use. It measures 40 by 40 km.

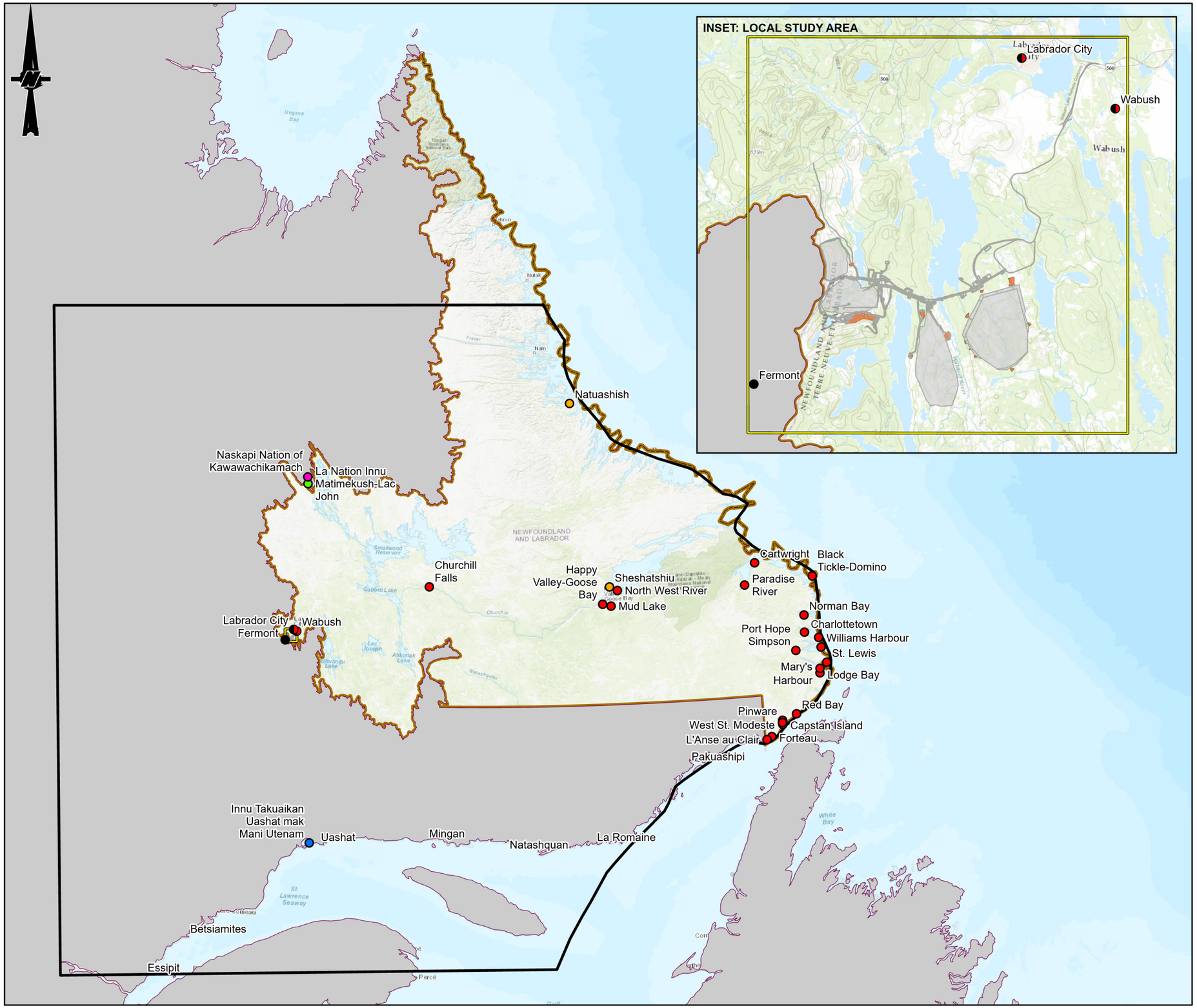
The RSA is generally defined as the overall geographic extent of land and resource use by the identified Indigenous groups and has been established to assist in assessing how the Project may affect the overall nature, intensity or value of land and resource use by the groups considered. The RSA, which covers 85 million ha, is thus intended to give a regional context to the effects assessment by considering the full known distribution of land and resource use by all of the Indigenous groups.

The spatial boundaries are summarized in Table 13-4 and illustrated in Figure 13-2.

Table 13-4: Spatial Boundaries for Assessment of Indigenous Land and Resource Use Valued Environmental Component

Study Area	Area (ha)	Description/Rationale
SSA	4,323	The SSA includes the Project footprint plus an additional buffer to incorporate a level of uncertainty into the Project design so that effects are not underestimated. The SSA was defined using bounding points around the outermost components of the Project footprint.
LSA	160,000	The LSA encompasses all Project components/activities and potential zones of influence of Project-related environmental effects that may reasonably be expected to occur.
RSA	85,233,666	The RSA is the geographic extent of land and resource use by the Indigenous groups to assist in assessing how the Project may affect their overall land and resource use.

SSA = site study area; LSA = local study area; RSA = regional study area.



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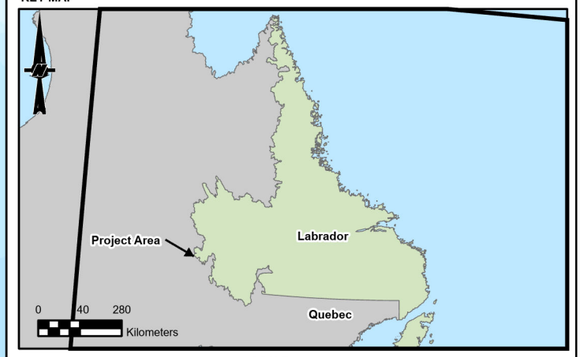

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Legend

- Labrador/Quebec Boundary
- Local Study Area
- Regional Study Area
- Proposed Project Infrastructure
- Proposed Sediment Pond
- Community in the Local Study Area
- Community in the Local Study Area / Community Identified by NunatuKavut Community Council
- Innu Nation
- Innu Takuaikan Uashat mak Mani-Utenam
- La Nation Innu Matimekush-Lac John
- Naskapi Nation of Kawawachikamach
- Community Identified by NunatuKavut Community Council

0 40,000 80,000 160,000
1:5,500,000 METRES

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)
1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - NEWFOUNDLAND AND LABRADOR
2. COORDINATE SYSTEM: NAD83(CSRS)V3 UTM ZONE 20N

CLIENT
CHAMPION IRON MINES LTD.

PROJECT
KAMI IRON ORE MINE PROJECT (KAMI PROJECT)
WABUSH, NL

TITLE
INDIGENOUS LAND AND RESOURCE USE SPATIAL BOUNDARIES

CONSULTANT

YYYY-MM-DD	2025-06-27
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PREPARED	GM/MS
REVIEWED	BM
APPROVED	NG

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The temporal scope of the assessment focuses on the 40-year period from initial construction to the end of decommissioning and rehabilitation (i.e., Closure), as defined by the following Project phases:

- **Construction phase (referred to as Construction)**–includes site preparation, mine, process plant and site infrastructure development, as well as commissioning the structures, systems, and components. The duration of Construction is expected to be four years.
- **Operations and Maintenance phase (referred to as Operations)**–includes the mining and milling of iron ore, production and shipment of iron ore concentrate, tailings management, management of mine rock, waste management, water management, release of treated effluent, site maintenance, and transportation of staff and materials to and from the site. Operations initiates with one year of pre-development mining (i.e., ramp-up) and concludes when processing is complete and is expected to last 26 years.
- **Decommissioning and Rehabilitation phase (referred to as Closure)**–includes accelerated flooding of the Rose Pit, re-establishment of passive surface water drainage following the pit-flooding period, and recontouring and revegetating disturbed areas. Physical infrastructure that is not required during Post-closure monitoring and for other activities required to achieve the Project's decommissioning criteria and to return the Project site to a safe and stable condition will be removed. Closure is expected to be 10 years.

Within the context of Indigenous Land and Resource Use, attention will be paid where relevant to such temporal factors as seasonal patterns, so as to evaluate how the Project phases may interact with the cyclical nature of Traditional activities. For instance, harvesting seasons are connected to the measurable parameters outlined in Table 13-2. Disruptions caused by the Project during critical seasonal periods could affect not only the availability of resources, but also the cultural and spiritual significance of Indigenous Land Use practices.

13.4 Existing Environment

The existing environment for Indigenous Land and Resource Use generally forms the basis against which residual Project and cumulative effects are assessed. Current Indigenous Land and Resource Use also represents the outcome of historical and current environmental and socio-economic changes that have shaped Traditional practices over time. Environmental and socio-economic pressures or factors are either natural (e.g., weather, wildfire, predation, disease, climate change) or human-related (e.g., European settlement, industrial development, commercial harvesting, forestry, competing land uses).

13.4.1 Methods

Characterization of Indigenous Land and Resource Use in the LSA was based on a range of information sources, including publicly available land claims documentation, land use studies, archaeological reports, academic literature, government documents and studies conducted for other resource development projects in the area. Given the substantial historical context relevant to this EIS, combined with the lack of updated data or additional relevant information, the sources remained unchanged from those used in the previous EIS (Alderon 2012). As a result, the information on the existing environment in the previous EIS is reproduced for the current assessment. Additionally, consultation and engagement with the identified Indigenous groups have been foundational to both the prior EIS and the current EIS, leading to consultation agreements and a land use study agreement established by the previous proponent. Also, additional information was provided to Champion or the prior proponent during their respective consultation/engagement processes.

The aforementioned sources have informed the reporting of current land and resource use of Indigenous groups that participated in the Project's engagement process and contributed their insights and knowledge. For Indigenous groups that opted out of engagement–either in the context of the prior or current EIS due to capacity constraints or other reasons–the assessment relies solely on literature reviews and publicly available data.

13.4.2 Aboriginal and Treaty Rights

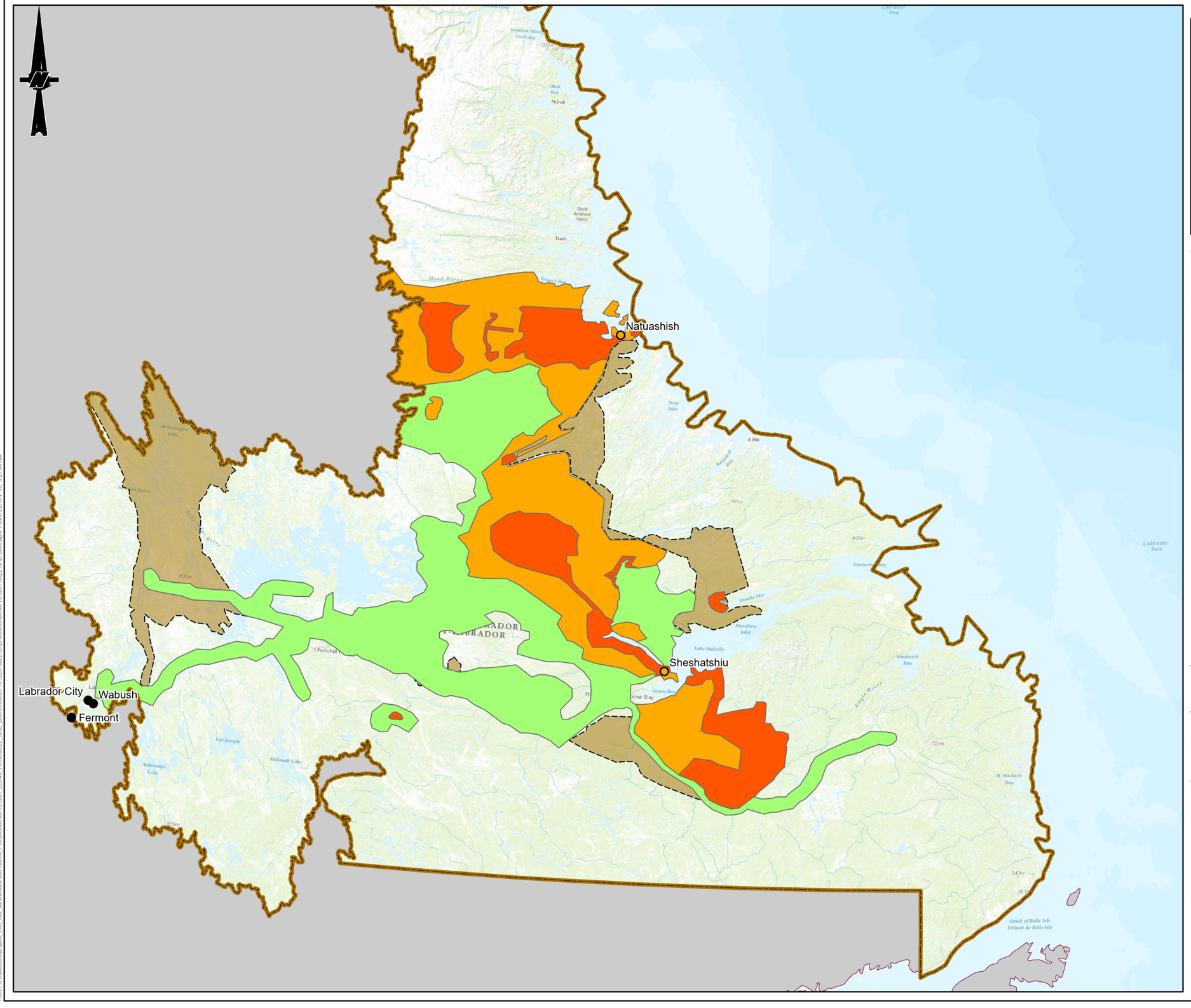
The following sections briefly introduce the context of the rights of each Indigenous group considered for the purpose of this assessment.

13.4.2.1 Innu Nation

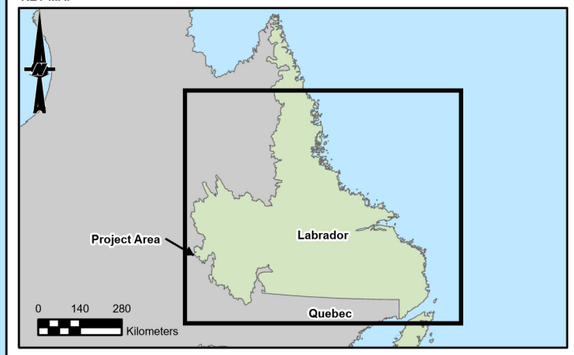
Innu Nation represents the Labrador Innu, who live mainly on two reserves: Sheshatshiu (Sheshatshiu Innu) in Central Labrador and Natuashish (Mushuau Innu) on the Labrador North Coast. Sheshatshiu Innu First Nation was established in 2006 (GNL 2006), whereas Mushuau Innu First Nation was established in 2003 (FCCI 2021).

The Labrador Innu claim rights and title to much of Labrador, excluding Nunatsiavut. In September 2008, Innu Nation and the Government of NL announced the signing of the Tshash Petapen Agreement, which resolved key issues of matters between Innu Nation and the Government of NL related to the Innu land claim, as well as effects and benefits related to past and proposed hydroelectric developments in western and central Labrador (NLOIAR No Date). Since that time, the provincial and federal governments and Innu Nation have completed detailed agreements, including a Labrador Innu Land Rights AIP, which was signed by the three parties in 2011 and forms the basis for ongoing treaty negotiations.

Under the Tshash Petapen Agreement, Traditional Innu land use areas of Labrador have been designated as Labrador Innu Lands (Category 1), Labrador Innu Settlement Area (Category 2), Permit-Free Hunting Area (Category 3) or other designated lands under the current Labrador Innu Land Claims AIP (Figure 13-3).



KEY MAP



SCALE 1:20,000,000

Legend

- Labrador/Quebec Boundary
- Labrador Innu Settlement Area - Catagory 3
- Labrador Innu Settlement Area - Catagory 2
- Labrador Innu Lands - Catagory 1
- Innu Economic Development Area
- Innu Nation
- Community in the Local Study Area

0 40,000 80,000 160,000

1:3,000,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - NEWFOUNDLAND AND LABRADOR
2. COORDINATE SYSTEM: NAD 1983 UTM ZONE 21N

CLIENT

CHAMPION IRON MINES LTD.

PROJECT

KAMI IRON ORE MINE PROJECT (KAMI PROJECT)
WABUSH, NL

TITLE

INNU NATION LAND CLAIMS AGREEMENT-IN-PRINCIPLE AREA

CONSULTANT

Kami

YYYY-MM-DD	2025-06-27
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PREPARED	GM/MS
REVIEWED	BM
APPROVED	NG

PROJECT NO.	CONTROL	REV.	FIGURE
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13.4.2.2 Innu Takuaikan Uashat mak Mani-Utenam

The members of ITUM primarily reside in two reserves in the Sept-Îles area in Québec. Uashat (1.17 km²) is located on the western outskirts of Sept-Îles, at the mouth of the Sainte-Marguerite River, and was constituted in 1906, whereas Maliotenam (Mani-Utenam) (5.27 km²), located 16 km east of Sept-Îles at the mouth of the Moisie River, was created in 1949.

The Innu of Uashat mak Mani-Utenam are descendants of an Indigenous population previously referred to as Montagnais (Mountaineers), which denotes their travels in the interior (Clément 2009). The members of ITUM assert rights over a vast territory that they call Nitassinan, which covers much of the Québec-Labrador Peninsula, along the rivers emanating from the North Shore in Québec as far as the Petitsikapau, Caniapiscau and Michikamau Lakes (Figure 13-4) (Hydro-Québec 2007).

In 1975, Conseil Atikamekw-Montagnais, representing nine Indigenous communities (including ITUM) and three Atikamekw communities, submitted a land claim in and to parts of Québec and Labrador that was accepted for negotiation by the governments of Canada and Québec, but has not been accepted for negotiation by the Government of NL (NLOIAR No Date). ITUM and NIMLJ created Corporation Ashuanipi in 2005 to represent their members in their comprehensive land claims negotiations, which began with the governments of Canada and Québec in 2006. Corporation Ashuanipi ended its activities in 2008, and ITUM and NIMLJ joined two other Innu communities on the North Shore to form the Alliance stratégique innue (Innu Strategic Alliance) in 2010 to defend their rights and interests, including in Labrador (Alliance stratégique innue 2010). No publicly available information was found on any activities undertaken by the Alliance stratégique innue since 2011.

On May 30, 2008, the Lac Bloom Iron Mine Limited Partnership (owned by a subsidiary of Cliffs Natural Resources) and the Innu communities of Uashat mak Mani-Utenam and Matimekush-Lac John signed an Impact and Benefit Agreement related to the Lac Bloom Mine. Following acquisition of the Lac Bloom mine in 2016, Québec Iron Ore (a subsidiary of Champion), signed the Impact and Benefit Agreement in 2017. The Impact and Benefit Agreement, which applies to all of Québec Iron Ore's projects, enables creation of joint committees to discuss specific issues of concern, such as employment, training, procurement, economic benefits, and environmental management. The goal of the Environmental Committee is to share environmental information regarding mining projects transparently with the communities. It also offers ITUM and NIMLJ the opportunity to influence Québec Iron Ore's decisions by providing a direct platform to discuss their concerns.

ITUM's Bureau de la protection des droits ancestraux et du territoire (Office for the Protection of Ancestral Rights and Territory) is engaged in ensuring compliance with agreements signed by the community and mining companies. According to the Bureau's director, environmental protection is a major concern for community members. The Environmental Committee is seen as a valuable instrument to help protect the Traditional lands of ITUM members (Minerai de Fer Québec 2019).

13.4.2.3 La Nation Innu Matimekush-Lac John

The members of NIMLJ primarily reside in two reserves in the Schefferville area in Québec. Matimekosh (Matimekush), located on the shore of Lac Pearce, was established in 1968, whereas Lac John, situated about 3.5 km away from Matimekush and the centre of Schefferville, was created in 1960.

The Innu of Matimekush-Lac John are descendants of an Indigenous population previously referred to as Montagnais (Mountaineers), which denotes their travels in the interior. The members of NIMLJ assert rights over a vast territory that they call Nitassinan, which covers much of the Québec-Labrador Peninsula, along the rivers emanating from the North Shore in Québec as far as the Petitsikapau, Caniapiscau and Michikamau Lakes (Figure 13-4) (Hydro-Québec 2007).

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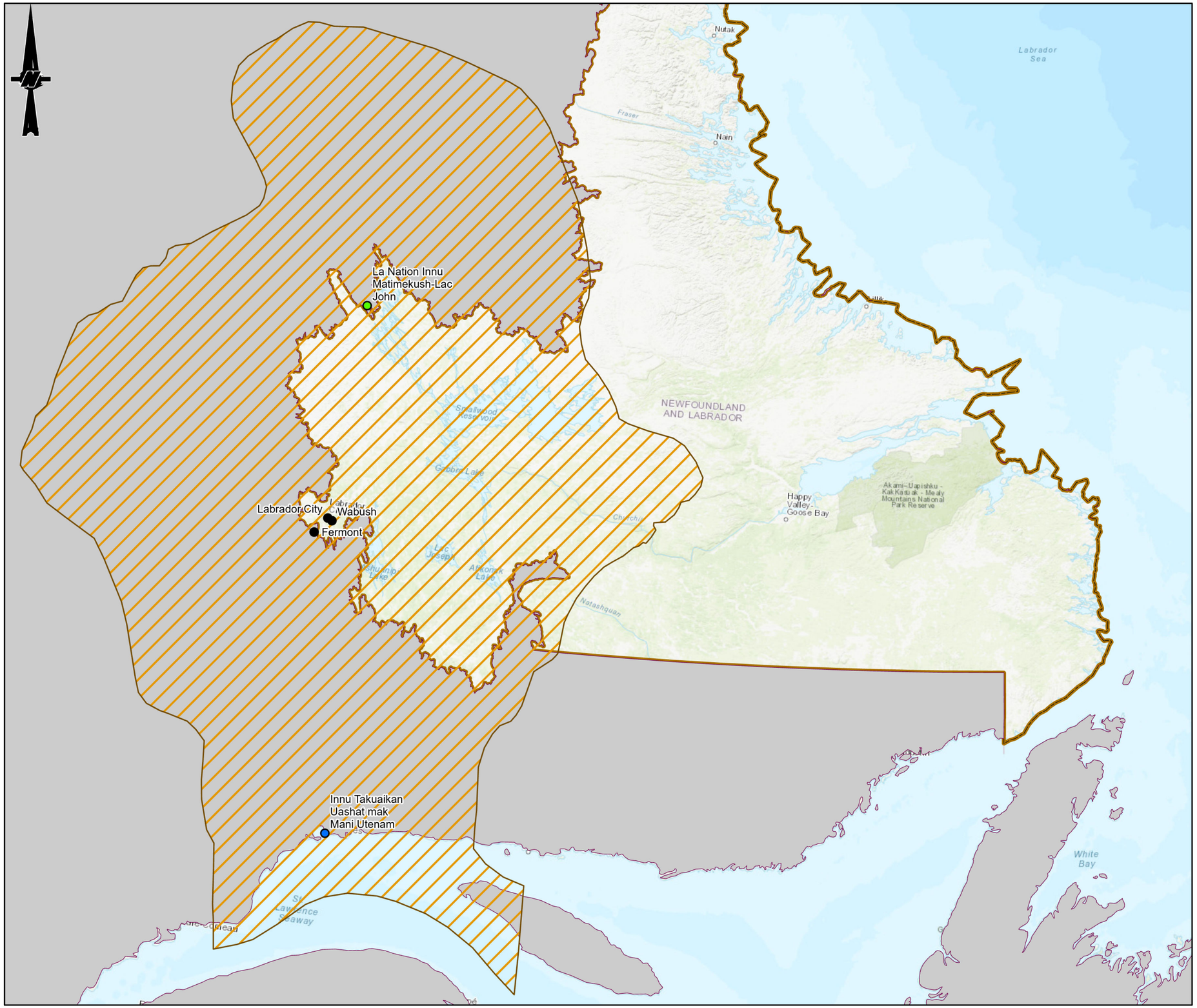
Information on the Impact Benefit Agreement signed by NIMLJ and ITUM for the Lac Bloom Mine is found in Section 13.4.2.2.



KEY MAP

SCALE 1:20,000,000

Legend

- Labrador/Quebec Boundary
- Traditional Territory of Innu Takuaikan Uashat mak Mani-Utenam and Nation Innu Matimekush-Lac John
- Community in the Local Study Area
- Innu Takuaikan Uashat mak Mani-Utenam
- La Nation Innu Matimekush-Lac John

0 40,000 80,000 160,000

1:3,750,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - NEWFOUNDLAND AND LABRADOR
2. COORDINATE SYSTEM: NAD 1983 UTM ZONE 21N

CLIENT

CHAMPION IRON MINES LTD.

PROJECT

KAMI IRON ORE MINE PROJECT (KAMI PROJECT)
WABUSH, NL

TITLE

TRADITIONAL TERRITORY OF INNU TAKUAIKAN UASHAT MAK MANI-UTENAM AND LA NATION INNU MATIMEKUSH-LAC JOHN

CONSULTANT

Kami

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APPROVED	NG

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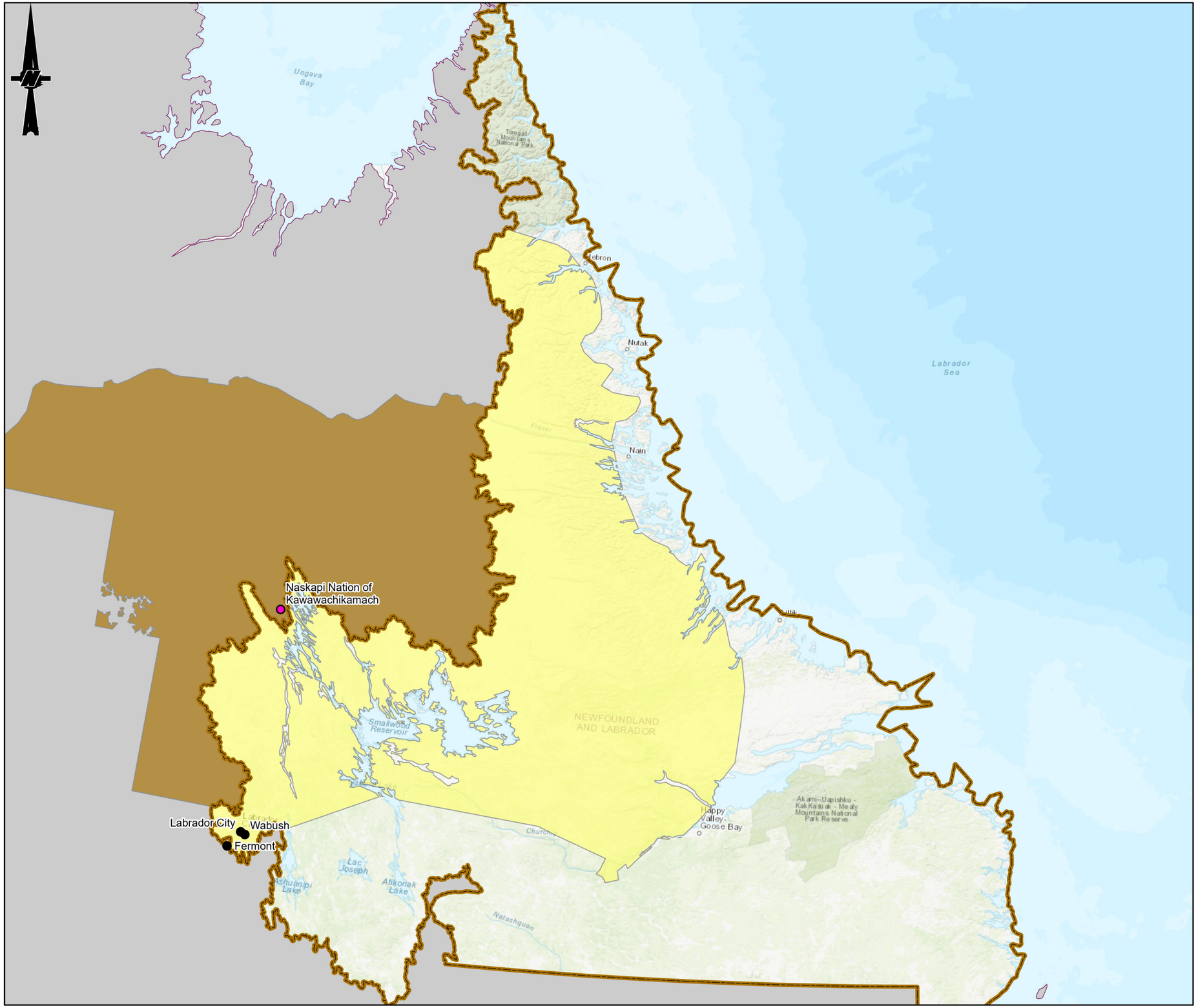
13.4.2.4 Naskapi Nation of Kawawachikamach

The Naskapis reside mainly in Kawawachikamach, located approximately 15 km northeast of Schefferville and established in 1982.

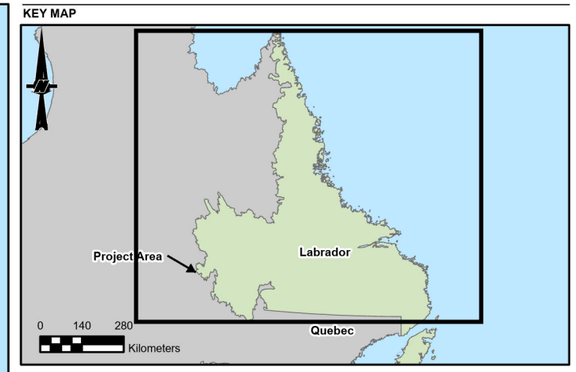
The Naskapis and their ancestors have occupied the interior of the Québec-Labrador Peninsula since time immemorial. They refer to their Traditional lands as Nuchimiyuschiiy. The Naskapis were nomadic, following the migratory caribou from Hudson Bay in the west to the Labrador Coast in the east, and from the southern coast of Ungava Bay in the north to the vicinity of Labrador City in the Churchill River area in the south (Weiler 2009).

Starting in the early 19th century, the Naskapis congregated temporarily and seasonally at the various posts of the Hudson's Bay Company and at favoured hunting locations. They settled in Schefferville in 1956, where some started to work at Iron Ore Company of Canada's Schefferville mines. The Naskapis shared with the Innu the Lac John Reserve and thereafter the Matimekosh Reserve. In 1983, the NNK surrendered its interest in the latter reserve upon its relocation to Kawawachikamach (IOC 2021).

The move to Kawawachikamach followed the ratification in 1978 of the Northeastern Québec Agreement (NEQA) with the governments of Québec and Canada that settled the Naskapis' claims of rights to part of Québec (Figure 13-5). In the Naskapi Sector created pursuant to the NEQA, the Naskapis have varying levels of privilege, exclusive rights and interests. Although the claims of the Naskapis in and to areas of Québec have been resolved, they continue to assert rights to a large portion of Labrador, including Labrador West. In 1995, the NNK submitted a statement of claim for the area, which remains unresolved (ATRIS 2019).



KEY MAP



SCALE 1:20,000,000

Legend

- Labrador/Quebec Boundary
- Naskapi Sector (JBNQA, Sector 24, Schedule 4)
- Outstanding Land Claim - Labrador
- Community in the Local Study Area
- Naskapi Nation of Kawawachikamach

0 40,000 80,000 160,000

1:3,750,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - NEWFOUNDLAND AND LABRADOR
2. COORDINATE SYSTEM: NAD 1983 UTM ZONE 21N

CLIENT

CHAMPION IRON MINES LTD.

PROJECT

KAMI IRON ORE MINE PROJECT (KAMI PROJECT)
WABUSH, NL

TITLE

NASKAPI NATION OF KAWAWACHIKAMACH TREATY AREA AND LAND CLAIM AREA

CONSULTANT

Kami

YYYY-MM-DD	2025-06-27
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PREPARED	GM/MS
REVIEWED	BM
APPROVED	NG

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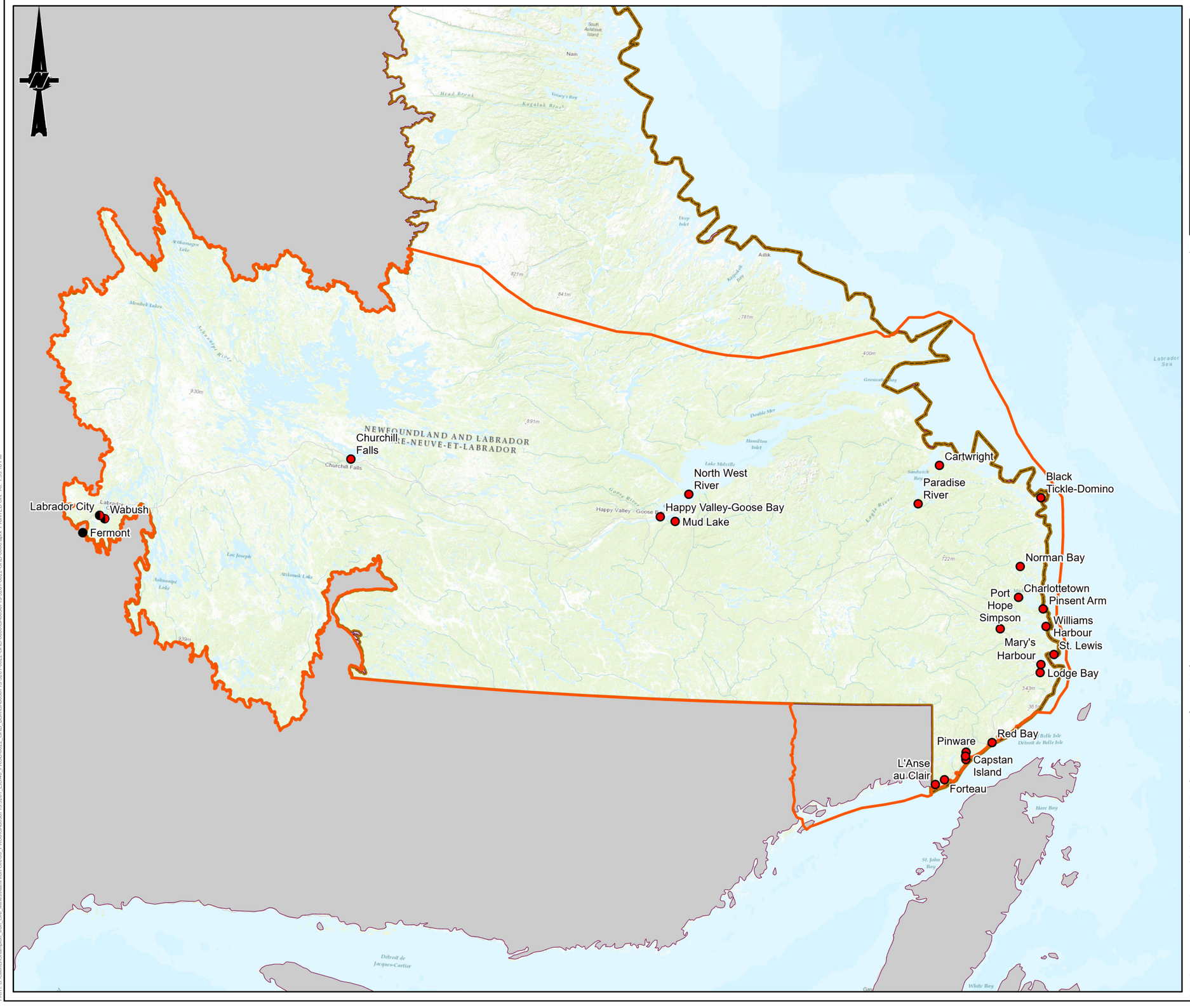
13.4.2.5 NunatuKavut Community Council

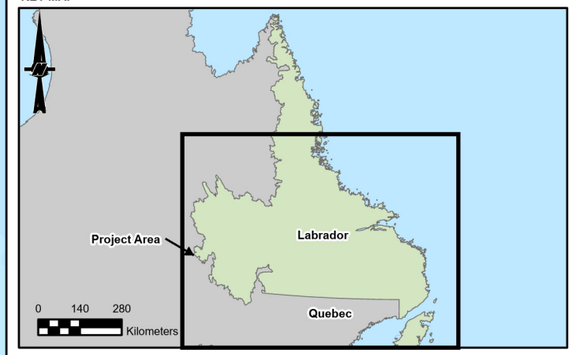
NCC has approximately 6,000 members who live throughout Labrador and elsewhere, particularly in communities along the southeast coast from Hamilton Inlet south to the Labrador Strait, as well as in central and western Labrador (NCC 2025).

The Treaty of 1765, signed between the Inuit and the British Crown, protected British interests from interference by the French and Americans (NCC 2021). It also provided the Inuit protection and treaty rights, including self-government, harvest of wildlife and natural resources and commercial right of trade. The treaty was formally recorded by the Lords of Trade to the Privy Council of Britain in May of 1769 and is protected by the Canadian *Constitution Act*.

The NunatuKavut Inuit of south and central Labrador are descendants of Inuit and Europeans who settled in Labrador in the 1700-1800s. The NCC promotes recognition of the rights of its members by all levels of government. It has asserted a land claim that covers much of central and southeastern Labrador (Figure 13-6). In 2019, the Government of Canada and NCC signed a Memorandum of Understanding establishing a discussion table on the Recognition of Indigenous Rights and Self-Determination (NCC 2025).



KEY MAP



SCALE 1:20,000,000

Legend

- Labrador/Quebec Boundary
- NunatuKavut Land Claim
- Community in the Local Study Area
- Community in the Local Study Area / Community Identified by NunatuKavut Community Council
- Community Identified by NunatuKavut Community Council

0 40,000 80,000 160,000

1:3,000,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - NEWFOUNDLAND AND LABRADOR
2. COORDINATE SYSTEM: NAD 1983 UTM ZONE 21N

CLIENT

CHAMPION IRON MINES LTD.

PROJECT

KAMI IRON ORE MINE PROJECT (KAMI PROJECT)
WABUSH, NL

TITLE

NUNATUKAVUT COMMUNITY COUNCIL LAND CLAIM AREA

CONSULTANT

Kami

YYYY-MM-DD	2025-06-27
DESIGNED	----
PREPARED	GM/MS
REVIEWED	BM
APPROVED	NG

PROJECT NO.	CONTROL	REV.	FIGURE
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13.4.2.6 Socio-political Context of Asserted Rights in the Region

In engaging with the five identified Indigenous communities, Champion was advised by Indigenous communities that they disagree with NCC's assertion of Aboriginal Rights in the LSA. Champion has informed the NL Office of Indigenous Affairs and Reconciliation of the matter. The disagreement is public knowledge as, for example, Innu Nation had called on the Government of Canada to reject NCC's Indigenous identity claims following the Memorandum of Understanding described in Section 13.1.1.1.

During Champion's engagement process, Indigenous communities advised Champion that they could not share information on contemporary Traditional Land and Resource Use, because of ongoing land claims negotiations or disputes with the Crown on recognition of Aboriginal Rights. As a result, the only source of information on contemporary Traditional Land and Resource Use made available to Champion is the 2012 land use study prepared by NCC for the previous EIS. Champion invited all identified Indigenous groups to review the previous land and resource use information provided in the 2012 EIS and provide pertinent information for the current EA process. To date, none of the Indigenous groups have provided information in that regard. Champion will continue to engage with the identified Indigenous groups and consider land and resource use information in Project planning, should it be made available.

As stated in Chapter 22, Champion's approach to Indigenous engagement is not intended to replace the Crown's duty to consult with respect to the Project. It is also important for Champion not to interfere with current negotiations and engagement efforts between the Crown and Indigenous groups.

13.4.3 Indigenous Land and Resource Use

The information presented in the following sections, reproduced from the Alderon 2012 EIS, focuses on information relevant to the SSA and the LSA. The SSA refers to the term Project footprint as defined in the Alderon 2012 EIS, both areas being largely similar.

13.4.3.1 Innu Nation

The Labrador Innu are the descendants of nomadic caribou hunters who travelled in relatively small groups throughout portions of the interior of the Labrador-Québec Peninsula to hunt caribou (Armitage 1989).

The approximate boundaries of the Sheshatshiu Innu territory between 1900 and 1965 extended west from Sheshatshiu along the Churchill River to Churchill Falls, although several places within the general western Labrador and eastern Québec region were reportedly used by Labrador Innu while part of, or when hunting with, members of other bands (Armitage 1989). Those sites include the Ashuanipi River, Ashuanipi Lake and Lac Joseph, east of Wabush.

Available information indicates that there are presently three core areas for Traditional Land and Resource Use by Sheshatshiu Innu (Mailhot 1997; Armitage and Stopp 2003):

- The hub of activity remains the group of lakes at the headwaters of Eagle River in southeastern Labrador and its tributaries, which had been an important area since pre-settlement times.
- The second area is an area of Central Labrador bounded by Uinnukapau (Winnokapau Lake) in the south, Smallwood Reservoir (formerly Mishikamau) in the west, Atshuku-nipi (Seal Lake) in the north and Nipishish (Nipishish Lake) in the east.
- The third area is centred on three lakes: Ashuapamatikuan (Shipiskan Lake), Ashtunekamuku (Snegamook Lake) and Shapeiau (Shapio Lake).

The identified core areas are distant from the LSA (Figure 13-2). Land use in those areas is now also supplemented by Innu harvesting along the Trans-Labrador Highway (TLH) and various secondary roads between Happy Valley-Goose Bay and western Labrador (Armitage and Stopp 2003).

In sum, Labrador Innu carry out many land and resource use activities for Traditional purposes, including hunting, fishing and gathering. While some activities occur within western Labrador generally (primarily along the TLH and other access roads), the review did not identify evidence of current land and resource use activities in or near the SSA. Champion is likewise not aware of future/planned land and resource use that may occur within or near the SSA and may, therefore, be affected.

Innu Nation databases and other available information describe cultural/spiritual sites and places, including birth, burial, death and gathering places, sites of religious and historical significance, and shaking tent ceremony locations. The available information does not refer to any sites within the LSA.

Finally, the Project does not overlap with land areas that have been designated under the current Labrador Innu Land Claims AIP. While the AIP is not legally binding and forms the basis for ongoing treaty negotiations between Innu Nation and the provincial and federal governments, it reflects the most recent information available regarding Labrador Innu land selection and the various land areas, types and associated rights that would be associated with an eventual final agreement.

13.4.3.2 Innu Takuaikan Uashat mak Mani-Utenam

The Innu of Uashat mak Mani-Utenam share their ancestral territory with the Innu of Matimekush-Lac John (Section 13.4.3.3), which stretches from the Québec Lower North Shore to north of Matimekush-Lac John, encompassing a large portion of western Labrador and eastern Québec (Figure 13-4).

The Innu of Uashat mak Mani-Utenam are the descendants of an Indigenous population that has occupied parts of the Québec-Labrador Peninsula for centuries. Their Traditional territory extended along the rivers from the coast of Québec's Lower North Shore into the Québec-Labrador interior as far as lakes Petitsikapau, Caniapiscau and Michikamau (Hydro-Québec 2007). Camps were dispersed across the territory, from where the Innu travelled to harvest wildlife according to the seasons. After spending winter on their hunting grounds in the interior, the Innu families convened in spring in the coastal area of what is today Sept-Îles, notably by travelling the Sainte-Marguerite (Tshimanipistuk) and Moisie (Mistashipu) Rivers. Waterfowl-hunting and salmon-fishing occurred principally in spring and summer, and the Innu prepared to return inland in late summer. Families travelling along the Moisie River reached the Nipissis River and Lake Nipissis, and eventually Lake Matinipi and, westward, Lakes Caophacho, Ashuanipi and Menihek. The Ashuanipi area was an important gathering place for the Innu (Castonguay, Dandenault et Associés inc. 1999). The archaeological and ethnographic sites recorded in Labrador are concentrated along the Ashuanipi-Menihek water corridor. In summer, many Innu families would gather on the shore of Lac Daviault (Focus Graphite 2014) near what is Fermont today. Zones of archaeological potential have been identified along the waterways between Lac Daviault and Lac Carheil (Transports Québec 2015).

The Innu of Uashat mak Mani-Utenam have indicated that they still engage in Traditional activities, such as harvesting, within the large Traditional territory, though activities are mainly practised along the coast of the St. Lawrence River, at the mouth of rivers, and along the existing highway (Route 138) (Uashaunnuat et al. 2010). Data on current land use in western Labrador by Innu of Uashat mak Mani-Utenam suggest that travel and harvesting activities are mostly focused on the Ashuanipi River and Menihek Lake (Nalcor Energy 2010).

The Project will be carried out in whole or in part in Lots 244 and 245 of the Saguenay Beaver Reserve (Figure 13-7), which are the subject of interests claimed by certain families of Uashat mak Mani-Utenam. Trapping activities in this area are not exclusive to Indigenous Persons (Minerai de Fer Québec 2019).

New camps and snowmobile trails were established across the territory pursuant to the 1994 agreement between Uashat mak Mani Utenam and Hydro-Québec for the construction of the Sainte-Marguerite-3 station, thus somewhat increasing land use. At the time, many permanent and temporary campsites and chalets were identified within the Sainte-Marguerite river basin (Castonguay, Dandenault et Associés Inc. 1996). Some 200 camps have been built since, in particular along the length of the Sainte-Marguerite River, while others are located along the Tshiuetin Rail Transportation Inc. railway and snowmobile trailhead (Castonguay et al. 2006).

The Innu of Uashat mak Mani-Utenam continue to use their Traditional territories, especially in the southern region accessible from their communities. The Québec North Shore & Labrador Railway and the Sainte-Marguerite-3 road have increased access to Traditional hunting and trapping areas.

During engagement with Champion, ITUM stated that the effects of mining activities over the past decades in the general area within which the Project is situated have affected caribou movements, thus affecting Traditional land use. ITUM noted that its members still use the area for hunting and trapping. Specific land use information in the area was not provided.

Labrador City

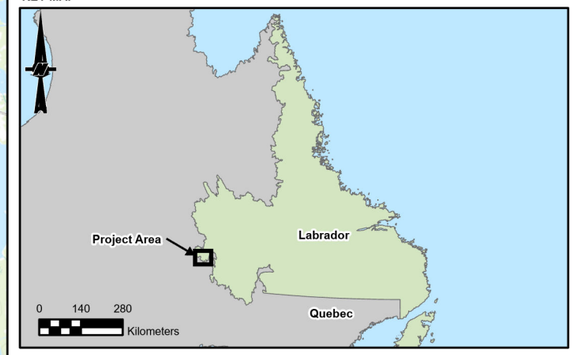
Wabush

Lot 244

Lot 245

Fermont

KEY MAP



SCALE 1:20,000,000

Legend

- Labrador/Quebec Boundary
- Beaver Management Lots
- Proposed Project Infrastructure
- Proposed Sediment Pond
- Community in the Local Study Area

0 2,000 4,000 8,000

1:175,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - NEWFOUNDLAND AND LABRADOR
2. COORDINATE SYSTEM: NAD 1983 UTM ZONE 21N

CLIENT

CHAMPION IRON MINES LTD.

PROJECT

KAMI IRON ORE MINE PROJECT (KAMI PROJECT)
WABUSH, NL

TITLE

BEAVER MANAGEMENT LOTS

CONSULTANT

Kami

YYYY-MM-DD	2025-06-27
DESIGNED	----
PREPARED	GM/MS
REVIEWED	BM
APPROVED	NG

PROJECT NO.	CONTROL	REV.	FIGURE
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13.4.3.3 La Nation Innu Matimekush-Lac John

The Innu of Matimekush-Lac John share close ties with the Innu of Uashat mak Mani-Utenam, with whom they have traditionally used and occupied a vast territory ranging over much of the Québec-Labrador Peninsula and down to the coast of the Lower North Shore.

Camps were dispersed across the territory, from where the Innu travelled to harvest wildlife according to the seasons. After wintering on their hunting grounds in the interior, the Innu families convened in spring in the coastal area of what is today Sept-Îles, notably by travelling the Sainte-Marguerite (Tshimanipistuk) and Moisie (Mistashipu) Rivers. Waterfowl-hunting and salmon-fishing occurred principally in spring and summer, and the Innu prepared to return inland in late summer. Families travelling along the Moisie River reached the Nipissis River and Lake Nipissis, and eventually Lake Matinipi and, westward, Lakes Caophacho, Ashuanipi and Menihek. The Ashuanipi area was an important gathering place for the Innu (Castonguay, Dandenault et Associés inc. 1999). The archaeological and ethnographic sites recorded in Labrador are concentrated along the Ashuanipi-Menihek water corridor. In summer, many Innu families would gather on the shore of Lac Daviault (Focus Graphite 2014) near what is Fermont today. Zones of archaeological potential have been identified along the waterways between Lac Daviault and Lac Carheil (Transports Québec 2015).

Evidence suggests that during the Historic Period, travel corridors used by Innu overlapped with parts of the general region surrounding the LSA (Alderon 2012). By the 1980s it appears that travel in the interior by the Innu of Matimekush-Lac John was greatly reduced, focusing on the area north of Labrador City and Wabush.

Although the Innu have adopted a more sedentary lifestyle during the 20th century, Traditional activities, including hunting, trapping and fishing, continue to play a central role in the lives and culture of the Innu of Matimekush-Lac John, including the hunting of caribou and other wildlife, fishing, and other types of harvesting. No information was identified to suggest current use of the LSA by the Innu of Matimekush-Lac John. Champion is likewise not aware of future/planned land and resource use that may occur within or near the Project footprint and may, therefore, be affected.

13.4.3.4 Naskapi Nation of Kawawachikamach

Archaeological evidence indicates that the Naskapis and their ancestors have used the northern part of the interior of the Québec-Labrador Peninsula for the past several thousand years (McCaffrey 1983), with the George River caribou herd being a central part of their culture and economy (Weiler 1992).

Two main travel routes have been used relatively steadily by the Naskapis over several generations and cover their Traditional territory from its northernmost limit at Ungava Bay to the central plateau around Lakes Attikamagen, Petitsikapau and Michikamau (Weiler 2009): one follows Howells River from the lower Koksoak, Caniapiscau and Goodwood Rivers in the north to Menihek and Ashuanipi Lakes in the south; and the other follows Swampy Bay River from the lower Koksoak and lower Caniapiscau Rivers to the Attikamagen-Petitsikapau Lake plateau and Michikamau Lake.

The NEQA outlines the Traditional territory within Québec, which encompasses much of northern Québec. Land and resource use occurs throughout the lands set out in the NEQA, although some travel routes and campsites have also been identified within Labrador, including in the Smallwood Reservoir area (Henriksen 1978). The Naskapis continue to practise many aspects of their Traditional way of life and culture throughout portions of this overall region.

After the Naskapis began to reside in the Schefferville area more permanently during the 20th century, their land and resource use activities focused increasingly upon adjacent areas. Activities such as hunting, trapping, and fishing remain important for the culture and economy of the NNK, whose members continue to pursue these activities near Kawawachikamach, along the TLH and Québec North Shore & Labrador Railway, and occasionally at outpost camps.

None of the available information indicates current land or resource use activities or the presence of places of cultural/spiritual significance within or near the SSA. The outcome of engagement with the NNK for the Kami Mining Project indicates that the Naskapis do not currently use the LSA (Alderon 2013). Champion is not aware of future/planned land and resource use that may occur within or near the SSA and may, therefore, be affected.

13.4.3.5 NunatuKavut Community Council

The available information indicates that the Traditional trapping areas of NCC members extended through southeastern Labrador to the Churchill River and included trap lines up to the “Height of Land” in western Labrador. Members of NCC continue to use land, water, and marine areas extensively for hunting large and small game, fishing, and harvesting vegetation for food, Traditional medicines, firewood, and other purposes (Nalcor Energy 2011).

Members of NCC travel on the land and sea by truck, snowmobile, boat, foot, dog-team and snowshoes (LMN 2009; NCC 2010). Travel along the TLH by automobile is currently the main mode of travel and access to land use areas. A network of snowmobile trails also connects the North West River, Happy Valley-Goose Bay, Mud Lake and Churchill Falls with other communities in Labrador, including Labrador City, Wabush, and Cartwright. These travel arteries are not used exclusively by NCC members, but rather by most Labradorians.

In 2012, Alderon and NCC agreed on the conduct of a study into current land and resource use activities by NCC members in Labrador West. The study, presented in Appendix L of Alderon's 2012 EIS, included a survey and mapping of the general nature and location of land and resource use activities within a regional area that included the Kami Mining Project footprint defined by Alderon. It reports on information provided by 30 respondents during telephone surveys and 10 participants in map biography interviews. As all 10 participants interviewed were originally from other areas of Labrador, the information given generally covered a period of about 10 to 15 years up to the time of the study. The telephone survey of 30 individuals did not identify the period of land use.

Briefly, the study indicates that NCC members residing in Labrador City and Wabush undertake a variety of land and resource use activities throughout western Labrador, including hunting, fishing, berry-picking, camping and associated travel across the land. The areas in which such activities occur include (but are not limited to) areas adjacent to the communities themselves, at other locations along the TLH, the Québec North Shore & Labrador Railway and other roadways, as well as near the Smallwood Reservoir.

Current land and resource use activities and locations identified specifically by NCC members within or near the SSA indicated that fishing occurred in a number of local waterbodies, including Duley Lake, Mills Lake, Riordan Lake, Rectangle Lake and others, with some associated place names, camping locations and travel/trapping routes in the area.

The study noted that the magnitude and intensity (i.e., frequency) of land use was not analyzed, and it recommended further study in the SSA on those aspects and the formulation of mitigation measures as appropriate. It also concluded that total area for many species harvested was often wide-ranging and that the SSA "made up a small portion of the total harvested land base." No cultural or spiritual sites connected to NCC were identified within the SSA.

13.5 Effects Assessment

The assessment of effects on Indigenous Land and Resource Use is presented in the following sections.

13.5.1 Methods

13.5.1.1 Effect Pathway Screening

Interactions between Project components/activities and the environment, and corresponding potential changes to the environment that could result in a potential effect to the Indigenous Land and Resource Use VEC were identified by an effect pathway screening. The effect pathway screening was used to inform the residual Project and cumulative effect analyses for the Indigenous Land Resource Use VEC.

Potential pathways leading to effects on Indigenous Land and Resource Use are identified based on the following:

- review of the Project Description (Chapter 2) and scoping of potential effects by the EIS team for the Project
- input from engagement (Chapter 22)
- scientific and Traditional knowledge
- review of EIS for similar mining projects, including the previous EIS (Alderon 2012)
- previous experience with mining projects
- consideration of key issues (Section 13.3.1)

Potential adverse effects of the Project are then identified, and practicable mitigation applied to avoid, minimize and/or compensate effects on Indigenous Land and Resource Use, where applicable. Avoidance measures, in Project design and planning as integrated into the Project, were developed iteratively by the Project's EIS team. The effectiveness of mitigation measures proposed for each effect pathway is assessed to determine whether the mitigation would address the potential Project effect such that the pathway is eliminated, would result in a negligible adverse effect on Indigenous Land and Resource Use, or if residual adverse effects on Indigenous Land and Resource Use resulting from the Project remain.

The effect pathway screening is a preliminary assessment intended to focus the effects analysis on effect pathways that require a more comprehensive assessment of effects on VECs. Using scientific and Traditional knowledge, feedback from engagement, experience with similar developments, and an understanding of mitigation effectiveness (i.e., level of certainty that the proposed mitigation would work), each effect pathway is categorized as one of the following:

- **No effect pathway**–The effect pathway could be removed (i.e., the effect would be avoided) by avoidance measures and/or additional mitigation so that the Project would result in no measurable environmental change relative to existing conditions or guideline values (e.g., water quality guideline values which, in this case, could serve as a proxy for indicating ongoing feasibility of water-related resource use), and, therefore, would have no residual effect on Indigenous Land and Resource Use.
- **Negligible effect pathway–**With the application of mitigation, the effect pathway could result in a measurable but minor environmental change relative to existing conditions or guideline values, but the change is sufficiently small that it would have a negligible residual effect on Indigenous Land and Resource Use. Therefore, further detailed assessment of the residual effect is not warranted, as the effect pathway would not be expected to result in a significant residual Project or cumulative effect on Indigenous Land and Resource Use.
- **Residual effect pathway–**Even with the application of mitigation, the effects pathway is still likely to result in a measurable environmental change relative to existing conditions or guideline values that could cause a greater than negligible adverse effect on Indigenous Land and Resource Use and warrants additional assessment.

Project-environment interactions determined as no effect or negligible effect pathways are not carried forward in the residual effects analysis. Residual effect pathways that could result in changes to the environment with one or more associated measurable parameters and have the potential to cause more than a negligible effect on Indigenous Land and Resource Use are carried forward to the residual Project effects analysis and residual cumulative effects analysis.

13.5.1.2 Residual Project Effect Analysis

The residual effects analysis describes the effects of the Project on Indigenous Land and Resource Use relative to existing conditions, using the temporal scope identified for the assessment (Section 13.3.3). Residual effects are described for each of the measurable parameters for the residual effect pathways identified. Changes in measurable parameters are predicted using a qualitative approach by applying a thorough understanding of the Project's components/activities to create a reasoned narrative of potential effects on Indigenous Land and Resource Use when considering existing conditions.

Residual effects are classified in tabular form using effects criteria, which is intended to provide structure and comparability across VECs assessed for the Project. The residual effects classification uses nature, magnitude, geographic extent, duration, timing, frequency, reversibility, probability of occurrence, and ecological and socio-economic context as criteria. The approach to classify each residual effect criterion is provided in Table 13-5. Following classification of residual Project effects, the analysis also evaluates their significance using threshold criteria or standards beyond which a residual effect is considered significant. The definition of a significant effect on Indigenous Land and Resource Use is provided in Section 13.5.1.4.

Table 13-5: Definitions Applied to Effects Criteria Classifications for the Assessment of Effects on Indigenous Land and Resource Use

Criterion	Rating	Definition
Nature	Positive	Change in measurable parameter results in net improvement or benefit to Indigenous Land and Resource Use
	Neutral	Change in measurable parameter results in no change to Indigenous Land and Resource Use
	Adverse	Change in measurable parameter results in net degradation of Indigenous Land and Resource Use
Magnitude	Low	Change in measurable parameter is such that Traditional Land and Resource Use could be practised in the same or similar manner as before
	Moderate	Change in measurable parameter is such that the preferred manner or location of Traditional Land and Resource Use could be modified or limited
	High	Change in measurable parameter is such that Traditional Land and Resource Use could no longer be carried out in preferred manner or location
Geographic extent	SSA	Change in measurable parameter is confined to the SSA
	LSA	Change in measurable parameter extends outside the SSA but within the LSA
	RSA	Change in measurable parameter extends beyond the LSA but is confined to the RSA
	Beyond regional	Change in measurable parameter extends beyond the RSA

Criterion	Rating	Definition
Duration	Short term	Change in measurable parameter is limited to the Construction or Closure phase
	Medium term	Change in measurable parameter occurs through the duration of the Project
	Long term	Change in measurable parameter extends beyond the life of the Project
Timing	Qualitative narrative	Change in measurable parameter is described with a focus on seasonality of Indigenous Land and Resource Use as relevant
Frequency	Occasional	Change in measurable parameter is expected to occur rarely (e.g., once or a few times)
	Periodic	Change in measurable parameter is expected to occur consistently at regular intervals or associated with temporal events (e.g., during hot, dry climatic conditions)
Reversibility	Reversible	Change in measurable parameter is reversible after Closure
	Irreversible	Change in measurable parameter is predicted to influence the component indefinitely
Probability of occurrence	Unlikely	Change in measurable parameter is not expected to occur, but not impossible
	Possible	Change in measurable parameter may occur, but is not likely
	Probable	Change in measurable parameter is likely to occur, but is uncertain
	Certain	Change in measurable parameter will occur
Ecological and socio-economic context	Qualitative narrative	Change in measurable parameter is described by the perception of an effect that considers sensitivity and resilience of VECs (ecological context), and the cultural and social significance placed on certain VECs and the unique values, customs or aspirations of each Indigenous group

SSA = site study area; LSA = local study area; RSA = regional study area; VEC = valued environmental component.

13.5.1.3 Residual Cumulative Effect Analysis

The cumulative effects assessment builds on the results of the residual Project effects assessment and considers the incremental changes that were predicted to have a likely residual adverse effect on Indigenous Land and Resource Use. This would include the effects of past and current projects or past climate-related changes (i.e., forest fires), which contribute to existing conditions upon which residual Project effects are assessed. For the EIS, the description of the existing environment characterizes the environment already affected by past and current projects and activities; therefore, the cumulative effects assessment focuses on analyzing the effects of other reasonably foreseeable developments (RFDs) in combination with the Project. Although positive residual effects are characterized in the residual Project effects analysis, they are not carried forward to the cumulative effects analysis, as Project benefits from other past, present and/or RFDs or activities are unlikely to be known or publicly disclosed (e.g., Benefit Agreements with Indigenous groups or local community stakeholders).

The cumulative effects assessment follows a three-step process:

1. Identify RFDs and potential cumulative effects that overlap in time and space with residual effects.
2. Identify and describe additional mitigation measures, if applicable.
3. Characterize residual cumulative effects, using the same criteria defined for the residual Project effects analysis (Section 13.5.1.2).

Chapter 4 provides a list of known RFDs and physical activities with potential residual effects that could overlap spatially and temporally with the Project's residual environmental effects. Following identification of applicable RFDs, residual Project effects on Indigenous Land and Resource Use are evaluated. The evaluation is completed qualitatively based on publicly available information (e.g., Project registrations or EIS reports) to describe the environmental effects of RFDs on Indigenous Land and Resource Use. If effects from these RFDs overlap spatially or temporally with the residual Project effects on Indigenous Land and Resource Use, then potential cumulative effects are identified. Otherwise, a cumulative effects assessment is not required.

Based on the assessment of potential cumulative effects, an assessment is made regarding whether additional mitigation measures, beyond those proposed for the Project, are required to address potential cumulative effects. Where applicable, additional mitigation measures are identified.

Residual cumulative effects are characterized using the same criteria assessed for residual Project effects (Section 13.5.1.2). Following classification of residual cumulative effects, the analysis evaluates the significance of residual Project effects using threshold criteria beyond which a residual effect is considered significant. The definition of a significant effect for Indigenous Land and Resource Use is provided in Section 13.5.1.4.

13.5.1.4 Significance Determination

A significant adverse residual effect on Indigenous Land and Resource Use is defined as one that causes a meaningful decline in one or more of the following parameters:

- the accessibility or availability of land and resources used by the identified Indigenous groups
- the quality of the experience of Indigenous Land and Resource Use
- the quantity or quality of harvests, despite the application of mitigation measures

The effect must be more than negligible and disrupt participation or access.

13.5.2 Effect Pathway Screening

The effect pathway screening identifies potential effects pathways that are evaluated considering proposed mitigation to predict whether the effect pathway has the potential to cause residual adverse or positive effects. The effectiveness of mitigation measures proposed for each effect pathway is assessed to determine whether the mitigation would address the potential Project effect such that the effect pathway is eliminated or would result in a negligible adverse effect on the VEC. As described in Section 13.5.1.1, each effect pathway was categorized as one of the following:

- **No effect pathway** (i.e., avoidance measures and/or mitigation result in no residual effect on Indigenous Land and Resource Use)
- **Negligible effect pathway** (i.e., mitigation results in negligible effect on Indigenous Land and Resource Use)
- **Residual effect pathway** (i.e., effect that is greater than negligible and carried forward for further assessment)

The effects pathway screening is summarized in Table 13-6. The subsections following the table provide the rationale to assign potential effects to the no effect pathway, negligible effect pathway and residual effect pathway categories.

Table 13-6: Potential Effects Pathways for Indigenous Land and Resource Use

Project Components/Activities	Effects Pathway	Environmental Design Features, Mitigation or Enhancement Measures	Effect Pathway Screening
Construction: — site preparation, including vegetation clearing and earthworks — handling and storage of overburden — road development, including culverts and bridge installation — construction of facilities and infrastructure — construction of tailings management facility starter dam — handling and storage of mine rock — drilling and blasting — construction of water management infrastructure — dewatering activities — power generation — operating mobile construction equipment — site traffic, including transportation of personnel and materials to and from site — employment and procurement	— Project presence and site activities may result in limited access to, and loss of, areas for Traditional Land and Resource Use. — Project presence and site activities may result in disturbances related to air quality, noise, vibration, light, viewscapes, and traffic that affect the quality of the experience of using the land and resources for Traditional purposes. — Project presence and site activities may adversely affect the land and resources used for Traditional purposes, diminishing the quantity/quality of harvests.	— Limit the SSA to the extent practical through site design: – Optimize use of cleared areas for Project activities. – Minimize the footprint (e.g., clustering buildings, co-locating linear infrastructure). — Minimize access restrictions in the LSA where safety permits. — Continue to share with the Indigenous groups Project information and updates on ongoing and planned activities, and undertake discussion of issues and potential means of addressing them as outlined in the Kami Engagement Plan (Annex 5G). — Continue to consult and engage with the identified Indigenous groups on land and resource use. — Implement where agreed-upon processes for collection of information on land and resource use, Traditional knowledge and issues scoping (with associated funding and resources). — Implement mitigation measures for minimizing effects related to air quality and climate (Chapter 5), noise, vibration and light (Chapter 6), surface water (Chapter 8), fish and fish habitat (Chapter 9), vegetation, wetlands and protected areas (Chapter 10), wildlife (Chapter 11), heritage and historical resources (Chapter 12), traffic (Chapter 16) and viewscapes (Chapter 17). — Prohibit hunting and fishing by Project personnel in the SSA while working or residing on site. — Implement the various management plans (e.g., Environmental Protection, Environmental Effects Monitoring, Erosion and Sediment Control, Waste Management) to mitigate potential effects on the biophysical environment.	Negligible effect pathway for all Indigenous groups.
Operation and Maintenance: — open pit mining, including blasting and crushing ore and mine rock — operating mobile mining equipment — handling and storage of overburden, mine rock and ore — operation and management of the tailings management facility — processing iron ore concentrate — pit dewatering and site water management — handling, storage and discharge of non-contact water — handling, storage, treatment and discharge of contact water — water intake for fresh water and process water — sewage collection, treatment and surface discharge — progressive reclamation — railcar loading and transportation — site traffic, including transportation of personnel and materials to and from site — camp, mine services area, and office operation — employment and procurement		— Limit the SSA to the extent practical through site design: – Optimize use of cleared areas for Project activities. – Minimize the footprint (e.g., clustering buildings, co-locating linear infrastructure). — Minimize access restrictions in the LSA where safety permits. — Continue to share with the Indigenous groups Project information and updates on ongoing and planned activities, as well as discussion of issues and potential means of addressing them as outlined in the Kami Engagement Plan (Annex 5G). — Continue to consult and engage with the identified Indigenous groups on land and resource use. — Implement where agreed-upon processes for collection of information on land and resource use, Traditional knowledge and issues scoping (with associated funding and resources). — Implement mitigation measures for minimizing effects related to air quality and climate (Chapter 5), noise, vibration and light (Chapter 6), surface water (Chapter 8), fish and fish habitat (Chapter 9), vegetation, wetlands and protected areas (Chapter 10), wildlife (Chapter 11), heritage and historical resources (Chapter 12), traffic (Chapter 16) and viewscapes (Chapter 17). — Prohibit hunting and fishing by Project personnel in the SSA while working or residing on site. — Implement the various management plans (e.g., Environmental Protection, Environmental Effects Monitoring, Erosion and Sediment Control, Waste Management) to mitigate potential effects on the biophysical environment. — Implement progressive rehabilitation during Operations.	Negligible effect pathway for all Indigenous groups.

Project Components/Activities	Effects Pathway	Environmental Design Features, Mitigation or Enhancement Measures	Effect Pathway Screening
Closure: — accelerated pit flooding — removal of infrastructure, restoration and revegetation of facilities and infrastructure — site traffic, transportation of personnel and materials to and from the site — employment and procurement		— Minimize restrictions in the LSA where safety permits. — Continue to share with the Indigenous groups Project information and updates on ongoing and planned activities, as well as discussion of issues and potential means of addressing them, as outlined in the Kami Engagement Plan (Annex 5G). — Continue to consult and engage with the identified Indigenous groups on land and resource use. — Implement mitigation measures for minimizing effects related to air quality and climate (Chapter 5), noise, vibration and light (Chapter 6), surface water (Chapter 8), fish and fish habitat (Chapter 9), vegetation, wetlands and protected areas (Chapter 10), wildlife (Chapter 11), heritage and historical resources (Chapter 12), traffic (Chapter 16) and viewscapes (Chapter 17). — Prohibit hunting and fishing by Project personnel in the SSA while working or residing on site. — Implement the various management plans (e.g., Environmental Protection, Environmental Effects Monitoring, Erosion and Sediment Control, Waste Management) to mitigate potential effects on the biophysical environment. — Restore public access to the SSA and LSA, where feasible, as part of the closure process. — A Rehabilitation and Closure Plan is being developed in collaboration with government and Indigenous communities. This will be submitted as part of the permitting process.	Negligible effect pathway for all Indigenous groups.

SSA = site study area; LSA = local study area.

13.5.2.1 No Effect Pathways

The effects pathway screening indicates that none of the anticipated Project interactions with existing conditions results in a no-effect pathway for Indigenous Land and Resource Use.

13.5.2.2 Negligible Effect Pathways

Given the limited available information respecting land and resource use by the identified Indigenous groups in the SSA or LSA, combined with the adoption of a conservative approach for the effects assessment, the following Project interactions with existing conditions are assumed to result in negligible effect pathways to land and resource use by any of the Indigenous groups. Consequently, they are not carried forward in the assessment for the reasons explained below.

Limited Access to, and Loss of, Areas for Traditional Land and Resource Use

Access restrictions will be implemented progressively throughout the SSA as required for public safety and operational reasons. Once established, many restrictions will remain in place throughout the life of the Project. In other areas, such as those associated with construction of site access roads, stream crossings and much of the rail line, temporary access restrictions will be required during active construction periods. Access to areas of the SSA will also be restricted during Closure to allow for the restoration of affected land used for harvesting purposes, as part of rehabilitation activities.

Champion plans to continue to proactively engage with all the Indigenous groups, as outlined in the Kami Engagement Plan (Annex 5G), to effectively mitigate potential effects.

In summary, given that the SSA constitutes a small portion of the total land base of all the Indigenous groups, in combination with Champion's commitment to continue to engage with them on land and resource use (among other topics), it is reasonable to conclude that the potential effects of the Project on accessibility and availability of land and resources used for Traditional purposes are negligible.

Disturbances Diminishing the Quality of the Experience of Traditional Land and Resource Use

All Project phases will result in disturbances, such as those associated with air emissions, noise, vibration, light, traffic and visibility of Project equipment and physical works. These disturbances could adversely affect the experience of using the land and its resources for Traditional purposes. Detailed analyses of the potential disturbances, including their intensity and spatial and temporal distribution, are presented in the applicable EIS VEC chapters and include associated mitigation measures. For the assessment of effects on the quality of the experience of Traditional Land and Resource Use, only adverse residual effects of high magnitude are considered, since land and resource use will not be permitted in the SSA, where the effects of the disturbances will be most concentrated. The potential disturbances of high magnitude involve certain parameters of air quality (total particulate matter and particulate matter with a mean aerodynamic diameter of 10 microns or smaller) during the Project lifespan, as well as noise during Construction.

Concerning the predicted residual effect of high magnitude of particulate matter (total particulate matter and particulate matter with a mean aerodynamic diameter of 10 microns or smaller) during the Project lifepsan, its extent is local, its duration medium-term and its frequency continuous. The effect is also reversible. The only receptor where the predicted concentrations of 24-hour total particulate matter and particulate matter with a mean aerodynamic diameter of 10 microns or smaller exceed the NL Ambient Air Quality Standards at a predicted rate of more than 1% of the year is at a cabin location (with a predicted rate of 4% of the year, or 13 days of the year). Additionally, an analysis of the predicted changes to air quality (as well as to other environmental components) on human health was conducted (Human Health Risk Assessment, TSD XI). It concluded that the Project is not anticipated to result in any potential adverse effects on human health.

Respecting the predicted residual effect of moderate magnitude of noise during Construction, its extent is local, its duration short-term and its frequency periodic. The effect is also reversible.

Considering that access to the SSA will not be permitted during the Project lifecycle and that the SSA constitutes a small portion of the total land base used by the Indigenous groups, which is wide-ranging, it is reasonable to conclude that the potential effects of the Project on the quality of the experience of Traditional Land and Resource Use are negligible.

Champion commits to continuing to proactively engage with all the Indigenous groups, as outlined in the Kami Engagement Plan (Annex 5G), to effectively mitigate potential effects.

Diminished Quality or Quantity of Harvests due to Effects on the Biophysical Environment

Sensory disturbances (e.g., dust, noise) during all Project phases and effects on such VECs as surface water, vegetation, wetlands, fish and wildlife can indirectly affect Indigenous Land and Resource Use by, for example, reducing the presence and abundance of wildlife for harvesting, reducing the quality of berries, or resulting in the loss of fish.

The potential implications of the Project for fish (Chapter 9), vegetation (Chapter 10) and wildlife (Chapter 11) have been assessed in detail. The related assessments concluded that the Project will not likely cause significant adverse environmental effects on aspects of the biophysical environment considering mitigation, monitoring, management, and compensation measures. This, in combination with the fact that key resources (such as caribou) are either not found in the LSA or not likely to be affected due to regulation such as hunting bans, as well as the finding that the SSA constitutes a small portion of the total harvested land base, leads to the conclusion that there is minimal to no potential for consequent effects on the Traditional use of the potentially affected land and resources.

Champion plans to continue proactively engaging with all the Indigenous groups, as outlined in the Kami Engagement Plan (Annex 5G), to effectively mitigate potential effects.

13.5.2.3 Residual Effect Pathways

No Project-environment interactions with current land and resource use for Traditional purposes are predicted to result in residual effect pathways.

13.6 Prediction Confidence and Uncertainty

A key element of a comprehensive EA is the prediction of future conditions of the environment as a result of the Project from previous and existing projects, activities and RFDs. Given that environments change naturally and continually through time and across space, assessments of effects and predictions about future conditions embody some degree of uncertainty (CEA Agency 2018).

The purpose of this section is to identify the key sources of uncertainty and qualitatively describe how uncertainty was addressed for Indigenous Land and Resource Use to increase the level of confidence that effects would not be larger than predicted, including the potential need for monitoring and adaptive management that can reduce uncertainty over time (Section 4.10).

Confidence in effects analyses can be related to many elements for Indigenous Land and Resource Use:

- adequacy of the baseline data for providing an understanding of existing conditions
- the nature, magnitude and spatial extent of future fluctuations in ecological, cultural and socio-economic variables, independent of effects from the Project and other developments (e.g., climate change, fire, flood)
- assumptions, conditions and constraints of quantitative model inputs
- understanding of Project-related effects on complex social-ecological systems that interact across different scales of time and space (e.g., how and why the Project would influence wildlife and Indigenous Land and Resource Use)
- knowledge of the effectiveness of proposed Project environmental design features or mitigation for avoiding or minimizing effects
- uncertainties associated with the exact location, physical footprint, activity level, and timing and rate of future developments

There is a moderate level of confidence in the prediction based on limited access to Traditional Land and Resource Use studies for the identified Indigenous groups (the only one available being the 2012 land use study from NCC), existing knowledge obtained from research respecting the identified Indigenous groups (see Section 13.4.3), and the results of current engagement with the Indigenous groups. Nonetheless, the mitigation measures proposed for the Project (e.g., site design to avoid sensitive features to the extent possible, measures addressing effects on air quality, noise, vegetation, fish, and wildlife) have been shown to be effective for other projects.

13.7 Monitoring, Follow-up and Adaptive Management

A dedicated follow-up and monitoring plan is not proposed for Indigenous Land and Resource Use. Champion will develop a Project-specific Environmental Management System, Environmental Protection Plan and other associated plans stipulating mitigation measures to be applied during Construction, Operations, and Closure. These measures will be subject to regular review of their effectiveness as part of ongoing adaptative management programs.

Champion will implement the Kami Engagement Plan to follow up on specific Indigenous Land and Resource Use interests. Follow-up and monitoring programs for other VECs will be indirectly applicable to Indigenous Land and Resource Use.

13.8 Predicted Future Conditions Should the Project Not Proceed

While it is reasonable to assume that Indigenous Land and Resource Use would benefit should the Project not proceed, no adverse residual effect on Indigenous Land and Resource Use is anticipated as a result of the Project. Thus, the predicted future conditions of the environment for Indigenous Land and Resource Use is not expected to differ markedly from current conditions if the Project does not proceed.

13.9 Key Findings and Conclusions

This chapter summarized available information on Indigenous Land and Resource Use in the SSA and LSA for the identified Indigenous groups, and analyzed the potential effects of the Project on this VEC. Design changes have been made to the Project to avoid effects on Indigenous Land and Resource Use to the extent possible, and various mitigation measures have been identified to minimize potential effects.

Based on the available information, Project interactions with existing conditions are predicted to result in negligible effect pathways to land and resource use by Indigenous groups in the LSA for Traditional purposes. Consequently, they are not carried forward in the assessment.

In sum, no residual effect pathways are anticipated for Indigenous Land and Resource Use. The previous EIS (Alderon 2012) had arrived at the same conclusion.


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14. Other Land and Resource Use

The purpose of **Chapter 14, Other Land and Resource Use** is to characterize the existing environment, Project-environment interactions and potential residual Project and cumulative effects of the Project on Other Land and Resource Use. Other Land and Resource Use refers to land and resource use other than that by Indigenous Peoples for Traditional purposes. The Project has the potential to cause adverse effects on Other Land and Resource Use through displacement of physical assets or disruption of activities presently undertaken within the site study area (SSA), as defined in Section 14.3.3, or on surrounding lands. Land and resource use by Indigenous Peoples for Traditional purposes is considered as a Valued Environmental Component (VEC) in **Chapter 13, Indigenous Land and Resource Use**.

Effects on the biophysical environment may influence use of land and resources, as natural resources (e.g., surface water, fish, plants, wildlife) may be affected. Therefore, VECs of the biophysical environment provide information to support the assessment of Other Land and Resource Use, as follows:

- **Chapter 5, Air Quality and Climate**–includes changes in air quality during Project activities that may affect Other Land and Resource Use (e.g., disturbance of species targeted for harvesting, dust on harvested plants).
- **Chapter 6, Noise, Vibration and Light**–includes changes in sensory disturbances during Project activities that may affect Other Land and Resource Use (e.g., disturbance of species targeted for harvesting).
- **Chapter 8, Surface Water**–includes changes in water quality or water levels in ponds or lakes during Project activities that may affect Other Land and Resource Use (e.g., boating or swimming).
- **Chapter 9, Fish and Fish Habitat**–includes changes in the quantity and quality of aquatic resources during Project activities that may affect Other Land and Resource Use (e.g., trout angling).
- **Chapter 10, Vegetation, Wetlands, and Protected Areas**–includes changes in the quantity and quality of existing plant communities during Project activities that may affect Other Land and Resource Use (e.g., berry-picking or forestry).
- **Chapter 11, Wildlife**–includes changes in the quantity and quality of wildlife resources during Project activities that may affect Other Land and Resource Use (e.g., hunting or trapping).

In addition, the assessment of potential effects on Other Land and Resource Use is also directly linked to other socioeconomic VECs and informed the following analysis:

- Chapter 13, Indigenous Land and Resource Use–includes consideration of effects on resources used by Indigenous land users.
- **Chapter 15, Economy and Employment** VEC–is informed by changes in Other Land and Resource Use during Project activities, as they may affect other commercial activities (e.g., mining, mineral exploration, quarrying).
- **Chapter 17, Community Health and Well-Being**–includes changes to environmental conditions (e.g., air quality, noise, vibration, light, viewscapes) that may result in disturbances to land and resource use.

The assessment of potential effects on Other Land and Resource Use caused by the Project is discussed in the context of existing conditions (Section 14.4) and described in more detail in the Land Use and Socioeconomic Baseline Report (Annex 4C).

The requirements in the provincial Environmental Impact Statement Guidelines (EIS Guidelines) for the Project issued by the Newfoundland and Labrador (NL) Minister of Environment and Climate Change (Government of NL 2024a) involve a variety of socioeconomic issues to be addressed in the EIS, including issues related to land and resource use. These other issues have been divided among the VECs selected for the socioeconomic environment to reflect the best fit based on content (Table 14-1).

Table 14-1: Socioeconomic Valued Environmental Components and Issues Addressed

Valued Environmental Component	Issues Addressed
Indigenous Land and Resource Use (Chapter 13)	Indigenous governments and organizations
	Indigenous land and resource use
	Traditional, cultural, and recreational activities
Other Land and Resource Use (Chapter 14)	Municipalities with municipal plans and development regulations
	Extent of developed and undeveloped land
	Protected public water supply areas
	Parks and protected areas
	Land tenure
	Existing mining operations and planned expansions
	Accessibility of land for potential future mineral exploration and mining
	Current and historical land use for mining, mineral exploration and quarrying activities, including the presence of known mineral occurrences of potential economic significance
	Tourism-generating resources and operators (e.g., outfitter/guiding operators)
	Cabins
	Recreation areas (e.g., trails, multi-use trails, scenic lookouts, natural attractions)
	Recreation activities (e.g., hiking, hunting, fishing, swimming, berry-picking)
	Domestic wood harvesting areas
Economy and Employment (Chapter 15)	Employment and employment equity and diversity, including under-represented groups
	Business capacity relative to goods and services
Services and Infrastructure (Chapter 16)	Wastewater
	Private, semi-public and public drinking water systems
	Food security
	Housing, accommodations and property values
	Health care and community services, including mental health and addiction services and social programs
	Fire and emergency services
	Education and training services and facilities
	Municipal infrastructure or services and capacity
	Existing electrical infrastructure
	Existing railroad facilities
Community Health and Well-Being (Chapter 17)	Vibrations, noise emissions and noise levels, including sustained low frequency noise
	Light emissions, including night lighting
	Dust and air emissions
	Landscapes and viewscapes

14.1 Approach to the Effects Assessment

The methods and assessment presented in this chapter and throughout the EIS, were developed to address requirements of the provincial *Environmental Protection Act*, with specific consideration of information outlined in the provincial EIS Guidelines for the Project issued by the Minister of Environment and Climate Change (Government of NL 2024a). A table of concordance to the EIS Guidelines is provided in the Executive Summary.

The approach to the assessment of potential effects on Other Land and Resource Use included identifying key issues related to the Project (Section 14.3.1), analyzing input obtained through engagement (Section 14.2), outlining spatial and temporal boundaries for the VEC (Section 14.3.3), summarizing the description of baseline conditions including relevant regulatory and policy setting (Section 14.4), identifying assessment criteria and measurable parameters along with associated rationales (Section 14.3.2),

describing criteria used to determine the significance of any adverse residual effects (Section 14.5.1), identifying potential Project interactions and pathways for effects on the VEC (Section 14.5.2), identifying and describing mitigation measures (Section 14.5.4.2), characterizing any residual effects following mitigation (Section 14.5.3.1) and determining the significance of residual effects (Section 14.5.3.2). Residual cumulative effects are also assessed (Section 14.5.4).

The assessment of effects on Other Land and Resource Use follows the overall effects assessment approach and methods (**Chapter 4, Effects Assessment Methodology**). Where possible, comparison to the outcomes of the assessment of Other Land and Resource Use completed for the Alderon 2012 EIS have been made to highlight where effects on Other Land and Resource Use have been reduced through consideration of environmental design features and mitigation or where new adverse effects may arise and require additional consideration in Project planning.

14.2 Integrating Engagement from Indigenous Groups and Local Stakeholders

The Project previously underwent an environmental assessment (EA) process between 2011 and 2014. Alderon Iron Ore Corporation (Alderon), the previous owner of the Kami property, consulted with Indigenous groups and local stakeholders as part of that process. Likewise, Champion Iron Ore Limited (Champion) has been engaging with potentially affected Indigenous groups and local stakeholders since acquisition of the Project in 2021. The overall approach and methods for incorporation of engagement feedback into the EIS are discussed in detail in **Chapter 22, Engagement**.

Issues and concerns related to Other Land and Resource Use raised by local stakeholders, and how they were addressed through the Other Land and Resource Use VEC, are summarized in Table 14-2, including cross references to where comments were considered or addressed in the VEC chapter.

Table 14-2: Summary of Issues and Concerns Related to Other Land and Resource Use by Local Stakeholders

Comment Theme	How it is Addressed in the Assessment	Where it was Addressed in the Assessment	Local Stakeholder	Raised in the Alderon EIS (Yes/No)
Changes in water quality will affect fish and fish habitat (related to fishing)	Champion will manage and treat mine wastewater to protect lakes around the Project from discharge of contaminated water.	— Chapter 8: Surface Water (Section 8.5.3) — Chapter 9: Fish and Fish Habitat (Section 9.5.3)	Town of Labrador City, Town of Wabush, cabin owners	Yes
Project footprint will affect snowmobile trails	Champion has committed to rebuild snowmobile trails affected by the Project.	— Chapter 14: Other Land and Resource Use (Section 14.5.3)	Cabin owners/Town of Wabush, Town of Fermont, White Wolf Snowmobile Club	Yes
Movement of heavy equipment will affect use of a recreation area	Champion has redesigned the western access road to avoid cabin areas.	— Chapter 2: Project Description (Section 2.7) — Chapter 16: Services and Infrastructure (Section 16.5.2.2.4)	Cabin owners	Yes
Project footprint will affect the last wilderness in the area	Champion will minimize effects on wildlife through avoidance, minimizing the footprint, and stewardship agreements.	— Chapter 9: Fish and Fish Habitat (Section 9.5.3) — Chapter 10: Vegetation, Wetlands and Protected Areas (Section 10.5.3) — Chapter 11: Wildlife (Section 11.5.3)	Town of Labrador City	Yes
Dust and noise will affect usage of Duley Lake Family Park	Champion has identified Project-specific mitigation measures and adaptive management related to dust and noise.	— Chapter 5: Air Quality (Section 5.5.2) — Chapter 6: Noise, Vibration and Light (Section 6.5.3)	Town of Labrador City/Town of Wabush	Yes
Project may affect the Jean Lake and Elephant Head recreation areas	Champion has redesigned the east access road and railway route to avoid areas of concern.	— Chapter 2: Project Description (Section 2.8.8)	Town of Wabush	Yes

EIS = Environmental Impact Statement.

14.3 Assessment Scoping

This section defines and provides a rationale for selection of Other Land and Resource Use as a VEC, identifies key issues and measurable parameters selected for the assessment, and defines assessment boundaries for Other Land and Resource Use.

14.3.1 Key Issues

Key issues often relate to potential environmental, social, economic and health effects of a proposed project. Key issues identified for the Project reflect the primary concerns raised by regulatory authorities, Indigenous groups, and local stakeholders, including municipalities, residents, cabin owners, business owners and other interested parties.

To identify key issues related to Other Land and Resource Use, the following sources were reviewed:

- Section 4.1 of the provincial EIS Guidelines, which summarized key issues from regulatory agencies and feedback received on the Project Registration and draft EIS Guidelines
- records of engagement (Chapter 22), which captures engagement input received through meetings, phone calls, letters and interviews
- experience with mining projects in Labrador West
- key issues identified in the previous EIS
- the Land Use and Socioeconomic Baseline Report prepared for the EIS (Annex 4C)

Key issues related to other land and resource use include the following:

- existing mining operations and planned expansions
- accessibility of land for potential future mineral exploration and mining
- protected public water supply areas (PPWSAs), public drinking water systems and water quality
- parks and protected areas
- ability of cabin owners to continue activities such as hunting and wood harvesting
- effects of development on recreational land use in one of the last wilderness areas
- safety in recreation areas due to speed and number of trucks on roads
- safety in cabin areas due to movement of heavy equipment on roads and trails
- damage to roads and trails from movement of heavy equipment

Based on the preceding information, current concerns about land and resource use expressed by local stakeholders are focused on potential effects on recreation and harvesting activities (e.g., cabins, hunting, wood-cutting, access and safety in recreation areas due to mining activities). Regulators have identified concerns regarding access to the area for other exploration and mining activities and ability of cabin owners to continue land use activities (e.g., hunting and wood harvesting) in the area. Recreation and harvesting were also of interest during preparation of the previous EIS, as the following key issues were identified for land and resource use (Alderon 2012):

- potential effects on cabins
- potential effects on dog sled trails
- potential effects on fishing activities
- potential effects on hunting activities
- potential effects on land use activities
- potential effects on recreational activities
- potential effects on snowmobile trails
- potential effects on trapping
- potential effects on wood harvesting

The Alderon EIS determined that the Project would result in both adverse and positive effects on access to land and resource use within the SSA (Alderon 2012). The following measures were proposed to be incorporated into the Project design by Alderon to minimize effects on access:

- The stream crossing at Waldorf River would consist of a span bridge to facilitate navigation.
- Navigation signage would be posted in the vicinity of any in-water Project features.
- Progressive rehabilitation at the tailings management facility would begin during Operations, so that access could resume upon closure.
- Alderon would work with White Wolf Snowmobile Club and Menihek Nordic Ski Club to address Project effects.

The release letter issued by NL Environment and Climate Change (NLECC) on January 10, 2024, for the Project indicated the following: "Kami Mine Limited Partnership shall adhere to all mitigation, monitoring and commitments stated in the Environmental Impact Statement (EIS) submitted October 1, 2012, and the additional amendments submitted February 15, 2013, and June 27, 2013, and any other supporting documentation derived through the environmental assessment process".

Champion has adopted a similar approach to progressive rehabilitation and effects on snowmobile trails. Champion will continue to explore other aspects during detailed design as the Project progresses.

14.3.2 Valued Environmental Components and Measurable Parameters

The focus of this VEC is in Labrador West and on non-Indigenous use of land and resources near the Project. The use of land and resources for Traditional purposes is addressed in Chapter 13, Indigenous Land and Resource Use.

Other Land and Resource Use was selected as a VEC due to current and future use of lands and resources within and adjacent to areas planned for Project components and activities. The Project is located on lands within the planning areas of two municipalities with corresponding land use zoning by-laws. The rationale includes potential for interactions between the Project and the use of the land and resources, considering also the intrinsic value of industry, economic development and other activities such as recreation and subsistence harvesting.

Other current land uses in the area are under the jurisdiction of provincial and/or federal legislation, policies and guidance. The Project is on Crown land where other users hold land tenure and related rights (e.g., mining, mineral exploration, forestry, cabins). The Project will result in a loss of access to lands used for recreational purposes and, to a smaller extent, tourism as well as various types of harvesting.

Table 14-3 provides an overview of the Other Land and Resource Use VEC including rationale for selection, measurable parameters and linkages to other VECs. In the case of other land and resource use, measurable parameters are used to qualitatively describe changes to the environment from the Project, other human developments and natural factors, as well as to predict overall effects on VECs.

Table 14-3: Valued Environmental Components, Rationale for Selection and Measurable Parameters

Valued Environmental Component	Rationale for Selection	Measurable Parameters	Linkages to other VECs
Other Land and Resource Use	— Potential effects on current and future public and private use of the lands and resources within and adjacent to the Project. — The Project may require approvals or amendments to municipal land use zoning. — The Project may require permits or other approvals from provincial authorities. — The Project may affect access to areas used for recreation and tourism.	— Change in regulated land use — Change in land tenure — Change in cabin use — Change in industrial and commercial development — Change in access — Change in level of activity	— Air Quality and Climate (Chapter 5) — Noise, Vibration and Light (Chapter 6) — Surface Water (Chapter 8) — Fish and Fish Habitat (Chapter 9) — Vegetation, Wetlands, and Protected Areas (Chapter 10) — Wildlife (Chapter 11) — Indigenous Land and Resource Use (Chapter 13)

Valued Environmental Component	Rationale for Selection	Measurable Parameters	Linkages to other VECs
	— The Project may affect access to areas used for harvesting. — The Project may affect availability of cabins.		— Economy and Employment (Chapter 15) — Community Health and Well-Being (Chapter 17)

VEC = Valued Environmental Component.

14.3.3 Assessment Boundaries

Spatial boundaries for Other Land and Resource Use were selected in consideration of the geographic extent over which Project components/activities, and their effects, are likely to occur for the VEC. Temporal boundaries are based on the timing and duration of Project activities. Spatial and temporal boundaries associated with the effects assessment for Other Land and Resource Use, defined in Table 14-4 and shown in Figure 14-1, consist of the SSA, local study area (LSA) and regional study area (RSA), which are described below.

The SSA includes the area of the proposed infrastructure for the Project (i.e., the Project footprint) with an additional buffer to reflect existing uncertainty in the final design of the Project and so that adverse effects to VECs are not underestimated (i.e., the SSA area is twice as large as the anticipated Project footprint). The SSA is constrained to avoid certain features, including major lakes, the Québec-Labrador provincial border and sensitive features, such as the Wahnahnish Lake PPWSA. At 4,370 hectares (ha), the SSA represents the smallest scale of assessment and an area where the potential direct effects of the anticipated Project can be assessed accurately.

The LSA (Figure 14-1) includes 7,700 ha around the SSA and the combined Planning Areas of Labrador City (3,411 ha) and Wabush (4,242 ha). It encompasses all Project features, as well as several water bodies and landscape features used for recreational activities, subsistence harvesting and commercial land use and harvesting. The LSA includes the areas where Project-related environmental effects may reasonably be expected to occur. It has been amended from the previous EIS to encompass regulatory areas under the jurisdiction of the two municipalities and the Government of NL.

The RSA includes an area of approximately 4,600,000 ha and provides broader context for the assessment of Project effects on Other Land and Resource Use. Its scale enables the assessment of cumulative effects of the Project combined with existing conditions and other reasonably foreseeable developments (RFDs). The RSA, the same as for the previous EIS, was delineated to capture various travel routes in western Labrador, including roads, rail corridors and other cleared rights-of-way that afford access to the landscape via motor vehicle, snowmobile, or all-terrain vehicle (ATV). Within the boundaries of the RSA are several roads and byways, including the Trans-Labrador Highway (TLH) and two well-travelled smaller roads to locations on the Smallwood or Ossokmanuan reservoirs. The RSA also includes two hydroelectric transmission corridors used to travel west and southwest of Churchill Falls and south of the TLH. Other travel routes in the RSA include the Quebec North Shore and Labrador Railway (QNS&L) and its corridor, the extensive network of groomed snowmobile trails and many off-road trails and paths connecting to remote water bodies and privately-owned cabins. It is along these and other arteries that people access cabins and areas used for hunting, fishing, trapping, berry-picking and other harvesting throughout the region.

Table 14-4: Spatial Boundaries for Assessment of Other Land and Resource Use Valued Environmental Component

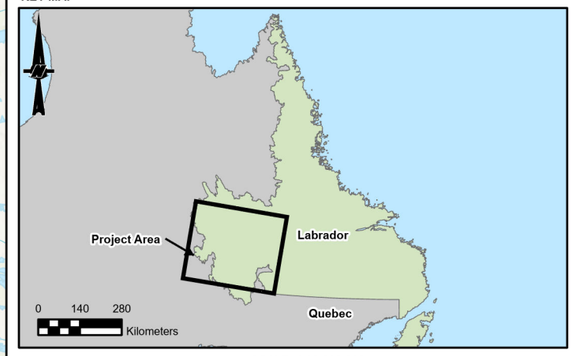
Study Area	Area (ha)	Description/Rationale
SSA	4,323	Includes the Project footprint plus additional buffered areas to incorporate a level of uncertainty into the Project design so that effects are not underestimated. The SSA was defined using bounding points around the outermost components of the Project footprint.
LSA	7,700	Includes the combined Planning Areas of Labrador City and Wabush. This study area has been changed from the previous EIS to encompass areas under jurisdiction of the Government of NL and the Towns of Labrador City and Wabush.
RSA	4,600,000	Includes a large area to provide regional context for land use patterns across western Labrador and in adjacent areas of eastern Québec. This is the same RSA as in the Alderon EIS.

EIS = Environmental Impact Statement; LSA = local study area; NL = Newfoundland and Labrador; RSA = regional study area; SSA = site study area.

The temporal scope of the assessment focuses on the 40-year period from initial Construction to the end of Decommissioning and Rehabilitation (i.e., Closure) as defined by the following Project phases:

- **Construction Phase (referred to as Construction)**–includes site preparation, mine, process plant and site infrastructure development and commissioning the structures, systems and components. The duration of Construction is expected to be four years.
- **Operations and Maintenance Phase (referred to as Operations)**–includes the mining and milling of iron ore, production and shipment of iron ore concentrate, tailings management, management of mine rock, waste management, water management, release of treated effluent, site maintenance and transportation of staff and materials to and from the site. Operations initiate with one year of predevelopment mining (i.e., ramp-up) and concludes when processing is complete and is expected to last 26 years.
- **Decommissioning and Rehabilitation Phase (referred to as Closure)**–includes accelerated flooding of the Rose Pit, re-establishment of passive surface water drainage following the pit-flooding period, and recontouring and revegetating disturbed areas. Physical infrastructure not required during Post-closure monitoring and for other activities needed to achieve the Project's decommissioning criteria and to return the Project site to a safe and stable condition will be removed. Closure is expected to be 10 years.

KEY MAP



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Legend

- Labrador/Quebec Boundary
- Site Assessment Area
- Local Study Area (LSA)
- Regional Study Area (RSA)

0 12.5 25 50

1:1,000,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - NEWFOUNDLAND AND LABRADOR
2. IMAGERY CREDITS: WORLD TOPOGRAPHIC MAP: SOURCES: ESRI, TOMTOM, GARMIN, FAO, NOAA, USGS, © OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
WORLD HILLSHADE: ESRI, CGIAR, USGS3. COORDINATE SYSTEM: NAD 1983 UTM ZONE 19N

CLIENT

CHAMPION IRON MINES LTD.

PROJECT

KAMI IRON ORE MINE PROJECT (KAMI PROJECT)
WABUSH, NL

TITLE

STUDY AREAS

CONSULTANT

Kami

YYYY-MM-DD	2025-06-27
DESIGNED	----
PREPARED	GM/MS
REVIEWED	NG
APPROVED	BM

PROJECT NO.	CONTROL	REV.	FIGURE
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14.4 Existing Environment

The existing environment for Other Land and Resource Use generally formed the basis against which the residual Project and cumulative effects are assessed. The existing environment also represents the outcome of historical and current environmental and socioeconomic pressures that have shaped observed conditions for Other Land and Resource Use. Environmental and socioeconomic pressures or factors are either natural (e.g., weather, wildfire, predation, disease, climate change) or human-related (e.g., industrial development, forestry, fishing, hunting).

In keeping with Section 4.3.4 of the provincial EIS Guidelines, a land and resource use baseline study was prepared to describe existing conditions for Other Land and Resource Use (Land Use and Socioeconomic Baseline Report, Annex 4C). The baseline study describes existing conditions for regulated land use, land tenure, industrial and commercial development, recreation and tourism, as well as harvesting. It is summarized in the following sections as appropriate. Indigenous Land and Resource Use is described in Chapter 13.

For the LSA, applicable land and resource uses include municipal, Crown land tenure, mining, mineral exploration, quarrying, forestry, use of motorized off-road vehicles (i.e., snowmachines and ATVs), boating, hunting, trapping, recreational fishing and activities in and around parks and cabin areas, all of which are governed by federal, provincial and/or municipal regulations (Table 14-3). Crown land around Labrador City and Wabush, and in the larger region, is generally used for recreation and subsistence activities. Labrador City and Wabush have no outfitting operations, as these facilities are in more remote areas.

Where usage or activities are regulated, there may be implications for engagement or permitting through government agencies. Where land use conflicts are identified, discussions and/or agreements may be required with regulators and/or other users or user groups. Most regulations regarding land and resource use are provincial. Municipalities govern land and resource use within their boundaries, though provincial regulations (e.g., *Water Resources Act)* may also apply to regulated land use within municipalities. The Government of Canada has jurisdiction over navigable waters, migratory bird hunting and recreational fishing, though provincial legislation also governs hunting and fishing.

14.4.1 Methods

Other Land and Resource Use. Information on Other Land and Resource Use was obtained through several methods. Information presented in the previous EIS was used for the purpose of the current process, engagement was undertaken with local stakeholders and research from various sources, including municipal, provincial and federal government departments and agencies and websites of businesses, service providers and industry organizations were conducted, to capture changes to land and resource use since the previous EIS in the current EIS. Information was also obtained from Rio Tinto IOC based on its work in Communities and Social Performance in Labrador West (Rio Tinto IOC 2024b). An overview of information sources is shown in Table 14-5.

Table 14-5: Sources of Information

Department or Agency	Information
Municipal	
Town of Labrador City	Land Use Planning Recreation
Town of Wabush	Land Use Planning Recreation
Provincial	
Government of NL	Mining
	Tourism
	Economy
NL Environment and Climate Change	Certificates of Approval
	PPWSAs
	Registry of Water Rights
	Policy for Allocation of Water Use

Table 14-5: Sources of Information

Department or Agency	Information
NL Fisheries, Forestry and Agriculture	Land Use Atlas
	Forest Management Plans
	Land Tenure
	Crown lands
	Hunting and Trapping
NL Hydro	Electrical System
NL Industry, Energy and Technology	Quarries
NL Municipal and Provincial Affairs	Municipal Plans and Development Regulations
NL Tourism, Culture, Arts and Recreation	Outfitting
Parks NL	Parks
Federal	
Canadian Wildlife Service	Migratory Bird Hunting
Fisheries and Oceans Canada	Recreational Fishing

NL = Newfoundland and Labrador; PPWSA = protected public water supply area.

Spatial data from the various sources were entered into a geodatabase to show proximity to the SSA and identify potential land use conflicts to be addressed in Project design or that may require permitting from, or engagement with, regulatory authorities. The geodatabase was also used to produce figures and to support assessment of effects on land and resource use activities from the perspective of disruption to other users in the area.

During preparation of the previous EIS, detailed primary information was collected through 20 informant interviews on the locations of various commercial, recreational and subsistence activities, including mineral exploration, forestry, transportation, boating, fishing, hunting, trapping, snowmobiling, skiing, cabin use, domestic wood harvesting, berry-picking, bird watching and geo-caching. This information has been used to identify land and resource use in the larger region and to describe land and resource use near the Project in combination with published information.

Since completion of the previous EIS, various changes to land and resource use, regulatory processes and management plans have been noted, as follows:

- During the predevelopment stage of the Kami Mining Project, Alderon purchased cabins (mainly around Mills Lake, Duley Lake and Waldorf River) that were identified as being potentially affected by mining activities.
- Land tenure continually evolves as leases/licences may expire and individuals or companies may acquire new access.
- In 2012, the Government of NL designated the entire watershed of Wahnahnish Lake as a PPWSA.
- In 2013, the Government of NL imposed a ban on hunting caribou in Labrador, except by Nunatsiavut Beneficiaries in Torngat Mountains National Park.
- In 2014, Cliffs Natural Resources announced closure of Wabush Mines, which was purchased by Tacora Resources and reopened in 2019.
- The Municipal Plans and Development Regulations for both Labrador City and Wabush were updated in 2018.
- Rio Tinto IOC has expanded and extended the life of its Labrador City Operations by opening the Moss Pit in 2018.
- In 2021, the District 22 Forestry Management Plan was updated for the period 2022-2026.

14.4.2 Land Use Planning

Various areas of regulated land use are intersected by the Project in Labrador City and Wabush (Figure 14-2, Table 14-6). Areas where permitting, engagement or other measures may be required (in consultation with regulatory agencies) include municipal zones in both municipalities, buffer zones around current or former waste disposal sites in Wabush and a portion of Route 500, which is a Provincially Protected Road. The Project has been designed to avoid the Wahnahnish Lake PPWSA to the extent possible (Figure 14-3).

Table 14-6: Regulated Land Use in the Site Study Area

Intersection	Legislation	Referral Agency
Labrador City Planning Area	Town of Labrador City Municipal Plan and Development Regulations	Town of Labrador City
Wabush Planning Area	Town of Wabush Municipal Plan and Development Regulations	Town of Wabush
Planning Area	*Urban and Rural Planning Act*, 2000	NL Municipal and Provincial Affairs, Land Use Planning
Protected Road - Route 500	*Urban and Rural Planning Act*, 2000 Protected Road Zoning Regulations Protected Road Zoning Plan Trans-Labrador Highway, Happy Valley Goose Bay - Québec Border	Town of Labrador City Town of Wabush NL Municipal and Provincial Affairs, Land Use Planning
Protected Public Water Supply Area	*Water Resources Act* Notice of Protected Water Supply Area of Wahnahnish Lake, WS-S-0775, Town of Wabush	Town of Wabush NL Environment and Climate Change (NLECC), Water Resources Management
Dump Site/Dump Site Buffers	*Environmental Protection Act* Waste Material Disposal Areas	Digital Government and Service NL NL Environment and Climate Change, Pollution Prevention

NL = Newfoundland and Labrador.

14.4.2.1 Municipal Planning

Municipal land use planning in NL is governed by the *Urban and Rural Planning Act, 2000* administered by the Department of Municipal and Community Engagement. The Act establishes requirements for preparing, approving and implementing planning documents, including municipal, regional and protected area plans (NLMAPA 2024a). Within municipalities, development may be controlled through a municipal plan by dividing the Planning Area into land use zones and classifying types of land use as permitted, prohibited or discretionary within each zone.

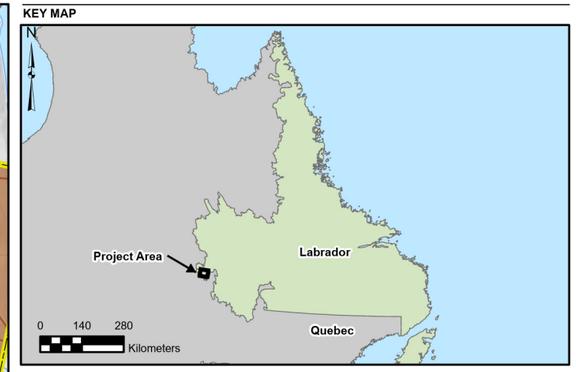
Both Labrador City and Wabush have municipal plans and development regulations. The Towns worked with the mining industry and relevant government departments to develop "Plan BIG," a regional growth strategy completed in 2015. Subsequently, the Towns undertook a joint municipal plan review to encourage density and help align the development standards of both municipalities (Town of Labrador City 2018a; Town of Wabush 2018a). The current 10-year municipal plans and development regulations were adopted in 2018.

The SSA intersects three zoning designations in the Labrador City Planning Area (Figure 14-2). Most lands in the Planning Area are identified as having commercial mineral reserves or high potential to contain economically feasible mineral resources (Town of Labrador City 2018b). The Municipal Plan indicates Labrador City Council's intent to protect these areas from development that would prohibit access to mineral reserves and establishes two land use designations (i.e., Mineral Workings and Mining Reserve-Rural) to accommodate present and future commercial mining activity. The Open Space designation in Labrador City is intended to accommodate developed recreation areas, such as hiking trails, groomed snowmobile trails, camp grounds, golf courses and natural spaces. Permitted and Discretionary uses are outlined in Table 14-7.

N

Labrador City
Wabush
Canning Lake
Harrie Lake
Little Wabush Lake
Flora Lake
Vern Lake
Jean Lake
Duley Lake Provincial Park Reserve
Long Lake (Duley Lake)
Pike Lake
Wahnahnish Lake
Riordan Lake
Mills Lake
Lac Daviault
Molar Lake
Fermont

KEY MAP



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LEGEND

Land Use Zoning

- Airport Industrial
- Cabin Development
- Conservation
- Core Commercial
- General Commercial
- General Industrial
- Light Industrial
- Mineral Workings
- Municipal Watershed
- Open Space
- Public Use
- Residential Medium Density
- Residential Small Lot
- Rural
- Commercial Highway
- Mining Reserve - Rural

- Site Study Area (SSA)
- Labrador City/Wabush Planning Area
- Labrador City Municipal Boundary
- Wabush Municipal Boundary
- Duley Lake Park
- Labrador/Quebec Boundary
- Existing Railway
- Existing Road
- Contour
- River/Stream
- Bog/Wetland
- Waterbody

0 500 1,000 2,000

1:85,000 METRES

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)
1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - NEWFOUNDLAND AND LABRADOR
2. IMAGERY CREDITS:
3. COORDINATE SYSTEM: NAD 1983 UTM ZONE 19N

CLIENT
CHAMPION IRON MINES LTD.

PROJECT
KAMI IRON ORE MINE PROJECT (KAMI PROJECT)
WABUSH, NL

TITLE
LAND USE PLANNING

CONSULTANT

Kami

YYYY-MM-DD	2025-06-27
DESIGNED	----
PREPARED	MS
REVIEWED	NG
APPROVED	BM

PROJECT NO.	CONTROL	REV.	FIGURE
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Table 14-7: Land Use Zoning in the Site Study Area (Labrador City)

Zoning Designation	Permitted Uses	Discretionary Uses
Mineral Workings	Mineral Workings[a] Conservation	General Industry Light Industry Antenna Commercial Residential (Temporary Worker's Residence Only)[b]
Mining Reserve - Rural	Mineral Workings Cemetery Agriculture Forestry Transportation (Mining Related Only) Conservation	Animal General Industry Hazardous Industry Recreation Open Space Antenna Commercial Residential (Temporary Worker's Residence Only)
Open Space	Recreation Open Space Conservation	General Assembly Outdoor Assembly Indoor Assembly Office Shop Transportation Catering Antenna

Source: Town of Labrador City 2018b.

(a) Mineral Working means land or buildings used for the working, stockpiling or extraction of rock, mineral, peat or aggregate material, and will include a "quarry."

(b) Temporary Workers Residence means one or more buildings used for sleeping accommodation, the preparation and serving of food and/or sport and recreation facilities, operated under single ownership and intended to be used on a temporary or seasonal basis. The units may be dismantled and removed from the site from time to time.

The SSA intersects six zoning designations in Wabush in both the Municipal Boundary and the Planning Area (Figure 14-2). Within the Planning Area, the Town has zoned areas for residential, cabin development, commercial, industrial, public use, open space, conservation, rural, mineral workings and watershed - municipal (Town of Wabush 2018b). The zones intersected by the Project, along with Permitted and Discretionary land uses, are outlined in Table 14-8.

The Municipal Plan expresses the intention of Wabush Council to protect mineral resources and mineral lands to support long-term economic activity (Town of Wabush 2018a). It is a priority of Council to provide land for cabin development in unserviced areas, such as those around Riordan Lake, especially since the designation of the Wahnahnish Lake watershed as a PPWSA, along with mining rights, limit further cabin development in southern parts of the Municipal Boundary and Planning Area. Industrial areas include those zoned for Industrial - General (Wabush Industrial Park) and Industrial - Airport (Wabush Airport). The conservation designation protects environmentally sensitive areas, such as the shoreline of Jean Lake that provides outdoor recreation. Open space protection in Wabush provides outdoor public spaces.

Table 14-8: Land Use Zoning in the Site Study Area (Wabush)

Zoning Designation	Permitted Uses	Discretionary Uses
Mineral Workings	Mineral Workings	General Industry Light Industry Hazardous Industry Solid Waste Antenna
Cabin Development	Single Dwelling Recreation Open Space Conservation	Shop[a]

Zoning Designation	Permitted Uses	Discretionary Uses
Industrial - General	General Industry Light Industry Service Station Office Transportation	Office Medical and Professional Shop Personal Service General Services Communications Police Station Animal Taxi Stand Take-Out Food Service Veterinary Recreation Open Space Antenna Temporary Workers Residence (Housing)[b]
Industrial - Airport	Transportation Passenger Assembly General Industry[c] Light Industry[c] Shop[c]	Personal Service Taxi Stand General Service
Conservation	Conservation	Forestry Antenna
Open Space	Recreation Open Space Conservation	Indoor Assembly Outdoor Assembly Take-out Food Service Antenna

Source: Town of Wabush 2018b.

(a) A shop accessory to one of the foregoing permitted uses may be permitted through discretionary authority of Council.

(b) Temporary Workers Residence means one or more buildings under single ownership and operated on a temporary or seasonal basis used for accommodation of mine employees, preparation and serving of food for those employees and/or provision of sport and recreation facilities for those employees. The units may be dismantled and removed from the site from time to time.

(c) Only permitted if directly related to airport operations.

14.4.2.2 Protected Roads

The SSA intersects a portion of the Route 500, which is a protected road with a zoning plan. Protected road designations under Section 32 of the *Urban and Rural Planning Act, 2000* are intended to control development within buffered areas along roadways to facilitate traffic efficiency, public safety and consistent development (NLMAPA 2024b). The Protected Road Zoning Plan indicates that "the Towns of Labrador City and Wabush are exempt from the Protected Road Zoning Regulations" (NLMAPA 2006). Where Protected Road Zones are within a Planning Area, development proposals are referred to the appropriate municipality.

14.4.2.3 Protected Public Water Supply Area

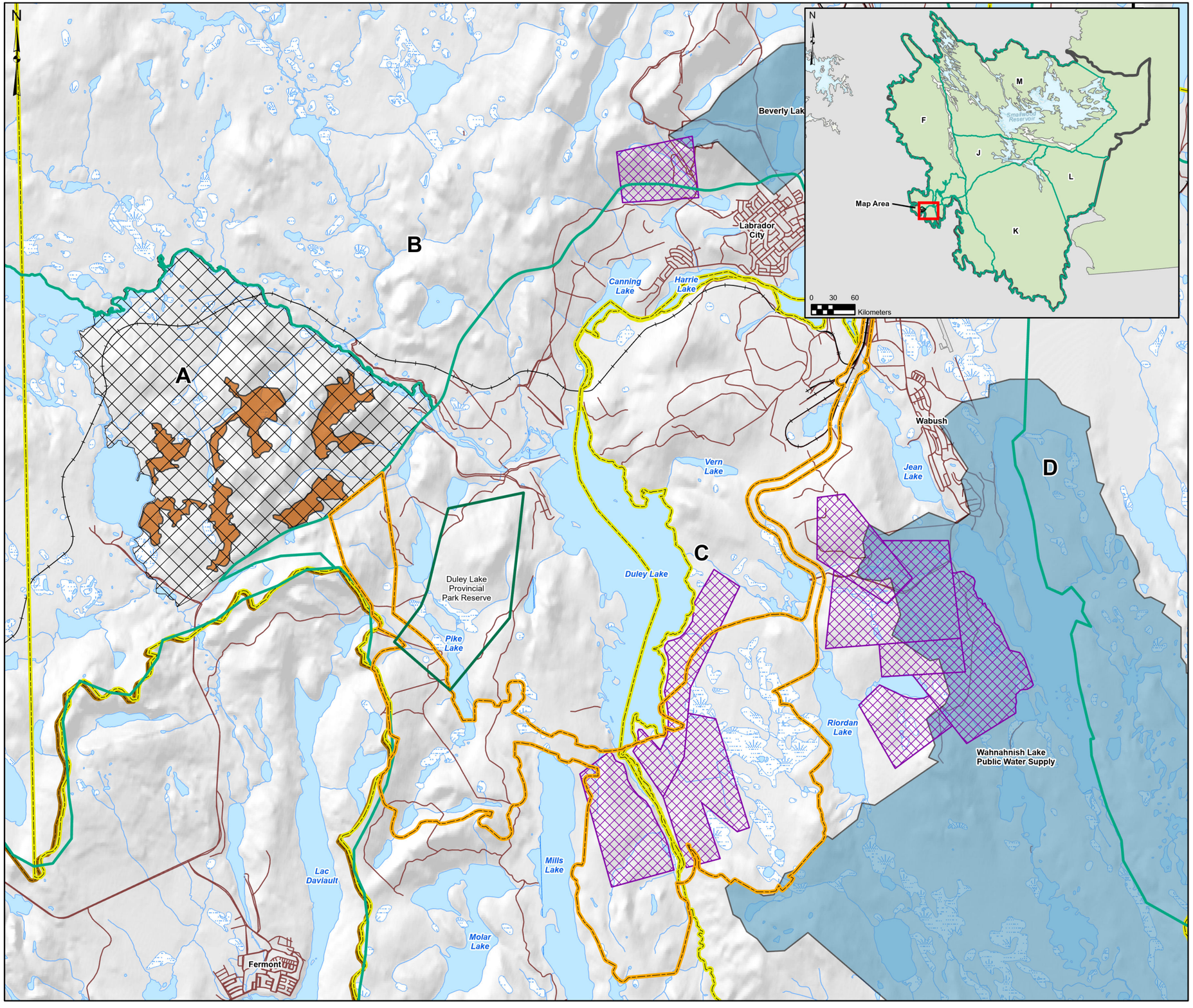
Champion has made efforts to remove proposed infrastructure from the Wahnahnish Lake Public Water Supply Area, including the eastern access road and railway corridor. However, the SSA does intersect a small portion of the Provincially Protected Wahnahnish Lake Public Water Supply Area (NLECC Water Resources 2025a) (Figure 14-3). Protected public water supplies are governed by the NL *Water Resources Act* to preserve water quality for residents and the surrounding environment (Government of NL 2025a). No development is permitted in protected watersheds without approval from the Department of Environment and Climate Change, Water Resources Management Division (NLECC 2025a).

The entire watershed of Wahnahnish Lake was designated as a protected water supply area in 2012 through the "Notice of Protected Water Supply Area of Wahnahnish Lake, WS-S-0775, Town of Wabush" (Government of NL 2013). Section 39(6) of the *Water Resources Act* states:

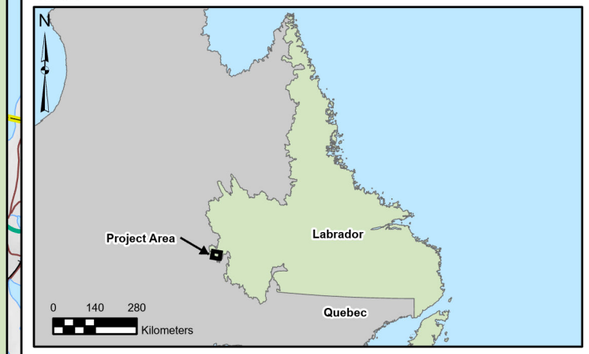
"The minister shall regulate resource development and other activities to be undertaken in an area established under subsection (1) that, in the minister's opinion, may impair the quality of water, and those activities shall not be undertaken without first obtaining authorization from the minister."

14.4.2.4 Dump Site/Dump Site Buffers

The SSA intersects the buffers of two current or former waste disposal sites in Wabush (Figure 14-4). Active and closed waste disposal sites are surrounded by a buffer and any potential developments in the buffer area must be referred to Digital Government and Service NL. In NL, impacted sites such as former waste disposal sites are managed by the Impacted Sites Management Section of NLECC, Pollution Prevention division (NLECC 2025b). Provincial and federal requirements are outlined in the provincial "Guidance Document for the Management of Impacted Sites" under the authority of the *Environmental Protection Act, 2000* (Government of NL 2025b). Any development within the buffer of a waste disposal site or former waste disposal site also requires referral to NLECC, Pollution Prevention.



KEY MAP



SCALE 1:20,000,000

LEGEND

- Site Study Area (SSA)
- Labrador City/Wabush Planning Area
- Domestic Harvest Area (Labeled A-F, J, L, M)
- Commercial Harvesting
- Commercial Timber Block
- Silviculture
- Protected Public Water Supply Area
- Existing Road
- Existing Railway
- River/Stream
- Contour
- Bog/Wetland
- Waterbody
- Duley Lake Park
- Labrador/Quebec Boundary

0 500 1,000 2,000

1:85,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - NEWFOUNDLAND AND LABRADOR
2. IMAGERY CREDITS: WORLD TOPOGRAPHIC MAP: ESRI, HERE, GARMIN, FAO, NOAA, USGS, AAFC, NRCAN
3. COORDINATE SYSTEM: NAD 1983 UTM ZONE 19N

CLIENT

CHAMPION IRON MINES LTD.

PROJECT

KAMI IRON ORE MINE PROJECT (KAMI PROJECT)
WABUSH, NL

TITLE

NATURAL RESOURCES

YYYY-MM-DD	2025-06-27
DESIGNED	----
PREPARED	MS
REVIEWED	NG
APPROVED	BM

PROJECT NO.	CONTROL	REV.	FIGURE
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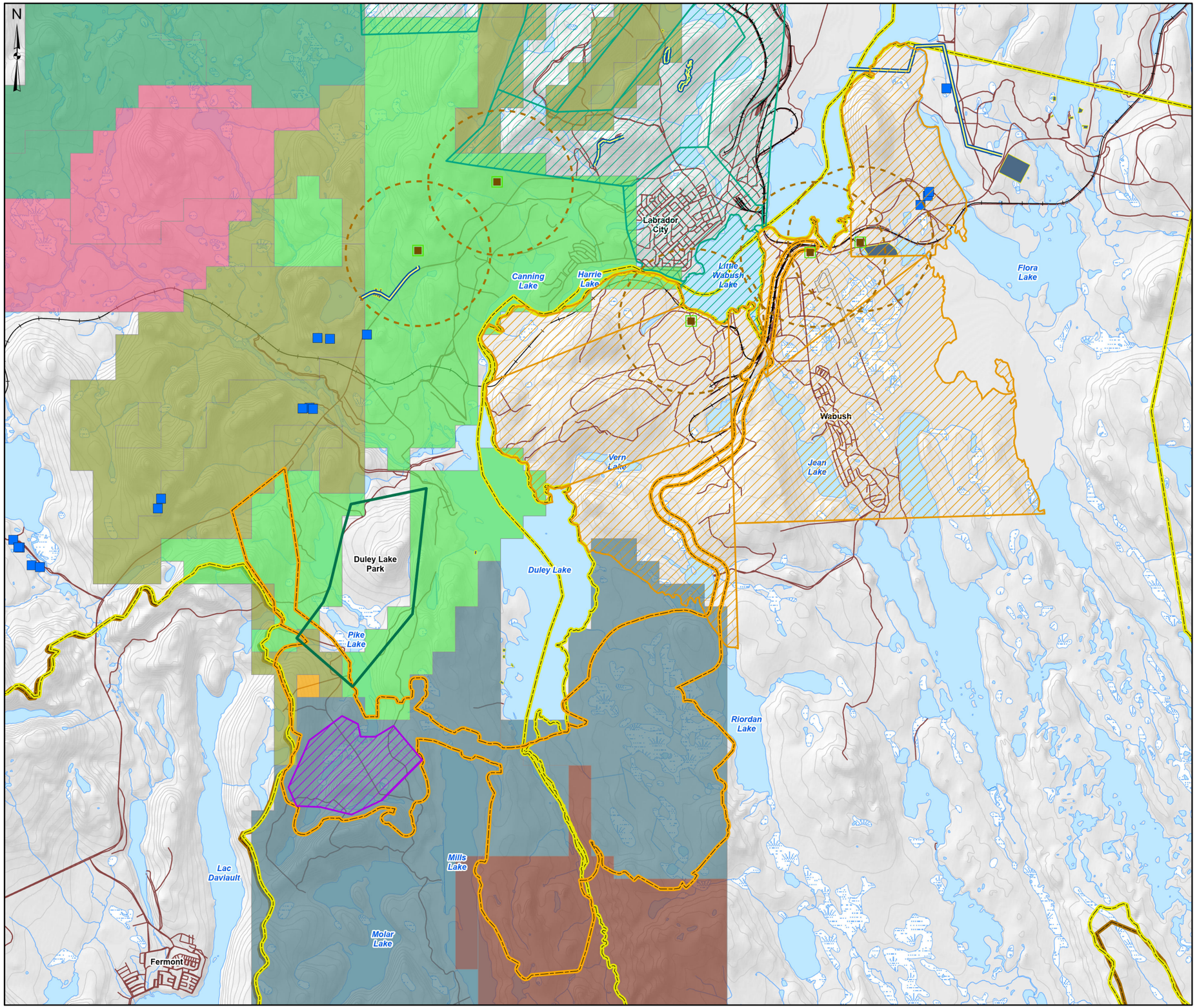
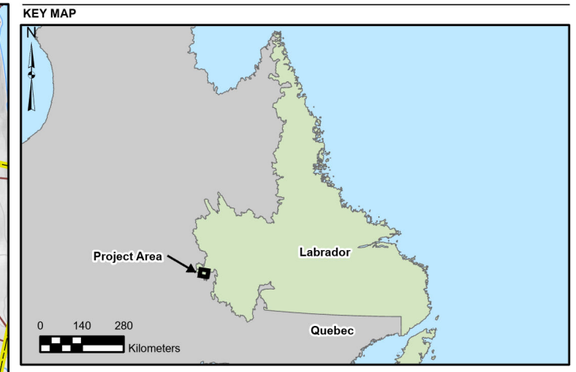


KEY MAP



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LEGEND

- Site Study Area (SSA)
- Quarry (Permit)
- Waste Disposal Site
- Waste Disposal Site Buffer
- Application for Crown Title (Linear)
- Applications for Crown Title

Mineral Exploration Licence

- Chad Kennedy
- Champion Iron Mines Limited
- Darrin Hicks
- Iron Ore Company of Canada
- Kami General Partner Limited
- Labrador Iron Ore Royalty Corporation
- Mike Noseworthy
- Mine Capital
- Red Paramount Iron Ltd.

Mining Lease

- Kami General Partner Limited
- Labrador Iron Ore Royalty Corporation
- Wabush Mines

- Labrador City/Wabush Planning Area
- Labrador/Quebec Boundary
- Duley Lake Park
- Existing Railway
- Existing Road
- River/Stream
- Contour
- Bog/Wetland
- Waterbody

0 500 1,000 2,000

1:85,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - NEWFOUNDLAND AND LABRADOR
2. IMAGERY CREDITS:
3. COORDINATE SYSTEM: NAD 1983 UTM ZONE 19N

CLIENT

CHAMPION IRON MINES LTD.

PROJECT

KAMI IRON ORE MINE PROJECT (KAMI PROJECT)
WABUSH, NL

TITLE

INDUSTRY

CONSULTANT

Kami

YYYY-MM-DD	2025-06-27
DESIGNED	----
PREPARED	MS
REVIEWED	NG
APPROVED	BM

PROJECT NO.	CONTROL	REV.	FIGURE
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14.4.3 Land Tenure

In NL, Crown land is made available for personal, business, organizational or government use through the *Lands Act* (NLFFA 2024a). The SSA intersects various parcels of tenured Crown land held for mineral exploration and mining extraction (Figure 14-4) as well as a Provincial Park Reserve (i.e., decommissioned Provincial Park) and cabins (Figure 14-5). Mining and mineral exploration are discussed in Section 14.4.4. Duley Lake Provincial Park Reserve and cabins are described in Section 14.4.5.

Crown land tenure conveys surface rights only (NLFFA 2024b). The NL and Canadian governments retain rights to natural resources on Crown lands and may lease subsurface or surface rights to private enterprises to extract resources through mining, quarrying and forestry or to harness other natural resources such as renewable energy. A title is a claim to ownership of, and right to possession of, a parcel of land usually documented through a grant and/or a deed of conveyance. Potential conflicts regarding land tenure should be referred to Crown Lands division of NL Fisheries, Forestry and Agriculture, Lands (FFA) division. Inquiries regarding forestry resources should be directed at the same division.

14.4.4 Industrial and Commercial Development

Industrial and commercial development in Labrador West mainly consists of mining. Other natural resource extraction, such as commercial forestry, is limited. No commercial forestry or quarries were identified in the SSA (Figure 14-3; Figure 14-4).

The NL mining industry is governed by the *Mineral Act* and Mineral Regulations and the *Mining Act* and Mining Regulations. A mining lease confers exclusive rights to develop, extract, remove, deal with, sell, mortgage or dispose of minerals on or under land covered in the lease area. Current mining leases include the Rio Tinto IOC mine in Labrador City (Figure 14-4). Tacora Resources holds a mining lease for the Scully Mine (formerly Wabush Mines) in Wabush. Kami Iron Mine Partnership holds a mining lease and surface lease for lands in Labrador City (Government of NL 2024b).

Much of the land in Labrador West is owned by mining interests, as the then Government of Newfoundland originally granted land to mining companies to build the mines and communities. In some instances, historical land grants included both surface and subsurface mineral rights. Labrador Iron Ore Royalty Corporation (LIORC) has been active in Labrador West for more than 86 years (LIORC 2024). Under a 1938 Statutory Agreement with the provincial government, LIORC's predecessor, Labrador Mining and Exploration Limited, received leases and licences for exploration and mining rights and a grant of surface rights to establish the Labrador City townsite, which led to development of the Carol Mine, related infrastructure and the QNS&L Railway. LIORC sublets mining leases to Rio Tinto IOC and, as a shareholder, receives royalties on its sales.

In 1954, the Government of Newfoundland (through Newfoundland and Labrador Corporation Limited) granted John C. Doyle and Canadian Javelin Limited rights to nearly 6,216 square kilometres (km^2) of land in western Labrador (Heritage NL 1997-2024). Doyle purchased the mining rights, organized a consortium of interests as Wabush Mines Limited and engaged American engineering expertise to improve the ore benefaction process. Doyle also built a railway spur connecting to the QNS&L Railway. Wabush Mines developed the Scully Mine and the Wabush townsite for employees and their families.

In addition to exploration licences and mining leases held for the Project (i.e., Kami General Partner Limited and Champion Iron Mines Limited), the SSA intersects mineral exploration licences issued to Wabush Mines, LIORC, Rio Tinto IOC and an individual (Table 14-9) (Figure 14-4). It also intersects mining leases held by Wabush Mines and LIORC. Inquiries regarding potential conflicts with the quarry, mineral exploration and/or mining rights of others should be directed to NL Industry, Energy and Technology, Mining and Mineral Development.

Table 14-9: Mining Activities in the Site Study Area

Intersection	Legislation	Referral Agency
Exploration Licences: Champion Iron Mines Limited Rio Tinto IOC LIORC Mike Noseworthy Wabush Mines	*Mineral Act* Mineral Regulations	NL Industry, Energy and Technology, Mining and Mineral Development
Mining Leases: Kami General Partnership Limited Wabush Mines LIORC	*Mining Act* Mining Regulations	

Rio Tinto IOC = Rio Tinto Iron Ore Company; LIORC = Labrador Iron Ore Royalty Corporation; NL = Newfoundland and Labrador.

Mineral Exploration Licences

In NL, mineral licences are issued by the Minister of Industry, Energy and Technology under the *Mineral Act*, Section 22. The licensee is granted exclusive rights to explore for minerals in, on or under the area of land identified in the Mineral Licence for five years from the issue date (Cox and Palmer 2025). An initial mineral licence may be held for a maximum of 20 years, based on compliance with all conditions of the licence, completion of and reporting on annual mineral assessment work, and renewal of the licence every five years (under Section 28). A licence may be extended annually to a maximum of 10 years (Section 28.1).

Mining Leases

Provided the required assessment work has been completed and reporting is acceptable to government, a mineral licence holder may obtain a mining lease for the area of an identified mineral resource (Cox and Palmer 2025). The holder of a mining lease has an exclusive right to develop, extract, remove, deal with, sell, mortgage or otherwise dispose of all subject minerals in, on or under the land identified in the lease. According to the *Mineral Act* (Subsection 31(2)), an initial mining lease has a term of 25 years or less. However, the Minister may (following an application by the lessee and satisfactory compliance with the terms and conditions of the mining lease) renew the lease for an additional term of a maximum of 10 years from the expiry date of the original term or prior extension (Subsection 31(6)). To qualify for the extension, a lessee must demonstrate (including confirmation from a qualified individual) the existence of a potentially viable mineral resource.

To develop mineral resources, it is also necessary to obtain surface rights under the *Mineral Act* (Section 33) to the area required for exploration, operations or processing and development in, on or under land covered by the mining lease/surface lease (Cox and Palmer 2025). The term of a surface lease does not extend beyond the period of the mining lease.

To develop a mineral resource, a proponent must also obtain surface lease rights under the *Mineral Act* (Section 33) to conduct mineral exploration, mining operations, mineral processing and lessee obligations for the land covered by the Mining Lease (Cox and Palmer 2025). The surface lease term may not extend beyond the term of the relevant mining lease. Champion holds a mining lease and surface lease for the Project.

14.4.5 Recreation and Tourism

Recreational activities are an important part of the culture and lifestyle of Labrador West. Residents participate in a wide range of outdoor pursuits, such as snowmobiling and ATV riding. Various clubs and sports facilities are available for recreation with winter activities being a strong focus (Figure 14-5). Smokey Mountain Ski Club, in Labrador City near the townsite, offers alpine skiing with groomed trails for skiers and snowboarders (Smokey Mountain Ski Club 2018). Tamarack Golf Club, in Labrador City near Duley Lake, provides an 18-hole golf course (Golf Newfoundland and Labrador 2025). The SSA intersects snowmobile trails, the Nordic skiing/snowshoeing trail of a long-running annual event, a Provincial Park Reserve and cabin areas (Table 14-10), as discussed in subsequent paragraphs and sections.

Table 14-10: Regulated Recreation and Tourism in the Site Study Area

Intersection	Legislation	Referral Agency
White Wolf Snowmobile Trails	*Off-Road Vehicles Act* Off-Road Vehicles Regulations	White Wolf Snowmobile Club Digital Government and Service NL
Duley Lake Provincial Park Reserve	*Provincial Parks Act* Duley Lake Provincial Park Proclamation, 1998	NL Tourism, Culture, Arts and Recreation
Cabins	*Lands Act*	NL Fisheries, Forestry and Agriculture, Crown lands

NL = Newfoundland and Labrador.

14.4.5.1 Snowmobiling

The SSA intersects a portion of the groomed snowmobile trails in Labrador West (Figure 14-5). White Wolf Snowmobile Club maintains more than 500 km of trails in Labrador West that also connect to trails in Québec and the Churchill Falls area (Rio Tinto IOC 2024b). Under Section 14 of the Off-Road Vehicles Regulations, NL users are required to purchase a trail pass from the operators of managed trails (Government of NL 2022).

Based on information gathered for the previous EIS, snowmobiles are frequently used outside of the trail system in open terrain and on ponds and lakes throughout the area, though the trail system does not cross the large waterbodies (Alderon 2012). Snowmobiles are used to access cabins and associated activities, including ice fishing, hunting, trapping and hauling firewood and

other materials. Many residents reported using the regional groomed trails network from west of Fermont, Québec to Churchill Falls. Residents have also reported participating in off-trail snowmobiling around White Lake, Leg Lake, Dumbell Lake, Trout Lake and Smokey Mountain, throughout the Labrador West and Fermont areas, as well as off the snowmobile trail west of Churchill Falls (Rio Tinto IOC 2024b).

Labrador West snowmobile trails are the starting and ending points for the annual Cain's Quest Snowmobile Endurance Race, which follows a route of approximately 3,000 km across Labrador and into Québec (Alderon 2012; Cain's Quest 2025). Cain's Quest attracts tourists as well as locals. In 2024, the 12th race event attracted about 50 teams of two, with participants from Canada, the United States and other countries such as Finland and Switzerland (Cain's Quest 2025).

14.4.5.2 Nordic Skiing and Snowshoeing

Menihek Nordic Ski Club provides cross-country skiing programs for children and adults at its facility in Labrador City near Smokey Mountain Ski Club (Menihek Nordic Ski Club 2025) (Figure 14-5). Menihek also hosts training (e.g., for the provincial team) and special events such as the provincial cross-county ski championships and the Great Labrador Loppet, which had its 50th annual event in March 2025. The Loppet includes Nordic skiing and snowshoeing on groomed trails from White Wolf Snowmobile Club to the Québec border, routing through the Duley Lake area where it intersects the SSA.

14.4.5.3 Parks and Camping

The SSA intersects the southern portion of Duley Lake Provincial Park Reserve (Figure 14-5). Duley Lake Provincial Park Reserve, one of 10 park reserves, is the remaining land mass of a former provincial park (NLTCR 2020). It protects 6.90 km^2 of open lichen woodland representative of Ecoregion V (Labrador). Though decommissioned, the park lands remain under the jurisdiction of NL Tourism, Culture, Arts and Recreation.

In addition to municipal parks within Labrador City and Wabush, one privately operated park is in Labrador West. Duley Lake Family Park, the privatized portion of Duley Lake Provincial Park Reserve, is at the northern end of Duley Lake (Figure 14-5). The park is open from May to September and provides approximately 200 recreational vehicle (RV)/camping sites, a boat launch, public washrooms/showers and sewage dumping station (Labrador City and Wabush 2024). The SSA does not intersect Duley Lake Family Park.

14.4.5.4 Cottage Areas and Cabins

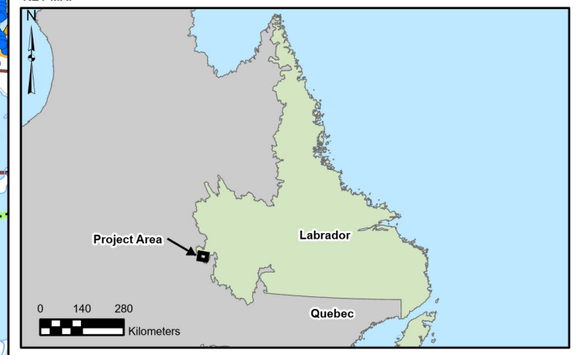
In NL, Crown Land is made available for cabins and cottage developments through the *Lands Act* (NLFFA, Crown Lands 2024 [Crown lands]). Recreational cottage lots may be in areas accessible by conventional motor vehicle, where land is appropriately zoned under an approved municipal plan or in provincially designated cottage development areas. Remote recreational cottage lots are available in areas not accessible by conventional motor vehicle. Both types of cottage lots are permitted where no land use conflicts are identified. In high-demand areas, applications are invited through public lot draws under the authority of NL FFA.

Quality of life in Labrador West is closely associated with year-round outdoor activities, which are often linked to the many cabins found throughout the region. Cottage planning areas are located at Duley Lake and Walsh River with registered cabins also on rivers and lakes (e.g., Waldorf River, Pike Lake, Riordan Lake, Harris Lake, Lower Loon Lake, Upper Loon Lake) within the Planning Areas of the Towns of Labrador City and Wabush (Figure 14-5) and in areas to the east along Route 500. In Wabush, the supply of available cabin areas has been reduced by the extended provincial watershed boundary and mining lands (Town of Wabush 2018b). The eastern side of the SSA intersects a cottage development area around Riordan Lake, and various cabins are located within and near the SSA.

N

Gateway Labrador Campground
Labrador City
Canning Lake
Harrie Lake
Little Wabush Lake
Flora Lake
Knoll Lake
Wabush
Vern Lake
Jean Lake
Duley Lake Park
Duley Lake
Pike Lake
Riordan Lake
Mills Lake
Lac Daviault
Molar Lake
Fermont

KEY MAP



SCALE 1:20,000,000

- Site Study Area (SSA)
- Campgrounds
- Marina
- Tamarack Golf Club
- Cabin
- Recreation Area
- Boat Launch
- Snowmobile Chalet
- Nordic Ski Trail
- Snowmobile Trail
- Walking Trail
- Cabin Development Zone
- Cottage Planning Area
- Existing Railway
- Existing Road
- River/Stream
- Contour
- Bog/Wetland
- Waterbody
- Duley Lake Provincial Park Reserve
- Duley Lake Family Park
- Labrador/Quebec Boundary

0 500 1,000 2,000

1:85,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - NEWFOUNDLAND AND LABRADOR
2. IMAGERY CREDITS:
3. COORDINATE SYSTEM: NAD 1983 UTM ZONE 19N

CLIENT

CHAMPION IRON MINES LTD.

PROJECT

KAMI IRON ORE MINE PROJECT (KAMI PROJECT)
WABUSH, NL

TITLE

RECREATION

CONSULTANT

Kami

YYYY-MM-DD	2025-06-27
DESIGNED	----
PREPARED	MS
REVIEWED	NG
APPROVED	BM

PROJECT NO.	CONTROL	REV.	FIGURE
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14.4.5.5 Boating

Boating is a popular activity in Labrador West, including on Duley Lake and Waldorf River (Alderon 2012). Marinas are located at Duley Lake and Jean Lake, where the annual regatta is held. Other waterbodies commonly used for boating include Mills Lake, parts of Wabush Lake and Little Wabush Lake. It was reported that, during ice-free seasons, approximately 50 crafts may be seen on Duley Lake at one time and are used for fishing, recreation and access to cabins. Waldorf River is accessed by small motorboat or canoe. In Canada, navigable waters are protected through Transport Canada's Navigation Protection Program.

Boating is also a popular activity in the region and is typically combined with fishing and accessing remote cabins not accessible by road during the ice-free seasons (Alderon 2012). Informants reported popular boating locations as many of the waterways north of Wabush and Shabogamo Lake and the rivers and ponds that connect to it. Ashuanipi Lake and the adjoining rivers and ponds south of Ross Bay are also used for boating associated with fishing and fall hunting. Boating is common on Lobstick Lake, a river system west of the Lobstick Lake, Smallwood Reservoir and Ossokmanuan Reservoir, which are accessible from the TLH and often associated with fishing.

14.4.5.6 Other Outdoor Activities

Information gathered for the previous EIS helps to identify the location of land use activities in Labrador West. Beaches are located at Duley Lake, Quartzite Lake and Tanya Lake in Labrador City and at Jean Lake in Wabush (Alderon 2012). Walking trails in the area include Jean Lake Walking Trail in Wabush and the Menihek Nordic Ski Trails (off season), Tanya Lake Walking Trail and Crystal Falls Hiking Trail in Labrador City.

Several areas of Labrador West offer scenic views. Crystal Falls Hiking Trail provides panoramic views of the waterfall and both Towns (Labrador City and Wabush 2024). Smokey Mountain look-out, accessed by Route 500, offers a bird's-eye view of Labrador West. Jean Lake in Wabush also offers scenic views.

14.4.6 Harvesting

Residents of Labrador West participate in harvesting as recreation, as well as for sources of food and firewood to heat homes and cabins. This section presents available information about hunting, trapping, fishing, wood-cutting and berry-picking. The SSA is within large administrative boundaries for hunting, trapping and angling (Table 14-11). Interviews during the previous EIS provided more information on the specific locations of hunting, trapping and fishing in Labrador West and the larger region, which is used to describe these areas in the following sections.

Table 14-11: Regulated Harvesting in the Site Study Area

Intersection	Legislation	Referral Agency
Large and Small Game Hunting	*Wild Life Act* Wild Life Regulations	NL Fisheries, Forestry and Agriculture, Wildlife
Bird Hunting	*Migratory Birds Convention Act* Migratory Birds Hunting Regulations: Newfoundland and Labrador *Wild Life Act* Wild Life Regulations	Environment and Climate Change Canada, Canadian Wildlife Service NL Fisheries, Forestry and Agriculture, Wildlife
Fur Trapping	*Wild Life Act* Wild Life Regulations	NL Fisheries, Forestry and Agriculture, Wildlife
Angling (trout)	*Canada Fisheries Act* Recreational Fishing Regulations *Wild Life Act* Wild Life Regulations	*Canada Fisheries Act* Recreational Fishing Regulations NL Fisheries, Forestry and Agriculture, Wildlife

NL = Newfoundland and Labrador.

14.4.6.1 Hunting

In Labrador West, regulated hunting seasons for moose, black bear and small game are mainly in the fall and winter months (Government of NL 2024c). Black bear hunting also has a spring season. Hunting migratory birds occurs in fall. Coyote hunting season is nearly year-round (September to July), and wolves may be hunted in winter (November to March).

According to informant interviews for the previous EIS, hunting of small game and birds occurs at various locations along the shorelines of waterbodies and in some of the burnt-over areas (Alderon 2012). Informants described hunting areas near Wabush Lake, Little Wabush Lake and Wahnahnish Lake, as well as Riordan Lake and Rectangle Lake. Some cabin users reported hunting small game and birds near Duley Lake. Fall bird hunting occurs at Waldorf River and the south end of Duley Lake, where there are wetlands suited for bird habitat.

Many of the hunting areas identified are also used for snaring rabbits, which is a popular recreational activity for cabin owners (Alderon 2012). Informants also identified hunting areas at Ossokmanuan Reservoir, Shabogamo Lake and the shorelines of Ashuanipi Lake, Lac Joseph and Atikonak Lake, all east of Wabush. Harvested species included waterfowl, rabbit, beaver, marten and muskrat. One informant hunted porcupine locally and in the RSA.

Given the scarcity of moose and restrictions for hunting caribou, informants reported that black bear hunting was gaining in popularity and three informants reported that they usually take at least one each per year (Alderon 2012). Bears were hunted to the northeast and northwest of Labrador City and Wabush, but most who hunted bear indicated that they did so in the RSA.

Interview data indicated that hunting occurred predominately in fall, winter and early spring, and focused on migratory and non-migratory birds, as well as other waterfowl (Alderon 2012). Common species hunted in the RSA included ptarmigan, grouse, geese and ducks, with harvests of 10 birds or less. Some hunters reported taking as many as 100 ptarmigan and grouse annually, as well as approximately 40 geese and 40 other migratory birds. Bird hunting generally occurred near waterbodies easily accessed by roads and highways (e.g., the TLH) and access roads along the south shore of Smallwood Reservoir west of Churchill Falls. Other bird hunting locations in the RSA included the shoreline of Ossokmanuan Reservoir and farther south along Panchia Lake to the north shore of Atikonak Lake.

14.4.6.2 Trapping

Trapping occurs for both recreational and commercial reasons, as pelts may be sold depending on market conditions. Labrador West is part of the Labrador South fur zone, where trappers may harvest a variety of species. Fur harvesting generally occurs in fall and winter during optimum periods for fur quality. Open season is between October and May depending on the species (Government of NL 2024c).

In the previous EIS, informants reported traplines in and near the SSA, but the level of trapping was not extensive compared to Labrador West generally and the RSA (Alderon 2012). Several trappers mentioned that, due to the number of cabins and high activity levels that occur around the SSA, they prefer to concentrate efforts in the RSA away from the communities and cabins.

Trappers who participated in informant interviews noted that trapping occurs along waterways, wetlands and in wooded areas (Alderon 2012). Respondents indicated that trapping is mainly carried out as a recreational activity and that furs are sold to recover costs. Furbearers harvested in Labrador West and the RSA include rabbit, beaver, marten and muskrat. Fewer animals are harvested in Labrador West, where popular locations include much of the shoreline of Duley Lake, both sides of Waldorf River, Riordan Lake, Rectangle Lake, Wahnahnish Lake and the river system to the south, as well as on part of Wabush Lake. Trapping areas were also reported on the south shore of Walsh River and areas to the west and south.

14.4.6.3 Fishing

Many areas of Labrador West, including Duley Lake and Waldorf River (identified for boating in Section 14.4.5), are used for fishing (Alderon 2012). In the RSA, to the south of Ross Bay, Ashuanipi Lake and adjoining rivers and ponds are also commonly used for boating related to fishing and fall hunting. Other popular boating (and likely fishing) locations include Lobstick Lake, Smallwood Reservoir, Ossokmanuan Reservoir and a river system to the west of the Lobstick Lake where boating and fishing occur. While information is not available for which species are harvested in any location, several waterbodies in western Labrador are identified for the quality of fishing. Ashuanipi Lake, Ossokmanuan Reservoir and Shabogamo Lake are noted for fishing ouananiche (land-locked salmon), lake trout, brook trout, whitefish and northern pike (Mussio Ventures Ltd. 2014).

14.4.6.4 Domestic Wood-Cutting

Labrador West is situated within Forest Management District 22 (Table 14-12). Less than 5% of the land base is considered suitable for commercial forestry (NLFFA 2021). In the five-year operating plan, 322 annual domestic cutting permits (each for 22 m^3) are issued on 13 domestic timber blocks surrounding Labrador City and Wabush (Figure 14-3). Domestic annual allowable cut is 7,084 m^3.

Table 14-12: Forest Harvesting in the Site Study Area

Intersection	Legislation	Referral Agency
Forestry Management Area 22	*Forestry Act* Cutting of Timber Regulations	NL Fisheries, Forestry and Agriculture, Forestry

NL = Newfoundland and Labrador.

In 2023, residents reported that most domestic cutting occurs close to Labrador City and Wabush. Firewood was also harvested east of Labrador City and Wabush near Julienne Lake, Shabogamo Lake, Grand Hermine Lake and along the TLH, particularly between Emeril Junction and Churchill Falls (Rio Tinto IOC 2014). Firewood is generally cut and hauled in the fall and winter months.

14.4.6.5 Berry-Picking

Berry-picking occurs throughout the RSA at various locations, including in the SSA, based on the locations identified in the previous EIS. Typically, berries are harvested in summer and fall adjacent to cabins, in relative proximity to communities, as well as in more remote locations and generally in areas accessible by roads or trails (Alderon 2012). The most common berries harvested are blueberries, partridgeberries and bakeapples. In the RSA, blueberries are harvested in burnt-over areas straddling the TLH, including a large area along the shoreline of Ossokmanuan Reservoir toward Twin Falls.

14.5 Effects Assessment

The effects assessment for Other Land and Resource Use is presented in the following sections. The methods for assessing effects are presented in Section 14.5.1. The effect pathway screening, residual Project effect analysis and residual cumulative effect analysis are provided in Section 14.5.2.

14.5.1 Methods

This section outlines methods for assessing potential effects on other land and resource use. Key to this method is an evaluation of potential pathways to effects, which are described for each phase of the Project along with proposed mitigation measures to avoid, minimize or mitigate any anticipated effects.

14.5.1.1 Effect Pathway Screening

Interactions between Project components/activities and the environment, and corresponding changes that could result in a potential effect on the Other Land and Resource Use VEC were identified through an effect pathway screening. The effect pathway screening was used to inform the residual Project and cumulative effect analyses for the Other Land and Resource Use VEC. Each pathway was initially assumed to have an interaction that would result in potential effects on Other Land and Resource Use.

Potential pathways from Project activities to Other Land and Resource Use were identified using the following:

- review of the Project Description (Chapter 2) and scoping of potential effects by the EIS team for the Project
- input from engagement (Chapter 22)
- review of EISs for similar mining projects, including the previous EIS
- previous experience with mining projects
- experience with socioeconomic effects in Labrador West
- consideration of key issues (Section 14.3.1)

Potential adverse effects of the Project were identified, and practicable mitigations were applied to avoid, reduce, minimize and/or rehabilitate effects to Other Land and Resource Use. Various avoidance measures were integrated into Project design to prevent effects from occurring are described in Chapter 2. Where effects pathways are likely, mitigations were proposed and assessed to

determine whether they would effectively address the potential Project effect such that the pathway was eliminated, would result in a negligible adverse effect on Other Land and Resource Use or if residual adverse effects from the Project remained.

This effect pathway screening was a preliminary assessment intended to focus the residual effects analysis on effects pathways that required a more quantitative/qualitative or comprehensive assessment of effects. Using experience with similar developments, feedback from consultation and an understanding of the effectiveness of mitigation, each effect pathway was categorized as one of the following:

- **No effect pathway**–The effect pathway could be removed (i.e., the effect would be avoided) by avoidance measures and/or additional mitigation so that the Project would result in no measurable change relative to existing conditions and therefore would have no residual effect on Other Land and Resource Use.
- **Negligible effect pathway**–With the application of mitigation, the effect pathway could result in a measurable but minor change relative to existing conditions, but the change is sufficiently small such that it would have a negligible residual effect on Other Land and Resource Use (e.g., a land use conflict that can be addressed through consultation/agreement with affected parties or permitting). Therefore, further detailed assessment of the residual effect is not warranted, as the effect pathway would not be expected to result in a significant residual Project or cumulative effect to Other Land and Resource Use.
- **Residual effect pathway**–Even with the application of mitigation, the effects pathway is still likely to result in a measurable change relative to existing conditions that could cause an adverse or positive effect on Other Land and Resource Use that is greater than negligible and warrants additional assessment.

Project interactions determined to have no effect pathway or negligible effect pathways were not carried forward for further assessment (Section 14.5.3 Section 14.4.2.2). Residual effect pathways that could result in changes to the environment with associated measurable parameters and the potential to cause a greater than negligible effect on Other Land and Resource Use were carried forward for residual Project effects analysis (Section 14.5.3) and residual cumulative effects analysis (Section 14.5.4).

14.5.1.2 Residual Project Effect Analysis

The residual effects analysis measures and describes the effects of the Project on Other Land and Resource Use relative to existing conditions. This analysis was conducted using the temporal boundaries identified for the assessment (Section 03). Residual effects are described for each measurable parameter for the residual effect pathways identified.

The residual effects analysis used a reasoned narrative to describe anticipated changes to each measurable parameter caused by the Project. Residual effects are classified in tabular form using effects criteria intended to provide structure and comparability across VECs assessed for the Project. The residual effects classification uses nature, magnitude, geographic extent, duration, timing, frequency, reversibility and probability of occurrence as criteria. The approach to classify each residual effect criterion is provided in Table 14-13. Following classification of residual Project effects, the analysis also evaluates the significance of residual effects using threshold criteria or standards beyond which a residual effect is considered significant. The definition of a significant effect for Other Land and Resource Use is provided in Section 14.5.1.4.

Table 14-13: Definitions Applied to Effects Criteria Classifications for the Assessment of Other Land and Resource Use

Criterion	Rating	Definition
Nature	Positive	Change in measurable parameter results in net improvement or benefit to the Other Land and Resource Use VEC
	Neutral	Change in measurable parameter results in no change to the Other Land and Resource Use VEC
	Adverse	Change in measurable parameter results in net degradation or loss to the Other Land and Resource Use VEC
Magnitude	Negligible	No measurable change in area of land available for outdoor recreation and harvesting
	Low	Project results in 0-5% loss of land available for outdoor recreation and harvesting
	Moderate	Project results in 6-10% loss of land available for outdoor recreation and harvesting
	High	Project results in 11-25% loss of land available for outdoor recreation and harvesting
Geographic extent	Site study area	Change in measurable parameter is confined to the SSA
	Local	Change in measurable parameter extends outside the SSA but within the LSA
	Regional	Change in measurable parameter extends beyond the LSA but is confined to the RSA
	Beyond regional	Change in measurable parameter extends beyond the RSA

Table 14-13: Definitions Applied to Effects Criteria Classifications for the Assessment of Other Land and Resource Use

Criterion	Rating	Definition
Duration	Short term	Residual effect limited to Construction or Closure phases of the Project
	Medium term	Residual effect occurs through the duration of the Project
	Long term	Residual effect extends beyond the life of the Project
Timing	Qualitative Narrative	Changes in measurable parameter may be seasonal depending on activity
Frequency	Occasional	Change in measurable parameter is expected to occur rarely (e.g., once or a few times)
	Periodic	Change in measurable parameter is expected to occur consistently at regular intervals or associated with temporal events (e.g., during hot, dry climatic conditions)
	Continuous	Change in measurable parameter is expected to occur all the time
Reversibility	Reversible	Change in measurable parameter is reversible after Closure
	Irreversible	Change in measurable parameter is predicted to influence the component indefinitely
Probability of occurrence	Unlikely	Change in measurable parameter is not expected to occur, but not impossible
	Possible	Change in measurable parameter may occur, but is not likely
	Probable	Change in measurable parameter is likely to occur, but is uncertain
	Certain	Change in measurable parameter will occur
Ecological and Socioeconomic Context	Undisturbed	Area is relatively undisturbed or not adversely affected by development
	Disturbed	Area has been or is substantially disturbed by previous and/or present development
	Resilient	Adequate capacity to recover from disturbance, with consideration of existing disturbance
	Not resilient	Low capacity to recover from disturbance, with consideration of existing disturbance

LSA = local study area; RSA = regional study area; SSA = site study area; VEC = Valued Environmental Component.

14.5.1.3 Residual Cumulative Effect Analysis

The cumulative effects assessment builds on the results of the residual Projects effects assessment and considers the incremental changes that were predicted to have a likely residual adverse effect on Other Land and Resource Use. This includes the effects of past and current projects or past climate-related changes (i.e., forest fires), which contribute to existing conditions upon which residual Project effects are assessed. For the EIS, the description of the existing environment characterizes the environment already affected by past and current projects and activities; therefore, the cumulative effects assessment focused on analyzing the effects of other RFDs in combination with the Project. Although positive effects are characterized in the residual Project effects analysis, they are not carried forward to the cumulative effects analysis, as the Project benefits from other past, present and RFDs or activities are unlikely to be known or publicly disclosed (e.g., Benefit Agreements with communities).

The cumulative effects assessment followed a three-step process:

- Identify RFDs and potential cumulative effects that overlap in time and space with residual effects.
- Identify and describe any additional mitigation measures, if applicable.
- Characterize residual cumulative effects, using the same criteria defined for the residual Project effects analysis (Section 14.5.1.2).

Chapter 4 provides a list of known RFDs and physical activities with potential residual effects that could overlap spatially and temporally with the Project's residual environmental effects, based on which cumulative effects were evaluated. If effects from these RFDs overlapped spatially or temporally with the residual Project effects on Other Land and Resource Use, potential cumulative effects were identified. If no spatial or temporal overlap existed for the residual Project effects and RFDs identified, then a cumulative effects assessment was not required.

Based on the assessment of potential cumulative effects, an assessment was made regarding whether additional mitigation measures, beyond those proposed for the Project, were required to address potential cumulative effects. Where applicable, additional mitigation measures were identified.

Residual cumulative effects were characterized using the same criteria assessed for residual Project effects (Section 14.5.1.2). Following classification of residual cumulative effects, the analysis also evaluated the significance of residual Project effects using threshold criteria or standards beyond which a residual environmental effect was considered significant. The definition of a significant effect for Other Land and Resource Use is provided in Section 14.5.1.4.

14.5.1.4 Significance Determination

A residual Project effect on Other Land and Resource Use is considered significant if:

- The Project will result in a land use that is non-conforming with established federal or provincial legislation/policy or municipal land use by-laws that cannot be approved through permitting, amendment, consultation or agreement.
- The Project will result in a change or disruption that restricts or degrades present land and resource use capacity within the RSA where tourism, recreation or harvesting activities cannot continue at or near current levels over the long term and where compensation is not possible.

14.5.2 Effect Pathway Screening

The effect pathway screening describes potential effects pathways that are evaluated considering proposed mitigation measures to predict whether the effect pathway has the potential to cause residual adverse or positive effects. The effectiveness of mitigation measures proposed for each effect pathway was assessed to determine whether the mitigation would address the potential Project effect, such that the effect pathway was eliminated or would result in a negligible adverse effect on a VEC. As described in Section 14.5.1.1, each effect pathway was categorized as one of the following:

- **no effect pathway** (i.e., avoidance measures and/or mitigation results in no residual effect on Other Land and Resource Use)
- **negligible effect pathway** (i.e., mitigation results in negligible effect on Other Land and Resource Use)
- **residual effect pathway** (i.e., effect that is greater than negligible and carried forward for further assessment)

The Project has the potential to result in changes to Other Land and Resource Use during Construction, Operations, and Closure. The effects pathway screening is summarized in Table 14-14. The subsections following the table provide rationale used to assign potential effects to the no effect pathway and negligible effect pathway categories and list residual effect pathways. Each Project component/activity identified as a residual effect pathway was carried forward for detailed assessment in Section 14.5.3.

Table 14-14: Potential Effects Pathways for Other Land and Resource Use

Project Components/Activities	Effects Pathway	Environmental Design Features, Mitigation or Enhancement Measures	Effect Pathway Screening

Construction
Project components may be incompatible with current land use zoning or other regulations or policies, and/or affect the access to, availability of, rights to, or viability of areas used for other land and resource use activities.
	— The Project may require permitting approvals from regulators
	— Project presence and site activities may affect current use and future development
		— Limiting the Project footprint to the extent practical through site design:
		  – optimizing use of cleared areas for Project activities
		  – minimizing the footprint (e.g., clustering buildings, co-locating linear infrastructure)
		— Continuing to engage with the Town Councils of Labrador City and Wabush regarding regulations and permitting requirements
		— The Project has been designed to avoid the Wahnahnish Lake PPWSA as much as possible
		— Continuing to engage with provincial authorities regarding regulations and permitting requirements
		— Continuing to engage with other tenure holders/industrial and commercial users to address any land use conflicts
		— Conducting an inventory of existing cabins and owners and developing a plan to address issues
		— Working with White Wolf Snowmobile Club to address effects on snowmobile trails
		— Continuing to engage with key local stakeholders (e.g., Kami Working Group, cabin owners, municipalities, White Wolf Snowmobile Club)
			Negligible Effect Pathway

	— Project presence and site activities may result in limited access to, and loss of, areas for recreation and tourism — Project presence and site activities may result in limited access to, and loss of, areas for harvesting	— An access road has been added to the west side of Duley Lake Provincial Park Reserve to reduce interactions between the Project and residents and/or cabin owners — Preparing a Transportation Impact Assessment and Traffic Management Plan ahead of construction — Champion will continue to consult with local stakeholders (e.g., Kami Working Group) to plan and implement the Project to permit access to the extent possible while ensuring public safety and the safety and security of mine operations — Working with owners to address Project effects on properties	Residual Effect Pathway
Operation and Maintenance Routine activities and components may affect access to, availability of, or viability of areas used for land and resource use activities.	— Project presence and site activities may result in limited access to, and loss of, areas for recreation and tourism — Project presence and site activities may result in limited access to, and loss of, areas for harvesting	— Champion will continue to consult with local stakeholders (e.g., Kami Working Group) to plan and implement the Project to permit access to the extent possible while ensuring public safety and the safety and security of mine operations — Working with owners to address Project effects on properties — Working with harvesters to address Project effects on natural resources	Residual Effect Pathway
Closure Closure activities have the potential to reverse adverse effects related to some localized use of land and resources and may ultimately restore access.	— Project presence and site activities may result in limited access to, and loss of, areas for recreation and tourism — Project presence and site activities may result in limited access to, and loss of, areas for harvesting	— Initiating progressive rehabilitation at the TMF so that access can resume upon mine closure — Working with owners to address Project effects on properties — Working with harvesters to address Project effects on natural resources	Residual Effect Pathway

PPWSA = protected public water supply area; TMF = tailings management facility.

14.5.2.1 No Effect Pathways

The effects pathway screening indicates that none of the anticipated Project interactions with existing conditions results in no effect pathways for Other Land and Resource Use.

14.5.2.2 Negligible Effect Pathways

The following Project interactions with existing conditions are predicted to result in negligible effect pathways to Other Land and Resource Use and are also not carried forward in the assessment.

14.5.2.2.1 Regulated Land Use

The Project intersects municipally zoned lands for other types of uses within the Planning Areas of both Labrador City and Wabush (Section 14.4.2). It intersects a portion of a Protected Road within the Wabush Planning Area. Any development proposals in Protected Road zones within a Planning Area are referred to the municipality, in this case the Town of Wabush.

The Project intersects a portion (7 ha or 0.045%) of Wahnahnish Lake watershed, the PPWSA for the Town of Wabush. Champion will comply with regulations related to PPWSAs, including appropriate permitting such as "Application for a Permit to Develop in a Protected Public Water Supply Area/Wellhead Protected Water Supply Area" (NLECC Water Resources 2025b). Champion will also comply with all requirements and acknowledges that bulk fuel storage (including back-up diesel or gas generators) is not permitted in a PPWSA.

The Project intersects a portion of a Provincial Park Reserve (former Provincial Park in Labrador City, where the land is held by the Government of NL). Duley Lake Provincial Park Reserve is zoned as Open Space in the Town of Labrador City Development Regulations (Town of Labrador City 2018b). The Project also intersects dump sites/dump site buffers in Wabush, which are addressed through communications with Digital Government and Services NL and NLECC, Pollution Prevention as required.

All Project construction activities will occur on municipal lands within the Planning Areas of the Towns of Labrador City and Wabush. The portions of the Project that fall within the Labrador City Planning Area (e.g., access road, open pit, overburden stockpile, mine rock stockpile, primary ore crusher station, mine service area) are predominantly located on lands zoned as Mineral Workings and Mining Reserve - Rural. The Kami General Partnership mining lease/surface lease is on lands zoned as Mineral Workings where mineral extraction is permitted. The west access road crosses an area zoned as Open Space, where transportation may be permitted under discretionary authority of the Town Council of Labrador City.

Construction of Project infrastructure, including the tailings management facility, rail line and process plant, occurs within land zoned as Mineral Working by the Town of Wabush. The Project intersects areas of land zoned for Cabin Development at Riordan Lake in the Wabush Planning Area. A portion of the rail line and east access road will be constructed parallel to Tacora Resources' existing rail line that connects to the QNS&L Railway. The rail line and east access road intersect other zoning designations (i.e., conservation, Open Space, General Industrial, Airport Industrial) in Wabush. Though transportation is not listed as a permitted or discretionary use in these zones (Table 14-8), an existing rail line crosses them.

To avoid adverse effects on regulated land use, meet regulatory requirements and acquire all permitting and approvals prior to Project Construction, Champion will continue to engage with the Town Councils of Labrador City and Wabush regarding municipal zoning and permitting requirements, including use of areas zoned for non-mining uses. Champion will also engage with relevant provincial authorities regarding any provincial interests (e.g., Provincial Park Reserve, dump sites/dump site buffers) potentially affected by the Project. These permitting and engagement measures will minimize effects on regulated land use. Champion will continue to engage with cabin owners to discuss mitigations, including applicable compensation where appropriate.

14.5.2.2.2 Land Tenure

Land tenure in the LSA includes various parcels of Crown land held for mineral exploration, mining extraction, Duley Lake Provincial Park Reserve (discussed above) and cabins. Mining and mineral exploration are discussed under industrial and commercial development in Section 14.5.2.2.3, whereas cabins are described under recreation and tourism in Section 14.5.2.2.4. Any potential effects on the land tenure of companies, government agencies and individuals may be addressed through engagement and potential agreements (if required) with affected parties and through engagement with tenure holders and NL FFA, Crown lands.

14.5.2.2.3 Industrial and Commercial Development

No commercial forestry or quarrying were identified in the SSA. The SSA intersects areas used by companies and individuals for mineral exploration and/or mining, which involve mineral exploration licences (i.e., Rio Tinto IOC, LIORC, Wabush Mines and Mike Noseworthy) and mining leases (i.e., Wabush Mines, LIORC).

Any potential effects on industrial or commercial activities of companies and individuals may be addressed through engagement and potential agreements (if required) with affected parties and through engagement with relevant government agencies, such as NL Industry, Energy and Technology, Mining and Mineral Development.

14.5.2.2.4 Recreation and Tourism

The Project intersects a portion of the trails maintained by White Wolf Snowmobile Club, including the trail used for the Great Labrador Loppet. Champion is working with White Wolf Snowmobile Club to address effects on snowmobile trails in the SSA. Various cabins, including those within and beyond, the SSA had been purchased by Alderon in preparation for mine development. Any further arrangements will be made prior to Construction, through negotiation with property owners.

14.5.2.3 Residual Effect Pathways

The following Project interactions were predicted to potentially result in residual effect pathways to Other Land and Resource Use and were advanced for further assessment of residual effects on recreation and tourism, as well as harvesting.

14.5.2.3.1 Recreation and Tourism

The Project will result in changes in access and possibly level of activity and cabin use. An area of land (4,370 ha) will be unavailable for usage during Construction, Operations, and Closure (estimated to be 40 years). Residents use cabins and a camping area near the Project. Project-related effects will include changes to usage of cabins and recreation and tourism areas.

Design changes have been made to the Project to avoid effects on land and resource use (Table 14-14). Various mitigations have been proposed to minimize effects on recreation and tourism), including those committed to by Alderon and Champion to address residual effects. Based on previous studies, recreation activities are also practised widely throughout western Labrador in areas with access for boats, snow machines, ATVs and automobiles. A portion of the snowmobile trail system will need to be rebuilt to accommodate the Project. Champion will continue to engage with local stakeholders such as White Wolf Snowmobile Club on trail design options, which will be finalized during detailed design of the mine site.

14.5.2.3.2 Harvesting

The Project will result in changes in access to the SSA and possibly level of activity, such as domestic wood-cutting. Sensory disturbances (e.g., noise, vibration, light) from Construction, Operations, and Closure could reduce the presence and abundance of wildlife for hunting and trapping. Changes to air quality and resulting changes to vegetation could affect harvesting, such as berry-picking. Changes to water quality could affect fish habitat, thus affecting fishing. Residents have reported some hunting in the SSA and LSA near Duley Lake and Mills Lake, and in the area from Riordan Lake to Wahnahnish Lake. The rail line has been reconfigured to avoid the Wahnahnish Lake watershed area.

In the previous EIS, trapping was identified around Duley Lake, Waldorf River, Riordan Lake, Rectangle Lake, Wahnahnish Lake and the river system to the south. Boating and fishing were identified in Duley Lake and Mills Lake. Several trappers who participated in the informant interviews mentioned that, due to the number of cabins and land use activity that occur in the SSA and LSA, they prefer to concentrate efforts in the RSA away from the cabins and communities. As for hunting, trapping and fishing are also practised throughout western Labrador in areas with access. Several berry-picking areas were identified as being in the SSA, but the activity is known to occur widely in the LSA and RSA.

14.5.3 Residual Project Effect Analysis

This section provides results of the analysis of residual Project effects on Other Land and Resource Use for effects pathways with the potential for greater than negligible effects (identified in Section 14.5.2.3). Aside from this discussion on land and resource use, effects on air quality are assessed in Chapter 5; noise, vibration and light, in Chapter 6; surface water quality, in Chapter 8; vegetation, in Chapter 10; and effects on community health and well-being in Chapter 17. Indigenous Land and Resource Use is addressed in Chapter 13. These assessments should be read in conjunction with this chapter, as the results of these assessments have not been repeated in the discussion of effects on Other Land and Resource Use provided below.

The residual Project effects analysis for Other Land and Resource Use is based on a qualitative description, as no modelling or predictive analysis was undertaken for this VEC. Mitigation measures will be applied to minimize effects on Other Land and Resource Use. Likewise, mitigation measures that will be used to minimize the effects of changes to air quality, noise, vibration and light, surface water, vegetation and community health and well-being are all applicable to land and resource use. In addition, design measures taken to minimize the visual effects of mine infrastructure, such as mine rock storage, to the extent possible are beneficial to land and resource use. The introduction of a new railway line and access roads may also provide enhanced year-round access to areas for hunters and other resource users.

14.5.3.1 Residual Project Effects Characterization

A summary and characterization of residual Project effects on land and resource use is included in Table 14-15. Overall, with the application of mitigation and management measures, residual effects on other land and resource use are low in magnitude. The residual effects on other land and resource use are limited to the SSA (direct loss of area) and LSA (sensory disturbances). Effects are of medium duration (i.e., for the duration of the Project) and are anticipated to occur at periodic and continuous frequencies. Effects are predicted to be mostly reversible upon Project closure with rehabilitation. Though land and resource use is known to occur in the SSA and LSA, the RSA is large with plentiful land and resources to accommodate displaced users of land and resources.

14.5.3.1.1 Recreation and Tourism

Residual effects such as limited access to, and loss of, areas currently used for recreation and tourism will begin in Construction and continue throughout Operations and Closure. Champion will continue to engage with White Wolf Snowmobile Club (e.g., regarding Cain's Quest snowmobile race) and recreational users regarding the intersection of the Project and recreation areas. This will include communication of Project information, updates on ongoing and planned activities and a discussion of issues and concerns and potential means of addressing them. Therefore, adverse residual effects on recreation and tourism from the Project are anticipated to be low in magnitude.

With implementation of mitigation measures, residual effects of the Project on recreation and tourism are anticipated to be low in magnitude. The Project is in an area used for recreation and tourism, but extensive alternative areas are available to conduct these activities. The SSA constitutes approximately 0.03% of the RSA. Project effects on recreation and tourism are expected to occur within the SSA from the direct loss of an area due to restricted access to the mine site and within the LSA from indirect sensory disturbances.

During Construction and Closure, residual effects are expected to be of short-term duration, periodic in frequency with an increase in the winter months for applicable activities. During Operations, they are expected to be medium term and continuous in frequency. Residual effects will be reversible following Project Closure. Recreation and tourism in the RSA is considered resilient, as it has a moderate to high capacity to recover from disturbance, including from predicted Project-related effects.

14.5.3.1.2 Harvesting

Residual effects such as limited access to, and loss of, areas currently used for harvesting will begin in Construction and continue throughout Operations and Closure. This will continue to directly affect any harvesting that takes place within the SSA, including hunting, trapping, fishing, domestic wood- cutting and berry-picking.

Potential Project effects on harvesting include indirect effects from sensory disturbance (e.g., noise, light, vibration) from the physical presence of the Project and increased traffic along the rail line and access roads that may affect the presence of wildlife (assessed in Chapter 11). This could result in reduction of harvesting success due to the disruption of targeted species, which could lead to greater pressure on game resources in other areas. The overall experience of hunters, trappers and anglers may be compromised in the SSA, but these activities are also practised widely in the RSA. Champion has committed to preparing a Transportation Impact Assessment and Traffic Management Plan.

Hunters, trappers and anglers may experience adverse effects related to the availability of targeted species in the LSA resulting from habitat avoidance due to disturbance and wildlife mortality (Chapter 11). Behavioral changes in wildlife species can result from indirect disturbances (e.g., noise, light) displacing targeted species from the LSA, and result in hunters or trappers within the LSA experiencing reduced harvesting success rates. However, alternative areas within the LSA and RSA are available for users to pursue these activities outside of the area affected by the Project. Application of the mitigation measures described in Section 11.5.2 is predicted to reduce the magnitude and duration of Project effects on mortality risk and change in habitat. Champion will continue to engage with resource users (e.g., hunters, trappers) regarding the intersection of the Project and hunting and trapping areas. This will include communication of Project information, updates on ongoing and planned activities and a discussion of concerns and potential means of addressing them. Therefore, adverse residual effects on harvesters from the Project are anticipated to be low in magnitude.

Change in water quality associated with Project emissions, discharges and wastes may also result in adverse effects on fish and therefore lead to additional pressure on fishery resources. However, residual effects on fish and fish habitat as discussed in Chapter 9 will be compensated for through the Fish and Fish Habitat Offsetting Plan. Significant adverse effects on fish and fish habitats are unlikely if the recommended plans and procedures, including a formal fish relocation plan, are followed. Given this and the extensive areas available for fishing in the LSA and RSA, adverse residual effects on fishery resources are anticipated to be low in magnitude.

Loss of an area and/or restriction of access will continue throughout Closure. However, this phase will also allow for the restoration of affected land used for harvesting purposes. Residual effects on harvesting from closure activities are anticipated to be low in magnitude.

It should be noted that the previous EIS, which was released from EA by the Government of NL in 2014, determined the Project was not likely to result in significant adverse residual effects on other land and resource use.

With implementation of mitigation measures, residual effects of the Project on harvesting are anticipated to be low in magnitude. The Project is in an area used for harvesting, but extensive alternative areas are available outside of the SSA to undertake harvesting activities; the SSA is approximately 0.03% of the RSA. Project effects on harvesting are expected to occur within the SSA (from the direct loss of the area) and the LSA (from indirect sensory disturbances).

During Construction and Closure, residual effects on harvesting are expected to be short term and periodic in frequency. During Operations, they are expected to be medium term and continuous in frequency. Residual effects will be mainly reversible following Project Closure, with access being restored and rehabilitation ongoing. Harvesting in the RSA is considered resilient, as it has a moderate to high capacity to recover from disturbance, including from predicted Project-related effects.

Table 14-15: Characterization of Residual Effects on Other Land and Resource Use Measurable Parameters

Residual Effect	Criterion	Rating
Change in Recreation and Tourism	Nature	Adverse
	Magnitude	Low
	Geographic Extent	LSA
	Duration	Medium term
	Timing	Recreational and tourism activities may occur year-round, with a particular focus on winter activities
	Reversibility	Reversible
	Frequency	Periodic during Construction and Closure, continuous during Operations
	Probability of occurrence	Certain
	Ecological and Socioeconomic context	Resilient
Change in Harvesting	Nature	Adverse
	Magnitude	Low
	Geographic Extent	LSA
	Duration	Medium term
	Timing	Harvesting (e.g., hunting, trapping, fishing) is subject to regulated seasons and peak periods for certain activities (e.g., wood-cutting, trapping, berry-picking). Activities mainly coincide with fall, winter and spring seasons.
	Reversibility	Reversible
	Frequency	Periodic during Construction and Closure, continuous during Operations
	Probability of occurrence	Certain
	Ecological and Socioeconomic context	Resilient

LSA = local study area.

14.5.3.2 Significance Determination

As outlined in Section 14.5.1.4, a residual Project effect on Other Land and Resource Use is determined as significant if:

- The Project will result in a land use that is non-conforming with established federal or provincial legislation/policy or municipal land use by-laws that cannot be approved through permitting, amendment, consultation or agreement.
- The Project will result in a change or disruption that restricts or degrades present land and resource use capacity within the RSA where tourism, recreation or harvesting activities cannot continue at or near current levels over the long term and where compensation is not possible.

While Project components and activities will result in adverse effects on Other Land and Resource Use during each phase of the Project, the residual effects are anticipated to be low in magnitude. Land and resource use is anticipated to continue to occur at or near current levels over the long term, given the alternative areas available for recreation and tourism and harvesting. Project activities and components will not disrupt, restrict or degrade land and resource use to the point where activities cannot continue at or near current levels. With mitigation and environmental protection measures, the residual environmental effects on Other Land and Resource Use are predicted to be **not significant**.

The results were similar in the previous EIS where the residual effects on land and resource use were determined to be not significant. For designated land use, the rail line would intersect a cabin use zone at Duley Lake and the Wahnahnish Lake PPWSA, but the overlap involved small areas. Access would be limited in a small portion of the LSA, but residents most frequently used other areas for the same activities. Any noise and dust generated could affect level of activity/use but would be restricted to the LSA. Relocation of snowmobile trails or cross-country ski trails would be addressed in consultation with user groups. Any potential adverse effects on cabin use would result from overlap during Construction, and noise and dust generation during Operations.

14.5.4 Residual Cumulative Effects Analysis

Following the assessment of Project effects in the sections above, an assessment of potential cumulative effects was conducted for other projects and activities that have the potential to interact with RFDs.

14.5.4.1 Reasonably Foreseeable Developments and Potential Cumulative Effects

Six RFDs were identified as having the potential to contribute to cumulative effects along with the Kami Mining Project (Table 14-16). Five of these are expansion and/or infrastructure projects for three existing mines located between 13 and 25 km from the Kami Mining Project. The sixth is a road improvement project between 6 and 93 km from the Kami Mining Project. All RFDs are in the RSA for land and resource use.

There are no spatial intersections of the Kami Mining Project and the identified RFDs, but each RFD coincides temporally with the Project. Four projects (at the Bloom Lake mine and Rio Tinto IOC's Labrador City operations) are at existing mine sites where operations are ongoing. The remaining two projects (Route 389 improvement program and Scully Mine tailings impoundment area) include use of presently undeveloped land and thus potentially affect tourism, recreation and harvesting due to loss of access to land and/or disturbances. These two projects may contribute to cumulative effects along with the Kami Mining Project in the RSA.

The loss of access to land and potential other disturbances would have minimal effects on land and resource use, as the two RFDs involve a small portion of land in the RSA and residents engage in activities over a large area. Champion will continue to engage with local stakeholders, such as municipalities and the Labrador West Alliance, to discuss potential land use conflicts and solutions. The conclusion is that potential cumulative effects of the identified RFDs and the Project's residual effects are unlikely to be greater than negligible.

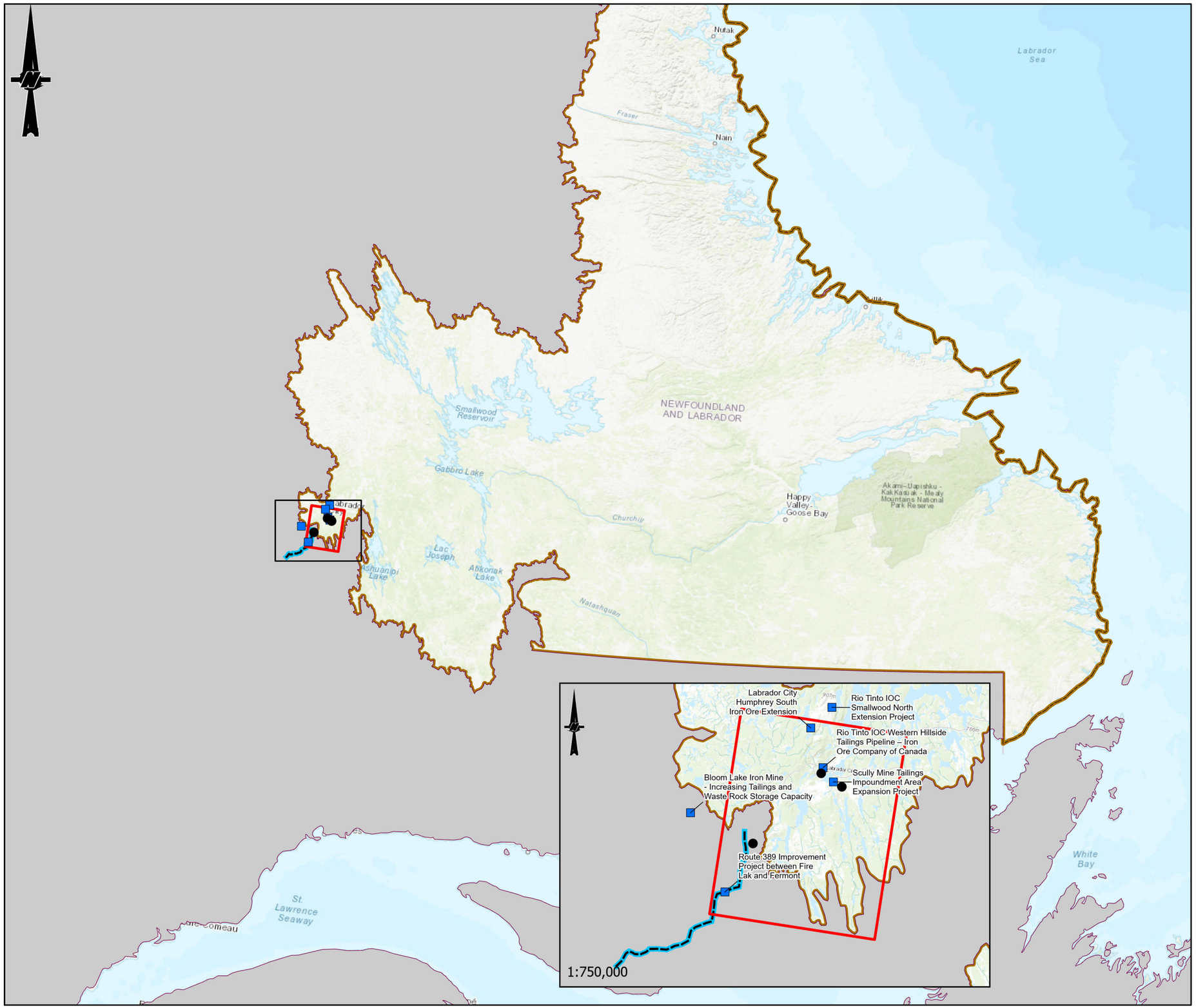
Table 14-16: Other Projects and Activities Considered in the Cumulative Effects Assessment

Project Name or Physical Activity	Description of Project Effects	Approximate Direct Distance to Kami Mining Project Site	Status/Timing	Interaction with Residual Effects to Other Land and Resource Use from Kami Mining Project
Route 389 Improvement Program – Project A between Fire Lake and Fermont	Part of a program to improve Route 389 from Baie-Comeau and Fermont. For the 70-km segment between Fire Lake and Fermont, the project includes construction of a 60-km roadway on a new alignment and major reconstruction of 10.5 km of the existing route.	Approximately 6 to 93 km	In construction Construction: 2023 to 2028	No spatial overlap Temporal overlap with Kami Construction and Operations Loss of undeveloped land in Québec in addition to the Kami Mining Project Potential for negligible cumulative effects to occur

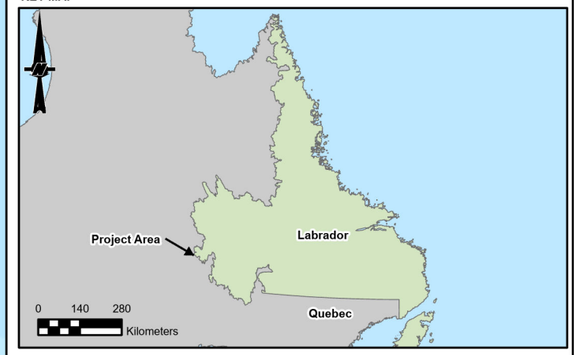
Project Name or Physical Activity	Description of Project Effects	Approximate Direct Distance to Kami Mining Project Site	Status/Timing	Interaction with Residual Effects to Other Land and Resource Use from Kami Mining Project
Scully Mine Tailings Impoundment Area Expansion Project	Involves expansion of the tailings impoundment area by up to 1,411 ha, southeast of the existing tailings disposal site at Scully Mine in Wabush (Tacora Resources 2021). The expansion aims to increase production and extend the mine's operational life. Several cabins are in the upper watershed of Flora South, and cabin owners may engage in brook trout fishing and other recreational activities. However, no land use conflicts are anticipated because of the project.	13 km	Construction not yet initiated Construction: 2025 to 2047	No spatial overlap Temporal overlap with Kami Construction and Operations Loss of 1,411 ha of undeveloped area in addition to the Kami Project Potential for negligible cumulative effects to occur
Rio Tinto IOC Western Hillside Tailings Pipeline	Involves development of an access road and pipeline, installation of transmission lines, pumps and pumphouses, as well as a modified tailings deposition strategy for Wabush Lake at the Rio Tinto IOC mine (Rio Tinto IOC 2024a). The project is situated entirely on IOC-owned property, where public access remains restricted. No significant adverse interactions with land and resource use activities are expected.	15 km	In construction Construction: 2024 to 2038	No spatial overlap Temporal overlap with Kami Construction and Operations Existing mine site No potential cumulative effect predicted
Bloom Lake Iron Mine – Phase II Expansion	Aims to expand tailings and waste rock storage capacity at Bloom Lake mine to support increased production and extend the mine's operational life.	17 km	Ongoing Operations: 2023 to 2040	No spatial overlap Temporal overlap with Kami Construction and Operations Existing mine site No potential cumulative effect predicted
Labrador City Humphrey South Iron Ore Extension	Involves a 370-ha expansion of an existing mine pit at the Rio Tinto IOC mine (Rio Tinto IOC 2020). The expansion includes extension of the mine pit and waste dump, development of a new waste dump, as well as installation of power lines, dewatering wells and surface water-handling systems. The project area falls within IOC's existing mining leases and owned property, where public access is generally restricted. White Lake is an exception, though access will be limited during project development activities. These restrictions may negatively affect recreational fishing, berry-picking and other activities in the White Lake area.	20 km	In construction Construction: 2024 to 2026 Operations: 2026 to 2070s	No spatial overlap Temporal overlap with Kami Construction, Operations, and Closure Existing mine site No potential cumulative effect predicted

Project Name or Physical Activity	Description of Project Effects	Approximate Direct Distance to Kami Mining Project Site	Status/Timing	Interaction with Residual Effects to Other Land and Resource Use from Kami Mining Project
Rio Tinto IOC Smallwood North Extension Project	Involves a 160-ha expansion of an existing mine pit at the Rio Tinto IOC mine. Includes the pit extension, development of a new waste dump and installation of power lines, dewatering wells and surface water-handling systems (Rio Tinto IOC 2021). Mining activity has been ongoing in the project area since the 1960s. Due to this long-standing industrial activity and public access restrictions, land and resource use activities are not conducted in the area.	25 km	In construction Construction: 2024, then 2029 to 2030	No spatial overlap Temporal overlap with Kami Construction and Operations Existing mine site No potential cumulative effect predicted

Rio Tinto IOC = Rio Tinto Iron Ore Company.



KEY MAP



SCALE 1:20,000,000

Legend

- Regional Study Area (RSA)
- Labrador/Quebec Boundary
- Proposed Road 389 Between Fermont and Fire Lake
- Community in the Local Study Area
- Reasonably Foreseeable Developments

0 40,000 80,000 160,000

1:3,750,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - NEWFOUNDLAND AND LABRADOR
2. COORDINATE SYSTEM: NAD 1983 UTM ZONE 21N

CLIENT

CHAMPION IRON MINES LTD.

PROJECT

KAMI IRON ORE MINE PROJECT (KAMI PROJECT)
WABUSH, NL

TITLE

OTHER PROJECTS AND ACTIVITIES CONSIDERED IN THE CUMULATIVE EFFECTS ASSESSMENT FOR OTHER USE OF LAND AND RESOURCES

CONSULTANT

Kami

YYYY-MM-DD	2025-07-02
DESIGNED	----
PREPARED	MS
REVIEWED	NG
APPROVED	BM

PROJECT NO.	CONTROL	REV.	FIGURE
CA0038713.5261	0025	0	14.6

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

25mm

14.5.4.2 Mitigation Measures

Based on the assessment of potential cumulative effects, an evaluation was made regarding whether additional mitigation measures, beyond those proposed for the Project, were required to address potential cumulative effects on Other Land and Resource Use.

Cumulative effects on loss of land from the Kami Mining Project and the Scully Mine Tailings Impoundment Area Expansion Project will affect approximately 0.13% of land in the RSA (0.03% for Kami and 0.10% for Scully). The Rio Tinto IOC projects and the Bloom Lake project are on existing mining properties. The area that will be lost for the Route 389 upgrades is unknown. Due to the relatively small area affected by cumulative effects, no further mitigation measures are recommended for Other Land and Resource Use.

14.5.4.3 Residual Cumulative Effects Characterization

The residual cumulative effects analysis uses a reasoned narrative to describe anticipated changes to each measurable parameter caused by the Project along with changes caused by other projects. The results of the analysis are summarized in Table 14-17.

Table 14-17: Characterization of Residual Cumulative Effects on Other Land and Resource Use Measurable Parameters

Residual Effect	Criterion	Rating/Effect Size
Change in Recreation and Tourism	Nature	Adverse
	Magnitude	Low
	Geographic Extent	RSA
	Duration	Medium term
	Timing	Recreational and tourism activities may occur year-round, with a particular focus on the winter season
	Reversibility	Reversible
	Frequency	Periodic during Construction and Closure, continuous during Operations
	Probability of occurrence	Certain
	Ecological and Socioeconomic context	Resilient
Change in Harvesting	Nature	Adverse
	Magnitude	Low
	Geographic Extent	RSA
	Duration	Medium term
	Timing	Harvesting (e.g., hunting, trapping, fishing) is subject to regulated seasons and peak periods for certain activities (e.g., wood-cutting, trapping, berry-picking). Activities mainly coincide with fall, winter and spring seasons.
	Reversibility	Reversible
	Frequency	Periodic during Construction and Closure, continuous during Operations
	Probability of occurrence	Certain
	Ecological and Socioeconomic context	Resilient

RSA = regional study area.

14.5.4.4 Significance Determination

The potential residual environmental effects of the Kami Mining Project may act cumulatively with effects from other past, present or planned projects and activities in the RSA. The cumulative effects of the Kami Mining Project combined with the Scully Mine Tailings Impoundment Area Expansion Project will result in a decrease in some 5,781 ha (1,411 for Kami and 4,370 for Scully) considering the respective footprints of each project. These decreases in land available for other uses will be limited to about 0.13% of the land area in the RSA, and mostly reversible. Therefore, the cumulative effects of the Project in combination with other past, present and planned projects and activities on Other Land and Resource Use are determined to be **not significant.**

14.6 Prediction Confidence and Uncertainty

A key element of a comprehensive EA is prediction of future conditions of the environment resulting from the Project from previous and existing projects and activities, as well as RFDs. Given that environments change naturally and continually through time and across space, assessments of effects and predictions about future conditions embody some degree of uncertainty (CEA Agency 2018).

The purpose of this section is to identify the key sources of uncertainty and qualitatively describe how uncertainty was addressed for the assessment of effects on Other Land and Resource Use to increase the level of confidence that effects would not be larger than predicted, including the potential need for monitoring and adaptive management that can reduce uncertainty over time (Section 4.10).

Confidence in effects analyses can be related to many elements for the Other Land and Resource Use VEC, including the following:

- adequacy of the baseline data for providing an understanding of the existing conditions
- the nature, magnitude and spatial extent of future fluctuations in ecological, cultural and socioeconomic variables, independent of effects from the Project and other developments (e.g., climate change, fire, flood)
- understanding of Project-related effects on complex social-ecological systems that contain interactions across different scales of time and space (e.g., how and why the Project would influence wildlife and Indigenous Land and Resource Use)
- knowledge and experience with the type of effect in the system
- knowledge of the effectiveness of proposed Project environmental design features or mitigation for avoiding or minimizing effects
- uncertainties associated with the exact location, physical footprint, activity level, and timing and rate of future developments

There is a high level of confidence in the prediction based on access to comprehensive government published information regarding regulated land and resource use in NL, existing knowledge obtained from a long history of socioeconomic research in Labrador West, the results of current engagement with land and resource users in the region and a land and resource study for the previous EIS, which was released from EA with conditions in 2014. The mitigation measures proposed for the Project (e.g., site design to avoid sensitive features to the extent possible), removal of cabins with compensation for cabin owners and those measures addressing effects on fish, birds and wildlife are proven and effective mitigations for other projects.

14.7 Monitoring, Follow-Up and Adaptive Management

A dedicated follow-up and monitoring plan is not proposed for Other Land and Resource Use. Champion will develop a Project-specific Environmental Management System, Environmental Protection Plan and other associated plans stipulating mitigation measures to be applied during Construction, Operations, and Closure. These measures will be subject to regular review of their effectiveness as part of ongoing adaptative management programs. Regarding specific land and resource use interests, Champion has prepared an engagement plan for the Project (Annex 5G, Kami Engagement Plan).

Follow-up and monitoring programs for some VECs will be indirectly applicable to other use land and resources. In addition, Champion will continue to liaise with government departments and agencies, community groups, and other local stakeholders to provide Project-specific information periodically and to facilitate planning regarding Other Land and Resource Use.

14.8 Predicted Future Conditions Should the Project Not Proceed

The predicted future condition of the environment for Other Land and Resource Use if the Project does not proceed is not expected to differ markedly from current conditions. The Project is in a predominately natural area with existing land and resource use (e.g., mineral exploration and potential development, silviculture, recreation, fishing, hunting, trapping, berry-picking, wood-cutting) and in an area mainly designated for mining uses by the municipalities. Many users hold land tenure with surface rights only, as the rights to subsurface resources are maintained by the Crown, which may lease subsurface or surface rights for the purpose of resource extraction (e.g., forestry, mining, quarrying). Even if the Project does not proceed, it is probable that other mining developments may occur in this area. The future conditions for tourism, recreation and harvesting are also influenced by the availability of harvested species and resources, as discussed in Chapters 9 to 11.

14.9 Fermont

The SSA for the Kami Mining Project does not intersect any land and resource use in Fermont or Québec, as the entirety of the Project footprint is in Labrador City and Wabush. Therefore, the Project will not result in effects on land use planning or industrial and commercial development. Due to the Fermont's proximity to the provincial boundary with Labrador, the Project may result in disturbances to tourism and recreation land uses near Fermont.

The previous Project (i.e., Alderon) consulted with Indigenous groups and local stakeholders. Champion has been engaging with potentially affected Indigenous groups and local stakeholders since acquisition of the Project in 2021. Issues and concerns related to Other Land and Resource Use raised by stakeholders in Fermont, and how they were addressed through the Other Land and Resource Use VEC, are summarized in Table 14-18, including cross references to where comments were considered or addressed in the VEC chapter.

Table 14-18: Summary of Issues and Concerns Related to Other Land and Resource Use by Fermont Stakeholders

Comment Theme	How it is Addressed in the Assessment	Where it was Addressed in the Assessment	Stakeholder	Raised in the Alderon EIS (Yes/No)
Project footprint will affect snowmobile trails	Champion has committed to rebuilding snowmobile trails affected by the Project.	Chapter 14: Other Land and Resource Use	Town of Fermont	Yes

EIS = Environmental Impact Statement.

14.9.1 Outdoor Tourism and Recreation

Fermont residents enjoy outdoor recreation throughout the year, with a strong emphasis on winter activities such as snowmobiling, snowshoeing, cross-country skiing, ice fishing, ice skating, paraskiing and tobogganing (Municipalité de Fermont 2025). Additionally, some participate in alpine skiing and/or snowboarding at the Smokey Mountain Ski Club in Labrador City.

Snowmobile trail users in Côte-Nord purchase permits from the Québec Federation of Snowmobile Clubs, with fees supporting trail maintenance by clubs like Le Club de Motoneige les Lagopèdes de Fermont (FCMQ 2025). Fermont offers approximately 250 km of groomed trails (Tourisme Côte-Nord 2025b), which connect to Labrador West's White Wolf Snowmobile Club trails (Figure 14-5). Based on information from the previous EIS, some riders from Québec (about 500 annually) purchased trail permits from White Wolf Snowmobile Club (Kent 2012).

Fermont residents partake in a variety of activities from spring to fall, including riding ATVs on trail systems(FCMQ 2025) . Mountain biking and/or hiking occurs on trails at Mont Daviault and Monts Severson (Tourisme Côte-Nord 2025a). Bird watching sites have been identified at Lac Daviault, Monts Severson and Lac Daigle (Cornell University 2025). Fermont has two RV campgrounds on Lac Daviault, which also has a marina and beach (Tourisme Côte-Nord 2025a).

Mont Daviault and Monts Severson both offer scenic views (Tourisme Côte-Nord 2025a). Project components such as mine rock storage areas have been redesigned to be less visible from Fermont. Visual aesthetics is addressed in Chapter 17.

In 2024, the Québec Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs issued a call for proposals inviting citizens and organizations to identify potential terrestrial and marine protected areas (Le Trait d'union du nord 2024). The Municipalité régionale de comté de Caniapiscau submitted a proposal to establish a protected area including Monts Severson and Mont Daviault for nature conservation and recreation.

Based on information from the previous EIS, of the 276 recreational cabins in the Labrador City/Wabush/Fermont area, 76 were in Québec (Alderon 2012). The EIS for the Project includes consideration of effects on cabins near Lac Daviault. Effects on air quality are discussed in Chapter 5. Effects on noise, vibration and light are presented in Chapter 6. Mitigations such as measures to control dust, noise, vibration, light will result in reduction of Project-related effects for Fermont, including on cabins near Lac Daviault.

14.9.2 Harvesting

No current information was available on the locations of harvesting in Fermont. In the land use study for the previous EIS, five Fermont residents identified hunting, trapping, fishing and berry-picking locations. The results are summarized as follows (Alderon 2012):

- Hunting areas are to the east and west sides of Lac Daviault.
- Trapping occurs north of Lac Daviault. Some trappers indicated they prefer to concentrate efforts in the larger region away from the communities and cabins.
- Fishing was reported in two waterbodies east of Lac Daviault, though most fishing occurred in Labrador.
- Two small berry-picking areas were identified north of Lac Daviault, near Hugette Lake in Labrador.

For the most part, these activities do not take place in the SSA, expect for fishing where it is possible that Fermont residents may fish in waterbodies near the Project. Regarding resources harvested by Fermont residents, fish and fish habitat is assessed in Chapter 9. Effects on vegetation are addressed in Chapter 10 and effects on wildlife in Chapter 11. Any efforts to mitigate Project-related effects on fish, wildlife and plants in the SSA and LSA will serve to reduce effects on land and resource users in Fermont.

14.9.3 Alderon Environmental Impact Statement

During the previous EIS (Alderon 2012), the Fermont citizens' group raised concerns regarding potential effects of the project, particularly on lakes and the environment (Mouvement citoyen de Fermont 2012). Lac Daviault and Lac Perchard are important for recreation and drinking water, respectively. The group was concerned the project could lead to changes in water quality and quantity and recommended robust measures to prevent contamination and safeguard the water bodies.

The citizens' group expressed concerns about deforestation due to the project. Members felt that deforestation and storage of overburden from mining operations would damage the natural aesthetics surrounding Fermont. Citizens were concerned that deforestation could disrupt wildlife habitats, reduce biodiversity, exacerbate habitat loss and harm ecological balance. The community of Fermont posed questions regarding socioeconomic effects, including Alderon's water management strategies and how the company would prevent contamination and restore water bodies in the event of damage. Potential socioeconomic effects were a key concern, with citizens concerned the project could negatively affect local tourism, including camping and recreational activities around Lac Daviault. Recreation and tourism, particularly for cabin owners and businesses, could suffer from disruptions caused by mining operations.

14.10 Key Findings and Conclusions

This chapter summarized available information on Other Land and Resource Use in the SSA, LSA and RSA and analyzed the potential effects of the Project on this VEC. Design changes have been made to the Project to avoid effects on other land and resource use to the extent possible. For instance, the rail line has been reconfigured to avoid the Wahnahnish Lake PPWSA.

Through preparation of a thorough baseline and spatial analysis, residual adverse effects pathways were identified for tourism and recreation, as well as harvesting land uses in the SSA. The SSA is a popular recreation area with cabin developments and a recreation park used for camping and other activities. A regional snowmobile trail, including a portion used for an annual Nordic skiing/snowshoeing event, are intersected by the SSA. Based on studies for the previous EIS, some fishing, boating, hunting, trapping and berry-picking was reported in the SSA and LSA. However, due to the number of cabins and other activities, some users preferred to concentrate efforts away from cabins and communities. Recreation and harvesting activities are generally practised widely in western Labrador in areas with access for boats, snowmobiles, ATVs and automobiles.

Implementation of the Project will result in changes in available land in the SSA and possibly the level of land and resource use. Mitigations have been proposed to minimize effects on recreation and tourism (e.g., relocation of snowmobile trails, compensation and removal of cabins) and harvesting, including those committed to by Alderon in the previous EIS and by Champion in current planning and design efforts. None of the changes identified is expected to have significant residual effects on tourism/recreation and harvesting.

Residents of Fermont generally undertake land and resource use activities near the community, but also in areas near or with visibility of Labrador West. Project features have been redesigned to reduce visibility from Fermont. Further, any design changes and mitigations to reduce effects on land and resource use in Labrador West will also reduce effects in Fermont.

The previous EIS had similar findings to this EIS, including no likely significant residual effects on land and resource use. Mitigations incorporated into Project design included progressive rehabilitation and working with recreational users to address Project effects.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15. Economy and Employment

The purpose of **Chapter 15, Economy and Employment** of the Environmental Impact Statement (EIS) is to characterize the existing environment, Project-environment interactions and potential residual Project and cumulative effects on the economy and employment. The Project has the potential to provide benefits to adjacent communities and the region through employment and expenditures on goods and services during the life of the Project. Conversely, the Project's requirements for workers, goods and services may also cause adverse effects. Within the scope of the EIS, changes in the economy and employment influence local and regional services and infrastructure. Therefore, the assessment of effects on the economy and employment provides information to support the assessment of another Valued Environmental Component (VEC), namely services and infrastructure, addressed in **Chapter 16, Services and Infrastructure**. The assessment of potential effects of the Project on the economy and employment are discussed in the context of existing conditions (Section 15.1). A more thorough discussion of existing conditions is included in the Land Use and Socio-economic Baseline Report in Annex 4C.

The requirements in the provincial Environmental Impact Statement Guidelines (EIS Guidelines) for the Project issued by the Newfoundland and Labrador (NL) Minister of Environment and Climate Change (GNL 2024a) involve a variety of socioeconomic issues to be addressed in the EIS, including issues related to Indigenous Land and Resource Use. These other issues have been divided among the VECs selected for the socioeconomic environment to reflect the best fit based on content (Table 15-1).

Table 15-1: Socio-economic Valued Environmental Components and Issues Addressed

Valued Environmental Component	Issues Addressed
Indigenous Land and Resource Use (Chapter 13)	Indigenous governments and organizations
	Indigenous Land and Resource Use
	Traditional, cultural and recreational activities
Other land and resource use (Chapter 14)	Municipalities with municipal plans and development regulations
	Extent of developed and undeveloped land
	Protected public water supply areas
	Parks and protected areas
	Land tenure
	Existing mining operations and planned expansions
	Accessibility of land for potential future mineral exploration and mining
	Current and historical land use for mining, mineral exploration and quarrying activities, including the presence of known mineral occurrences of potential economic significance
	Tourism-generating resources and operators (e.g., outfitter/guiding operators)
	Cabins
	Recreation areas (e.g., trails, multi-use trails, scenic lookouts, natural attractions)
	Recreation activities (e.g., hiking, hunting, fishing, swimming, berry picking)
	Domestic wood harvesting areas
Economy and employment (Chapter 15)	Employment and employment equity and diversity, including under-represented groups
	Business capacity relative to goods and services
Services and infrastructure (Chapter 16)	Wastewater
	Private, semi-public, and public drinking water systems
	Food security
	Housing, accommodations and property values
	Health care and community services, including mental health and addiction services and social programs
	Fire and emergency services
	Education and training services and facilities
	Municipal infrastructure or services and capacity
	Existing electrical infrastructure
	Existing railroad facilities

Valued Environmental Component	Issues Addressed
Community Health and Well-Being (Chapter 17)	Vibrations, noise emissions and noise levels, including sustained low frequency noise
	Light emissions, including night lighting
	Dust and air emissions
	Landscapes and viewscapes

15.1 Approach to the Effects Assessment

The methods and assessment presented in this chapter were developed in consideration of the requirements under the provincial *Environmental Protection Act*, with specific consideration of the requirements set out in the provincial EIS Guidelines for the Project issued by the Minister of Environment and Climate Change (GNL 2024a). A table of concordance to the EIS Guidelines is provided in the Executive Summary. The assessment of effects on the economy and employment followed the overall effects assessment approach and methods (**Chapter 4, Effects Assessment Methodology**).

Where relevant, comparison to the outcomes of the assessment of effects on the economy and employment completed in the previous EIS (Alderon 2012) has been made to highlight where adverse effects on the economy and employment have been reduced through consideration of environmental design features and mitigation, or where new adverse effects may be introduced and require additional consideration in Project planning.

15.2 Integrating Engagement from Indigenous Groups and Local Stakeholders

The Project previously underwent an environmental assessment (EA) process between 2011 and 2014. Alderon, the previous owner of the Kami property, consulted with Indigenous groups and local stakeholders as part of that process. Champion Kami Partner Inc. (Champion) has, similarly, been engaging with potentially affected Indigenous groups and local stakeholders since acquisition of the Project in 2021. The overall approach and methods to incorporate engagement feedback into the EIS are discussed in detail in **Chapter 22, Engagement**.

Issues and concerns related to the economy and employment raised by Indigenous groups and local stakeholders and how they are addressed in the assessment are summarized in Table 15-2, including cross-references to where comments were considered or addressed.

Table 15-2: Summary of Issues and Concerns Related to Economy and Employment by Indigenous Groups and Local Stakeholders

Comment Theme	How It Is Addressed in the Assessment	Where It Was Addressed in the Assessment	Indigenous Group or Local Stakeholder	Raised in the Alderon EIS (yes/no)
In favour of FIFO to provide employment opportunities to their community members, especially younger individuals	Champion commits to developing charter flight routings that consider transportation to Indigenous communities.	Chapter 22: Engagement	Innu Nation ITUM NIMLJ NCC	Yes
Request for implementation of early training programs to equip communities with the necessary skills for employment opportunities related to the Project	The implementation of training programs has been incorporated in Project planning and assessed.	Chapter 15: Economy and Employment (Section 15.5.3)	Innu Nation Labrador City Wabush Fermont	Yes
Concern related to lack of skilled workers available, which results in FIFO to fulfill employment needs	Mitigation to manage the issue of workforce availability has been incorporated in the assessment. Champion will prioritize local hiring.	Chapter 15: Economy and Employment	Labrador City Wabush Fermont Labrador West Alliance	Yes

Comment Theme	How It Is Addressed in the Assessment	Where It Was Addressed in the Assessment	Indigenous Group or Local Stakeholder	Raised in the Alderon EIS (yes/no)
Preference for hiring of residents over FIFO	The effects of FIFO versus local workers have been assessed. Champion will prioritize local hiring.	Chapter 15: Economy and Employment	Labrador City Wabush Fermont Labrador West Alliance	Yes
Interest in potential economic opportunities with Champion	Champion is committed to fostering strong, respectful relationships and advancing beneficial outcomes from the Project.	Chapter 15: Economy and Employment	Innu Nation ITUM NIMLJ NCC	Yes
Request for an Impact and Benefit Agreement	Champion is committed to fostering strong, respectful relationships and advancing beneficial outcomes from the Project. However, to respect the confidentiality of these discussions and uphold the integrity of ongoing negotiations, the content of Impact Benefits Agreement discussions will not be disclosed within this EIS.	Chapter 22: Engagement	Innu Nation ITUM NIMLJ NCC	No
Interest in increasing the reach of the Tshiuetin rail transport company for mineral transportation	Champion is committed to fostering strong, respectful relationships and advancing mutually beneficial outcomes related to the Kami Mining Project.	Chapter 2: Project Description Chapter 22: Engagement	ITUM	No
Interest in integrating a wind project to supply the sector with electricity	Multiple power source options, including wind, have been considered for the Project. Champion is committed to fostering strong, respectful relationships and advancing mutually beneficial outcomes related to the Kami Mining Project.	Chapter 22: Engagement	ITUM	No

FIFO = fly-in/fly-out; ITUM = Innu Takuaikan Uashat mak Mani-Utenam; NCC = NunatuKavut Community Council; NIMLJ = La Nation Innu Matimekush-Lac John.

15.3 Assessment Scoping

This section identifies key issues for the economy and employment, defines and provides a rationale for the selection of the economy and employment as a VEC, identifies the measurable parameters selected and defines assessment boundaries.

15.3.1 Key Issues

Key issues often relate to the potential environmental, social, economic and health effects of a proposed project. Key issues identified for the Project reflect the primary concerns raised by regulatory authorities, Indigenous groups and local stakeholders, including local residents, cabin owners, business owners and other interested parties.

To identify key issues related to the economy and employment, the following sources were reviewed:

- Section 4.1 of the final EIS Guidelines, which summarized key issues from regulatory agencies and feedback received on the Project Registration and draft EIS Guidelines
- the record of engagement (Chapter 22), which captures engagement input received through meetings, phone calls, letters, and interviews
- past experience with mining projects in Labrador
- the key issues identified in the previous EIS (Alderon 2012)
- the findings in the Economic Impact Analysis (Locke and Strategic Concepts Inc. 2025)
- the Land Use and Socioeconomic Baseline Report in Annex 4C prepared for the EIS)

After review and consideration of the sources listed above, the identified key issues related to the economy and employment during Project Construction and Operations include the following:

- availability of local workers
- gender diversity in the workforce
- Indigenous inclusion
- availability of specialized workers, including (but not limited to) engineers and technicians
- business capacity to supply the Project
- apprenticeship and training
- potential effects on local businesses
- potential effects on local economy
- secondary processing of iron ore

15.3.2 Valued Environmental Components and Measurable Parameters

The economy and employment have been selected as a VEC due to the potential of the Project to change economic and employment conditions, which are fundamental components of quality of life. They have also been raised as key issues in the EIS Guidelines, as well as by Indigenous groups and local stakeholders.

Measurable parameters are used to characterize changes to attributes of the environment from the Project, other human developments and natural factors. The changes in measurable parameters are used to assess change in and predict overall effects on VECs. Table 15-3 summarizes the rationale for selection of the economy and employment as a VEC, its measurable parameters and linkages to other VECs.

Table 15-3: Valued Environmental Component, Rationale for Selection and Measurable Parameters

Valued Environmental Component	Rationale for Selection	Measurable Parameters	Linkages to Other Valued Environmental Components
Economy and employment	The Project has the potential to affect the economy and employment at the local and regional scales, and beyond	— Gross domestic product — Project-generated employment — Project-generated training — Project-generated contracting — Project-generated government revenue — Project-generated opportunities for under-represented groups	Services and Infrastructure (Chapter 16)

15.3.3 Assessment Boundaries

Assessment boundaries define the spatial and temporal extents of the assessment for each VEC. The spatial boundaries for the economy and employment are defined in Table 15-4 and shown in Figure 15-1. The local study area (LSA) for the economy and employment consists of the communities in NL that are adjacent to the Project site, namely Labrador City and Wabush, which will most likely provide labour, goods and services required for the Project. The regional study area (RSA) consists of the Province of NL. The RSA reflects the scale at which the Project's effects on the economy have been modelled for NL. It is also the area that informs the assessment of cumulative effects where required. The Site Study Area (i.e., Project footprint) does not apply to the economy and employment VEC, which focuses on communities. The potential effects of the Project on Fermont's economy and employment of its residents are addressed in Section 15.9.

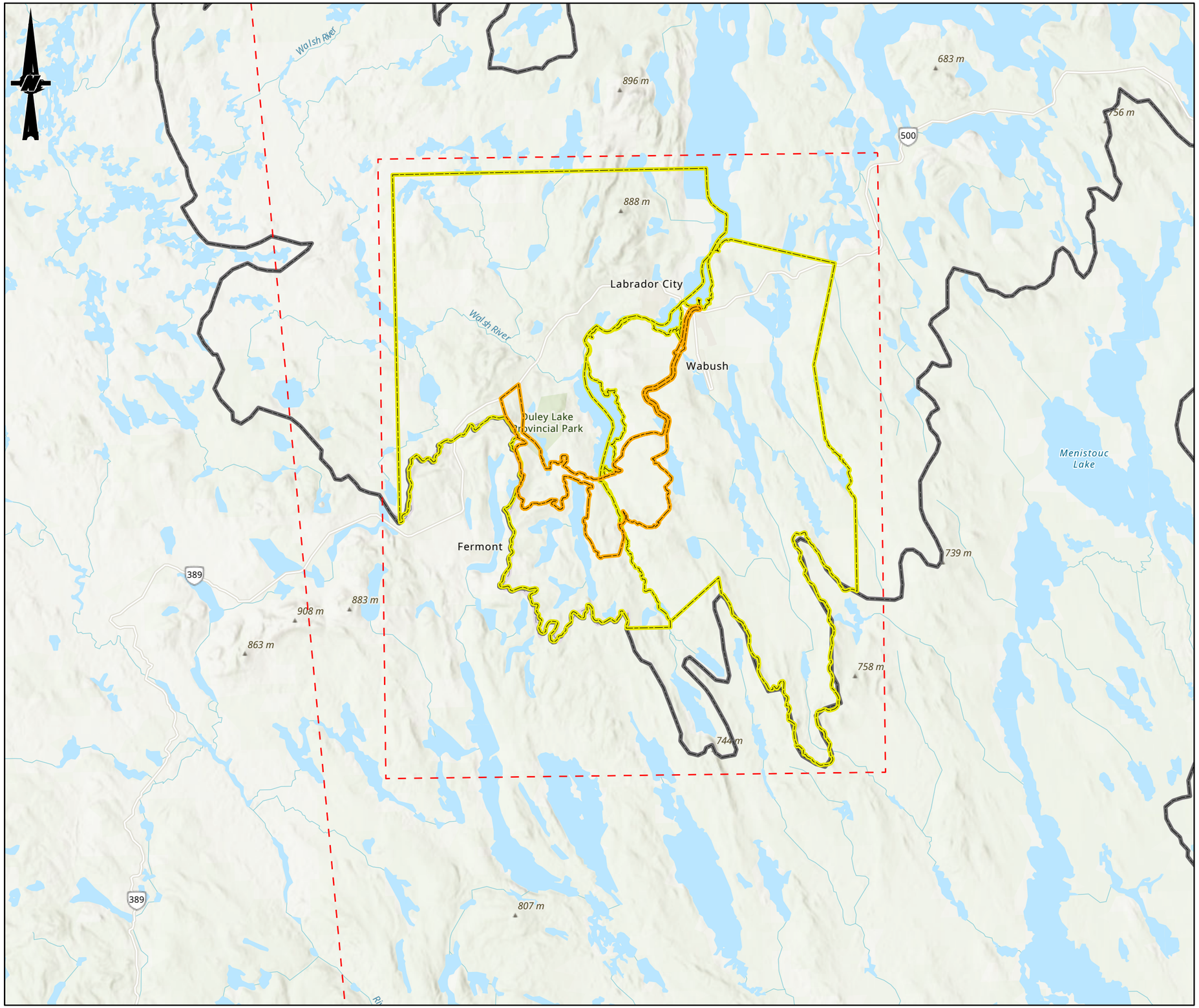
Table 15-4: Spatial Boundaries for Assessment of Economy and Employment Valued Environmental Component

Study Area	Area (ha)	Description/Rationale
LSA	4,323	Includes the communities of Labrador City and Wabush, which are the adjacent communities likely to be affected most directly by the Project
RSA	n/a	Includes the Province of NL, which is the region likely to be most affected by the Project

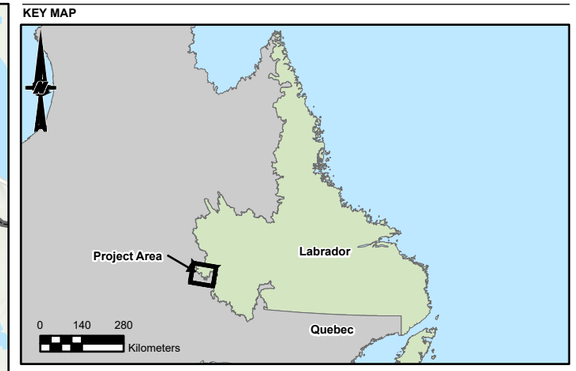
LSA = local study area; n/a = not applicable; NL = Newfoundland and Labrador; RSA = regional study area.

The temporal scope of the assessment focuses on a 40-year period from initial construction, through operations and to the end of decommissioning and rehabilitation (i.e., Closure) as defined by the following Project phases:

- **Construction phase (referred to as Construction): 4 years**–Includes site preparation, mine, process plant and site infrastructure development, and commissioning the structures, systems and components. The duration of Construction is expected to be four years.
- **Operations and Maintenance phase (referred to as Operations): 26 years**–Includes the mining and milling of iron ore, production and shipment of iron ore concentrate, tailings management, management of mine rock, waste management, water management, release of treated effluent, site maintenance and transportation of staff and materials to and from the site. Operations initiate with one year of pre-development mining (i.e., ramp-up) and conclude when processing is complete and is expected to last 26 years.
- **Decommissioning and Rehabilitation phase (referred to as Closure): 10 years**–Includes accelerated flooding of the Rose Pit, re-establishment of passive surface water drainage following the pit-flooding period, and recontouring and revegetating disturbed areas. Physical infrastructure that is not required during Post-closure monitoring and for other activities required to achieve the Project's closure criteria and to return the Project site to a safe and stable condition will be removed. Closure is expected to be 10 years.



KEY MAP



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Legend

- Site Study Area (SSA)
- Labrador/Quebec Boundary
- Local Study Area (LSA)
- Regional Study Area (RSA)

0 2,500 5,000 10,000

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NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - NEWFOUNDLAND AND LABRADOR
2. IMAGERY CREDITS: WORLD TOPOGRAPHIC MAP: SOURCES: ESRI, TOMTOM, GARMIN, FAO, NOAA, USGS, © OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY WORLD HILLSHADE: ESRI, NASA, NGA, USGS3. COORDINATE SYSTEM: NAD 1983 UTM ZONE 19N

CLIENT

CHAMPION IRON MINES LTD.

PROJECT

KAMI IRON ORE MINE PROJECT (KAMI PROJECT)
WABUSH, NL

TITLE

ECONOMY AND EMPLOYMENT SPATIAL BOUNDARIES

CONSULTANT

Kami

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15.4 Existing Environment

The existing economy and employment conditions generally forms the basis against which residual Project and cumulative effects are assessed. The Land Use and Socio-economic Baseline Report (Annex 4C) characterizes socio-economic conditions in the study areas with the potential to be affected by the Project. The existing conditions respecting the economy, the cost of living, major industrial sectors, businesses and employment are described in the following sections.

15.4.1 Methods

The Land Use and Socio-economic Baseline Report was prepared through a desktop review of available information sources, including (but not limited to) websites of governments and industry, as well as data from Statistics Canada and the Government of NL. Information obtained from consultation with stakeholders and data from the Economic Impacts Analysis (Locke and Strategic Concepts Inc. 2025; TSD XIV: Economic Impact Analysis) were added where relevant.

15.4.2 Economy

The following sections outline existing economic conditions in NL and Labrador West. In some cases, regional datasets include other areas, such as Churchill Falls.

15.4.2.1 Newfoundland and Labrador Economy

The economy of NL was traditionally based on resource industries (e.g., fisheries and forestry), but more recently also on energy generation, mining and offshore oil and gas. Development of natural resource-based projects, large capital investments and subsequent royalties from oil and gas and mining enhance employment, incomes and government revenues when commodity prices are high. However, the provincial economy is vulnerable to global downturns, especially in the price of seafood products, hydrocarbons and minerals.

Key provincial economic indicators such as gross domestic product (GDP), labour force and employment generally increased between 2006 and 2023 (NLF 2025). Around 2021, all indicators experienced declines due to the COVID-19 pandemic, but have since improved. The NL GDP grew by 6.7% between 2023 and 2024 based on higher resource production and consumer spending (GNL 2025b). The provincial labour force grew by 2.8% and participation by 0.7% in 2024, mainly due to international immigration of people of working age. Employment increased by 2.8% in 2024 and is forecast to decline by 1.2% in 2025 because of effects of United States economic policy on the NL and Canadian economies (GNL 2025b).

In 2024, the NL mining industry exported approximately $4.4 billion (B) in mineral shipments, a decrease of 0.6% over 2023 largely due to lower prices for iron ore and nickel (GNL 2025b). Mining-related employment decreased by 11.5% in 2024 due to completion of construction at the Voisey's Bay Mine Expansion project in Northern Labrador. Investment in mineral exploration increased by 6.0% over 2023, reaching $243.9 M in 2024 (GNL 2025b). Growth was driven by strong gold prices and exploration activities in Central Newfoundland.

Real GDP is expected to increase by 4.4% in 2025, mainly due to additional production and export in the oil and gas and mining sectors (GNL 2025b). This includes the Terra Nova Project, which is expected to continue increasing production, and Valentine Gold, which is anticipated to achieve first ore production. Major investments are planned for the Bay du Nord offshore oil project and the Upper Churchill project in western Labrador. Six potential wind-hydrogen projects in Newfoundland and the Gull Island hydroelectric project in Labrador are also in pre-development stages (GNL 2025b).

15.4.2.1.1 Cost of Living

Following the COVID-19 pandemic, economic recovery caused high consumer demand and supply chain challenges, resulting in inflation and increases in interest rates (by Bank of Canada) to curb spending and borrowing. To better characterize the effects of inflation on Canadians, Statistics Canada conducted a survey from April 19 to May 1, 2022, which revealed the following trends (Statistics Canada 2022b):

- More than two in five Canadians reported food prices were most challenging.
- One in five Canadians expected to obtain food or meals from a community organization in the following six months.
- Younger Canadians were more likely than older people to be concerned about the cost of housing or rent.
- Many Canadians had adjusted spending habits and lifestyle due to inflation.

Within this context, the following sections examine Consumer Price Index, the Newfoundland and Labrador Nutritious Food Basket (NL NFB) and minimum wage and low-wage earners in NL.

15.4.2.1.1.1 Consumer Price Index

The Consumer Price Index represents changes in prices experienced by consumers (Statistics Canada 2023b). It compares the cost of a fixed basket of goods and services over time to monitor change. The year-over-year Consumer Price Index for all items in NL increased by 3.4% from 2022 to 2023 and 1.8% from 2023 to 2024 (Statistics Canada 2025).

After reaching a high of 8.2% in June 2022, the inflation rate for NL gradually declined during the first half of 2023 (NLF 2025). This decrease can be directly linked to reduced energy prices. As energy prices increased again during the third quarter of 2023, the inflation rate rose each month and continued to increase, but at a lower rate. As of 2025, NL reported the lowest annual inflation rate (1.1%) among all Canadian provinces (NLF 2025). Similar data were not available for Labrador West.

15.4.2.1.1.2 Newfoundland and Labrador Nutritious Food Basket

The NL NFB includes 61 foods from the 2019 Canada's Food Guide based on specific food amounts and nutrient needs of individuals for a family of four for one week (NLF 2025). The NL NFB is calculated by health authority, geographic location and urban/rural areas.

From 2021 to 2023, the total cost of the NL NFB increased by 21% for NL generally and 24% for Labrador (Central West), which includes Labrador West (Table 15-5). In 2023, the NL NFB cost the least in urban areas of eastern Newfoundland, followed by Central Newfoundland; the cost in Labrador was highest among the regions, though Labrador (Central West) had the lowest costs in Labrador. More recent data were not available.

Table 15-5: Newfoundland and Labrador Nutritious Food Basket by Health Authority and Region

Health Authority/Region	Sub-Region	2021 ($)	2022 ($)	2023 ($)	Change (%)
Eastern Newfoundland	General	261	292	317	9
	Urban	244	274	301	10
	Rural	302	340	359	6
Central Newfoundland	General	288	324	344	6
	Urban	246	282	307	9
	Rural	306	342	361	5
Western Newfoundland	General	305	335	363	8
	Urban	298	327	352	8
	Rural	311	342	374	9
Labrador-Grenfell Health	General	314	361	386	7
	Labrador (North Coast)	394	467	509	9
	Labrador (South Coast)	363	413	427	3
	Labrador (Central West)	289	324	359	11
	Northern Peninsula portion of Labrador-Grenfell Health	325	385	388	1
Province	All regions	275	309	333	8

Source: (NLNFB 2023).

15.4.2.1.1.3 Minimum Wage and Low-Wage Earners

The Government of NL has increased minimum wage from $11.65 per hour in April 2020 to $15 per hour in October 2023 (NLF 2025), with a further increase to $16 per hour effective April 2025 (GNL 2025a). In 2022, women in NL were more likely than men to earn less than $15 per hour and individuals under the age of 25 years (15 to 19, 20 to 24 years) were about twice as likely to earn less than $15 per hour compared to older workers. In addition, low-wage earners were likely to have a working spouse making more than $15 per hour. Data were not available for Labrador West.

15.4.2.2 Labrador West Economy

The traditional economy of Labrador, which was founded on resource-based activities such as fishing, hunting, trapping and outfitting, began a transition in the mid-20th century. From the 1950s to the 1970s, development of mining projects in Labrador West and hydroelectric generation at Churchill Falls resulted in an industrial economy, several new communities and in-migration of workers and their families. Mining projects in Labrador West rely to some extent on FIFO employees and contractors during project lifecycles.

15.4.2.2.1 Mining

The economy of Labrador West is largely dependent on iron ore mining, processing and shipping from resources of the Labrador Trough. The primary mineral resource is iron ore, though mining sector outputs also include iron ore concentrate and pellets, dolomite and silica (NLDIET No Date). The following sections describe operating mines in the Labrador Trough, which includes western Labrador and northeastern Québec.

15.4.2.2.1.1 Rio Tinto Iron Ore Company

Since 1962, Iron Ore Company of Canada (IOC) has operated an iron mine in Labrador City. The mine is currently owned and operated as Rio Tinto-IOC. In 2024, Rio Tinto-IOC produced about 16.1 million tonnes per annum (Mtpa) of iron ore concentrate, 2.4% less than 2023 due to an 11-day shutdown and community evacuation resulting from forest fires (GNL 2025b). Rio Tinto-IOC's employment totalled 2,200 in 2024, 0.9% higher than in 2023, with most employees as residents of Labrador West, though the mine is supported by FIFO workers.

15.4.2.2.1.2 Tacora Resources

From 1965 until 2011, Wabush Mines operated the Scully Mine in Wabush (NLDIET No Date). In 2011, Cliffs Natural Resources became the sole owner of the mine, which it closed in 2014. The Scully Mine was acquired by Tacora Resources Inc. in 2017 and re-opened in 2018 (GNL 2025b).

In 2024, Tacora generated 699 person-years of employment, an increase of 3.2% over the previous year (GNL 2025b). The company continues to ramp up to full operations with an anticipated output of more than 6.0 Mtpa, but it has faced human resource and financial challenges. In March 2023, Tacora announced that it would offer 26 FIFO opportunities for management positions due to the inability to recruit locally (Business Wire 2023). In September 2024, Tacora was acquired by an investor group including Cargill Incorporated. The result is a $250 million (M) investment, expansion plans and a 10-year offtake agreement with Cargill's metals business.

15.4.2.2.1.3 ArcelorMittal Mining Canada

Québec Cartier Mining opened the Mont-Wright mine complex (mine, crusher, and concentrator) at Fermont, Québec, in 1974 (ArcelorMittal 2024). Following purchase of Québec Cartier Mining in 2006, ArcelorMittal undertook an expansion of the mine, increasing production and indicating an estimated additional 30 years of operations. ArcelorMittal also operates the Fire Lake mine (85 km southwest of Fermont), which has been producing ore year-round since 2012. As Fire Lake is an open pit mine, without a crusher or concentrator, raw ore from Fire Lake is processed at Mont-Wright. Together, the Mont-Wright and Fire Lake mines produce about 26 Mtpa of iron ore concentrate. ArcelorMittal, which has struggled with attraction and retention of mine workers, aims to minimize FIFO by enhancing quality of life in Fermont to attract future residents (Saint-Pierre 2021).

15.4.2.2.1.4 Champion Iron Limited

The Lac Bloom mine is located 13 km north of Fermont, Québec (Champion 2025). It was originally opened in 2009 by Consolidated Thompson Iron Mines (The Northern Miner 2016). Cliffs Natural Resources Inc. purchased Consolidated Thompson Iron Mines in 2011 and closed the mine in 2014 (The Northern Miner 2016; Cliffs Natural Resources Inc. 2011). Québec Iron Ore (a subsidiary of Champion Iron Limited) purchased the mine in 2015 and redeveloped the processing infrastructure; the mine has been operational since 2018 (The Northern Miner 2016; Champion 2025). The mine produces approximately 7.4 Mtpa of high-grade ore concentrate (Champion 2025) and is mainly operated as a FIFO operation, as some employees are local residents.

15.4.2.2.1.5 Tata Steel Minerals Canada

Tata Steel Minerals Canada (TSMC) Limited operates an iron ore mine near Schefferville, Québec, with deposits on both sides of the Québec/Labrador border (GNL 2025b). In 2020, TSMC transitioned from seasonally producing direct shipping ore to also producing high-grade iron ore concentrate year-round (NLF 2022). In 2024, TSMC generated approximately 457 person-years of employment, 11.4% less than in 2023 (GNL 2025b). TSMC is a FIFO operation with a workers' accommodations facility, cafeteria, and infirmary at the site (CBC 2023).

15.4.2.2.2 Energy Generation and Transmission

The Churchill Falls Generating Station, located on the Churchill River in western Labrador, began power production in 1971 (Town of Churchill Falls 2023). Churchill Falls Labrador Corporation Limited, an NL Hydro company, owns and operates the hydroelectric generating plant at Churchill Falls and related transmission facilities in western Labrador.

In 2023, NL Hydro commissioned the Labrador Island Link, which includes more than 1,600 km of transmission lines from the Lower Churchill Hydroelectric Generation Project (824 megawatts) at Muskrat Falls in Central Labrador to the Avalon Peninsula of Newfoundland (NL Hydro 2023). Transmission lines and a subsea cable to Nova Scotia (developed in partnership with Emera Energy) provide clean energy to Nova Scotia and connect to the North American electricity grid.

15.4.2.2.3 Major Capital Projects

In 2024, the Government of NL listed a total of nearly $12.5 B in major capital projects (defined as a minimum project cost of $1 M) planned or underway in NL (GNL 2024b). The Mining and Oil & Gas category, at $8.2 B, showed the highest level of investment, with municipal infrastructure following at $2.3 B. Two major capital projects were listed for western Labrador (Table 15-6).

Table 15-6: Major Capital Projects, Western Labrador (2024)

Proponent	Capital Cost	Date	Project
NL Hydro	$105.7 M	2024	Capital expenditures for improvements and upgrades at Churchill Falls
Rio Tinto-IOC	Approximately $70 M	2024/2025	Installation of electric boiler, instrumentation and fuel-efficient burners to replace heavy fuel oil boilers and to reduce oil consumption and greenhouse gas emissions

Source: *(NLF 2025)*.

M = million.

The above-cited list of major capital projects excludes four projects totaling $35 B in capital and financing costs identified in the Churchill Falls Memorandum of Understanding executed in December 2024 (Locke and Strategic Concepts Inc. 2025).

15.4.2.2.4 Economic Development

Labrador West Chamber of Commerce is the primary business support organization in Labrador West. No current data were available on members. Along with the Towns of Labrador City and Wabush, various government departments/agencies and other organizations also provide support services to businesses.

15.4.2.3 Businesses

The following sections describe the business sector in Economic Zone 2: Western Labrador (which includes Labrador City, Wabush, and Churchill Falls) in terms of number, type and size of businesses. In December 2023, approximately 15,299 businesses were registered in NL, of which 256 (less than 2% of total) were in western Labrador (Table 15-7). Many of these businesses are likely located in Labrador West, as Churchill Falls is a small, self-contained company town. From 2022 to 2023, the number of businesses in western Labrador decreased by 15 businesses (5%).

In 2023, the largest business sectors in western Labrador (by number of businesses) were retail trade (15%), wholesale trade (12%), health care and social assistance (9%), accommodation and food services (9%), as well as real estate and rental leasing (8%) (Table 15-7).

Table 15-7: Number of Businesses by Industry (North American Industry Classification System, 2017), Economic Zone 2: Western Labrador

Selected Industries	2022	2023
Agriculture, forestry, fishing and hunting	n/a	n/a
Mining and oil and gas extraction	4	3
Utilities	2	2
Construction	24	18
Manufacturing	5	3
Wholesale trade	27	30
Retail trade	47	39
Transportation and warehousing	11	11
Information and cultural industries	3	3
Finance and insurance	7	7
Real estate and rental leasing	22	20
Professional, scientific and technical services	17	19
Management of companies and enterprises	1	1
Administrative and support, waste management and remediation services	7	4
Educational services	2	2
Health care and social assistance	23	24
Arts, entertainment and recreation	12	11
Accommodation and food services	25	23
Other services (except public administration)	31	31
Public administration	2	1
Unknown industry	n/a	1
Total	272	256

Source: (NLF 2025).

n/a = not available.

Businesses in western Labrador and NL are small in terms of number of employees (Table 15-8). In 2023, most businesses (80%) in Economic Zone 2 had fewer than 20 employees. Both jurisdictions had few businesses with more than 100 employees.

Table 15-8: Number of Businesses by Employment Size (2023)

Number of Employees	Western Labrador		NL	
	#	%	#	%
1–4	104	41	7,995	52
5–19	100	39	5,239	34
20–99	46	18	1,667	11
100–499	6	2	280	2
500+	n/a	0	118	1

Source: (NLF 2025).

NL = Newfoundland and Labrador; n/a = not applicable.

Due to lack of workers, businesses sometimes employ temporary foreign workers in the service industry and/or for skilled occupations. Many temporary foreign workers in NL come from the Philippines (Statistics Canada 2023a).

15.4.2.3.1 Business Capacity

The capability of businesses in Labrador West to supply equipment, materials and services required by Champion is significant (Locke and Strategic Concepts Inc. 2025). Industrial capacity has reached a level of maturity reflective of more than 65 years of construction, mining and iron ore processing, with well established supply chains. Despite most items required for mineral production continuing to be manufactured and sometimes sourced from outside Newfoundland and Labrador, a large volume of goods and services required by iron ore companies operating in Labrador are sourced locally. Local and regional capacity is higher with consideration of suppliers from Québec. In many instances, local businesses are also involved in vertically integrated economic

activities such as transportation, logistics, warehousing, assembly or batching (Locke and Strategic Concepts Inc. 2025). Table 30 TSD XIV: Economic Impact Analysis, while not exhaustive, illustrates supply capability with major suppliers in Labrador City, Wabush, Fermont and Sept-Îles, as well as some in NL and Québec. A list of Indigenous companies from Labrador West, Central Labrador, Sept-Îles and other locations (mainly in NL and Québec) offering goods and services to the western Labrador mining industry can be found Table 31 of TSD XIV: Economic Impact Analysis.

15.4.3 Employment

The following sections present data on employment, labour and income. Some data for Wabush may have been suppressed to protect privacy of data associated with a small number of individuals.

15.4.3.1.1 Employment and Labour

Labour force statistics describe the population employed or looking for work. In 2021, Labrador City and Wabush had higher labour force participation and employment rates than NL (Table 15-9), which points to robust employment opportunities in Labrador City and Wabush. The participation and employment rates were lower for women+[1] than for men+ in Labrador City and Wabush.

Table 15-9: Labour Force Characteristics (2021)

Indicator – Population 15 Years and Older (%)	Labrador City		Wabush		Census Division No. 10		NL	
	Men+	Women+	Men+	Women+	Men+	Women+	Men+	Women+
Participation rate	78.3	66.5	84.8	68.2	72.4	65	58.6	53.7
Employment rate	74.6	62.2	80.5	65.6	63	57.8	48.1	47
Unemployment rate	4.7	6.5	4.3	4.8	13.1	11	18	12.4

Source: Statistics Canada 2023.

NL = Newfoundland and Labrador; men+ = men (and/or boys) as well as some non-binary persons; women+ = women (and/or girls) as well as some non-binary persons.

15.4.3.1.2 Employment by Economic Sector

Table 15-10 shows the labour force organized by the North American Industry Classification System 2017, including disaggregated data by gender. In 2021, Labrador City's largest economic sectors in terms of employment were "Mining, Quarrying, and Oil and Gas Extraction" (42%), "Retail Trade" (10.7%) and "Healthcare and Social Assistance" (7.6%). Wabush had a similar profile, as the largest economic sectors in terms of employment were "Mining, Quarrying, and Oil and Gas Extraction" (36.1%), "Construction" (7.4%) and "Healthcare and Social Assistance" (7.4%). Generally, NL economies were more diversified, with a broader distribution of employment across sectors. "Mining, Quarrying, and Oil and Gas Extraction" (19.3%) was the leading employment sector in the RSA, while "Healthcare and Social Assistance" (27.9%) was in the lead in NL.

While employment in "Mining, Quarrying, and Oil and Gas Extraction" is a smaller proportion of the economy in NL compared to Labrador City and Wabush, women+ occupied less than half of the proportion of men+ employed in each of the geographic areas examined. Women+ were more likely than men+ to be employed in "Retail Trade" or "Healthcare and Social Assistance" in all jurisdictions, though the difference between genders was more prominent in both Labrador City and Wabush.

[1] "Women+" includes women (and/or girls) as well as some non-binary persons. "Men+" includes men (and/or boys) as well as some non-binary persons (Statistics Canada 2023).

Table 15-10: Labour Force by Industry (2021)

North American Industry Classification System 2017	Labrador City (%)		Wabush (%)		Census Division No. 10 (%)		NL (%)	
	Men+	Women+	Men+	Women+	Men+	Women+	Men+	Women+
Agriculture, forestry, fishing and hunting	0	0	0	0	3.2	1.3	5.8	1.9
Mining, quarrying, and oil and gas extraction	55.9	24.5	50	18.1	27.6	10	6.6	1.3
Utilities	0.4	0	2.1	0	5	1.7	1.7	0.6
Construction	6.8	2.1	9.3	3.8	10.6	2.7	13.9	1.8
Manufacturing	3.5	1.3	2.9	1.9	3.5	2.6	6.4	3.1
Wholesale trade	4.3	2.1	5.7	6.7	3.1	2	2.9	1.0
Retail trade	8.4	13.6	3.6	10.5	8.3	12.5	10.7	14.0
Transportation and warehousing	3.3	3.1	5.7	1.9	6.1	3.2	7.2	2.4
Information and cultural industries	0.4	0.5	0	0	0.4	0.3	1.2	1.0
Finance and insurance	0	2.3	0	0	0.3	1.4	1.2	2.6
Real estate and rental and leasing	0.8	1	0	3.8	0.6	1	1.0	0.7
Professional, scientific and technical services	1.6	2.9	2.9	1.9	2	2.2	5.4	4.0
Management of companies and enterprises	0.4	0	0	0	0.3	0	0.1	0.1
Administrative and support, waste management and remediation services	1.2	3.4	1.4	2.9	3.8	3.8	3.6	2.5
Educational services	0.6	5.5	1.4	13.3	1.8	9	4.5	9.7
Health care and social assistance	1	15.9	1.4	16.2	3.4	21.1	5.6	27.9
Arts, entertainment and recreation	0.8	1.3	0	0	0.8	1	1.5	1.6
Accommodation and food services	3.5	9.1	2.1	6.7	3.6	8.3	4.9	7.8
Other services (except public administration)	4.1	5.2	2.1	6.7	3.3	4	3.8	4.3
Public administration	1.6	5	5.7	2.9	10	10.2	8.8	9.1

Source: Statistics Canada 2023.

NL = Newfoundland and Labrador.

15.4.3.1.3 Income

The 2020 median and average employment incomes in Labrador City and Wabush were considerably higher than those in NL (Table 15-11), which is indicative of the higher percentage of individuals working in the mining industry and supporting sectors. Nonetheless, a wide variance existed between men+ and women+ in Labrador City and Wabush: the median employment income of women+ was roughly 40% that of men+, whereas their average employment income was slightly more than half that of men+. For both indicators, the variances between men+ and women+ were notably wider for Labrador City and Wabush than for NL.

Table 15-11: Employment Income (2020)

Employment Income ($)	Labrador City		Wabush		Census Division No. 10		NL	
	Men+	Women+	Men+	Women+	Men+	Women+	Men+	Women+
Median employment income	108,000	40,800	107,000	44,000	70,000	37,600	37,600	27,400
Average employment income	98,500	55,650	100,600	54,600	77,700	47,720	52,900	37,840

Source: Statistics Canada 2023.

NL = Newfoundland and Labrador.

15.4.3.1.4 Low Income and Income Support

In 2020, the rates of low income in Labrador City and Wabush were much lower than those in NL (Table 15-11), which is consistent with the information on average employment income (Table 15-12).

The number of individuals and families requiring income support from government sources can also be an indication of the economic health of an area. Approximately 60% of the population of Labrador City and Wabush received government transfer income in 2020, which was lower than for NL and is likely due to fewer retirees and higher employment. The reopening of the Scully mine in 2019 likely contributed to a lower unemployment and helped to reduce the need for income assistance.

Table 15-12: Low Income (2020)

Low Income (%)	Labrador City	Wabush	Census Division No. 10	NL
Low income[(a)]	4.6	3.4	7.7	15.2
Government transfer recipients aged 15 years and over	60	61.7	67.7	80.3

Source: Statistics Canada 2023.

(a) Low-income status refers to the income situation of the statistical unit in relation to a specific low-income line in a reference year. Statistical units with income below this line are considered to be in low income (Statistics Canada 2022a). Low-income status refers to the income situation of the statistical unit in relation to a specific low-income line in a reference year. Statistical units with income below this line are considered to be in low income (Statistics Canada 2022a).

NL = Newfoundland and Labrador.

15.5 Effects Assessment

The effects assessment for the economy and employment VEC is presented in the following sections.

15.5.1 Methods

15.5.1.1 Effect Pathway Screening

Interactions between the Project and the environment, and the corresponding potential changes to the environment that could result in the potential effect to the economy and employment VEC were identified by an effect pathway screening. The effect pathway screening was used to inform the residual Project and cumulative effect analyses for the economy and employment VEC.

Potential pathways leading to effects on the economy and employment are identified using the following:

- review of the Project Description (**Chapter 2**) and scoping of potential effects by the EIS team for the Project
- input from engagement (Chapter 22)
- review of EIS for similar mining projects, including the previous EIS (Alderon 2012)
- previous experience with mining projects

- experience with socio-economic effects in Labrador West
- consideration of key issues (Section 15.3.1)

Potential adverse effects of the Project are then identified, and practicable mitigation proposed to avoid, minimize and/or compensate effects to the economy and employment where required. The effectiveness of mitigation measures proposed for each effect pathway is assessed to determine whether the mitigation would address the potential Project effect such that the pathway is eliminated, would result in a negligible adverse effect on the economy and employment, or if residual adverse effects to the economy and employment from the Project remain.

This effect pathway screening is a preliminary assessment intended to focus the analysis on effect pathways that require a more quantitative or comprehensive assessment of effects on VECs. Using scientific knowledge, feedback from engagement, logic, experience with similar developments and an understanding of the effectiveness of mitigation (i.e., level of certainty that the proposed mitigation would work), each effect pathway is categorized as one of the following:

- **No effect pathway**–The effect pathway could be removed (i.e., the effect would be avoided) by avoidance measures and/or additional mitigation so that the Project would result in no measurable change relative to existing conditions and would therefore have no residual effect on the economy and employment.
- **Negligible effect pathway**–With the application of mitigation, the effect pathway could result in a measurable but minor change relative to existing conditions, but the change is sufficiently small that it would have a negligible residual effect on the economy and employment (e.g., creation of new businesses, increased availability of goods and services, but not to an extent that would significantly affect economy and employment data metrics). Therefore, further detailed assessment of the residual effect is not warranted, as the effect pathway would not be expected to result in a significant residual Project or cumulative effect on the economy and employment.
- **Residual effect pathway**–Even with the application of mitigation, the effects pathway is still likely to result in a measurable change relative to existing conditions that could cause a greater than negligible adverse or positive effect on the economy and employment and warrants additional assessment.

Project-environment interactions determined as no effect or negligible effect pathways are not carried forward for further assessment (Section 15.5.32). Residual effect pathways that could result in changes to the environment with one or more associated measurable parameters and have the potential to cause more than negligible effect on the economy and employment are carried forward to the residual Project effects analysis (Section 15.5.3) and residual cumulative effects analysis (Section 15.5.4). The effect pathway screening applies also to positive effects, in which case enhancement measures can be proposed to maximize the magnitude of the positive effects.

15.5.1.2 Residual Project Effect Analysis

The residual effects analysis measures and describes the effects of the Project on the economy and employment relative to existing conditions, using the temporal scope identified for the assessment (Section 0). Residual effects are described for each of the measurable parameters for the residual effect pathways identified. The residual effects analysis uses a reasoned narrative to describe anticipated changes to each measurable parameter caused by the Project.

Residual effects are classified in tabular form using effects criteria, which is intended to provide structure and comparability across VECs assessed for the Project. The residual effects classification uses nature, magnitude, geographic extent, duration, reversibility, probability of occurrence and ecological and socio-economic context as criteria. Some criteria listed in Chapter 4, namely frequency and timing, do not apply to the economy and employment VEC. The approach to classify each residual effect criterion is provided in Table 15-13. Following classification of residual Project effects, the analysis evaluates the significance of adverse effects using threshold criteria or standards beyond which a residual effect is considered significant. The definition of a significant effect for the economy and employment is provided in Section 15.5.1.4. The significance of residual positive effects is not determined.

Table 15-13: Definitions Applied to Effects Criteria Classifications for Assessment of Effects on Economy and Employment

Criterion	Rating	Definition
Nature	Positive	Change in measurable parameter results in net improvement or benefit to the economy and employment
	Neutral	Change in measurable parameter results in no change to the economy and employment
	Adverse	Change in measurable parameter results in net degradation of the economy and employment
Magnitude	Low	Change in measurable parameter may or may not be detectable and is within normal range of variability
	Moderate	Change in measurable parameter is clearly distinguishable, but is unlikely to pose a serious risk or benefit to the economy and employment
	High	Change in measurable parameter is likely to pose a serious risk or benefit to the economy and employment
Geographic extent	Local	Change in measurable parameter extends within the LSA
	Regional	Change in measurable parameter extends beyond the LSA but is confined to the RSA
	Beyond regional	Change in measurable parameter extends beyond the RSA
Duration	Short term	Change in measurable parameter extends to Construction or Closure only
	Medium term	Change in measurable parameter extends through Operations
	Long term	Change in measurable parameter extends beyond Operations
Reversibility	Reversible	Change in measurable parameter is reversible after Closure
	Irreversible	Change in measurable parameter is predicted to influence the component indefinitely
Probability of occurrence	Unlikely	Change in measurable parameter is not expected to occur, but not impossible
	Possible	Change in measurable parameter may occur, but is not likely
	Probable	Change in measurable parameter is likely to occur, but is uncertain
	Certain	Change in measurable parameter will occur
Ecological and socio-economic context	Qualitative narrative or numeric quantification	Change in measurable parameter is described by the perception of an effect that considers sensitivity and resilience of VECs (socio-economic context), and the cultural and social significance placed on certain VECs and the unique values, customs or aspirations of local communities or Indigenous groups

LSA = local study area; n/a = not applicable; RSA = regional study area; VEC = Valued Environmental Component.

The assessment of effects on the local and regional economy required quantitative modelling of the impacts of Project-related expenditures. A model developed by Strategic Concepts Inc. was used, as described in TSD XIV: Economic Impact Analysis. The model has been applied to several resource projects in Canada, particularly in Labrador. It tracks expenditures through the economy and applies reasonable coefficients to determine direct, indirect and induced impacts on employment, incomes, GDP and taxation.

The starting point for the model was Champion's capital and operating cost estimates in the 2024 Pre-Feasibility Study for the Project. All dollar estimates presented are expressed in 2024 Canadian dollars, unless otherwise indicated. The analysis was based on an estimated Project cost of approximately $23.1 B for Construction (over a period of 5 years) and Operations (over 26 years), with a total of $6.0 B in capital expenditures, including sustaining capital and leased capital, and $17.1 B in operating expenditures.

15.5.1.3 Residual Cumulative Effect Analysis

The cumulative effects assessment builds on the results of the residual Projects effects assessment and considers the incremental changes predicted to have a likely residual adverse effect on the economy and employment. This would include the effects of past and current projects that contribute to existing conditions upon which residual Project effects are assessed. For the EIS, the description of existing conditions characterizes the environment already affected by past and current projects and activities; therefore, the cumulative effects assessment focuses on analyzing the effects of other RFDs in combination with the Project. Although positive residual effects are characterized in the residual Project effects analysis, they are not carried forward to the cumulative effects analysis, as the Project benefits from other past, present and RFDs or activities are unlikely to be known or publicly disclosed (e.g., Benefit Agreements with Indigenous groups or local community stakeholders).

The cumulative effects assessment follows a three-step process:

- Identify RFDs and potential cumulative effects that overlap in time and space with residual effects.
- Identify and describe any additional mitigation measures, if applicable.
- Characterize residual cumulative effects, using the same criteria defined for the residual Project effects analysis (Section 15.5.1.2).

Chapter 4 provides a list of known RFDs and physical activities with potential residual effects that could overlap spatially and temporally with the Project's residual environmental effects. Chapter 4, Figure 4-4 presents the location of all six identified RFDs. This list was considered in the identification of RFDs for the assessment of cumulative effects on the economy and employment. Following the identification of applicable RFDs, residual Project effects on the economy and employment were evaluated for temporal and spatial overlap with the effects of RFDs to identify potential cumulative effects. The evaluation was completed qualitatively based on publicly available information (e.g., Project Registrations or EIS reports) describing the environmental effects of RFDs. If effects from these RFDs overlapped spatially or temporally with the residual Project effects on the economy and employment, then potential cumulative effects were identified. If no spatial or temporal overlap existed for the residual Project effects and RFDs identified in Appendix 4B, then a cumulative effects assessment was not required.

Based on the assessment of potential cumulative effects, an assessment was made regarding whether additional mitigation measures, beyond those proposed for the Project, were required to address potential cumulative effects. Where applicable, additional mitigation measures were identified.

Residual cumulative effects were characterized using the same criteria assessed for residual Project effects (Section 15.5.1.2).

Following classification of residual cumulative effects, the analysis also evaluated the significance of residual Project effects using threshold criteria or standards beyond which a residual environmental effect was considered significant. The definition of a significant effect for the economy and employment is provided in Section 15.5.1.4.

15.5.1.4 Significance Determination

A significant residual effect on the economy and employment is defined as one that, as a result of the Project, a measurable change to the economy and employment within the LSA and RSA is determined to be distinguishable from existing conditions and trends, lasting beyond the temporal boundaries of the Project and, in the event of an adverse effect, cannot be managed through mitigation measures.

15.5.2 Effect Pathway Screening

The effect pathway screening predicts potential effects pathways that are then evaluated considering proposed mitigation to predict whether the effect pathway has the potential to cause residual adverse or positive effects. The effectiveness of mitigation measures proposed for each effect pathway where an adverse effect is predicted is assessed to determine whether the mitigation would address the potential Project effect, such that the effect pathway is eliminated or would result in a negligible adverse effect on a VEC. As described in Section 15.5.1.1, each effect pathway is categorized as one of the following:

- **no effect pathway** (i.e., avoidance and/or mitigation measures result in no residual effect on the economy and employment)
- **negligible effect pathway** (i.e., mitigation results in negligible effect on the economy and employment)
- **residual effect pathway** (i.e., effect that is greater than negligible and carried forward for further assessment)

Also as noted previously, the effect pathway screening can apply to potential positive effects as well, in which case enhancement measures are proposed.

The effects pathway screening is summarized in Table 15-14. The subsections following the table explain on what basis potential effects were assigned to the no effect or negligible effect pathway categories and list residual effect pathways. Each Project component/activity identified as a residual effect pathway is carried forward for detailed assessment in Section 15.5.3.

The screening leads in all cases to positive effect pathways. Some adverse effects resulting from the Project's demands for workers, goods and services may arise, such as drawing workers and businesses from other economic sectors due to relatively high wages and employment benefits in the mining industry, thereby affecting the capacity of services and infrastructure dependent on those workers and businesses. These are addressed in the discussion presented below and in **Chapter 16**.

Table 15-14: Potential Effects Pathways for Economy and Employment

Project Components/Activities	Effects Pathway	Environmental Design Features, Mitigation, or Enhancement Measures	Effect Pathway Screening
Construction Employment and procurement	Project employment will affect the local and regional labour supply, including under-represented groups Project employment requiring additional training will affect local and regional skills levels Project spending on goods and services will affect local and regional businesses Project employment and spending will affect the local and regional economies	— Post job qualifications early and identify available training and training providers so residents can acquire the necessary skills and qualify for potential Project employment. — Communicate employment skills requirements to training providers and educational institutions to plan appropriate Project-related training; participate in the development of training programs to inform needs. — Work with local communities to develop training programs oriented to operational needs. — Establish a Health and Wellness Strategy focused on employee mental health and wellness to complement health and safety programs and to support employees. — Provide on-site accommodations that are safe and welcoming for the Project workforce. — Provide transportation for employees to the worksite from a centralized location to facilitate employment of local and regional workers. — Advertise open job postings within the Indigenous communities as soon as possible. — Conduct recruiting programs as well as regular and effective outreach and communications with Indigenous communities to support recruitment, including through career fairs, information sessions, workshops, public notices, factsheets, community meetings and any other measures that may increase awareness of and access to information on employment opportunities at the Project. — Support processes and initiatives related to employment readiness, training and educational initiatives with Indigenous communities, such as skills assessment, career counselling, referrals to education upgrading, creation of training plans, career sessions at local schools and educational site trips. — Establish a skills inventory and local and Indigenous business inventory that are regularly updated. — Give preference to qualified residents, persons belonging to under-represented groups (e.g., women, members of Indigenous communities) for employment and training opportunities. — Work with local and Indigenous businesses to enhance the opportunity to participate in the supply of goods and services (e.g., facilitate workshops about opportunities available, collaborate with small businesses to prepare bids in response to requests for proposal, provide business education). — Give preference to contracting for goods and services from businesses in Indigenous communities and local municipalities. — Establish and maintain a process to track local and regional contracting, subcontracting and procurement opportunities (as required by Government of NL). — Fulfill the commitments in the Benefits Agreement/Gender Equity, Diversity and Inclusion Plan signed in 2014 to the best of Champion's abilities and develop an updated Gender Equity, Diversity and Inclusion Plan to reflect current standards and expectations, followed by updating the Workforce and Employment Plan. — Participate in the Labrador West Alliance, a Regional Working Group of mining companies, municipalities, provincial and federal government agencies and the Labrador West Chamber of Commerce, to jointly address regional challenges, such as attraction and retention of labour in all sectors.	Residual effect pathway

Project Components/Activities	Effects Pathway	Environmental Design Features, Mitigation, or Enhancement Measures	Effect Pathway Screening
Operations Employment and procurement	Project employment will affect the local and regional labour supply, including under-represented groups Project employment requiring additional training will affect local and regional skills levels Project spending on goods and services will affect local and regional businesses Project employment and spending will affect the local and regional economies	— Post job qualifications early and identify available training and training providers so local residents can acquire the necessary skills and qualify for potential Project employment. — Communicate employment skills requirements to training providers and educational institutions to plan appropriate Project-related training; participate in the development of training programs to inform needs. — Work with local communities to develop training programs oriented to operational needs. — Support retraining programs to establish transferable skills for employees during the latter part of the Operations phase. — Establish a Health and Wellness Strategy focused on employee mental health and wellness to complement health and safety programs and to support employees. — Provide on-site accommodations that are safe and welcoming for the Project workforce. — Provide transportation for employees to the worksite from a centralized location to facilitate employment of local and regional workers. — Advertise open job postings within the Indigenous communities as soon as possible. — Conduct recruiting programs as well as regular and effective outreach and communications with Indigenous communities to support recruitment, including through career fairs, information sessions, workshops, public notices, factsheets, community meetings and any other measures that may increase awareness of and access to information on employment opportunities at the Project. — Support processes and initiatives related to employment readiness, training and educational initiatives with Indigenous communities, such as skills assessment, career counselling, referrals to education upgrading, creation of training plans, career sessions at local schools and educational site trips. — Establish a skills inventory and local and Indigenous business inventory that are regularly updated. — Give preference to qualified residents, persons belonging to under-represented groups (e.g., women, members of Indigenous communities) for employment and training opportunities. — Work with local and Indigenous businesses to enhance the opportunity to participate in the supply of goods and services (e.g., facilitate workshops about opportunities available, collaborate with small businesses to prepare bids in response to requests for proposal, provide business education). — Give preference to contracting for goods and services from businesses in Indigenous communities and local municipalities. — Establish and maintain a process to track local and regional contracting, subcontracting and procurement opportunities (as required by Government of NL). — Fulfill the commitments in the Benefits Agreement/Gender Equity, Diversity and Inclusion Plan signed in 2014 to the best of Champion's abilities and update the Gender Equity, Diversity and Inclusion Plan to reflect current standards and expectations, followed by the development of a Workforce and Employment Plan. — Participate in the Labrador West Alliance, a Regional Working Group of mining companies, municipalities, provincial and federal government agencies and the Labrador West Chamber of Commerce, to jointly address regional challenges, such as attraction and retention of labour in all sectors.	Residual effect pathway

Project Components/Activities	Effects Pathway	Environmental Design Features, Mitigation, or Enhancement Measures	Effect Pathway Screening
Closure Employment and procurement	Project employment will affect the local and regional labour supply, including under-represented groups Project employment requiring additional training will affect local and regional skills levels Project spending on goods and services will affect local and regional businesses Project employment and spending will affect the local and regional economies	— Provide job search assistance to employees at the Closure phase. — Support retraining programs to establish transferable skills for employees. — Provide transportation for employees to the worksite from a centralized location to facilitate employment of local and regional workers. — Establish a Health and Wellness Strategy focused on employee mental health and wellness to complement health and safety programs and to support local and Indigenous employees. — Advertise open job postings within the Indigenous communities as soon as possible. — Establish a skills inventory and local and Indigenous business inventory that are regularly updated. — Give preference to qualified residents, persons belonging to under-represented groups (e.g., women, members of Indigenous communities) for employment opportunities. — Give preference to contracting for goods and services from businesses in Indigenous communities and local municipalities. — Establish and maintain a process to track local and regional contracting, subcontracting and procurement opportunities (as required by Government of NL). — Fulfill the commitments in the Benefits Agreement/ Gender Equity, Diversity and Inclusion Plan signed in 2014 to the best of Champion's abilities and develop an updated Gender Equity, Diversity and Inclusion Plan to reflect current standards and expectations, followed by the development of a Workforce and Employment Plan. — Participate in the Labrador West Alliance, a Regional Working Group of mining companies, municipalities, provincial and federal government agencies and the Labrador West Chamber of Commerce, to jointly address regional challenges, such as attraction and retention of labour in all sectors.	Residual effect pathway

NL = Newfoundland and Labrador.

15.5.2.1 No Effect Pathways

The effects pathway screening indicates that none of the anticipated Project interactions with existing conditions results in no effect pathways for the economy and employment.

15.5.2.2 Negligible Effect Pathways

The effects pathway screening indicates that none of the anticipated Project interactions with existing conditions results in negligible effect pathways for the economy and employment.

15.5.2.3 Residual Effect Pathways

The following Project-environment interactions are predicted to result in residual effects pathways for the economy and employment and were advanced for further assessment of residual effects (Section 15.5.3). The information presented below reflects the assessment provided in TSD XIV: Economic Impact Analysis (Locke and Strategic Concepts Inc. 2025).

15.5.2.3.1 Gross Domestic Product, Employment, Training, Contracting, and Government Revenues

Project construction, operations, and closure will require employment of workers, spending on goods and services from businesses, and other spending. The Project will contribute to GDP through the value of production at the mine site, as well as through direct, indirect and induced employment and income generated by companies that supply goods and services to the Project. Project-generated employment will include specialized roles that require additional training. Taxes generated by the Project will include direct taxes paid by the company, direct personal taxes paid by individuals working on the Project, as well as indirect and induced tax impacts through other spending (Locke and Strategic Concepts Inc. 2025).

15.5.2.3.2 Opportunities for Under-Represented Groups

Project construction, operations and closure will change local and regional employment levels and labour income, including for under-represented groups. Based on a review of existing mining projects operating in Labrador, it is estimated that, during Project Construction and Operations, women will represent between 10% to 25% of the workforce and members of Indigenous communities approximately 6% of the workforce, considering both capital and operating expenditures (Locke and Strategic Concepts Inc. 2025; TSD XIV: Economic Impact Analysis). Other under-represented groups may benefit from employment generated by the Project through Champion's Gender Equity, Diversity and Inclusion Plan.

15.5.3 Residual Project Effect Analysis

This section provides results of the residual Project effects analysis for the economy and employment for the effects pathways identified in Section 15.5.2.3. Methods for completing the residual Project effects analysis are presented in Section 15.5.1.2.

15.5.3.1 Residual Project Effects Characterization

As noted in Section 15.5.1, residual Project effects were characterized with the aid of an economic model. Detailed results are presented in TSD XIV: Economic Impact Analysis (Locke and Strategic Concepts Inc. 2025), with the highlights provided below.

Throughout consultation and engagement, Champion's representatives were reminded of the strong desire of stakeholders to hire local workers for the Project. While Champion remains committed to supporting local hiring and community growth, the current situation in Labrador West indicates that available local labour could be insufficient for Project Construction and Operations.

With the present understanding of available labour in Labrador West, it is expected that most construction roles would be filled by non-resident workers. Champion anticipates that the Project workforce will ramp up progressively to 600 workers in the middle of the third year of Construction. During the last two years of Construction, as direct and indirect workforce requirements are expected to increase, an additional 400 workers will be required (allowing for a total of 1,000 non-resident workers associated with Project Construction).

During Operations, the Project will require a workforce of about 600 persons. As the current labour force situation in Labrador West could prevent hiring of a significant number of local workers, Champion has planned for Project infrastructure to support a mainly non-resident workforce, working on a 14 days on/14 days off shift rotation (FIFO).

By continuing to partner with local stakeholders and support community growth efforts, particularly through the Labrador West Alliance, Champion will focus on prioritizing Labrador West residents for employment wherever possible.

15.5.3.1.1 Gross Domestic Product, Employment, Training, Contracting, and Government Revenues

The modelling of economic impacts conducted for the Project predicts that direct taxes paid by the company, direct personal taxes paid by individuals working on the Project, and indirect and induced tax impacts will amount to $4.1 B in total revenues to the federal treasury over the life of the Project (Locke and Strategic Concepts Inc. 2025). The Project will also result in 4.1 B in treasury payments to NL, $1.0 B to Québec and $409 M to Ontario.

Capital expenditures consist of labour ($1.4 B or 24%), materials ($875 M or 14.9%), equipment ($1.0 B or 17.3%) and services ($2.6 B or 43.8%) (Locke and Strategic Concepts Inc. 2025). The operating expenditures consist of labour ($2.9 B or 17%), energy ($3.1 B or 18.4%), materials ($4.6 B or 26.8%), services ($4.9 B or 28.5%), and administration ($1.6 B or 9.3%).

The modelling also predicts that the Project will create in total 150,000 person-years of employment, including nearly 23,000 person-years of direct employment (Locke and Strategic Concepts Inc. 2025). Half of the total estimate of person-years of employment is expected to accrue to NL, while one third will be for Québec and the remainder for Ontario.

It is anticipated that the Project will generate $17.0 B in incomes for workers and businesses nationally, yielding a GDP of $28.5 B throughout Canada when adding the economic value of production (Locke and Strategic Concepts Inc. 2025). The share of incomes for NL is $7.5 B, whereas it amounts to $6.4 B for Québec and $3.1 B for Ontario. NL's GDP is expected to reach $19.0 B over the life of the Project.

Considering both capital and operating expenditures, the model estimated that NL will benefit from 90% of direct employment and labour income ($3.7 B and 20,000 person-years) over the Project's life, while Québec's share will be 8% and Ontario's will be 2% (Locke and Strategic Concepts Inc. 2025).

Considering both capital and operating expenditures, the model estimated that NL is expected to benefit from 27% ($2.1 B) of indirect income and 36% (21,130 person-years) of indirect employment over the Project's life, whereas Québec will capture 48% ($3.8 B) of indirect income and 42% (25,150 person-years) of indirect employment and Ontario will receive 25% ($1.9 B) of indirect income and 22% of indirect employment (12,780 person-years) (Locke and Strategic Concepts Inc. 2025).

Over the life of the Project, NL is expected to receive $7.5 B in total income and 66,500 person-years in total employment, broken out as follows (Locke and Strategic Concepts Inc. 2025):

- $3.6 B and 20,700 person-years directly from the Project
- $2.1 B and 21,100 person-years indirectly from the Project
- $1.7 B and 24,700 person-years induced by the Project, assuming an income multiplier of 1.3

Direct taxes paid to the Government of NL over the life of the Project are anticipated to be $3.0 B, averaging $120 M per annum (Locke and Strategic Concepts Inc. 2025). The Project will generate close to $4.1 B in direct, indirect and induced taxes for the Government of NL.

The model assumed that labour and contractors would be available in NL to supply the Project. If these resources are not available in the province, the direct and indirect economic impacts will be lower than estimated (Locke and Strategic Concepts Inc. 2025). A list of potentially competing projects with estimated development timeframes, generated by (Locke and Strategic Concepts Inc. 2025), shows that, should the Project be delayed, there will be a likelihood of increased demand for labour from competing projects.

In summary, the requirements for workers, goods and services over the course of the Project's life will increase employment levels, skills levels, as well as incomes for workers and businesses in Labrador West, across NL and beyond. The Project will also increase government revenues and contribute to GDP. The following paragraphs elaborate on these findings.

The Project demand for labour will increase local and regional employment levels and labour income. Measures aimed at preferentially employing local and regional residents will enhance this positive effect. Therefore, no direct adverse residual effects on the local and regional economies are predicted due to a change in the demand for labour and in labour income. The residual effect is positive. High demand for labour results in employment mobility due to opportunities to achieve career advancement and/or enhanced income and benefits. An indirect adverse effect is that fewer workers will be available in other sectors, such as commercial and retail businesses and organizations that address community needs or enhance quality of life. While employment levels and labour income will decrease during the Closure phase, labour force capacity and experience gained through the Project may support future employment success.

The Project requirements for goods and services will create opportunities for local and regional businesses to participate in the Project through contracting. Measures aimed at preferentially contracting local and regional businesses and building capacity in the region through the life of the mine will optimize such opportunities. The spending of Project-related labour income will induce

positive effects on businesses through spending of labour income by workers. Consequently, no adverse residual effects on the local and regional economy are predicted due to a change in business income. While the level of business will decline during the Closure phase, the acquired business capacity and experience may support future contracting success for similar opportunities.

The availability of jobs at the Project can encourage more individuals to seek additional training to become qualified for Project employment, including through available employment funding programs. Measures aimed at expanding awareness and availability of training and funding programs will optimize training, and thus employment opportunities. Therefore, no adverse residual effects on the local and regional economy are predicted due to a change in the demand for training. The residual effect is positive.

Government revenues will increase through taxes and fees paid by the Project, and by participating individuals and businesses. Revenues will be greatest during Construction and Operations, while declining during Closure. Therefore, no adverse residual effects on the local and regional economy are predicted due to a change in government revenues, which will increase over the life of the mine. The residual effect is positive.

The Project will have a net positive effect on the economies of Labrador West, NL and other jurisdictions through employment and labour income, spending on local and regional businesses, and increased government revenues.

15.5.3.1.2 Opportunities for Under-Represented Groups

Using the assumptions identified in Section 15.5.2.3.2, such as the mid-point (17.5%) of a range of 10% to 25% of jobs engaging women and 6% of jobs engaging Indigenous Persons, the projected employment incomes and person-years of employment over the life of the Project for both groups are as follows (Locke and Strategic Concepts Inc. 2025):

- $754 M and 4,020 person-years for women, with an average of 134 person-years per annum
- $215 M and 1,150 person-years for Indigenous Persons, with an average of 40 person-years per annum

Champion's Gender Equity, Diversity and Inclusion Plan will play an important role in maximizing employment opportunities for under-represented groups. While the plan signed between the Government of NL and the Kami Mine Limited Partnership in 2014 continues to apply to the Project, Champion has committed to update it to reflect current conditions. The plan will outline the goals and initiatives that will be implemented throughout the Project to ensure, to the extent possible, fair and equitable access to benefits associated with the Project. Therefore, no adverse residual effects on employment opportunities for under-represented groups are predicted. The residual Project effect is positive.

Table 15-15 summarizes the characterization of the residual Project effects on the measurable parameters selected for the economy and employment, using the criteria identified in Section 15.5.1.2 (Table 15-13).

Table 15-15: Characterization of Residual Effects on Economy and Employment Measurable Parameters

Residual Effect	Criterion	Rating/Effect Size
Change in GDP, employment, training, contracting and government revenues	Nature	Positive
	Magnitude	High
	Geographic extent	Beyond regional
	Duration	Long term
	Reversibility	Reversible
	Probability of occurrence	Certain
	Ecological and socio-economic context	GDP, employment, training, contracting and government revenues are key indicators of individual and community well-being. Good economic and employment conditions protect people from precarious living conditions and promote mental and physical health.
Change in opportunities for under-represented groups	Nature	Positive
	Magnitude	Moderate
	Geographic extent	Regional
	Duration	Long term
	Reversibility	Reversible
	Probability of occurrence	Certain
	Ecological and socio-economic context	[as above]

GDP = gross domestic product.

15.5.3.2 Significance Determination

As indicated in Section 15.5.1.2, significance is not determined for residual Project effects that are characterized as positive. Therefore, no significance determination has been made for the positive residual Project effects identified for the economy and employment in Labrador West and Newfoundland and Labrador.

15.5.4 Residual Cumulative Effects Analysis

The EIS for the Project does not consider positive effects in the cumulative effects analysis, as discussed in Section 15.5.1.3. All direct residual effects of the Project on the economy and employment were determined to be positive. Thus, no cumulative effects analysis is carried out for the economy and employment.

15.6 Prediction Confidence and Uncertainty

A key element of a comprehensive EA is the prediction of future conditions of the environment as a result of the Project from previous and existing projects and activities and RFDs. Given that environments change naturally and continually through time and across space, assessments of effects and predictions about future conditions embody some degree of uncertainty (CEA Agency 2018).

The purpose of the Prediction Confidence and Uncertainty section is to identify the key sources of uncertainty and qualitatively describe how uncertainty was addressed for the economy and employment to increase the level of confidence that effects would not be larger than predicted, including the potential need for monitoring and adaptive management that can reduce uncertainty over time (Section 4.10).

Confidence in effects analyses can be related to many elements for the economy and employment, including the following:

- adequacy of the baseline data for providing an understanding of the existing conditions
- the nature, magnitude and spatial extent of future fluctuations in socio-economic variables, independent of effects from the Project and other developments (e.g., pandemics)
- assumptions, conditions and constraints of quantitative model inputs
- understanding of Project-related effects on complex socio-economic systems that interact across different scales of time and space (e.g., competing demands for labour, goods and services)
- knowledge of the effectiveness of proposed Project environmental design features, mitigation for avoiding or minimizing adverse effects, as well as enhancement measures for optimizing positive effects
- uncertainties associated with the exact location, activity level and timing and rate of future developments

The level of confidence in the prediction of effects on the economy and employment is considered to be moderate to high, due to experience with other similar and recent Project developments, the individual nature of choices made by the local labour force and businesses in seeking employment, training and business opportunities associated with the Project, as well as the uncertainty in the timing of competing major projects.

15.7 Monitoring, Follow-Up and Adaptive Management

This section presents a summary of the identified monitoring and follow-up required to confirm effects predictions and address uncertainty identified in Section 15.6.

Specifically, follow up and monitoring programs will be used to:

- evaluate the effectiveness of mitigation actions, and modify or enhance as necessary through monitoring and developing updated mitigation measures (if needed)
- identify unanticipated negative effects
- contribute to the overall continual improvement of the Project

Follow-up and monitoring will be implemented in accordance with the Gender Equity, Diversity and Inclusion Plan that apply to the Project (as signed between the Government of NL and the Kami Mine Limited Partnership in 2014), with periodic reports developed for each phase of the Project. Champion has also committed to update the Gender Equity, Diversity and Inclusion Plan and Workforce and Employment Plan.

15.8 Predicted Future Conditions Should the Project Not Proceed

Should the Project not proceed, it is anticipated that Labrador West in particular and NL in general will experience less economic growth and supply fewer jobs over a period of 30 years.

15.9 Fermont

The Project has the potential to affect the economy and employment in Fermont. The key issues raised by the Town of Fermont during consultation and engagement for the previous and current EA relevant to the economy and employment, as well as the approach taken in the EA to address them, are shown in Table 15-16.

Table 15-16: Key Issues Raised by the Town of Fermont

Key Issue (see Table 15.2)	Approach to Assessment
Request for implementation of early training programs to equip communities with the necessary skills for employment opportunities related to the Project	The implementation of training programs has been incorporated in Project planning and assessed.
Concern about lack of skilled workers available, which results in FIFO to fulfill employment needs	Mitigation to manage the issue of workforce availability has been incorporated in the assessment.
Preference for hiring of residents over FIFO	Champion will prioritize local hiring.

FIFO = fly-in/fly-out.

A good proportion of individuals and businesses are engaged in the mining sector, both in northeastern Québec and Labrador West. In 2021, Fermont's largest economic sectors were "Mining, quarrying, and oil and gas extraction" (55%). Fermont also had much higher labour force participation and employment rates than those for Sept-Rivières–Caniapiscau (SR-C), the census division to which Fermont belongs, and the Province of Québec, with men+ outpacing women+ (Statistics Canada 2023c). Due to the higher percentage of individuals working in the mining industry, Fermont's average employment income was substantially higher than those in SR-C or Québec. The average total income among Fermont recipients in 2020 was $98,000, while the average employment income for recipients was $96,600 (Statistics Canada 2023c). The average employment income of women+ in Fermont was less than half that of men+, while the employment income gap was narrower for SR-C and even more so for Québec. Concurrently, in 2020, the low income rate for Fermont was much lower than for SR-C and Québec (Statistics Canada 2023c).

As indicated in Section 15.5.3.1.1, the Economic Impact Analysis concludes that Québec will receive a sizeable portion of contracts and jobs from the Project (Locke and Strategic Concepts Inc. 2025). Given the proximity of Fermont to the Project site and the nature of Fermont's economy and workforce, it is reasonable to assume that Fermont's population and business community will benefit from a good number of Project-related employment and procurement contracts. At the same time, an indirect adverse effect is that fewer workers in Fermont will be available in other sectors, such as commercial and retail businesses and organizations that address community needs or enhance quality of life.

15.10 Key Findings and Conclusions

This chapter summarized available information on the economy and employment in the LSA and RSA and analyzed the potential effects of the Project on this VEC.

Through preparation of a thorough baseline and modelling, positive residual effect pathways were identified for GDP, employment, training, contracting and government revenues, as well as for opportunities for under-represented groups in Labrador West and NL. Residents and businesses of Fermont will also benefit from the employment and procurement contracts flowing from the Project.

A Benefits Agreement/ Gender Equity and Diversity Plan was signed between the Government of NL and the Kami Mine Limited Partnership in 2014 will continue to apply to the Project. Champion has committed to updating the Gender Equity, Diversity and Inclusion Plan to reflect current conditions.

The previous EIS had similar findings to the current EIS in that no residual adverse effects were predicted for the economy and employment; rather, significant positive effects were predicted for this VEC, with the Gender Equity, Diversity and Inclusion Plan acting as management measures.


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16. Services and Infrastructure

The purpose of **Chapter 16, Services and Infrastructure** is to characterize the existing environment, Project-environment interactions and potential residual Project and cumulative effects of the Project on services and infrastructure. The Project has the potential to cause adverse effects to these components of the socio-economic environment through:

- the movement of personnel, materials and equipment through western Labrador, by road, rail and air, which is consistent with what was assessed in the previous EIS (Alderon 2012)
- increases in population directly and indirectly associated with the Project. This includes the presence of a non-resident workforce, accommodated in temporary and permanent camps near the townsites of Labrador City and Wabush. This presents a change since the previous EIS (Alderon 2012), which proposed the use of a residential workforce.

These Project activities have the potential to interact with service and infrastructure use and demand, such as housing and accommodation, municipal services and infrastructure, community programs and transportation infrastructure. For this assessment, it has been assumed that the construction and operation of the Project will utilize a non-resident workforce due to limited capacity in labour and infrastructure. However, Champion is committed to transitioning to a local workforce as the Project continues to operate and the capacity of supporting infrastructure has increased.

The requirements in the provincial Environmental Impact Statement Guidelines (EIS Guidelines) for the Project issued by Newfoundland and Labrador (NL) Environment and Climate Change involve a variety of socio-economic issues to be addressed in the EIS. They have been divided among the VECs selected for the socio-economic environment to reflect the best fit based on content (Table 16-1).

Table 16-1: Socio-economic Valued Environmental Components and Issues Addressed

Valued Environmental Component	Issues Addressed
Indigenous Land and Resource Use (Chapter 13)	Indigenous communities and organizations
	Indigenous Land and Resource Use
	Traditional, cultural and recreational activities
Other Land and Resource Use (Chapter 14)	Municipalities with municipal plans and development regulations
	Extent of developed and undeveloped land
	Protected public water supply areas
	Parks and protected areas
	Land tenure
	Existing mining operations and planned expansions
	Accessibility of land for potential future mineral exploration and mining
	Current and historical land use for mining, mineral exploration and quarrying activities, including the presence of known mineral occurrences of potential economic significance
	Tourism-generating resources and operators (e.g., outfitter/guiding operators)
	Cabins
	Recreation areas (e.g., trails, multi-use trails, scenic lookouts, natural attractions)
	Recreation activities (e.g., hiking, hunting, fishing, swimming, berry picking)
	Domestic wood harvesting areas
Economy and Employment (Chapter 15)	Employment and employment equity and diversity, including under-represented groups
	Business capacity relative to goods and services

Valued Environmental Component	Issues Addressed
Services and Infrastructure (Chapter 16)	Wastewater
	Private, semi-public and public drinking water systems
	Food security
	Housing, accommodations and property values
	Health care and community services, including mental health and addiction services and social programs
	Fire and emergency services
	Education and training services and facilities
	Municipal infrastructure or services and capacity
	Existing electrical infrastructure
	Existing railroad facilities
Community Health and Well-being (Chapter 17)	Vibrations, noise emissions and noise levels, including sustained low frequency noise
	Light emissions, including night lighting
	Dust and air emissions
	Landscapes and viewscapes

Effects on other biophysical or socio-economic components may influence services and infrastructure. Therefore, other socio-economic and biophysical environment VECs provide information to support the assessment of services and infrastructure. This includes the economy and employment VEC (**Chapter 15, Economy and Employment**), as potential effects on local employment influence the demand on services and infrastructure.

The assessment of Project effects on services and infrastructure is discussed in the context of existing conditions (Section 16.4). The Land Use and Socio-economic Baseline Report is included in Annex 4C.

16.1 Approach to the Effects Assessment

The methods and assessment presented in this chapter were developed in consideration of the requirements under the provincial *Environmental Protection Act*, with specific consideration of the requirements set out in the EIS Guidelines for the Project issued by the Minister of Environment and Climate Change (GNL 2024b). A table of concordance to the EIS Guidelines is provided in the Executive Summary. The assessment of effects on services and infrastructure followed the overall effects assessment approach and methods (**Chapter 4, Effects Assessment Methodology**).

Where possible, comparison to the outcomes of the assessment of potential effects on services and infrastructure completed in the previous EIS (Alderon 2012) have been made to highlight where effects to services and infrastructure have been reduced through consideration of environmental design features and mitigation, or where new adverse effects may be introduced and require additional consideration in Project planning.

16.2 Integrating Engagement from Indigenous Groups and Local Stakeholders

Champion has, similarly, been engaging with potentially affected Indigenous groups since acquisition of the Project in 2021. The overall approach and methods for incorporation of engagement feedback into the EIS are discussed in detail in **Chapter 22, Engagement**.

Issues and concerns related to services and infrastructure raised by Indigenous groups and local stakeholders during the current EIS and how they were addressed through the assessment are summarized in Table 16-2, including cross references to where comments were considered or addressed in the EIS.

Table 16-2: Summary of Issues and Concerns Related to Services and Infrastructure by Indigenous Groups and Local Stakeholders

Comment Theme	How it is Addressed in the Assessment	Where it was Addressed in the Assessment	Indigenous Group or Local Stakeholder	Raised in the Alderon EIS (Yes/No)
Effects of railway on the Wabush watershed area	East access road and railway footprint were changed to address this concern.	Section 16.5.2 in Chapter 16, Services and Infrastructure	Town of Wabush	No
Concerns related to the availability of electricity	In November 2024, NL Hydro announced the plans to initiate the Labrador West Transmission Study, which explores the feasibility of an expansion of the transmission system into Labrador West from Churchill Falls and the potential economic impact of future development.	Chapter 2, Project Description Section 16.5.2.2.3 in Chapter 16, Services and Infrastructure	NunatuKavut Community Council Town of Wabush Town of Fermont Town of Labrador City	No
Effects on availability and costs of housing	Champion will continue to work in collaboration with the Labrador West Alliance members to mitigate effects.	Sections 16.5.2.3.1 and 16.5.3.1.1 in Chapter 16, Service and Infrastructure	Town of Wabush Town of Labrador City Town of Fermont Members of the Public Labrador West Chamber of Commerce Labrador West Alliance	Yes
Concerns regarding traffic disruptions on Duley Lake Road	Western access road was redesigned to avoid cabin areas.	Section 16.5.2.2.4 in Chapter 16, Service and Infrastructure	Mills Lake Cabin Owners Association Duley Lake Cabin Owners Association	No
Capacity of services (general)	Champion will continue to work in collaboration with the Labrador West Alliance members to mitigate effects.	Sections 16.5.2.2 and 16.5.2.3 in Chapter 16, Services and Infrastructure	Members of the Public Town of Fermont Labrador West Status of Women Town of Labrador City Town of Wabush	Yes, only raised during Alderon EIS
Availability of child care services	Champion will continue to work in collaboration with the Labrador West Alliance members to mitigate effects.	Sections 16.5.2.3.2 and 16.5.3.1.2 in Chapter 16, Services and Infrastructure	Labrador West Status of Women Town of Labrador City Town of Wabush	Yes, only raised during Alderon EIS
Effects on Wabush Airport	Champion will charter flights to transport workforce to and from site. Champion will continue to work in collaboration with the Labrador West Alliance members to mitigate effects.	Section 16.5.2.2.4 in Chapter 16, Services and Infrastructure	Town of Fermont Town of Labrador City Town of Wabush	Yes, only raised during Alderon EIS
Effects on municipal infrastructure	Champion will continue to work in collaboration with the Labrador West Alliance members to mitigate effects.	Section 16.5.2.2.2 in Chapter 16, Services and Infrastructure	Town of Fermont Members of the Public Town of Wabush Town of Labrador City	Yes, only raised during Alderon EIS
Concerns about the capacity of local emergency services	Champion will conclude a mutual-aid agreement with the Towns of Labrador City and Wabush.	Section 16.5.2.2.5 in Chapter 16, Services and Infrastructure	Town of Wabush Town of Labrador City	No

EIS = Environmental Impact Statement NL = Newfoundland and Labrador.

16.3 Assessment Scoping

This section identifies key issues for services and infrastructure, defines and provides a rationale for the selection of relevant VECs, identifies measurable parameters selected for the assessment and defines assessment boundaries.

16.3.1 Key Issues

Key issues often relate to the potential environmental, social, economic and health effects of a proposed project. Key issues identified for the Project reflect the primary concerns raised by regulatory authorities, Indigenous groups and local stakeholders, including residents, cabin owners, business owners and other interested parties.

To identify key issues related to services and infrastructure, the following sources were reviewed:

- Section 4.1 of the EIS Guidelines, which summarized key issues from regulatory agencies and feedback received on the Project Registration and draft EIS Guidelines
- the record of engagement (Chapter 22), which captures engagement input received through meetings, phone calls, letters and interviews
- experience with mining projects in Labrador West
- the key issues identified in the previous EIS (Alderon 2012)
- findings from the Land Use and Socio-economic Baseline Report prepared for the EIS (Annex 4C)

Key issues related to services and infrastructure include the following:

- existing electrical, water and sewage infrastructure
- potential effects on demand and costs of housing and accommodation
- potential effects on demand for community services and infrastructure, particularly health care, child care, education and emergency services
- potential effects on transportation infrastructure and an increase in traffic, including for the railway, roads and the airport

16.3.2 Valued Environmental Components and Measurable Parameters

Services and infrastructure was selected as a VEC because there is potential for Project activities to interact with and influence services and infrastructure during construction, operations and closure, through potential increases in direct and indirect population and because of Project components and activities affecting the existing use of transportation infrastructure.

Services and infrastructure are important to the liveability of an area, and are, therefore, highly valued by residents, businesses, Indigenous groups and other stakeholders. The importance of services and infrastructure to communities is indicated by the level of interest and concern raised regarding services and infrastructure during engagement activities (see Section 16.2).

Table 16-3 provides an overview of the services and infrastructure VEC, including the rationale for its selection and measurable parameters. In the case of services and infrastructure, measurable parameters are used to qualitatively describe changes to the environment caused by the Project, other human developments and natural factors, as well as to predict overall effects on VECs.

Table 16-3: Valued Environmental Components, Rationale for Selection and Measurable Parameters

VEC	Rationale for Selection	Measurable Parameters	Linkages to other VECs

Services and Infrastructure	— Project may affect demand for services and infrastructure
	— Project may increase demand for housing
	— Project may change or disrupt access by road, air or rail
		— Housing and accommodation
		— Capacity of the following services and infrastructure:
		  — child care
		  — education and training
		  — health care
		  — community support
		  — transportation
		  — public works
			— Economy and Employment (Chapter 15)
			— Community Health and Well-being (Chapter 17)

VEC	Rationale for Selection	Measurable Parameters	Linkages to other VECs
		— utilities and communication — safety and emergency services — recreation and culture	

VEC = valued environmental component.

16.3.3 Assessment Boundaries

Assessment boundaries define the spatial and temporal extents of the assessment for each VEC. The spatial boundaries for services and infrastructure are defined in Table 16-4 and shown in Figure 16-1, and consist of the site study area (SSA), an local study area (LSA) and a regional study area (RSA).

The SSA includes the proposed infrastructure for the Project (i.e., the Project footprint) with an additional buffer to reflect existing uncertainty in the final design of the Project and so that adverse effects to VECs are not underestimated (i.e., the SSA area is twice as large as the anticipated Project footprint). The SSA is constrained to avoid certain features, including major lakes, the Québec-Labrador provincial border and sensitive features, like the Wahnahnish Lake Protected Public Water Supply Area. The SSA represents the smallest scale of assessment and an area where the potential direct effects of the Project can be assessed accurately and precisely.

The LSA includes the Towns of Labrador City and Wabush and represents the scale to which most or all effects on services and infrastructure caused by the Project are anticipated. This represents a change from the previous EIS, which did not identify an LSA.

The RSA includes western Labrador, which encompasses the Towns of Labrador City and Wabush, and Town of Fermont, Québec. It provides broader context for the assessment of Project effects on services and infrastructure and an appropriate scale to assess cumulative effects from the Project combined with existing conditions and other RFDs. The RSA includes the main municipalities that will be affected by Project components/activities and expenditures and which are of concern to the public. These are the areas that will provide services and infrastructure to the Project and its employees, as well as where any Project-related demands will be experienced. The RSA is the same as in the previous EIS.

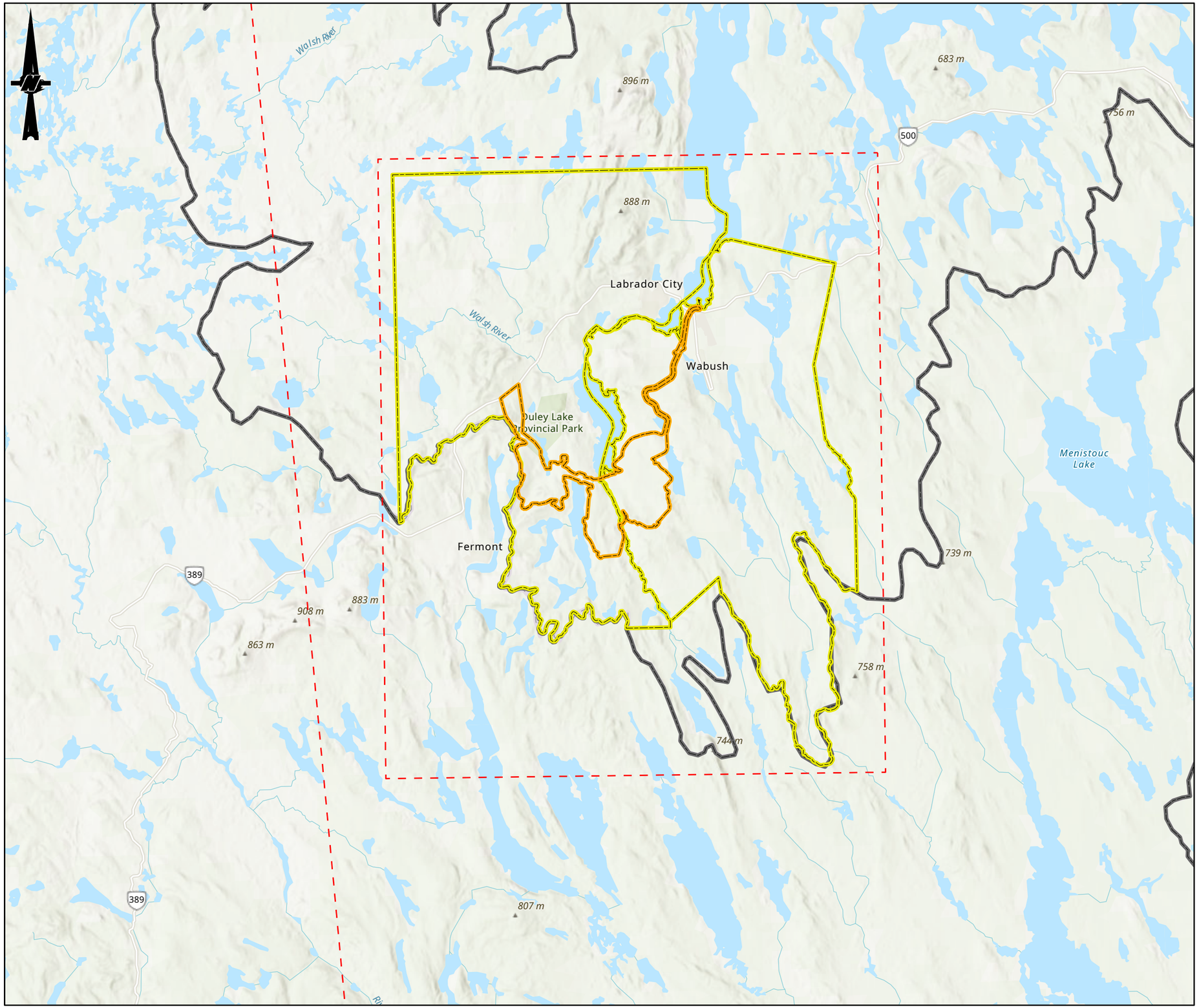
Table 16-4: Spatial Boundaries for Assessment of Services and Infrastructure Valued Environmental Component

Study Area	Area (ha)	Description/Rationale
SSA	4,323	Includes the Project footprint plus additional buffered areas to incorporate a level of uncertainty into the Project design so that effects are not underestimated. The SSA was defined using bounding points around the outermost components of the Project footprint.
LSA	7,700	Includes the Towns of Labrador and Wabush. These are the areas that will provide services and infrastructure to the Project and its employees, as well as where any Project-related demands will be experienced.
RSA	13,0155	Labrador West, including the Towns of Labrador City and Wabush, and the Town of Fermont, Québec. This provides broader context for the assessment of Project effects on services and infrastructure and an appropriate scale to assess cumulative effects from the Project combined with existing conditions and other RFDs.

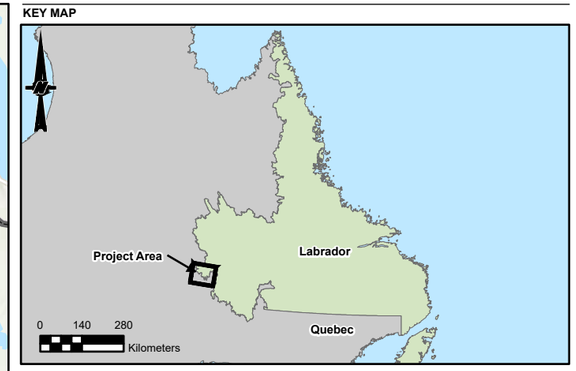
SSA = site study area; LSA = local study area; RSA = regional study area; RFDs = reasonably foreseeable developments.

The temporal scope of the assessment focuses on the 40-year period from initial construction to the end of decommissioning and rehabilitation (i.e., Closure) as defined by the following Project phases:

- **Construction phase (referred to as Construction)**–includes site preparation, mine, process plant and site infrastructure development, and commissioning the structures, systems and components. The duration of Construction is expected to be four years.
- **Operations and Maintenance phase (referred to as Operations)**–includes the mining and milling of iron ore, production and shipment of iron ore concentrate, tailings management, management of mine rock, waste management, water management, release of treated effluent, site maintenance and transportation of staff and materials to and from the site. Operations initiates with one year of pre-development mining (i.e., ramp-up) and concludes when processing is complete and is expected to be 26 years.
- **Decommissioning and Rehabilitation phase (referred to as Closure)**–includes accelerated flooding of the Rose Pit, re-establishment of passive surface water drainage following the pit-flooding period, and recontouring and revegetating disturbed areas. Physical infrastructure that is not required during Post-closure monitoring and for other activities required to achieve the Project's decommissioning criteria and to return the Project site to a safe and stable condition will be removed. Closure is expected to be 10 years.



KEY MAP



SCALE 1:20,000,000

Legend

- Site Study Area (SSA)
- Labrador/Quebec Boundary
- Local Study Area (LSA)
- Regional Study Area (RSA)

0 2,500 5,000 10,000

1:250,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - NEWFOUNDLAND AND LABRADOR
2. IMAGERY CREDITS: WORLD TOPOGRAPHIC MAP: SOURCES: ESRI, TOMTOM, GARMIN, FAO, NOAA, USGS, © OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY WORLD HILLSHADE: ESRI, NASA, NGA, USGS3. COORDINATE SYSTEM: NAD 1983 UTM ZONE 19N

CLIENT

CHAMPION IRON MINES LTD.

PROJECT

KAMI IRON ORE MINE PROJECT (KAMI PROJECT)
WABUSH, NL

TITLE

SERVICES AND INFRASTRUCTURE SPATIAL BOUNDARIES

CONSULTANT

Kami

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PREPARED	GM/MS
REVIEWED	CS
APPROVED	BM

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16.4 Existing Environment

The existing environment for services and infrastructure generally formed the basis against which the residual Project and cumulative effects were assessed. The existing environment also represents the outcome of historical and current environmental and socio-economic pressures that have shaped observed conditions of services and infrastructure. Influential pressures or factors were either natural (e.g., weather, wildfire, predation, disease, climate change) or human related (e.g., industrial development, forestry, changing business models, fishing, hunting).

A land use and socio-economic baseline study was conducted to support the characterization of the existing services and infrastructure. The baseline study presents known information about trends and capacity in services and infrastructure in the LSA, including housing and accommodations, child care, education and training, health care, social supports, transportation, municipal infrastructure, utilities and communications, safety and emergency services and recreation/culture. The baseline study is included as Annex 4C and summarized in the following sections as appropriate.

16.4.1 Methods

Consultation has been conducted by Champion to inform the preparation of the land use and socio-economic baseline study. Information was also obtained from various sources, including municipal, provincial and federal government departments/agencies and websites of businesses, service providers and industry organizations, to capture changes to services and infrastructure since the previous EIS for the Kami Mining Project. In addition, information was obtained from Rio Tinto Iron Ore Company of Canada (IOC) based on its work in Communities and Social Performance in Labrador West. An overview of information sources follows:

- Environmental Impact Statement Guidelines: Kami Iron Ore Mine, December 19, 2024 (GNL 2024b)
- Project Registration: Kami Iron Ore Mine Project, April 2024 (Champion 2024a)
- Socio-economic Baseline Report: Kami Iron Ore Mine Project, April 2024 (Champion 2024b)
- Environmental Assessment – A Guide to the Process (GNL 2024a)
- Kami Iron Ore Mine Project Environmental Impact Statement (Alderon 2012)
- Kami Iron Ore Mine Project Environmental Impact Statement Amendment (Alderon 2013)

Where possible, quantitative information has been provided to indicate the capacity and availability of services and infrastructure. This is supplemented by qualitative data and insights gained through engagement for both the previous and current EIS.

16.4.2 Housing and Accommodation

The number of private dwellings in Labrador City and Wabush decreased between 2016 and 2021, which may be due to change in classification of buildings in the area, an increase in short-term rentals, and/or an increase in private dwellings being occupied by non-resident workers. The rate of occupancy of private dwellings is high in Labrador City and Wabush, indicating little capacity in the housing market (Table 16-5).

Table 16-5: Total Private Dwellings and Private Dwellings Occupied by Usual Residents (2016, 2021)

Indicator	Labrador City		Wabush	
	2016	2021	2016	2021
Total private dwellings	3,474	3,368	950	864
Private dwellings occupied by usual residents	2,909	3,070	741	798

Source: Statistics Canada 2019; 2023

Housing prices in Labrador West have been affected by large local construction projects, especially those that do not provide temporary worker housing and thus create added demand for other accommodations. Housing prices escalated in Labrador West between 2011 and 2014 (NLMAA 2016, 2021), though prices fell after 2014, possibly due to the closure of Scully Mine. Housing prices have been affected by construction projects across Labrador West. In 2021, the average values of dwellings in Labrador City and Wabush were $296,000 and $282,500, respectively, both higher than the average for NL at $246,800. Limited capacity in affordable units in Labrador West results in high vulnerability for homelessness for parts of the population.

Short-term accommodation is limited in Labrador West, with a total of 358 rooms available. These rooms are in addition to short-term accommodation facilities allocated to non-resident workers. Many short-term accommodation providers are regularly utilized by non-resident workforces present in Labrador West. Non-resident workforces are also housed in dedicated worker accommodations, houses, apartment buildings and hotels purchased by companies.

Overall, housing and short-term accommodation is limited in Labrador West. Challenges with housing availability and affordability affect recruitment and retention in all sectors and increase the vulnerability of some parts of the population to experiencing housing insecurity and homelessness.

16.4.3 Child Care

Inadequate supply of child care has been evident in Labrador West, and lack of availability (including lack of care after hours, on weekends, during school breaks and to accommodate shiftwork) has affected the ability of all sectors to attract and retain workers, especially women (IOC 2024).

Three child care centres are in Labrador West: one in Labrador City, and two in Wabush. This includes two not-profit centres, and one privately owned and operated facility (ELCC Directory 2024). Children may spend a portion of their day in pre-kindergarten programs. Child care is also provided in unregistered home daycares. Facilities tend to have long waitlists and are sometimes unable to operate at capacity due to challenges attracting and retaining staff.

16.4.4 Education and Training

Four schools are in Labrador West: three in Labrador City and one in Wabush. Total school enrollments in Labrador West have generally increased in recent years (NLE 2023). School facilities operate below capacity indicating space is available for additional students to be enrolled. Operational capacity of schools is affected by challenges with attracting and retaining teaching staff, as well as the existing teaching workforce retiring. Reportedly, various teaching positions are available in Labrador West each year. The NL Teachers Association indicates that attracting teachers to the region has been a long-term challenge and that teachers and school administrators work overtime to keep schools open (NLTA 2023). Staff shortages are reportedly due to an increase in competition for teachers across Canada, a lack of incentives to relocate to the region compared to other parts of Canada, and more than 250 teachers retiring in the province each year.

Only one post-secondary education facility is in Labrador West, namely the College of the North Atlantic. It provides vocation-based programs and apprenticeship training (CNA 2023). However, several trades-based programs, including the mining technician program, have been suspended due to low enrolment. An early childhood education program has been added (CNA 2025).

16.4.5 Health Care

The Labrador West Health Centre in Labrador City has 28 beds, 14 of which are for acute care and 14 for long-term care (LGRHA 2023). The facility offers inpatient/outpatient and diagnostic/treatment services, as well as community health services to support residents. However, residents of the area must travel to larger centres for some diagnostic tests and treatments that are unavailable in Labrador West. As of October 2024, there were 44 vacancies for health care staff at the centre, indicating challenges with attracting and retaining health care staff (NLHS 2024). Staffing challenges reduce the operating capacity of the centre, place additional demand on the existing staff and resources at the facility and are of concern to existing and potential residents.

16.4.6 Community Support

Various groups in Labrador West address community needs and organize collective activities that contribute to community well-being, social cohesion and quality of life. While the organizations may change from time to time, they generally serve youth, immigrants, intellectually disabled, francophones, women, families and/or children, Indigenous Peoples, retirees/seniors and those in financial need.

Labrador West Ministerial Food Bank supports residents experiencing food insecurity (LWMFB 2023). Usage rates vary depending on economic conditions and the food bank actively plans for anticipated changes, with increased demand observed during economic slowdowns that result in higher unemployment, especially when housing costs are inflated. Following a period of lower usage around 2011-2012, demand has increased steadily (IOC 2024).

Hope Haven is a refuge and transition house for women (with or without children) fleeing intimate partner or family violence. Nine beds (four bedrooms) are available to clients (IOC 2024). As Labrador West often experiences a lack of available, appropriately priced housing, Hope Haven has helped to fill the post-transitional housing gap by supplying shelter for longer time periods, potentially resulting in limited capacity. A second stage housing project is planned to be complete in 2025 (Robinson 2025).

16.4.7 Transportation

Labrador West is connected to other parts of Labrador, Newfoundland and Québec by air, road and rail.

Wabush Airport, which serves Labrador City, Wabush and Fermont, as well as mining projects outside of communities, has two commercial airlines and a helicopter charter service. Costs of flights have increased by 47% at Wabush Airport since 2019, which is a greater increase than at other airports in the province (CBC 2024). Price increases are believed to be related to increased operating costs and lack of competition as well as the results of the COVID-19 pandemic.

The main line of the Québec North Shore and Labrador Railway (QNS&L) connects Schefferville to Sept-Îles (Québec) and carries passenger and freight trains (IOC 2024). As a federally regulated railway with common carrier obligations, the QNS&L has a legal requirement to meet the needs of third-party clients (including other existing and future mining operations, each of which manages its own rail cars on the system) (IOC 2024). The QNS&L is also used to ship heavy equipment, fuels, bulk inventory products, vehicles, building supplies and passengers in Labrador West and Québec.

Labrador West is connected to the national highway system by the Trans-Labrador Highway (Route 500) to Route 389 to Baie-Comeau, Québec (IOC 2024). Route 500 also connects Labrador West to Central Labrador with access to a ferry service to the Island of Newfoundland.

16.4.8 Public Works

The Towns of Labrador City and Wabush are responsible for delivery of public infrastructure, including water, wastewater and waste management services, to their respective residents and businesses.

The Town of Labrador City approved a 2024 budget of $32,550,071 (Town of Labrador City 2024). It is undertaking a strategic planning process, which identified upcoming priorities such as investments in the Curling Club, Fire Hall, Town Hall, gymnastics facility and a master plan for the Booth Avenue recreation area (IOC 2024). Reserve funds, an increase in water and sewer rates and long-term financing would be used for projects such as the Drake Waste Water Treatment Plant upgrade, Tamarack Sanitary Sewer upgrade, Willow Drive Street Reconstruction Phase 1 and the Arena Storage Building (IOC 2024).

The Town of Wabush approved a 2023 budget of $12,529,907, including $2,275,827 from non-residential grants in lieu of taxes (Town of Wabush 2023). Its 2023 priorities included improvements to equipment, fire hydrants, sewage treatment facilities, Town Hall, security systems and recreation facilities and amenities. Larger capital projects included upgrades to drinking water and wastewater treatment systems and street reconstruction.

16.4.9 Utilities and Communications

Access to reliable and affordable communications and utilities is important for industrial development and quality of life for residents. Service reliability has been an issue in Labrador West, especially for electricity, internet and cellular services.

NL Hydro provides electrical power to Labrador West from the Churchill Falls hydroelectric generating station via a 230-kilovolt transmission line (NL Hydro 2015). This electrical supply is inadequate to develop new mining opportunities and support initiatives of existing industries in the region (IOC 2024).

Bell Aliant is the main provider of telephone, internet and satellite television services in Labrador West (IOC 2024). Community Recreation Rebroadcasting Service Association, a non-profit communications provider, offers local services (e.g., television, internet, telephone). Cell phone connectivity is not available on the Trans Labrador Highway.

16.4.10 Safety and Emergency Services

Emergency services are provided to residents of Labrador West through fire, police and ambulance services.

The Towns of Labrador City and Wabush have fire departments that provide protection and response services to their respective municipalities and assist one another with emergency response as required (IOC 2024). The Town of Labrador City Fire and Emergency Services has a professional fire chief and a team of volunteer firefighters, with a fleet of fire, rescue and hazardous materials emergency response vehicles. The Wabush Fire Department is volunteer based. Both Labrador City and Wabush have some constraints in the capacity of fire services; neither has the training or equipment to address airport incidents.

Transport Canada had suspended emergency response services at Wabush Airport in 2020, citing low passenger activity. In December 2024, the agency announced it would reinstate firefighting services at the airport in 2024/2025 (VOCM 2024).

In 2023, Labrador West was served by 21 police officers and five civilians and continued to have a higher police-to-population ratio than all Royal Newfoundland Constabulary-served areas (except Corner Brook) and Canada as a whole (RNC 2023). The Royal Newfoundland Constabulary responded to 2,869 calls in Labrador West (1,959 in Labrador City, 729 in Wabush and 181 in Churchill Falls) in 2023.

Several road safety concerns have been identified in Labrador West, including recreational vehicle (e.g., snowmobile and all-terrain vehicle) usage on roadways, motorists passing school busses onloading or offloading school children and unsafe driving behaviour (RNC 2023).

The area is serviced by the provincial ambulance program, which provides emergency and routine medical air and road transportation (NLHCS 2023).

16.4.11 Recreation and Culture

Labrador City and Wabush offer a range of infrastructure for competitive sports and organized activities. The region has ice arenas, a curling facility, a bowling alley, a golf course, softball fields, a skateboard park, pump track, indoor and outdoor soccer fields, two dog parks, various walking trails, two campgrounds, an indoor swimming pool and a trap and skeet/rod and gun club (IOC 2024). In addition, facilities are available for downhill skiing, snowboarding, cross-country skiing and snowmobiling. Public and private fitness facilities and community-based groups also provide recreational programming, including gymnastics, martial arts, baseball, softball, hockey, soccer, badminton and volleyball (IOC 2024). The Towns also have playground facilities for small children.

16.5 Effects Assessment

The effects assessment for services and infrastructure is presented in the following sections. The methods to assessing effects are presented in Section 16.5.1. The effect pathway screening, residual Project effect analysis and residual cumulative effect analysis are provided in Section 16.5.2.

16.5.1 Methods

This section outlines methods for assessing potential effects on services and infrastructure. Key to this method is an evaluation of potential pathways to effects, which are described for each phase of the Project along with proposed mitigation measures to avoid, minimize or mitigate any anticipated effects.

16.5.1.1 Effect Pathway Screening

Interactions between Project components or activities, and corresponding changes that could result in a potential effect to the services and infrastructure VEC were identified through an effect pathway screening. The effect pathway screening was used to inform the residual Project and cumulative effects analyses for the services and infrastructure VEC. Each pathway was initially assumed to have an interaction that would result in potential effects on services and infrastructure.

Potential pathways from Project activities to interactions with services and infrastructure were identified using the following:

- review of the Project Description (**Chapter 2**) and scoping of potential effects by the EIS team for the Project;
- input from engagement (Chapter 22);
- review of EISs for similar mining projects, including the previous EIS (Alderon 2012)
- previous experience with mining projects
- experience with socio-economic effects in Labrador West
- consideration of key issues (Section 16.3.1)

Potential adverse effects of the Project were identified, and practicable mitigations were applied to avoid, reduce, minimize and/or rehabilitate effects to services and infrastructure. Various avoidance measures integrated into Project design to prevent effects from occurring are described in Chapter 2. Where effects pathways are likely, mitigations were proposed and assessed to determine whether they would effectively address the potential Project effect such that the pathway was eliminated, would result in a negligible adverse effect on services and infrastructure or if residual adverse effects from the Project remained.

This effect pathway screening was a preliminary assessment intended to focus the residual effects analysis on effects pathways that required a more quantitative/qualitative or comprehensive assessment of effects. Using experience with similar developments, feedback from consultation and an understanding of the effectiveness of mitigation, each effect pathway was categorized as one of the following:

- **No effect pathway**–The effect pathway could be removed (i.e., the effect would be avoided) by avoidance measures and/or additional mitigation so that the Project would result in no measurable environmental change relative to existing conditions or guideline values (e.g., air, soil or water quality guidelines), and, therefore, would have no residual effect on services and infrastructure.
- **Negligible effect pathway–**With the application of mitigation, the effect pathway could result in a measurable but minor environmental change relative to existing conditions or guideline values, but the change is sufficiently small that it would have a negligible residual effect on services and infrastructure (e.g., an increase in demand in infrastructure that is not likely to be noticeable compared to baseline conditions). Therefore, further detailed assessment of the residual effect is not warranted, as the effect pathway would not be expected to result in a significant residual Project or cumulative effect to services and infrastructure.
- **Residual effect pathway–**Even with the application of mitigation, the effects pathway is still likely to result in a measurable environmental change relative to existing conditions or guideline values that could cause a greater than negligible adverse or positive effect on services and infrastructure and warrants additional assessment.

Project interactions determined as having no effect pathway or negligible effect pathways were not carried forward for further assessment (Section 16.5.2). Residual effect pathways that could result in changes to the environment with one or more associated measurable parameter and have the potential to cause a greater than negligible effect on services and infrastructure were carried forward to the residual Project effects analysis (Section 16.5.3) and residual cumulative effects analysis (Section 16.5.4).

16.5.1.2 Residual Project Effect Analysis

The residual effects analysis measures and describes effects of the Project on services and infrastructure relative to existing conditions. It was conducted using the temporal boundaries identified for the assessment (Section 16.3.3). Residual effects are described for each of the measurable parameters for the residual effect pathways identified.

The residual effects analysis used a reasoned narrative to describe anticipated changes to each measurable parameter caused by the Project. This narrative description of anticipated effects is the foundation for the residual effects classification. Residual effects are summarized or classified in tabular form using effects criteria intended to provide structure and comparability across VECs assessed for the Project. The residual effects classification uses nature, magnitude, geographic extent, duration, timing, frequency, reversibility, probability of occurrence, and ecological and socio-economic context as criteria. Timing has not been included as an effects criterion for this assessment, as there is no seasonality to effects associated with services and infrastructure in the LSA and RSA. The approach to classify each residual effect criterion is provided in Table 16-6. Following classification of residual Project effects, the analysis also evaluates the significance of residual Project effects using threshold criteria or standards beyond which a residual effect is considered significant. The definition of a significant effect for services and infrastructure is provided in Section 16.5.1.4.

Table 16-6: Definitions Applied to Effects Criteria Classifications for the Assessment of Services and Infrastructure

Criterion	Rating	Definition
Nature	Positive	Change in measurable parameter results in net improvement or benefit to services and infrastructure
	Neutral	Change in measurable parameter results in no change to services and infrastructure
	Adverse	Change in measurable parameter results in net degradation of or loss to services and infrastructure
Magnitude	Low	Change in measurable parameter is such that use of services and infrastructure is the same or similar as before
	Moderate	Change in measurable parameter is such that use of services and infrastructure has been modified or limited
	High	Change in measurable parameter is such that use of services and infrastructure is no longer reasonably possible

Table 16-6: Definitions Applied to Effects Criteria Classifications for the Assessment of Services and Infrastructure

Criterion	Rating	Definition
Geographic extent	SSA	Change in measurable parameter is confined to the SSA
	Local	Change in measurable parameter extends outside the SSA but within the LSA
	Regional	Change in measurable parameter extends beyond the LSA but is confined to the RSA
	Beyond regional	Change in measurable parameter extends beyond the RSA
Duration	Short term	Change in measurable parameter is limited to Construction or Closure phase
	Medium term	Change in measurable parameter occurs through the duration of the Project
	Long term	Change in measurable parameter extends beyond the life of the Project
Frequency	Occasional	Change in measurable parameter is expected to occur rarely (e.g., once or a few times)
	Periodic	Change in measurable parameter is expected to occur consistently at regular intervals or associated with temporal events (e.g., during hot, dry climatic conditions)
	Continuous	Change in measurable parameter is expected to occur all the time
Reversibility	Reversible	Change in measurable parameter is reversible within a clearly defined time period
	Irreversible	Change in measurable parameter is predicted to influence the component indefinitely
Probability of occurrence	Unlikely	Change in measurable parameter is not expected to occur, but not impossible
	Possible	Change in measurable parameter may occur, but is not likely
	Probable	Change in measurable parameter is likely to occur, but is uncertain
	Certain	Change in measurable parameter will occur
Ecological and socio-economic context	N/A	Change in measurable parameter is described by the perception of an effect that considers sensitivity and resilience of VECs (ecological context), the socio-economic significance placed on certain VECs and the unique values, customs or aspirations of local communities or Indigenous groups

SSA = site study area; LSA = local study area; RSA = regional study area; RFDs = reasonably foreseeable developments; N/A = not applicable; VEC = valued environmental component.

16.5.1.3 Residual Cumulative Effect Analysis

The cumulative effects assessment builds on the results of the residual Projects effects assessment and considers the incremental changes that are predicted to have a likely residual adverse effect on services and infrastructure. This would include the effects of past and current projects or past climate-related changes (i.e., forest fires), which contribute to existing conditions upon which residual Project effects are assessed. For the EIS, the description of the existing environment characterizes the environment already affected by past and current projects and activities; therefore, the cumulative effects assessment focuses on analyzing the effects of other RFDs in combination with the Project. Although positive residual effects are characterized in the residual Project effects analysis, they are not carried forward to the cumulative effects analysis, as the Project benefits from other past, present and RFDs or activities are unlikely to be known or publicly disclosed (e.g., Benefit Agreements with Indigenous groups or local community stakeholders).

The cumulative effects assessment follows a three-step process:

1. Identify RFDs and potential cumulative effects that overlap in time and space with residual effects.
2. Identify and describe any additional mitigation measures, if applicable.
3. Characterize residual cumulative effects, using the same criteria defined for the residual Project effects analysis (Section 16.5.1.2).

Chapter 4 provides a list of known RFDs and physical activities with potential residual effects that could overlap spatially and temporally with the Project's residual effects. Chapter 4, Figure 4-4 presents the location of all six identified RFDs. This list is considered in the identification of RFDs for the assessment of cumulative effects on services and infrastructure. Following the identification of applicable RFDs, residual Project effects on services and Infrastructure are evaluated for temporal and spatial overlap with the effects of RFDs to identify potential cumulative effects. The evaluation is completed qualitatively based on publicly available information (e.g., Project Registrations or EIS reports) describing the environmental effects of RFDs. If effects from these RFDs overlap spatially or temporally with the residual Project effects on services and infrastructure, then potential cumulative effects are identified. If no spatial or temporal overlap exists for the residual Project effects and RFDs identified in Chapter 4 then a cumulative effects assessment is not required.

Based on the assessment of potential cumulative effects, an assessment is made regarding whether additional mitigation measures, beyond those proposed for the Project, are required to address potential cumulative effects. Where applicable, additional mitigation measures are identified.

Residual cumulative effects are characterized using the same criteria as for residual Project effects (Section 16.5.1.2). Following classification of residual cumulative effects, the analysis also evaluates the significance of residual Project effects using threshold criteria or standards beyond which a residual environmental effect is considered significant. The definition of a significant effect for services and infrastructure is provided in Section 16.5.1.4.

16.5.1.4 Significance Determination

A significant adverse residual effect from the Project is one where changes in demand resulting from the Project exceed the existing capacity of services and infrastructure on an ongoing and consistent basis during the life of the Project.

16.5.2 Effect Pathway Screening

The effect pathway screening predicts potential effects pathways that are then evaluated considering proposed mitigation to predict whether the effect pathway had the potential to cause residual adverse or positive effects. The effectiveness of mitigation measures proposed for each effect pathway was assessed to determine whether the mitigation would address the potential Project effect such that the effect pathway was eliminated or would result in a negligible adverse effect on a VEC. As described in Section 16.5.1.1, each effect pathway was categorized as one of the following:

- **No effect pathway** (i.e., avoidance measures and/or mitigation results in no residual effect on services and infrastructure)
- **Negligible effect pathway** (i.e., mitigation results in negligible effect of services and infrastructure)
- **Residual effect pathway** (i.e., effect that is greater than negligible and carried forward for further assessment)

The effects pathway screening is summarized in Table 16-7. The subsections following the table provide rationale used to assign potential effects to the no effect pathway and negligible effect pathway categories and list residual effect pathways. Each Project component/activity identified as having a residual effect pathway was carried forward for detailed assessment in Section 16.5.3.1.

Table 16-7: Potential Effects Pathways for Services and Infrastructure

Project Components/Activities	Effects Pathway	Environmental Design Features, Mitigation or Enhancement Measures	Effect Pathway Screening

Construction:
Project activities may affect demand for housing and accommodation, services and infrastructure, and/or access and use of the railway, local road networks and the airport.
 	
Operations and Maintenance:
Project activities may affect demand for housing and accommodation, services and infrastructure, and/or access and use of the railway, local road networks and the airport.
 	
Closure:
Closure may affect demand for housing and accommodation, services and infrastructure, and/or access and use of the railway, local road networks and the airport.
	— Project activities and related population growth could result in direct or indirect change in demand for housing and accommodation.	— Accommodate non-resident workforce in permanent camp, located in the SSA and serviced with own water, wastewater, electricity and telecommunications.
		— Prepare a Workforce and Employment Plan prior to construction that would detail:
		  — strategy for housing non-resident construction workers prior to permanent camp being constructed
		  — strategy for housing non-resident workers during Operations when permanent camp is at capacity
		  — communications protocols with short-term accommodation providers to monitor capacity and demand
			Residual Effect Pathway

	— Project activities and related population growth could result in direct or indirect change in demand for services and infrastructure.	— Engage local service providers, municipalities and infrastructure owners to communicate ongoing activities and monitor demand. — Provide basic services, such as a medical clinic and recreational facilities, at worker camps to reduce potential demand at local facilities. — Equip the Project with basic emergency services to respond to incidents or hazards on site. — Work with other emergency service providers on reciprocal service agreements. — Implement company policies and procedures. — Work with service providers, municipalities and infrastructure owners and operators ahead of, and during Closure to minimize disruptions and potential effects to staffing. — Implement management and mitigation measures identified for other VECs (including Chapter 15, Economy and Employment), as relevant. — Implement relevant management plans submitted as part of EIS, such as the Waste Management Plan (Annex 5H) and Emergency Response Plan (Annex 5C). — Participate in the Labrador West Alliance, a Regional Working Group of mining companies, municipalities, provincial and federal government agencies, and the Labrador West Chamber of Commerce, to jointly address community service and infrastructure issues, including housing stock, capacity of infrastructure (e.g., transportation), staffing in community support systems (e.g., health care, education, child care), workforce diversity and stability, and power supply. — Engage community organizations to identify and monitor any increase in demand for services associated with the Project. Work with the Labrador West Alliance to investigate opportunities for financial or in-kind support to these organizations.	Negligible Effect Pathway (community support, public works, utilities and communications, safety and emergency services, recreation and culture) Residual Effect Pathway (child care, education and training, health care)
	— Project activities could result in direct or indirect change in access routes for road, rail and air transportation.	— Work with industry and rail service providers (e.g., QNS&L) to understand use of rail line and schedule movements to minimize disruptions. — Work with Wabush Airport on schedule for charter flights and/or communicate with airlines as required to coordinate scheduling of flights to accommodate non-resident workforce. — Prepare and implement a Traffic Management Plan prior to Construction, to monitor any potential effects on local traffic and access routes as a result of Construction and Operations.	Negligible Effect Pathway

SSA = site study area; VEC = valued environmental component; EIS = Environmental Impact Statement.

16.5.2.1 No Effect Pathways

The effects pathway screening indicates that none of the Project-environment interactions results in no effect pathways for services and infrastructure.

16.5.2.2 Negligible Effect Pathways

The following Project-environment interactions are predicted to result in negligible effect pathways to services and infrastructure and are not carried forward in the assessment.

16.5.2.2.1 Community Support

Some community support services, particularly services for women, including sexual assault services, could see an increase in demand due to the presence of non-resident workers in the LSA. However, the potential for interaction between non-resident workers and local residents is expected to be minimal, as workers will be based on site in the permanent camp, without access to a vehicle. Champion's internal policies and procedures on code of conduct of employees and contractors, as well as workplace health and safety programs, are also expected to effectively manage such negative effect on local residents.

Community support programs may also experience an increase in demand due to population growth. However, this would be dependent on the demographic profile of workers and families moving into the communities. It is most likely that programs targeted for children and youth, women and families would be most affected by an increase in demand, as the Project is most likely to attract residential workers with families or couples of a working age. Services targeted at low-income families, such as financial support services and food banks, may notice an increase in demand in services as the cost of housing or a lack of available child care increases of financial stress for some residents. Noticeable adverse effects on demand for these services will be monitored through ongoing consultation with community organizations, and Champion will continue to work with the Labrador West Alliance to explore opportunities to support affected organizations.

16.5.2.2.2 Public Works

Water and wastewater infrastructure will be constructed to support Project activities and to service the permanent camp. Champion will coordinate with the Towns of Labrador City and Wabush to discuss the timing for construction of this infrastructure, to effectively avoid adverse effects on the local water and wastewater infrastructure.

Domestic waste generated by the Project would be managed in line with the Waste Management Plan (Annex 5H). This includes the transfer of diverted materials to facilities outside of the RSA. It is anticipated that solid waste intended for final disposal will be trucked to the Labrador West regional landfill, located on Route 500. Champion will coordinate with the Towns of Labrador City and Wabush throughout construction and operations to monitor concerns and implement the Waste Management Plan. If warranted, Champion will work with provincial authorities to develop a permitted on-site waste disposal facility. This would effectively avoid negative effects on landfill capacity for residents, businesses and industry.

Potential population growth related to the Project workforce could increase demand for water, wastewater and waste management systems in the LSA. Champion will coordinate with the Towns of Labrador City and Wabush to provide advance notice of any increase in demand for public infrastructure, to avoid service disruptions, and enable expansion of infrastructure to support additional population associated with the Project. This is expected to minimize adverse effects of the Project on public works infrastructure.

16.5.2.2.3 Utilities and Communications

Project-related activities, and an increase in population associated with the Project, may result in an increase in demand for utilities and communications services and infrastructure. NL Hydro will develop an upgraded power transmission system (not included in the scope of the Project), to support Project activities and the presence of a non-resident workforce (Chapter 2). Champion will work with NL Hydro to avoid adverse effects on the existing power supply. Telecommunications services will be provided by the Project via Starlink during construction, which will also provide backup communications for the Project and its workforce during operations. Although service reliability has been an issue in Labrador West, especially for electricity, internet and cellular services (see Section 16.4.9), it is expected that Project design, in addition to ongoing consultation between Champion and utility and communications service providers, will avoid an adverse effect on the population in the LSA and that infrastructure improvements will have a positive effect in Labrador West.

16.5.2.2.4 Transportation

Transportation of goods, services and personnel to the SSA would increase use of roads in the LSA during construction, operations and closure, which may be noticeable to cabin owners and residents. However, increases in vehicle movements are likely to occur primarily on highways, such as the Trans-Labrador Highway (Route 500), Route 389 and access roads constructed as part of the Project. Given most of the haulage routes use major roads that have capacity for additional light and heavy vehicles, the Project is

not likely to lead to traffic congestion or increases in travel times for other roads users. Noticeable increases in vehicle movements on roads associated with the Project are likely to be temporary and of a low magnitude and residents are likely to adapt easily to this increase over time.

Wabush Airport will be utilized for the Project to transport goods via air freight, and for transport of non-resident workers during construction, operations and closure. This is expected to increase demand on existing commercial flights at the airport, utilized by residents, businesses and industry across the LSA and RSA. However, the Project will primarily utilize chartered flights for worker transportation. Although there will be some use of commercial flights by staff and contractors, this is not likely to adversely affect availability or cost for local residents. Additional demand may potentially result in expansion of services and increased competition. Champion will continue to monitor any adverse effects on flight availability and cost through coordination with the Labrador West Alliance.

The Project will utilize the QNS&L to transport iron ore from the site to the Pointe-Noire Terminal. This will require construction of 17.6 km of single line track to connect the Project to the existing rail network. Once the Project is operational, about six train movements (four during the day, and two at night) will be generated in one direction per day on the Project's railway Main Line. Additionally, the QNS&L will likely be used for delivery of materials and equipment related to the Project. Although this may result in changes to schedules for other passenger or freight trains using the existing rail network, it is unlikely that services will be cancelled or disrupted due to Project activity. It is expected that Champion will engage with industry, rail operators and relevant government agencies (if necessary) to avoid or mitigate potential effects to existing railway users.

16.5.2.2.5 Safety and Emergency Services

Safety and emergency services will be required in the event of a workplace accident, road safety accident or other emergency that occurs in the SSA. This could increase demand for these services but the likelihood of this occurring is low, due to safety policies and procedures that will be implemented by Champion and its contractors. Champion will also have its own emergency response staff available to support accidents if they were to occur on site (refer to the Emergency Response Plan in Annex 5C).

Population growth associated with the Project may increase demand for safety and emergency services in the LSA, though Labrador West currently has a above average police-to-population ratio. Champion will coordinate with police and ambulance services in advance of the Project to notify them of Project schedule and potential population growth to enable additional resources to be assigned to police and ambulance services if warranted. Therefore, it is expected that there will be negligible adverse residual effects on residents or existing emergency services. Fire services in the area, which face challenges with some types of incidents, may experience an increase in volunteering due to population growth. As Transport Canada has reinstated emergency response services at Wabush Airport, this should reduce concerns for effects on local fire services, which do not currently have the equipment, training or resources to support airport incidents (see Section 16.4.10).

16.5.2.2.6 Recreation and Culture

The LSA is well-serviced with recreational infrastructure and cultural events (Section 16.4.11). Non-resident workforces may utilize recreational facilities in Wabush and Labrador City, particularly during the first two years of construction when workers will be accommodated in the towns. Residents and users of these facilities may notice an increase in the demand for these facilities, particularly in gyms and fitness centres. However, non-resident workers will typically work long shifts during their site rotation and fly-in/fly-out workers have limited transportation options to leave the construction or mine site.

Once accommodations have been established, non-resident workers will be provided with exercise and other recreational facilities at the camp. Therefore, adverse effect on existing users of recreational facilities is expected to be temporary and of a negligible magnitude.

Users of recreational facilities may notice an increase in demand generated by population growth in the LSA associated with the Project. This is likely to be most noticeable for users of sporting facilities, as sporting clubs and teams may benefit from an increase in membership and potential volunteers. However, due to the variety of recreational facilities available to residents (Section 16.4.11), a long-term increase in demand at an individual facility or sporting club is expected to have a negligible effect.

16.5.2.3 Residual Effect Pathways

The following Project interactions were predicted to have residual effect pathways for services and infrastructure and were advanced for further assessment of residual effects (Section 16.5.3).

16.5.2.3.1 Housing and Accommodation

The Project will initially require a non-residential (fly-in/fly-out) workforce during construction, operations and closure. However, Champion will also prioritize the employment of local residents on the Project, particularly during operations. Therefore, there is still a possibility that individuals and families will elect to relocate to Labrador West for employment. This could increase demand and cost for housing in the LSA, reducing availability and affordability for existing residents, particularly those in market rental housing. Champion is engaging with relevant stakeholders to support development of additional housing to accommodate population growth associated with the Project. Champion is proposing the use of both temporary and permanent camps to mitigate the adverse effect on housing demand in the LSA. Champion will continue to work with the Labrador West Alliance to manage the demand on housing and accommodation that occurs in the LSA, with the priority to make more housing available over time to increase the potential for local employment opportunities.

During construction, non-residential workers will initially utilize local accommodation before dedicated facilities are constructed/installed. Short-term accommodation providers may notice an increase in demand, which could benefit these providers, but could reduce availability for use by residents during emergencies and/or visitors for business, special events or activities.

16.5.2.3.2 Child Care

The direct and indirect population growth generated by the Project could increase demand for child care services in the LSA. The provision of child care is a key challenge for the region, with existing demands exceeding capacity of facilities. Additional demand on child care facilities could further affect capacity and the ability of primary care givers to access education and/or employment. Although Champion will coordinate with service providers to communicate the potential increase in demand generated by the Project, existing facilities are sometimes unable to operate at capacity due to difficulties attracting and retaining staff. This indicates that, even with notice, child care services may not be able to expand operations due to staffing limitations.

16.5.2.3.3 Education and Training

Direct and indirect population growth associated with the Project may result in an increase in school-aged children in the LSA, or an increase in adults looking to gain post-secondary training. Education and training facilities may experience an increase in enrolments because of population growth in Labrador City and Wabush. Section 16.4.4 indicates that there are existing challenges with attracting and retaining teaching and supportive staff for the schools, which affects the schools' ability to meet the current demand. This indicates that even with advanced notice of the potential increase in population associated with the Project, education services may not be able to expand its capacity to meet this demand. Therefore, any increase in demand at these services could result in a negative effect for staff and students at schools in Labrador City and Wabush.

The post-secondary education facility in Labrador City currently has experienced challenges sustaining some programs, including courses related to mining, due to low enrolment numbers (IOC 2024). The presence of the Project in the area may result in an increase in interest and enrolments in mining technician programs. This could benefit students wishing to study mining programs and also increase the proportion of residents in the LSA who have relevant qualifications to work at the Project during operations. Given this will also affect a small proportion of local students, this is likely to be a negligible positive effect of the Project.

16.5.2.3.4 Health Care

Health and medical facilities may be utilized through construction and operations by non-resident workforces in the event of accident, illness or for urgent medical care. Resident workers and their families who are attracted to the area during construction or operation would also require access to health care and medical facilities in the LSA. This could increase demand on service providers and reduce availability for existing residents. Health care services in the LSA have challenges with meeting existing demand, primarily due to staffing shortages. This indicates that, even with advanced notice of a potential increase in both non-resident and resident workforces and their families, health services may not be able to expand to meet demand due to challenges with attracting and retaining staff.

16.5.3 Residual Project Effect Analysis

This section provides results of the residual Project effects analysis for services and infrastructure for the residual effects pathways identified in Section 16.5.2.3.

Methods for completing the residual Project effects analysis for services and infrastructure are presented in Section 16.5.1.2.

16.5.3.1 Residual Project Effects Characterization

The Project will require a peak workforce of 1,000 people at its peak, when construction and operational workforces overlap (year three and year four). Although there will be a focus on providing Labrador West residents with employment opportunities during construction, it is expected that many roles may be filled by non-resident workers. During the first year of construction, the workforce (250 people) will be accommodated in Wabush or Labrador City, prior to the permanent workforce camp being constructed. Accommodation at the permanent camp will be available progressively, starting in the middle of the second year of construction, and will be fully operational by the middle of the third year of construction, with a total capacity for 600 workers.

During the last two years of construction, as direct and indirect workforce requirements are expected to increase, a temporary construction camp will be constructed to accommodate an additional 400 workers (allowing for a total of 1,000 non-resident workers associated with the Project). Following transition of the Project to operations, the temporary camp will be decommissioned.

During operations, the Project is expected to require a workforce of 677 people. Most roles will be filled by a non-resident workforce, working on a 14 days on/14 days off shift pattern. Some employees would be located at offices off site or some positions would be staffed by local residents. In line with the Gender Equity, Diversity and Inclusion Plan Champion is currently updating (Annex 5A), Champion will prioritize employment of local residents as much as possible, which could attract some people to the region. Any increase in resident workers will affect housing and accommodation (Section 16.5.3.1.1) and capacity and demand for child care, health care and community support services (Sections 16.5.3.1.2 to 16.5.3.1.4). However, it is expected that most roles would be filled by non-resident workers due to labour and infrastructure constraints (Table 16-8).

16.5.3.1.1 Housing and Accommodation

Workforce requirements for the Project would increase demand and potential cost of local housing and accommodation in the LSA as follows:

- Between 250 and 408 non-resident construction workers will require housing prior to the permanent camp reaching its operational capacity (up to 2.5 years).
- The attraction of individuals and their families as they relocate to the area to fill direct and indirect employment opportunities during Operations.

The housing supply in Wabush and Labrador City is already constrained (Section 16.4.2), and there is limited capacity for the existing housing market to accommodate the increase in demand. Workforce requirements for the Project could, therefore, further decrease the availability and affordability of existing housing and make it more difficult for residents to rent or purchase houses in the LSA. This could lead to indirect effects, such as an increase in financial stress, which in turn could cause an increased demand for support services to address such issues as food insecurity, mental health and family and intimate partner violence (see Section 16.5.2.2.1). Some groups, such as low-income households or those renting their homes, may be more sensitive to the results of increased demand for housing and may cause distress and/or out-migration from the LSA to find more affordable housing in other parts of the province. A decrease in housing availability could also increase barriers to attracting and retaining staff for service providers (Section **Error! Reference source not found.**) and local businesses. This could affect the overall liveability of Wabush and Labrador City for existing residents.

Champion has committed to working with local municipalities and stakeholders through the Labrador West Alliance to advance a regional multi-stakeholder approach to help address common issues, such as labour supply, health care service capacity, transportation access and housing/accommodations. Champion is committed to working with stakeholders through the Labrador West Alliance to create new residential lots to accommodate population growth, as part of their strategy to have a hybrid non-resident and resident workforce. However, there are constraints within the LSA, such as high construction costs, limited real estate developers to manage delivery and sale of additional residential housing, lack of available land to develop and lack of capacity of supporting infrastructure (e.g., water and sewer systems, electricity). The timeline for housing development may not necessarily align with the workforce requirements of the Project, meaning that adverse negative effects on the local housing market and existing residents are still possible despite proposed mitigation measures. Houses constructed specifically to meet the needs of the Project could also be left vacant once closure begins, and workforce requirements reduce. This may lead to a reduction in property value for residents as the market may become saturated with available housing. It also may lead to an increase in vacant housing in the LSA.

Some non-resident workers may utilize short-term accommodation providers in Wabush and Labrador City while the permanent camp is under construction, and at times during operation if the camp is at capacity. The increase in the demand for these facilities would benefit short-term accommodation providers. However, this may decrease the availability, and potentially affordability, of these facilities for visitors to the area. This could reduce tourism opportunities in the LSA and RSA, increase competition for industry that utilizes short-term accommodation to house non-resident workers, and affect the ability of residents to have friends

or family visit. Champion will manage the demand on short-term accommodation providers through the Workforce and Employment Plan, which will include ongoing coordination with short-term accommodation providers and other industry partners to monitor demand on existing facilities and to identify suitable accommodation alternatives if demand exceeds capacity of facilities in the LSA.

16.5.3.1.2 Child Care

Inadequate supply of child care has been an ongoing issue in Labrador West and has affected the ability of all sectors to attract and retain workers, especially women. As identified in Section 16.5.3.1, direct and indirect population growth will occur as workers and their families relocate to fill employment opportunities provided by the Project. This could increase the demand on existing child care services in Wabush and Labrador City. Given the existing constraints in child care supply in the LSA, it is likely that families moving to the area would not be able to access child care services. Any additional demand for child care services could also result in reduced access to these services for local families. This could mean that primary care givers, most likely women, may be required to take on full-time child care responsibilities, and be unable to engage in full-time employment outside of the home. This could reduce the overall household income for families and lead to financial stress and potentially affect the well-being of women who are unable to participate in the labour force. A lack of available child care may result in potential workers deciding to not move to Labrador West or existing residents relocating to another part of the province with better access to child care services and/or family support.

Champion, as part of the Labrador West Alliance, will coordinate with child care service providers to notify them of the potential increase in demand, and although some child care services may be able to increase capacity over the long term, challenges with attracting and retaining child care staff could prevent the sustainable expansion of services in the LSA. Lack of available housing is an existing barrier for attracting child care workers to the LSA. Enhancing ng the resident and non-resident workforce for these services will also increase requirements for housing and accommodations, placing further pressure on the housing market (Section 16.5.3.1.1).

16.5.3.1.3 Education and Training

Population growth associated with the Project will increase demand for education and training facilities in the LSA. Schools in Labrador West experience challenges with attracting and retaining enough teaching and support staff for the current population (NLTA 2023). These staff shortages could be exacerbated by an increase in enrolments at Labrador West schools from population growth associated with the Project. Staff shortages could result in an increase in the teacher-to-student ratio and potentially decrease educational outcomes for students in the long term. Schools would also be limited in their ability to offer extra curricula programs and may not be able to support students with complex or different learning needs. Existing challenges with attracting and retaining teaching staff indicates that, even if Champion notifies the services providers and government agencies of the potential for population growth in advance, the schools may not be able to hire additional teachers to fill these roles. Additional staffing requirements for the schools would increase requirements for available housing and accommodation, placing further pressure on the housing market (Section 16.5.3.1.1). Therefore, even with mitigation measures, noticeable adverse effects on education provision are expected due to the Project.

16.5.3.1.4 Health Care

Health care services will be required to support non-resident workers during construction and operations in the event of illness, workplace accident or medical emergency. Champion will equip the site with first aid services and a basic medical unit. However, for any large or complex matters, non-resident workers will be taken to the local health care centre in Labrador City. Nonetheless, this is not likely to lead to adverse effects for health care facilities, as most incidents are expected to be able to be managed on site, and the likelihood for workplace injury or accident is expected to be low due to Champion's safety policies and procedures.

Population growth associated with the Project will also increase the demand for health care services in the LSA. The Labrador West Health Centre has 28 beds and already faces challenges with capacity and demand for the existing population, mainly due to staffing shortages. Therefore, any increase in demand for these services would be noticeable to residents, leading to increases in wait times for residents and placing additional pressure and stress on staff of the existing facilities This may result in some residents relocating from Wabush or Labrador City to live somewhere with better access to health services.

Champion will coordinate with local health care providers and relevant government agencies to notify them of the Project and the potential increases in population associated with the Project workforce. Champion is also participating in the Labrador West Alliance, which is working collaboratively to address existing health care service shortages and additional demand created by major projects in the area. Health care services are likely to receive additional funding from the government to meet additional population demand, as the NL health care system is operated on needs-based funding model. However, the ability of services to operate at full capacity would be dependent on their ability to attract and retain health care professionals. Labrador West typically has health care staff vacancies, which indicates that services are already unable to operate at full capacity to support the existing population. Lack of available housing has been identified as a barrier to attracting health care staff to the LSA. Additional staffing requirements for

these services would increase requirements for available housing and accommodation, placing further pressure on the housing market (Section 16.5.3.1.1). Therefore, even with mitigation measures, noticeable adverse effects on health care provision are expected due to the Project.

Table 16-8: Characterization of Residual Effects on Services and Infrastructure Measurable Parameters

Residual Effect	Criterion	Rating/Effect Size
Housing and accommodation	Nature	Adverse: Demand for housing will increase beyond existing capacity.
	Magnitude	Moderate: Demand for housing and accommodations will increase with limited anticipated changes to supply, and cost of available housing could also increase.
	Geographic extent	Local
	Duration	Medium term: Demand for housing would be experienced over the life of the Project.
	Timing	Not applicable
	Reversibility	Reversible
	Frequency	Continuous
	Probability of occurrence	Certain
	Ecological and socio-economic context	Demand for housing and accommodation likely to exceed existing vacancy and capacity in the housing market, particularly during the first two years of Construction when non-resident workers would be required to be accommodated in Wabush and Labrador City.
Child Care	Nature	Adverse: Demand for child care will increase with limited anticipated changes to supply.
	Magnitude	Moderate: Existing child care services are experiencing challenges to support current population. Users and potential users of these facilities would be sensitive to any increase in demand or decline in availability.
	Geographic extent	Local
	Duration	Medium term: Service providers could take years to increase operational capacity to support increase in population growth.
	Timing	Not applicable
	Reversibility	Reversible
	Frequency	Continuous
	Probability of occurrence	Probable, though it depends on the composition of the population attracted to live in the area
	Ecological and socio-economic context	Increase in permanent population (families) associated with the Project would increase demand for child care, beyond existing service capacity.
Education and Training	Nature	Adverse: Demand for education will increase beyond existing staffing capacity.
	Magnitude	Moderate: Services are experiencing human resource challenges to support existing population. Users and potential users of these facilities would be sensitive to any increase in demand or decline in availability.
	Geographic extent	Local
	Duration	Medium term: Service providers could take years to increase operational capacity to support the increase in population growth.
	Timing	Not applicable
	Reversibility	Reversible
	Frequency	Continuous
	Probability of occurrence	Probable, as it depends on the composition (families) of the population attracted to live in the area
	Ecological and socio-economic context	Increase in population associated with the Project would increase demand for education, beyond existing capacity of these services.

Residual Effect	Criterion	Rating/Effect Size
Health Care	Nature	Adverse: Demand for health care will increase beyond the existing capacity.
	Magnitude	Moderate: Services are experiencing challenges to support existing population. Users of these facilities who may be affected would be sensitive to any increase in demand or decline in availability of these services.
	Geographic extent	Local
	Duration	Medium term: Service providers could take years to increase operational capacity to support increase in population growth.
	Timing	Not applicable
	Reversibility	Reversible
	Frequency	Continuous
	Probability of occurrence	Probable, as it depends on the demography of the population attracted to live in the area.
	Ecological and socio-economic context	Increase in population associated with the project would increase demand for health care, beyond the existing capacity of these services.

16.5.3.2 Significance Determination

As described in Section 16.5.1.4, a significant adverse effect on services and infrastructure was defined as demand resulting from the Project that exceeded the existing capacity of services and infrastructure on an ongoing and consistent basis during the life of the Project.

The change in demand on services and infrastructure was assessed based on the Project description and existing conditions of services and infrastructure in the LSA. The predicted demand for housing and accommodation, child care, education and training and health care services was found to exceed the existing capacity of these services and infrastructure in the LSA on an ongoing and consistent basis. **Therefore, a significant adverse effect on housing and accommodation, child care, education and training, and health care services is predicted**. Effects are greatest to be during the final years of construction and initial years of operation, when the demand on these services will be highest.

16.5.4 Residual Cumulative Effects Analysis

16.5.4.1 Reasonably Foreseeable Developments and Potential Cumulative Effects

Chapter 4 provides a list of known RFDs and physical activities that have potential to overlap spatially and temporally with the Project's residual environmental effects. Based on this list, RFDs with the potential to overlap spatially and/or temporarily with the Project, identified in Table 16-9, were assessed for possible interactions with the residual Project effects on services and infrastructure. This analysis indicates that there are no potential cumulative effects expected for services and infrastructure in the LSA with these RFDs (see Table 16-9). However, it should be noted that the cumulative effects of existing operations, including other mining and construction projects, in the area may lead to cumulative demand on services and infrastructure. These cumulative effects have been considered in Section 16.5.2, as they are considered part of the existing environment. Champion is committed to collaborating with the Labrador West Alliance to identify and manage cumulative effects to services and infrastructure as they arise.

Table 16-9: Other Projects and Activities Considered in the Cumulative Effects Assessment

Project Name or Physical Activity	Description of Project Effects	Approximate Direct Distance to Kami Mining Project Site	Status/Timing	Interaction with Residual Effects to Services and Infrastructure from Kami Mining Project
Bloom Lake Iron Mine – Phase II Expansion	Non-resident workforce leading to change in demand for housing, services and infrastructure	17 km	Ongoing, in operation	No, the project would not result in direct or indirect change in demand for housing, services and infrastructure in the LSA, as Bloom Lake is operated by a non-resident workforce, and is owned and managed by Champion.

Table 16-9: Other Projects and Activities Considered in the Cumulative Effects Assessment

Project Name or Physical Activity	Description of Project Effects	Approximate Direct Distance to Kami Mining Project Site	Status/Timing	Interaction with Residual Effects to Services and Infrastructure from Kami Mining Project
Scully Mine Tailings Impoundment Area Expansion Project	Construction activities leading to change in demand for housing, services and infrastructure	13 km	Construction not yet initiated	No, the project would not result in direct or indirect change in demand for housing, services and infrastructure, as the Scully Mine Tailings Impoundment Area Expansion Project would not require additional non-resident workers during construction or operation.
Route 389 Improvement Program – Project A between Fire Lake and Fermont	Non-resident workforce leading to change in demand for housing, services and infrastructure	Approximately 6 to 93 km	In construction	No, the project would not result in direct or indirect change in demand for housing, services and infrastructure, as the Route 389 Improvement Program would utilize temporary camps located near the project site. Although there would be non-resident workers in the area, they are not likely to travel to Fermont, Wabush or Labrador City to access services.
Rio Tinto IOC Western Hillside Tailings Pipeline	Non-resident workforce leading to change in demand for housing, services and infrastructure	15 km	In construction	No, the project would not result in direct or indirect change in demand for housing, services and infrastructure, as the Rio Tinto IOC Western Hillside Tailings Pipeline would not require additional non-resident workers during construction or operation.
Rio Tinto IOC Smallwood North Extension Project	Non-resident workforce leading to change in demand for housing, services and infrastructure	25 km	In construction	No, the project would not result in direct or indirect change in demand for housing, services and infrastructure, as the Rio Tinto IOC Smallwood North Extension Project would not require additional non-resident workers during construction or operation.
Labrador City Humphrey South Iron Ore Extension	Non-resident workforce leading to change in demand for housing, services and infrastructure	20 km	In construction	No, the project would not result in direct or indirect change in demand for housing, services and infrastructure, as the Labrador City Humphrey South Iron Ore Extension would not require additional non-resident workers during construction or operation.

LSA = local study area; Champion = Champion Iron Mines Limited; IOC = Rio Tinto Iron Ore Company of Canada.

16.6 Prediction Confidence and Uncertainty

A key element of a comprehensive environmental assessment is the prediction of future conditions of the environment as a result of the Project combined with previous and existing projects, activities and RFDs. Given that environments change naturally and continually through time and across space, assessments of effects and predictions about future conditions embody some degree of uncertainty (CEA Agency 2018).

The purpose of this section is to identify the key sources of uncertainty and qualitatively describe how uncertainty was addressed for services and infrastructure to increase the level of confidence that effects would not be larger than predicted, including the potential need for monitoring and adaptive management that can reduce uncertainty over time (Section 4.10).

Confidence in effects analyses can be related to many elements regarding services and infrastructure, including the following:

- adequacy of the baseline data for providing an understanding of the existing conditions
- the nature, magnitude, and spatial extent of future fluctuations in ecological, cultural, and socio-economic variables, independent of effects from the Project and other developments (e.g., climate change, fire, flood)
- assumptions, conditions, and constraints of quantitative model inputs
- understanding of Project-related effects on complex social-ecological systems that contain interactions across different scales of time and space (e.g., how and why the Project would influence wildlife and Indigenous Land and Resource Use)
- knowledge and experience with the type of effect in the system
- knowledge of the effectiveness of proposed Project environmental design features or mitigation for avoiding or minimizing effects
- uncertainties associated with the exact location, physical footprint, activity level, and the timing and rate of future developments

There is a high level of confidence in the prediction, based on the extent of the information regarding socio-economic baseline conditions at the time of preparing this assessment. However, this confidence is contingent on the socio-economic baseline conditions remaining consistent at the time of Project construction and operation. The magnitude of residual effects could change in light of socio-economic variables (such as the operation or closure of other projects in the area, the construction of additional housing), that are outside of Champion's influence or control. Nonetheless, the mitigation measures proposed for the Project have shown to be effective in managing similar effects on other mining projects. Construction of another project in the region that enables infrastructure development, such as housing and additional services, could also benefit this Project and reduce the potential for negative adverse effects.

16.7 Monitoring, Follow-up, and Adaptive Management

This section presents a summary of the identified monitoring and follow-up required to confirm effects predictions and address uncertainty identified in Section 16.6.

Specifically, follow up and monitoring programs will be used to:

- coordinate implementation of mitigation measures with other stakeholders, decision-makers and operators in the area
- evaluate the effectiveness mitigation actions, and modify or enhance as necessary through monitoring and developing updated mitigation measures (if needed)
- identify unanticipated negative effects, including possible accidents and malfunctions
- contribute to the overall continual improvement of the Project

Monitoring, follow-up and adaptive management for Project effects to services and infrastructure will occur through the implementation of:

- Emergency Response Plan
- Transportation Impact Study and Traffic Management Plan
- Kami Engagement Plan
- Workforce and Employment Plan
- Gender Equity, Diversity and Inclusion Plan

Where relevant, adaptive management measures to address the uncertainties associated with the effects predictions and mitigation, may be proposed. Specific effects to services and infrastructure will also be monitored through ongoing consultation with Indigenous groups, and participation in the Labrador West Alliance with other mining companies, the municipalities of Wabush, Labrador City and Fermont, businesses and government agencies.

16.8 Predicted Future Conditions Should the Project Not Proceed

If the Project was to not proceed, demand on services and infrastructure would remain the same as existing conditions, unless other projects in the area were to increase their residential employees, or another large project with a residential workforce was proposed in the area. Future conditions for services and infrastructure would also be influenced by the investment in expansion of housing, services and infrastructure by the government or other investors.

16.9 Fermont

This section describes how residual effects identified in Section 16.5.3 could interact with services and infrastructure in Fermont due to its proximity to the provincial border with Labrador, and the SSA. The key issues raised by Town of Fermont during consultation and engagement for the previous and current environmental assessment relevant to services and infrastructure, and the potential interaction with the Project and any residual effects, are shown in Table 16-10.

Table 16-10: Key Issues Raised by Town of Fermont

Key Issue (see Table 16-2)	Approach to Assessment
Concerns related to the availability of electricity	As determined in Section 16.5.1.2, the Project is not expected to lead to adverse effects on the availability of electricity, as Champion is working directly with NL Hydro to support connection of the Project with power supply infrastructure (which is not included in the scope for this assessment).
Effects on availability and costs of housing	See Section 16.9.1
Capacity of services (general)	See Sections 16.9.2 to 16.9.4
Effects on Wabush Airport	Residents of Fermont utilize the Wabush Airport as the closest airport. However, there are no expected adverse effects from the Project on the availability or cost of flights for residents of Fermont, as the Project will primarily utilize chartered aircraft for transportation of workers.
Effects on municipal infrastructure	As determined in Section 16.5.1.2, the Project is not expected to lead to adverse effects on municipal infrastructure in Fermont. Regarding use of municipal services, Champion is committed to implementing its own waste management and water supply services for the Project site and work with the Towns of Labrador City and Wabush on waste management.

Champion = Champion Iron Mines Limited; NL = Newfoundland and Labrador.

16.9.1 Housing and Accommodation

Fermont faces housing challenges, particularly in availability and affordability (Radio Canada 2024b). Contributing factors include the presence of non-resident workers, some of whom occupy homes, geographic remoteness raising construction costs, high labour expenses and a shortage of skilled workers (Radio Canada 2024c; 2024b). However, Fermont is committed to expanding residential opportunities by making 40 additional housing lots available for development.

Three short-term accommodation providers are based in Fermont. The large non-resident workforce in Fermont is housed in dedicated accommodations as well as housing in the town. ArcelorMittal owns most dwellings (Radio Canada 2024a), of which some are used to house workers who are fly-in, fly-out. The lack of available housing in Fermont is a key barrier to the attraction and retention of residents.

Due to the housing scarcity experienced in Fermont, it is unlikely that there will be an effect from population growth associated with the Project. If more market housing (not owned by ArcelorMittal) becomes available through additional investment, some workers may be attracted to move to Fermont to work for the Project, due to the short driving time between Fermont and the site (about 15 to 20 minutes). Short-term accommodation providers in Fermont may experience an increase in demand from visitors to the area associated with the Project, particularly during peak times should short-term accommodation providers be at capacity in Labrador City and Wabush. This would be monitored through Town of Fermont's participation in the Labrador West Alliance with Champion and other stakeholders.

16.9.2 Child Care

Fermont has one child care facility with a total capacity of 78 children, which is expected to expand to 100 children in 2025 (ArcelorMittal 2025). Key challenges include the limited capacity of the current facility, and difficulties in attracting and retaining child care workers, which further reduces operational capacity.

Given that child care is a provincial responsibility with associated regulations and funding programs, residents of Labrador West would be unable use regulated child care services in Fermont.

16.9.3 Education and Training

Education facilities in Fermont are limited to one primary school and one combined primary and secondary school. Recruiting and retaining staff at schools in Fermont is a challenge, with some positions being filled by teachers who have not yet received their full qualifications so that each class had an adult present and can remain open (CFMF 2024).

Given that education is a provincial responsibility, residents of Labrador West would be unable access education in Fermont.

16.9.4 Health Care

Primary health services in Fermont are provided by Centre de santé et de services sociaux de l'Hématite, which has six hospital beds and two observation beds, and offers a broad range of medical and social services, including general health care, and specialized clinics to address various needs (MSSS 2012). The services also support residents of other communities, including Schefferville.

Given existing constraints in health care services in Labrador West (see Section 16.4.5), it is possible that workers associated with the Project may wish to access health care in Fermont, particularly if wait times are shorter than those experienced in Labrador West. Any additional demand on health care providers in Fermont would be monitored through Town of Fermont's participation in the Labrador West Alliance with Champion and other stakeholders.

16.10 Key Findings and Conclusions

This chapter summarized available information on services and infrastructure in the SSA, LSA and RSA and analyzed the potential effects of the Project on this VEC. Design changes have been made to the Project to mitigate effects on services and infrastructure to the extent possible, such as the inclusion of a permanent camp to accommodate up to 600 workers for the lifespan of the Project.

Through preparation of a thorough baseline and spatial analysis, significant adverse effects were predicted for housing and accommodation, child care, education and training, and health care. These services and infrastructure are experiencing challenges meeting the demand of the existing population, and any population growth associated with the Project would increase demand and possibly lead to exceeding capacity. Although mitigation measures have been proposed, the ability for this to effectively manage or minimize adverse negative effects is limited.

Fermont also faces challenges with meeting demand for particular services and infrastructure from the current resident and non-resident population, which limits the potential for Labrador West residents to travel to Fermont to access services. Therefore, it is not likely that the Project will result in additional demand for services and infrastructure in Fermont.

Ongoing collaboration and coordination with local stakeholders, service providers, government and other operators, including participation in the Labrador West Alliance, is required to manage adverse negative effects and to adapt to changing socio-economic conditions. The previous EIS did not find residual negative effects for services and infrastructure, which indicates the increasing awareness and demand that has been placed on these services in the time since this EIS was prepared.


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17. Community Health and Well-Being

The purpose of **Chapter 17, Community Health and Well-Being** is to characterize the existing environment and assess interactions between the Kami Mining Project (the Project) and the environment and potential residual and cumulative effects of the Project on community health and well-being. Community health and well-being is influenced by and reflected in the physical, social, emotional and mental health of a community's population and overall perceptions of these factors. Within the scope of this Environmental Impact Statement (EIS), community health and well-being refers to potential effects on human health resulting from changes to air quality, soil quality, potential contamination of country foods (e.g., berries, fish and wild game) and drinking water quality, as well as the effects of changes to visual aesthetics.

The Project may also affect community health and well-being through changes associated with other socioeconomic Valued Environmental Components (VECs) as identified in Table 17-1. For example, the Project will result in changes in the landscape that could potentially affect the Aboriginal Rights of Indigenous Peoples (**Chapter 13, Indigenous Land and Resource Use**) or surrounding land and resource use (**Chapter 14, Other Land and Resource Use**), including reducing areas accessible for recreation and leisure activities. Further, economic benefits from employment opportunities associated with the Project, as discussed in **Chapter 15, Economy and Employment**, may contribute positively to health and well-being within affected communities. **Chapter 16, Services and Infrastructure** discusses effects on important community amenities (e.g., housing, health care, child care) and other supports (e.g., food bank, women's shelter) that contribute to health and well-being and the ability of community members to participate in meaningful education and employment opportunities.

The topics considered within the context of community health and well-being overlap with biophysical VECs examined in the EIS. Effects on air quality are addressed in **Chapter 5, Air Quality and Climate** and effects on noise, vibration and light are discussed in **Chapter 6, Noise, Vibration, and Light**. Thus, this chapter provides summaries where appropriate and directs readers to relevant discussions elsewhere in the EIS for a technical analysis of potential effects.

The requirements in the provincial EIS Guidelines for the Project issued by the Newfoundland and Labrador (NL) Minister of Environment and Climate Change (GNL 2024) involve a variety of socioeconomic topics to be addressed in the EIS including issues related to community health and well-being. These other issues have been divided among the socioeconomic VECs in Chapters 13 through 17 to reflect the best fit based on content (Table 17-1).

Table 17-1: Socioeconomic Valued Environmental Components and Issues Addressed

Valued Environmental Component	Issues Addressed
Indigenous Land and Resource Use (Chapter 13)	Indigenous communities and organizations
	Indigenous land and resource use
	Traditional, cultural and recreational activities
Other Land and Resource Use (Chapter 14)	Municipalities with municipal plans and development regulations
	Extent of developed and undeveloped land
	Protected public water supply areas
	Parks and protected areas
	Land tenure
	Existing mining operations and planned expansions
	Accessibility of land for potential future mineral exploration and mining
	Current and historical land use for mining, mineral exploration and quarrying activities including the presence of known mineral occurrences of potential economic significance
	Tourism-generating resources and operators (e.g., outfitter/guiding operators)
	Cabins
	Recreation areas (e.g., trails, multi-use trails, scenic lookouts, natural attractions)
	Recreation activities (e.g., hiking, hunting, fishing, swimming, berry picking)
	Domestic wood harvesting areas
Economy, Employment and Business (Chapter 15)	Employment and employment equity and diversity including under-represented groups
	Business capacity relative to goods and services

Valued Environmental Component	Issues Addressed
Services and Infrastructure (Chapter 16)	Wastewater
	Private, semi-public and public drinking water systems
	Food security
	Housing, accommodations and property values
	Health care and community services including mental health and addiction services and social programs
	Fire and emergency services
	Education and training services and facilities
	Municipal infrastructure or services and capacity
	Existing electrical infrastructure
	Existing railroad facilities
Community Health and Well-Being (Chapter 17)	Vibrations, noise emissions and noise levels including sustained low frequency noise
	Light emissions including night lighting
	Dust and air emissions
	Landscapes and viewscapes

Changes as a result of the Project could potentially affect the community of Fermont, Québec, which is beyond the jurisdiction of the Government of NL for the purpose of the environmental assessment. Where considerations related to Fermont arise, they are treated separately in Section 17.9. Nonetheless, references are sometimes made to Fermont throughout the assessment of effects on community health and well-being to facilitate an integrated understanding of effects.

17.1 Approach to the Effects Assessment

The methods and assessment presented in this chapter were developed in consideration of the requirements under the provincial *Environmental Protection Act*, with specific consideration of the requirements established in the provincial EIS Guidelines for the Project issued by the Minister of Environment and Climate Change (GNL 2024). A table of concordance to the EIS Guidelines is provided in the Executive Summary. The assessment of community health and well-being followed the overall effects assessment approach and methods (**Chapter 4, Effects Assessment Methodology**).

Where possible, comparison to the outcomes of the assessment of community health and well-being completed within the previous EIS (Alderon 2012) has been made to highlight where effects on community health and well-being have been reduced through consideration of environmental design features and mitigation, or where new adverse effects may be introduced and require additional consideration in Project planning.

17.2 Integrating Engagement from Indigenous Groups and Local Stakeholders

The Project previously underwent an environmental assessment process between 2011 and 2014. Alderon, the previous owner of the Kami property, consulted with Indigenous groups and local stakeholders as part of that process. Similarly, Champion Kami Partner Inc. (Champion) has been engaging with potentially affected Indigenous groups and local stakeholders since acquisition of the Project in 2021. The overall approach and methods for incorporation of engagement feedback into the EIS are discussed in detail in **Chapter 22, Engagement**.

Issues and concerns related to community health and well-being raised by Indigenous groups and local stakeholders and how they were addressed through the assessment are summarized in Table 17 including cross references to appropriate sections of the document.

Table 17-2: Summary of Issues and Concerns Related to Community Health and Well-Being by Indigenous Groups and Local Stakeholders

Comment Theme	How it is Addressed in the Assessment	Where it was Addressed in the Assessment	Indigenous Group or Local Stakeholder	Raised in the Alderon EIS (Yes/No)
Stakeholders expressed concern about the effects of dust in the area	Champion has prepared modelling to better understand potential effects on air quality and the effectiveness of mitigation measures.	Chapter 5, Air Quality and Climate (Section 5.5.2)	Kami Working Group Duley Lake Cabin Owners Association (DLCOA) Riordan Lake Cabin Owners Association (RLCOA) Mills Lake Cabin Owners Association (MLCOA) Town of Wabush Town of Labrador City Town of Fermont	Yes
Stakeholders expressed concerns related to visual aesthetics	Champion has prepared a Visual Aesthetics Impact Assessment (VAIA) to illustrate potential effects on viewscapes.	Viewscapes are addressed in this VEC (Section 17.5.3).	Kami Working Group DLCOA RLCOA MLCOA Town of Wabush Town of Labrador City Town of Fermont	No
Stakeholder expressed concern over discharges into Duley Lake	Champion's environmental management program includes water management infrastructure and a water treatment plant to protect lakes near the Project.	Chapter 2, Project Description Chapter 8, Surface Water (Section 8.5.3)	Cabin owners in proximity to the Project DLCOA	No
Stakeholder requested investigation of the buffer zone between the overburden stockpile and Duley Lake Provincial Park Reserve	Champion has designed the Project to minimize the footprint to the extent possible.	Chapter 2, Project Description Chapter 10, Vegetation, Wetlands and Protected Areas (Section 10.5.3)	Cabin owners in proximity to the Project RLCOA	No
Indigenous group expressed concern about accumulation of mine rock piles creating dust in the surrounding area	Champion has prepared modelling to better understand potential effects on air quality. Section 5.3 of the VAIA illustrates potential changes to viewscapes.	Viewscapes are addressed in this VEC (Section 17.5.3). Chapter 5, Air Quality and Climate (Section 5.5.2)	Innu Takuaikan Uashat Mak Mani-Utenam (ITUM)	No
Town expressed concern about changes in water quality affecting fish and fish habitat	Champion's environmental management program includes water management infrastructure and a water treatment plant to protect lakes near the Project.	Chapter 8, Surface Water (Section 8.5.3) Chapter 9, Fish and Fish Habitat (Section 9.5.3)	Town of Labrador City	Yes
Town noted a preference for dust suppression spraying as an additional mitigation measure	Champion identified Project-specific mitigation measures and adaptive management related to dust.	Chapter 5, Air Quality and Climate (Section 5.5.2)	Town of Wabush	No

Comment Theme	How it is Addressed in the Assessment	Where it was Addressed in the Assessment	Indigenous Group or Local Stakeholder	Raised in the Alderon EIS (Yes/No)
Town expressed concerns about air quality	Champion has assessed potential effects on air quality, including dust. Champion identified Project-specific mitigation measures and adaptive management related to dust.	Chapter 5, Air Quality and Climate (Section 5.5.2)	Town of Wabush	Yes

DLCOA = Duley Lake Cabin Owners Association; EIS = Environmental Impact Statement; MLCOA = Mills Lake Cabin Owners Association; RLCOA = Riordan Lake Cabin Owners Association; VAIA = Visual Aesthetics Impact Assessment; VEC = Valued Environmental Component.

17.3 Assessment Scoping

This section identifies key issues for community health and well-being, defines and provides a rationale for selection of community health and well-being as a VEC, identifies measurable parameters selected for the assessment and defines assessment boundaries for the VEC.

17.3.1 Key Issues

Key issues often relate to potential environmental, social, economic and health effects of a proposed project. Key issues identified for this Project reflect the primary concerns raised by regulatory authorities, Indigenous groups and local stakeholders, residents, cabin owners, business owners and other interested parties.

To identify key issues related to community health and well-being, the following sources were reviewed:

- Section 4.1 of the EIS Guidelines, which summarized key issues from regulatory agencies and feedback received on the Project Registration and draft EIS Guidelines
- the record of engagement (Chapter 22), which captures engagement input received through meetings, phone calls, letters and interviews
- experience with mining projects in Labrador West
- the key issues identified in the previous EIS (Alderon 2012), which were as follows:
  - characterization of all possible sources of contaminants/emissions, exposure pathways and consumption patterns that may generate health impacts in Labrador or Québec (e.g., respiratory concerns for sensitive components of the population), if any
  - potential for health impacts that may arise from changes in water quality and quantity
  - effects of the Project on the health and safety of Project workers, and those working in the areas affected by the Project, including the possible effects of any accidents or spills
  - effects of the Project on social factors, such as substance abuse and crime rates.

As mentioned above, issues related to community health and well-being are inherently complex and closely interconnected with other VECs examined in this EIS. However, issues directly linked to community health and well-being not addressed in other VECs are examined in this chapter.

Key issues related to community health and well-being include potential Project-related:

- human health issues resulting from environmental changes
- dust and air emissions
- vibrations, noise emissions and noise levels including sustained low frequency noise
- light emissions including night lighting
- changes to viewscapes.

17.3.2 Valued Environmental Components and Measurable Parameters

Community health and well-being was selected as a VEC because it was identified as an important consideration in the EIS Guidelines. It also has inherent importance to the well-being of humans, the natural environment, and health and safety regulatory requirements. In the absence of mitigation, Construction and Operations of the Project could potentially affect air quality, noise, vibration or light, human health and/or viewscapes. Air quality, noise, vibration and light were assessed in other VECs with the results summarized below; these VECs are not considered further in this chapter. Human health and viewscapes are the basis of the effects assessment for community health and well-being.

17.3.2.1 Air Quality

The effects assessment for air quality is presented in Chapter 5. In summary, a significant residual effect was predicted during operations, as the NL Ambient Air Quality Standards would be exceeded just outside the surface leases for total particulate matter (TPM) 35% of the year and particulate matter less than 10 micrometres (PM_{10}) 33% of the year within the local study area (LSA) for air quality. Within the air quality regional study area (RSA), ground-level concentrations of TPM and PM_{10} were predicted to be above the NL Ambient Air Quality Standards at the maximum exposure predicted for a cabin receptor. Concentrations above the NL Ambient Air Quality Standards would occur infrequently at the cabin receptor (<1% of the year for TPM and up to 4% of the year for PM_{10}), Duley Lake South (<1% of the year for TPM and 1% of the year for PM_{10}) and Fermont (<1% of the year for PM_{10}), because coarse particulates disperse with increased distance from the Project. Thus, no exceedances of the NL Ambient Air Quality Standards were predicted for particulate matter less than 2.5 micrometres ($PM_{2.5}$), nitrogen dioxide, sulphur dioxide, carbon monoxide and metals at the cabin or communities. The results of air quality modelling were incorporated into the HHRA, which is the basis for evaluation of effects of human health. Noise, vibration and light is assessed in Chapter 6 and also considered within the context of this chapter.

17.3.2.2 Noise, Vibration and Light

The effects assessment for noise, vibration and light is presented in Chapter 6, where the effects of noise, vibration and light were analyzed separately using appropriate methods to predict potential effects of the Project. The results of the analyses take into account the analytical methods and implementation of mitigation measures. Following these analyses, Project-related effects for noise, vibration and light were all predicted to be not significant. Local communities, cabins, and existing mining operations contribute to the existing environment for noise, vibration and light and therefore the ecological and socio-economic context is considered to be disturbed. Summaries are presented below and comprehensive information is provided in Section 6.5.

17.3.2.2.1 Noise

Noise from the Project has the potential to cause adverse effects during Project Construction and Operations. The results of the analysis for noise indicates some differences between noise for Construction and Operations.

The magnitude of residual effects from increased noise during Construction may range from low to moderate, depending on the distance between identified potential points of reception (PORs) and construction activities. Therefore, residual effects were conservatively assessed to be moderate in magnitude. Residual effects are expected to be local in geographic extent as effects are limited to the LSA and short term as effects occur during Construction. The effects are reversible as they will cease when the Project ends, periodic as they are expected to be intermittent, and probable as they are likely to occur.

The magnitude of residual effects from noise during Project Operations is predicted to be moderate, as perceptible changes in noise levels are expected to be within criteria limits established by Health Canada and the Québec Noise Guideline. Residual effects were assessed to be local in geographic extent as they are limited to the LSA and medium term as the effects will occur in the short-term and through the duration of the Project. The effects are reversible as they will cease when the Project ends, continuous as they are expected to occur all the time, and certain to occur.

17.3.2.2.2 Vibration

Vibration from the Project has the potential to cause adverse effects during Project Construction from blasting and use of mobile construction equipment, and during Operations due to ongoing blasting at the mine. Effects are predicted to be similar for vibration during Construction and Operations for the Project.

During Construction and Operations, vibration levels are expected to occasionally increase at the potential PORs. Vibration levels are expected to increase most during blasting in both phases. The magnitude of residual effects from Project Construction and Operations vibration are predicted to be moderate, as vibration levels are expected to remain below Quebec's Directive 019 vibration and overpressure limits. Residual effects were assessed to be local in geographic extent as they are limited to the LSA and short term to medium term as the effects occur during Construction and Operations. The effects are reversible as they will cease when the Project ends, periodic as they are expected to be intermittent, and certain to occur as blasting is required as part of the site preparation and startup and extraction of rock during development of the open pit mine.

17.3.2.2.3 Light

Light from the Project has the potential to cause adverse effects during Project Construction due to the use of mobile equipment and portable light plants, and during Project Operations due to the use of mobile equipment and fixed lighting. Effects are predicted to be similar for vibration during Construction and Operations for the Project with the exception of duration resulting from length of the Project phases: short term for Construction and medium term for Operations.

The magnitude of residual effects from Project Construction and Operations lighting are predicted to be moderate, because perceptible changes in light levels may occur due to the Project but they are expected to be within zone criteria established by the Commission Internationale de l'Éclairage (CIE). Residual effects were assessed to be local in geographic extent as the effects are limited to the LSA. Effects are reversible as they will cease when the Project ends, periodic as they are expected to be intermittent, and probable as they are likely to occur.

17.3.2.3 Selected Valued Environmental Components and Measurable Parameters

As air quality and noise, vibration and light are addressed in other VEC chapters, no measurable parameters for these VECs were identified for community health and well-being. Table 17-3 provides rationale for selection and lists the measurable parameters.

Table 17-3: Valued Environmental Components, Rationale for Selection and Measurable Parameters

Valued Environmental Component	Rationale for Selection	Measurable Parameters	Linkages to other VECs
Community health and well-being	Potential changes that may affect community health and well-being include Project-related effects on human health or viewscapes, affecting quality of life.	— Change in human health — Change in viewscapes	— Air Quality and Climate (Chapter 5) — Noise, Vibration and Light (Chapter 6) — Groundwater (Chapter 7) — Surface Water (Chapter 8) — Other Land and Resource Use (Chapter 14) — Services and Infrastructure (Chapter 16)

VEC = Valued Environmental Component.

17.3.2.3.1 Human Health

Human health is important to community members, government, Indigenous groups and local stakeholders. The health of residents can potentially be affected if they live, recreate or consume natural resources near a project site. Additionally, employees working on a project may also be affected. Measurable parameters are used to assess change and predict overall effects on VECs. The selected measurable parameter for health and well-being is human health.

17.3.2.3.2 Viewscapes

The aesthetics of the landscape is the visual character (i.e., topography, water features, vegetation, cultural features) or condition of resources related to the landscape's ability to provide scenic appeal for viewers. Landscape aesthetics is valued by individuals, society, and particularly persons involved in recreational or tourism land use activities. Visual aesthetics was selected as the measurable parameter for assessment of potential effects of the Project on viewscapes.

17.3.3 Assessment Boundaries

Assessment boundaries define the spatial and temporal extents of the assessment for each VEC. The spatial boundaries for community health and well-being, defined in the following sections and shown in Figure 17-1, consist of the site study area (SSA), a local study area (LSA) and a regional study area (RSA). The assessment boundaries were selected through alignment with the spatial boundaries of the relevant measurable parameters of community health and well-being that are linked to the Human Health Risk Assessment (HHRA; TSD XI) and Visual Aesthetics Impact Assessment (VAIA; TSD X).

17.3.3.1 Human Health Risk Assessment Study Areas

The spatial boundaries for the HHRA (TSD XI) were defined as the study areas identified by the air quality and water quality disciplines, as these disciplines estimated the predicted Project-related changes to air quality and water quality to support the HHRA for the Project. The SSA, LSA and RSA outlined in Figure 17-1 include:

- **SSA**–Project footprint (with addition of a boundary intended to capture the maximum area of Project disturbance).
- **LSA**–where measurable changes to VECs resulting from the Project may be anticipated.
- **RSA**–maximum geographical extent of direct and indirect effects of the Project, as well as the area within which the potential effects of the Project may interact with the effects of other projects in the region (i.e., a cumulative effect assessment).

The LSA for air quality is a 40 km by 40 km boundary from the centre of the Project, and captures Labrador City and Wabush, Labrador and Fermont (Table 17-4). The LSA for water quality includes waterbodies and watercourses or local watershed and sub-watersheds around the Project (i.e., Pike Lake, Daviault Lake, Molar Lake, Mills Lake, Duley Lake, Waldorf River, Rectangle Lake and Riordan Lake), which overlap with the Project and represents the scale to which most or all effects to surface water are anticipated.

Predicted changes to water quality were modelled for various lakes (i.e., Duley Lake, Pike Lake, Walsh River, Rose Pit Lake, Mills Lake, Waldorf River, Riordan Lake, Rectangle Lake) in the LSA (TSV VI and Chapter 8). However, the HHRA focused on lakes receiving direct discharge of effluent (i.e., Duley Lake) and those most influenced by site water management (i.e., Pike Lake and Riordan Lake). These three lakes are also relevant for human use.

The RSA includes additional areas beyond the LSA with a potential for overlapping air contaminants, and captures Tacora Resources' Scully Mine, Rio Tinto Iron Ore Company's Labrador City Operations, ArcelorMittal's Mont-Wright Mine, Champion's Bloom Lake Mine and Tata Steel Minerals Canada's Direct Shipping Ore Project.

17.3.3.2 Visual Aesthetics Impact Assessment Study Areas

Viewing distance affects the level of visible level in the landscape, as nearer visual elements are more discernible and prominent to the observer (TSD X). For the purposes of the VAIA, three study area boundaries were defined as the SSA, the LSA and the RSA (Figure 17-1).

- **SSA**–Project footprint and a 100 m buffer area around any Project infrastructure.
- **LSA**–1 km around the SSA encompassing foreground viewing distances where Project components are more discernible and prominent to viewers (Table 17-4).
- **RSA**–1 km to 5 km from the SSA encompassing background viewing distances that are 1 km to 5 km from the SSA, where changes to the landscape may be visible but are less discernible and prominent than foreground viewing distances.

Table 17-4: Spatial Boundaries for Assessment of Community Health and Well-Being Valued Environmental Component

Study Area	Area (ha)	Description/Rationale
SSA	4,323 ha	The proposed infrastructure for the Project (i.e., the Project footprint) and including buffers applied to the outer edges of the Project footprint.
LSA	160,000 ha	Human Health: The LSA is a 40 km by 40 km boundary from the centre of the Project, capturing Labrador City, Wabush and Fermont.
	11,577 ha	Viewscapes: 1 km around the SSA encompassing foreground viewing distances where Project components are more discernible and prominent to viewers.
RSA	360,000 ha	Human Health: The RSA extends from the highlands along the Québec-Labrador border, northeastward through Wabush and Labrador City along a chain of lakes including Wabush Lake and the southwestern end of Shabogamo Lake.
	50,098 ha	Viewscapes: 1 km to 5 km from the SSA, encompassing background viewing distances where changes to the landscape may be visible but are less discernible than foreground viewing distances.

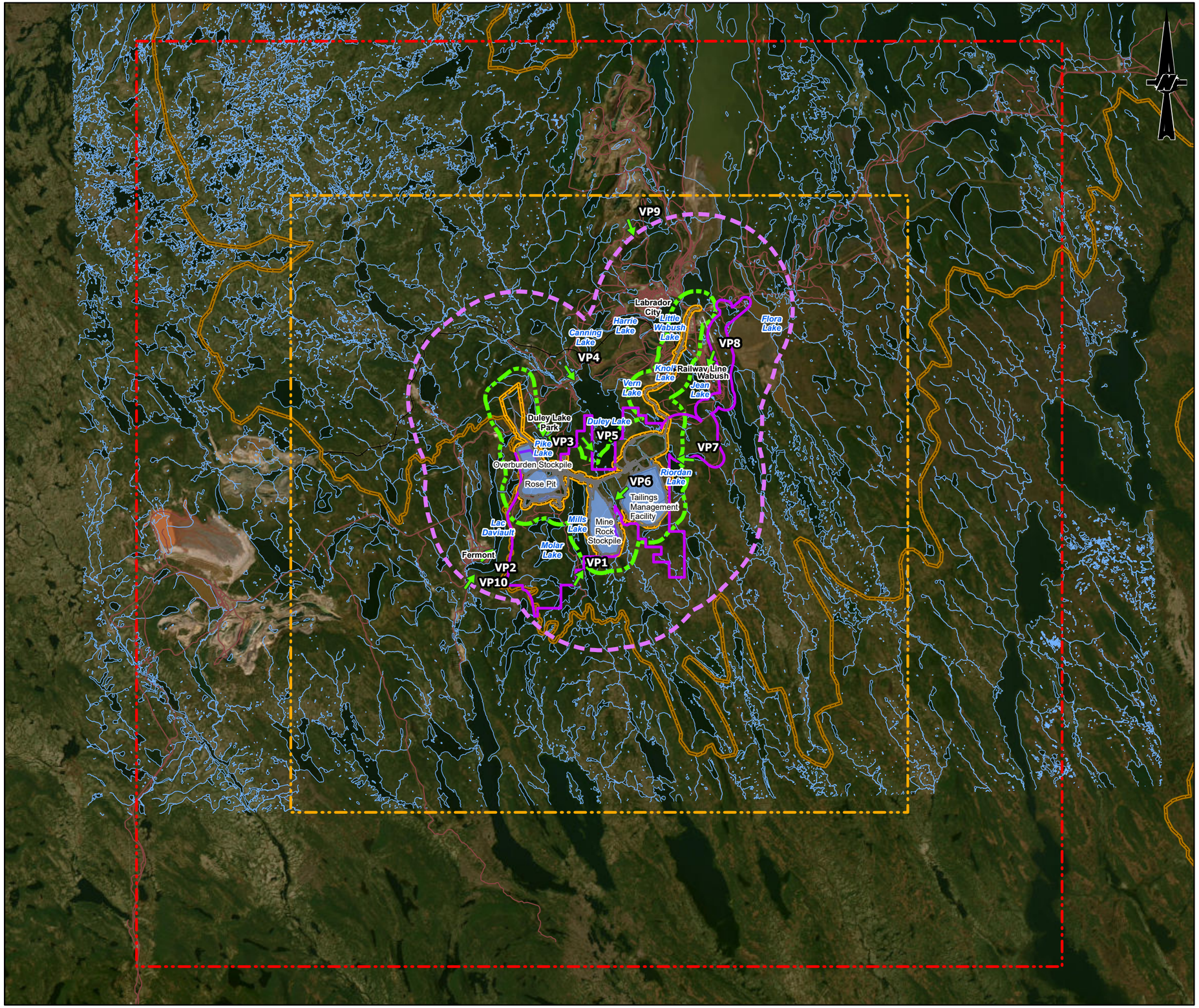
LSA = local study area; RSA = regional study area; SSA = site study area.

The temporal scope of the assessment focuses on the 40-year period from initial construction to the end of decommissioning and rehabilitation (i.e., closure) as defined by the following Project phases:

- **Construction Phase (referred to as Construction)**–includes site preparation, mine, process plant and site infrastructure development, and commissioning the structures, systems and components. The duration of Construction is expected to be four years.
- **Operations and Maintenance Phase (referred to as Operations)**–includes the mining and milling of iron ore, production and shipment of iron ore concentrate, tailings management, management of mine rock, waste management, water management, release of treated effluent, site maintenance and transportation of staff and materials to and from the site. Operations, which will be initiated with one year of pre-development mining (i.e., ramp-up) and conclude when processing is complete, is expected to be 26 years.
- **Decommissioning and Rehabilitation Phase (referred to as Closure)**–includes accelerated flooding of the Rose Pit, re-establishment of passive surface water drainage following the pit-flooding period and recontouring and revegetating disturbed areas. Physical infrastructure not required during post-closure monitoring or for other activities required to achieve the Project's decommissioning criteria and to return the Project site to a safe and stable condition will be removed. Closure is expected to be 10 years.

The effects analysis considers whether and how each phase of the Project (including similarities and differences in Project components or activities) may affect community health and well-being. Considerations of community health and well-being also account for seasonal variability, recognizing that exposure to environmental factors fluctuates based on time of year.

For the identified measurable parameters, potential changes in human health would likely be most evident during operations when air and water emissions would be highest. Changes to viewscapes would begin during construction, become most evident during operations and diminish prior to and during closure as progressive rehabilitation is undertaken.



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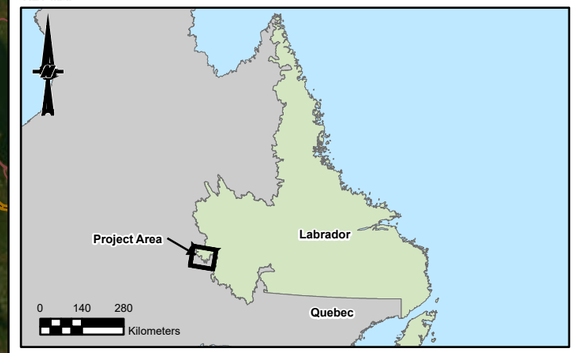

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LEGEND

- Viewpoint Location and Direction
- Proposed Project Infrastructure (Linear)
- Potential Access Road
- Proposed Access Road and Railway Corridor
- Existing Railway
- Existing Road
- River/Stream
- Proposed Project Infrastructure
- Proposed Sedimentation Pond
- Site Study Area (SSA)
- Local Study Area (LSA) - Visual Effects Assessment
- Regional Study Area (RSA) - Visual Effects Assessment
- Local Study Area (LSA) - (HHRA)
- Regional Study Area (RSA) - (HHRA)
- 2011 Assessment Area
- Labrador/Quebec Boundary
- Project Footprint

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1:250,000 KILOMETRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. IMAGERY CREDITS: WORLD IMAGERY: EARTHSTAR GEOGRAPHICS
2. COORDINATE SYSTEM: NAD 1983 UTM ZONE 19N

CLIENT

CHAMPION IRON MINES LTD.

PROJECT

KAMI IRON ORE MINE PROJECT (KAMI PROJECT)
WABUSH, NL

TITLE

COMMUNITY HEALTH AND WELL-BEING SPATIAL BOUNDARIES

CONSULTANT

Kami

YYYY-MM-DD	2025-07-02
DESIGNED	----
PREPARED	MS
REVIEWED	NG
APPROVED	BM

PROJECT NO.	CONTROL	REV.	FIGURE
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17.4 Existing Environment

The existing environment for community health and well-being generally forms the basis against which the residual Project and cumulative effects are assessed. The existing environment also represents the outcome of historical and current environmental and socioeconomic pressures that have shaped the observed conditions of community health and well-being. Environmental and socioeconomic pressures or factors can be either natural (e.g., weather, wildfire, predation, disease, climate change) or human related (e.g., industrial development, forestry, changing business models, fishing, hunting).

17.4.1 Methods

The assessment of potential Project effects on community health and well-being includes a general approach of overlaying what is known about this VEC with the Project components and activities to identify and describe likely interactions and resulting effects. The community health and well-being portion of this assessment has primarily utilized existing and available information on the existing (baseline) socioeconomic environment.

A variety of existing and available information sources have been used to understand and describe the existing conditions of community health and well-being, which are as follows:

- Section 4.1 of the final EIS Guidelines, which summarized key issues from regulatory agencies and feedback received on the Project Registration (Champion 2024)
- the Land Use and Socioeconomic Baseline Report prepared for the Project (Annex 4C)
- the HHRA prepared for the Project (TSD XI)
- the VAIA prepared for the Project (TSD X)
- the existing conditions and baselines of the relevant environmental components, as described in Chapter 5 and Chapter 6
- community and physical health conditions, as described in Section 25 in the Alderon Iron Ore Corporation EIS (Alderon 2012)
- records of engagement, which capture engagement input with Indigenous groups and local stakeholders received through meetings, phone calls, letters and interviews (Chapter 22)
- environmental assessments of other mining projects in Labrador West
- information, including Traditional Knowledge, provided to Champion through consultation with Indigenous groups

The methods for preparing the existing environment description for community health and well-being are described in the sections below. They are based on describing community health indicators to the extent possible, as limited specific information is available for Labrador West, along with methods for preparing the baselines for the HHRA and VAIA. No relevant changes to human health or visual aesthetics have been identified since completion of the previous EIS.

17.4.1.1 Human Health

Recent human health status data were not available for the LSA or RSA specifically. In Labrador, the most complete dataset for health indicators is hospital admissions, which does not capture data for conditions treated by family physicians in clinics or office settings. Additionally, detailed data on the incidence of diseases are not available for the Labrador West region itself, and only particular information is available for Labrador as a whole. Some data may be reported for Labrador Grenfell Health Labrador Grenfell Health region, which includes all of Labrador and all communities on the Northern Peninsula of Newfoundland. Finally, due to the COVID-19 pandemic, some 2020 and 2021 data are not as useful for identifying general trends as changes resulting from the public health emergency may have caused misinterpretation of the increases and decreases that would normally reveal trends and community challenges. In the absence of specific information for Labrador West, regional or provincial information has been assumed to be relevant and applicable.

17.4.1.2 Viewscapes

The methods for establishing existing environmental conditions relevant to visual aesthetics are described in Section 5.0 of the VAIA (TSD X) and summarized in this section. The approach followed established international best practices guidance for visual impact assessment and adapted elements of the United States Department of the Interior Bureau of Land Management's Visual Resource Management system and classes.

The baseline characterization was developed through desktop review of existing information including review of the regulatory and policy setting, a photographic field survey, classification of landscape character, landscape analysis and visibility analysis for the LSA and RSA. The photographic field survey, conducted in September 2024, resulted in baseline landscape photographs, geographic information and observations from representative viewpoints (VPs) to document existing viewing conditions. GIS data were compiled from stakeholder and publicly available sources and viewshed analysis was used to map visible areas with potential line-of-sight to Project components.

Determining the value of the landscape's existing visual quality incorporated results from the landscape characterization analysis describing the context of the SSA, results from the photographic field survey VPs, systematic ratings based on dimensions of scenic quality and viewing distance from criteria established in the Bureau of Land Management's Visual Resource Management system.

17.4.2 Human Health Baseline

According to self-reported data, the health and well-being of NL's population declined between 2021 and 2022, potentially influenced by the effects of the COVID-19 pandemic. During this period, the proportion of individuals rating their health as "very good or excellent" decreased by 13%, while those perceiving their health as "fair or poor" increased by approximately 27%. Similar trends were observed across Canada, where self-reported "very good or excellent" health declined by 6%, and "fair or poor" health increased by 23% (Statistics Canada 2023b).

Mental health perceptions followed a comparable pattern. In NL, the proportion of individuals rating their mental health as "fair or poor" increased by 23.5% from 2021 to 2022, while those reporting their mental health as "good or excellent" declined by 7.4%. Additionally, risk behaviours, such as heavy drinking, cigarette smoking and cannabis use increased during this time. Residents also reported heightened stress levels and reduced life satisfaction. These trends mirrored broader changes observed across Canada (Statistics Canada 2023b).

Prior to the pandemic, NL residents reported the highest levels of self-assessed mental health among all Canadian provinces and territories, with nearly 75% describing their mental health as "very good" or "excellent" in 2019 (Conference Board of Canada 2014). However, no recent data are available to determine whether NL's mental health perceptions have recovered post-pandemic. At the national level, Statistics Canada suggests that self-reported mental health indicators are improving. In 2023, the proportion of Canadians reporting "excellent" or "very good" mental health, a "strong sense of belonging to their local community," and high ratings of overall life satisfaction were at least 5% higher than in early 2021. However, symptoms of depression, anxiety and post-traumatic stress disorder remained unchanged, particularly among young adults, Indigenous individuals and 2SLGBTQI+[1] populations (Statistics Canada 2023a).

The median age of death in Labrador West increased between 2016 and 2021, potentially reflecting an aging population. Comparable data were not available for the RSA. In 2021, Labrador West's median age of death was 73 years, lower than the provincial median of 77 years. The median age of death in Labrador West has consistently remained below the provincial median throughout the reporting period (NLSA 2021).

Data on mortality causes were unavailable for the LSA. However, the national leading causes of death from 2019 to 2022 were malignant neoplasms (i.e., cancers) and heart disease, followed by accidents and COVID-19 (Statistics Canada 2023a). Suicide mortality rates in NL varied between 2020 and 2023, peaking in 2021 and 2022. Across Canada, suicide rates fluctuated significantly during this period, with some regions experiencing higher rates during the pandemic and others seeing increases post-pandemic.

17.4.3 Viewscapes Baseline

The LSA and RSA are primarily characterized by natural boreal forest ecosystems, which include extensive networks of waterways (Natural Resources Canada 2024). A defining feature of the ecozone is its abundance of lakes, ponds and wetlands. Cottages, a campground and recreation areas are situated around bodies of water, such as Duley Lake and Riordan Lake contributing to the region's recreational appeal.

[1] Two-Spirit, lesbian, gay, bisexual, transgender, queer, intersex and additional people who identify as part of sexual and gender diverse communities (Women and Gender Equality Canada 2023).

Industrial, developmental and settlement features are generally concentrated near roads in Labrador City, Wabush and Fermont, which originated as mining camps in the mid-twentieth century (WSP 2023). Due to the Project's proximity to Labrador City and Wabush townsites, recreational land use is extensive (WSP 2023). Figure 17-4 identifies recreational sites, such as cabins, the golf course, campground, boat launch, snowmobile trails and warm-up huts, as well as various trails near the Project. More information on recreation areas and infrastructure is included in Chapter 14.

17.5 Effects Assessment

17.5.1 Methods

17.5.1.1 Human Health Risk Assessment

To better understand potential effects on human health, an HHRA was prepared for the Project. The objective of the HHRA was to assess potential human health risks associated with changes in environmental quality due to contaminant releases from the Project. The HHRA was prepared consistently with the risk assessment framework and methodology endorsed by federal and provincial regulatory agencies (Health Canada 2024). The framework provides a structured and clear approach for evaluating potential human health risks, if any, to people associated with changes in environmental quality due to chemical releases from a project. For there to be a potential health risk, the following three conditions must be met:

- An environmental stressor must be present at levels that could be harmful.
- A receptor must be present.
- There must be an exposure pathway by which the receptor may come in contact with the environmental stressor.

The HHRA evaluated potential risks from inhalation exposure and multi-media exposure (i.e., ingestion and dermal contact), with the following objectives:

- to evaluate potential risks to human health from exposure to contaminants emitted to air from the Project, which may pose a potential health risk following short-term or acute exposure (e.g., 1-hour and 24-hour averaging period) and long-term or chronic exposure (e.g., annual averaging period)
- to evaluate potential risks to human health from exposure to contaminants released from the Project to soil due to aerial deposition and to surface water due water discharges, which may pose a potential health risk following long-term or chronic exposure from ingestion of soil, surface water or country foods, and from dermal contact with soil and surface water

The following types of contaminants that may be emitted into the environment from the Project were assessed in the HHRA:

- criteria air contaminants
- metals and metalloids
- polycyclic aromatic hydrocarbons
- major ions, nutrients, total dissolved solids

Health risks from these contaminants were assessed for human receptors at sensitive areas (receptor locations) by comparing health risks associated with the predicted Project-related changes to the environment to the existing environment for contaminants identified above. The HHRA evaluated potential health risks to the following receptors: cabin resident, urban resident, recreational/land user, Indigenous person, and commercial user. The results of the HHRA are applied to the effects assessment in Section 17.5.

The methods of the HHRA are further described in TSD XI.

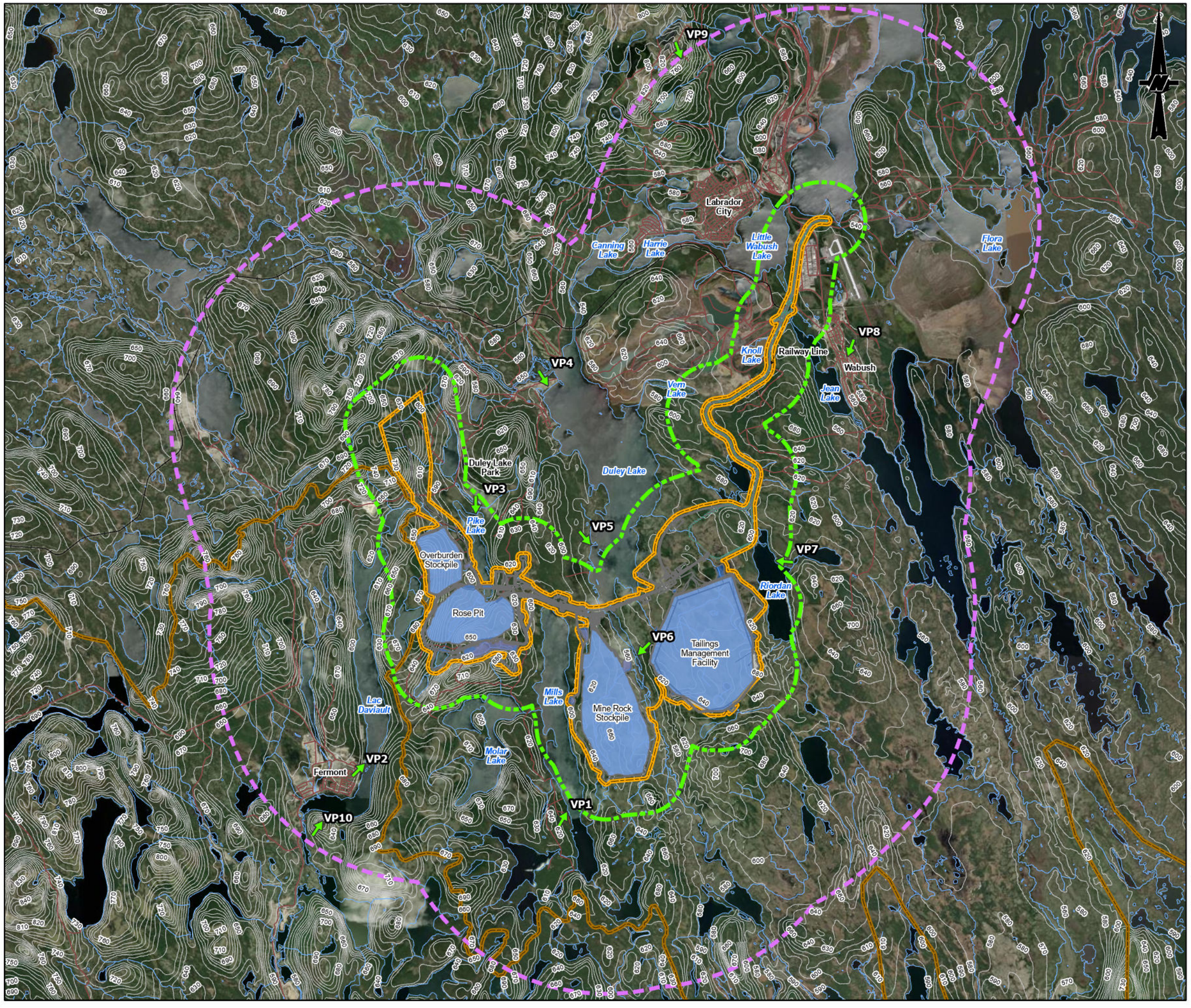
17.5.1.2 Visual Aesthetics Impact Assessment

To provide a realistic comparison of conditions before and after mine development, the VAIA was prepared to identify scenic outlooks, viewscapes, natural attractions, and the overall visual character of the region and views from areas where mine infrastructure would be visible (TSD X).

Based on the existing environment within the LSA and RSA, 10 key VPs were selected for the VAIA (Figure 17-2). These included Mills Lake, Pike Lake, Duley Lake Provincial Park, Duley Lake, Waldorf River and Riordan Lake, aligning with existing cottage and recreation locations near the Project. More distant VPs included Our Lady of Assumption Catholic Church in the Wabush townsite, Smokey Mountain near the Labrador City townsite and two sites in Fermont (i.e., Fermont Shoreline, Mont Daviault Lookout).

Receptors identified for each VP largely consisted of cottagers and recreational users, as well as Wabush and Fermont residents. The existing scenic quality for each of the VPs was identified as high based on the scenic quality assessment, except for the Our Lady of Assumption Catholic Church VP, where the scenic quality had been identified as moderate.

The VAIA describes the existing conditions and assesses the potential effects to visual aesthetics by construction, operations and closure phases of the Project. Operations and closure were considered as having similar visual effects due to the maximum extent/height of infrastructure in these periods. Displaying operational infrastructure at its maximum extent provided a worst-case scenario for the VAIA.



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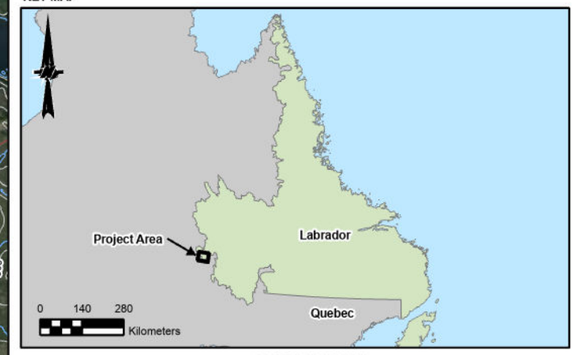

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LEGEND

- Viewpoint Location and Direction
- Proposed Project Infrastructure (Linear)
- Potential Access Road
- Proposed Access Road and Railway Corridor
- Existing Railway
- Existing Road
- River/Stream
- Contour
- Proposed Project Infrastructure
- Proposed Sedimentation Pond
- Site Study Area (SSA)
- Local Study Area (LSA)
- Regional Study Area (RSA)
- Labrador/Quebec Boundary
- PRojectFootprint_Dissolve

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NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)
1. IMAGERY CREDITS: WORLD IMAGERY: EARTHSTAR GEOGRAPHICS
2. COORDINATE SYSTEM: NAD 1983 UTM ZONE 19N

CLIENT
CHAMPION IRON MINES LTD.

PROJECT
KAMI IRON ORE MINE PROJECT (KAMI PROJECT)
WABUSH, NL

TITLE
VIEWPOINT LOCATIONS FOR POTENTIAL RECEPTORS

CONSULTANT
Kami

YYYY-MM-DD	2025-07-11
DESIGNED	----
PREPARED	JMA/PJM
REVIEWED	BK
APPROVED	JMC

PROJECT NO.	CONTROL	REV.	FIGURE
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17.5.1.3 Effect Pathway Screening

Interactions between Project components or activities, and the corresponding potential changes to the environment that would result in potential effects to the community health and wewll-being VEC were identified by an effect pathway screening. The effect pathway screening was used to inform the residual Project and cumulative effects analyses for the community and well-being VEC. Each pathway was initially assumed to have an interaction that would result in potential effects on community health and well-being.

Potential pathways from Project activities to community health and well-being were identified using the following:

- review of the Project Description (**Chapter 2**) and scoping of potential effects by the EIS team for the Project
- input from engagement (Chapter 22)
- scientific knowledge
- review of EISs for similar mining projects including the previous EIS (Alderon 2012)
- previous experience with mining projects in Labrador West
- consideration of key issues (Section 17.3.1)

Potential adverse effects of the Project were identified, and practicable mitigations were applied to avoid, minimize and/or rehabilitate effects to the community health and well-being VEC. Avoidance and minimization are widely recognized as the most important mitigation measures. The effectiveness of mitigation measures proposed for each effect pathway was assessed to determine whether the mitigation would address the potential Project effect such that the pathway was eliminated, would result in a negligible adverse effect on community health and well-being or if residual adverse effects to community health and well-being from the Project remained.

This effect pathway screening was a preliminary assessment intended to focus the effects analysis on pathways that required a more quantitative or comprehensive assessment of effects on VECs. Using scientific knowledge, feedback from consultation, experience with similar developments and an understanding of the effectiveness of mitigation (i.e., level of certainty that the proposed mitigation would work), each effect pathway was categorized as one of the following:

- **No effect pathway**–The effect pathway could be removed (i.e., the effect would be avoided) by avoidance measures and/or additional mitigation so that the Project would result in no measurable environmental change relative to existing conditions or guideline values (e.g., air, soil, or water quality guidelines), and therefore would have no residual effect on community health and well-being.
- **Negligible effect pathway**–With the application of mitigation, the effect pathway could result in a measurable but minor environmental change relative to existing conditions or guideline values but the change is sufficiently small that it would have a negligible residual effect on community health and well-being (e.g., an increase in an air quality parameter that is negligible compared to the range of existing values and thus unlikely to be considered a public health risk). Therefore, further detailed assessment of the residual effect is not warranted as the effect pathway would not be expected to result in a significant residual Project or cumulative effect to community health and well-being.
- **Residual effect pathway**–Even with the application of mitigation, the effects pathway is still likely to result in a measurable environmental change relative to existing conditions or guideline values that could cause a greater than negligible adverse or positive effect on community health and well-being and warrants additional assessment.

Project interactions determined as no effect pathway or negligible effect pathways were not carried forward for further assessment (Section 17.5.3). Residual effect pathways that could result in changes to the environment with one or more associated measurable parameter and have the potential to cause a greater than negligible effect on community health and well-being were carried forward to the residual Project effects analysis (Section 17.5.3) and residual cumulative effects analysis (Section 17.5.4).

17.5.1.4 Residual Project Effect Analysis

The residual effects analysis measures and describes the effects of the Project on the community health and well-being relative to existing conditions. The residual effects analysis was conducted using the temporal period identified for the assessment (Section 17.3.3). Where identified, residual effects are described for each of the measurable parameters listed below:

- human health
- viewscapes

The residual effects analysis used a reasoned narrative to describe anticipated changes to each measurable parameter caused by the Project. This narrative description of anticipated effects is the foundation for the residual effects classification. Residual effects are summarized or classified in tabular form using effects criteria, intended to provide structure and comparability across VECs assessed for the Project. The residual effects classification uses nature, magnitude, geographic extent, duration, timing, frequency, reversibility and probability of occurrence as criteria. The approach to classify each residual effect criterion is provided in Table 17-5. Following classification of residual Project effects, the analysis also evaluates the significance of residual Project effects using threshold criteria or standards beyond which a residual effect is considered significant. The definition of a significant effect for community health and well-being VEC is provided in Section 17.5.1.6.

Table 17-5: Definitions Applied to Effects Criteria Classifications for the Assessment of Community Health and Well-Being

Criterion	Rating	Definition
Nature	Positive	Change in measurable parameter results in net improvement or benefit to community health and well-being
	Neutral	Change in measurable parameter results in no change to community health and well-being
	Adverse	Change in measurable parameter results in net degradation of community health and well-being
Magnitude	Human health: Negligible Viewscapes: None	Human health: No measurable change Viewscapes: Contrasting elements are not visible or perceived
	Human health: Low Viewscapes: Weak	Human health: A measurable change to human health, within normal variation of baseline conditions Viewscapes: Contrasting elements can be seen but do not attract attention
	Moderate	Human health: A measurable change to human health that exceeds normal variation of baseline conditions but can be managed using existing resources Viewscapes: Contrasting elements attract attention and/or begin to become dominant in the landscape
	Human health: High Viewscapes: Strong	Human health: A measurable change to human health, exceeding management capacity of existing resources Viewscapes: Contrasting elements demand attention and/or dominate the landscape
Geographic extent	Site study area	Change in measurable parameter is confined to the SSA
	Local	Change in measurable parameter extends outside the SSA but within the LSA
	Regional	Change in measurable parameter extends beyond the LSA but is confined to the RSA
	Beyond regional	Change in measurable parameter extends beyond the RSA
Duration	Short term	Residual effect limited to Construction or Closure phases of the Project
	Medium term	Residual effect occurs through the duration of the Project
	Long term	Residual effect extends beyond the life of the Project
Timing	Qualitative Narrative	Change in measurable parameter may be seasonal
Frequency	Occasional	Change in measurable parameter is expected to occur rarely (e.g., once or a few times)
	Periodic	Change in measurable parameter is expected to occur consistently at regular intervals or associated with temporal events (e.g., during hot, dry climatic conditions)
	Continuous	Change in measurable parameter is expected to occur all the time
Reversibility	Reversible	Change in measurable parameter is reversible within a clearly defined time period
	Irreversible	Change in measurable parameter is predicted to influence the component indefinitely
Probability of occurrence	Unlikely	Change in measurable parameter is not expected to occur but not impossible
	Possible	Change in measurable parameter may occur but is not likely
	Probable	Change in measurable parameter is likely to occur but is uncertain
	Certain	Change in measurable parameter will occur
Ecological and socioeconomic context	Undisturbed	Area is relatively undisturbed or not adversely affected by development
	Disturbed	Area has been or is substantially disturbed by previous and/or present development
	Resilient	Adequate capacity to recover from disturbance, with consideration of existing disturbance
	Not resilient	Low capacity to recover from disturbance, with consideration of existing disturbance

LSA = local study area; RSA = regional study area; SSA = site study area.

17.5.1.5 Residual Cumulative Effect Analysis

The cumulative effects assessment builds on the results of the residual Project effects assessment and considers the incremental changes that were predicted to have a likely residual adverse effect on community health and well-being. This would include the effects of past and current projects or past climate-related changes (i.e., forest fires), which contribute to existing conditions upon which residual Project effects are assessed. For the EIS, the description of the existing environment characterizes the environment already affected by past and current projects and activities; therefore, the cumulative effects assessment focused on analyzing the effects of other RFDs in combination with the Project. Although positive residual effects are characterized in the residual Project effects analysis, they are not carried forward to the cumulative effects analysis, as the Project benefits from other past, present and RFDs or activities are unlikely to be known or publicly disclosed (e.g., Benefit Agreements with Indigenous groups or local stakeholders).

The cumulative effects assessment followed a three-step process:

- Identify RFDs and potential cumulative effects that overlap in time and space with residual effects.
- Identify and describe any additional mitigation measures, if applicable.
- Characterize residual cumulative effects, using the same criteria defined for the residual Project effects analysis (Section 17.5.1.4)

Chapter 4 provides a list of known RFDs and physical activities with potential residual effects that could overlap spatially and temporally with the Project's residual environmental effects. Figure 4-4 (Chapter 4) presents the location of all six of the known RFDs. This list was considered in the identification of RFDs for the assessment of cumulative effects to community health and well-being. Following the identification of applicable RFDs, residual Project effects to community health and well-being were evaluated for temporal and spatial overlap with the effects of RFDs to identify potential cumulative effects. The evaluation was completed qualitatively based on publicly available information (e.g., Project Registrations or EIS reports) describing the environmental effects of RFDs. If effects from these RFDs overlapped spatially or temporally with the residual Project effects to community health and well-being, then potential cumulative effects were identified. If no spatial or temporal overlap existed for the residual Project effects and RFDs identified in Chapter 4, then a cumulative effects assessment was not required.

Based on the assessment of potential cumulative effects, an assessment was made regarding whether additional mitigation measures, beyond those proposed for the Project, were required to address potential cumulative effects. Where applicable, additional mitigation measures were identified.

Residual cumulative effects were characterized using the same criteria assessed for residual Project effects (Section 17.5.1.4).

The identified residual cumulative effects identified and the respective additional mitigation measures, if applicable, were then applied to community health and well-being using a narrative approach, considering how residents might experience these effects in daily life, and a public health lens to consider overall social health and well-being effects.

Following classification of residual cumulative effects, the analysis also evaluated the significance of residual Project effects using threshold criteria or standards beyond which a residual environmental effect was considered significant. The definition of a significant effect for the community health and well-being VEC is provided in Section 17.5.1.6.

17.5.1.6 Significance Determination

A significant adverse residual effect on community health and well-being is one that is defined as a Project-related effect on the socioeconomic environment that results in long-term deterioration of community health and well-being over an extended period that cannot be managed or mitigated through planned Project mitigation measures, or through current or adjusted public policies, plans or programs.

The significance of these effects will be evaluated using the criteria outlined in Table 17-6.

17.5.2 Effect Pathway Screening

The effect pathway screening predicts potential effects pathways that are then evaluated considering proposed mitigation to predict whether the effect pathway had the potential to cause residual adverse or positive effects. The effectiveness of mitigation measures proposed for each effect pathway was assessed to determine whether the mitigation would address the potential Project effect such that the effect pathway was eliminated or would result in a negligible adverse effect on a VEC. As described in Section 17.5.1.1, each effect pathway was categorized as one of the following:

- **No effect pathway** (i.e., avoidance measures and/or mitigation results in no residual effect on community health and well-being)
- **Negligible effect pathway** (i.e., mitigation results in negligible effect on community health and well-being)
- **Residual effect pathway** (i.e., effect that is greater than negligible and carried forward for further assessment)

The effects pathway screening is summarized in Table 17-6. The subsections following the table provide rationale used to assign potential effects to the no effect pathway and negligible effect pathway categories and list residual effect pathways. Each Project component/activity identified as a residual effect pathway was carried forward for detailed assessment in Section 17.5.3.1.

Table 17-6: Potential Effects Pathways for Community Health and Well-Being

Project Components/Activities	Effects Pathway	Environmental Design Features, Mitigation or Enhancement Measures	Effect Pathway Screening
Construction: — Site preparation including vegetation clearing and earthworks — Quarry development and excavation of aggregate — Handling and storage of overburden — Road development including culverts and bridge installation — Construction of facilities and infrastructure — Construction of tailings management facility starter dam — Handling and storage of mine rock — Construction of water management infrastructure — Operating mobile mining equipment — Site traffic including transportation of personnel and materials to and from site	— Project activities pose potential risks to human health through air quality contaminant exposure.	— The predicted health risks consider mitigation measures incorporated into the design of Project infrastructure, facilities and operations as discussed in the chapters on Air Quality and Climate (Chapter 5), Noise, Vibration and Light (Chapter 6) and Surface Water (Chapter 8). The mitigations, typical and consistent with environmental best management practices, were incorporated into the emission estimates and resulting predicted ambient air concentrations, noise levels, and water quality constituent concentrations. — No additional mitigation measures, outside of those by design, are proposed or required for human health.	Negligible effect pathway
	— Construction activities related to transportation and distribution of personnel, equipment and materials along access roads and trails, rail line or generally within the Project footprint may create temporary changes in viewscapes within the LSA and RSA.	— Avoiding new Project footprint disturbances, to the extent practicable, such as using existing roads and trails, and disturbed areas (e.g., area related to forestry cut blocks or utility corridors). — Retaining existing vegetation and landforms, to the extent practicable, to provide screening of activity and Project components. — Selection and location of structures to minimize visibility and visual contrast with existing conditions. — Implementation of mitigation measures to manage fugitive dust emissions.	Negligible effect pathway
Operation and Maintenance: — Open pit mining including blasting and crushing ore and mine rock — Operating mobile mining equipment — Handling and storage of overburden, mine rock and ore — Operation and management of the tailings management facility — Processing iron ore concentrate — Sewage collection, treatment and surface discharge — Progressive reclamation — Railcar loading and transportation — Site traffic including transportation of personnel and materials to and from site — Camp, mine services area, and office operation	— Project activities pose potential risks to human health through air quality contaminant exposure.	— The predicted health risks consider mitigation measures incorporated into the design of Project infrastructure, facilities and operations as discussed in the chapters on Air Quality and Climate (Chapter 5), Noise, Vibration and Light (Chapter 6) and Surface Water (Chapter 8). The mitigations, typical and consistent with environmental best management practices, were incorporated into the emission estimates and resulting predicted ambient air concentrations, noise levels, and water quality constituent concentrations. — No additional mitigation measures, outside of those by design, are proposed or required for human health.	Negligible effect pathway
	— Mine infrastructure and stockpiles may be visible from community or recreation areas.	— Initiating progressive rehabilitation as a staged approach throughout operations. — Implementation of mitigation measures to manage fugitive dust emissions.	Residual effect pathway
Closure: — Accelerated pit flooding — Removal of infrastructure, restoration and revegetation of facilities and infrastructure — Site traffic, transportation of personnel and materials to and from the site	— Project activities pose potential risks to human health through air quality contaminant exposure.	— The predicted health risks consider mitigation measures incorporated into the design of Project infrastructure, facilities and operations as discussed in the chapters on Air Quality and Climate (Chapter 5), Noise, Vibration and Light (Chapter 6) and Surface Water (Chapter 8). The mitigations, typical and consistent with environmental best management practices, were incorporated into the emission estimates and resulting predicted ambient air concentrations, noise levels, and water quality constituent concentrations. — No additional mitigation measures, outside of those by design, are proposed or required for human health.	Negligible effect pathway
	— Mine infrastructure and stockpiles may be visible from community or recreation areas.	— Initiating progressive rehabilitation as a staged approach throughout operations. — Implementation of mitigation measures to manage fugitive dust emissions.	No effect pathway

17.5.2.1 No Effect Pathways

The following Project-environment interactions are predicted to result in no effect pathways to community health and well-being and are not carried forward in the assessment.

17.5.2.1.1 Viewscapes

Residual environmental effects resulting from closure will be positive relative to operations and maintenance and will be experienced throughout the LSA. The development of greenery during reclamation will contribute to visual restoration, improving visual aesthetics and creating a more balanced view, which should reduce effects on cottage residents and recreational visitors of the area.

17.5.2.2 Negligible Effect Pathways

The following Project-environment interaction was anticipated to result in a negligible effect pathway for community health and well-being.

17.5.2.2.1 Human Health

The multi-pathway assessment of the HHRA evaluated potential changes to soil quality, water quality and country foods concentrations. The predicted health risks were negligible considering the assumptions and conservative approach relied upon in the HHRA. Exposure and by extension health risks due to soil, water and country foods were likely overpredicted. The inhalation assessment predicted potential risks to human receptors for nitrogen dioxide, aluminum, manganese, silica and diesel particulate matter. Although these health risks were predicted, when the conservatism of the predictive air quality modelling and the infrequency of exceedances at the affected receptor locations was considered, the HHRA concluded that potential health effects due to inhalation are not expected from the Project. As a result, negligble residual effect pathways for human health were identified in relation to environmental exposures of the Project for all Project phases.

17.5.2.2.2 Viewscapes

During construction, there will be a negligible effect pathway for viewscapes. Construction activities related to transportation and distribution of personnel, equipment and materials along access roads and trails, the rail line or generally within the SSA will create temporary changes in viewscapes within the LSA and RSA. Most construction activities and components would likely be visible only to those adjacent to active sites and may be short in duration depending on the complexity of the activity. New access roads will produce a disturbance in forested areas resulting from vegetation removal, grading and gravel surfacing. Changes will likely be most visible in foreground viewing distances.

Avoidance or mitigation measures for changes to viewscapes during construction include:

- Avoiding new Project footprint disturbances, to the extent practicable, by using existing roads and trails and disturbed areas (e.g., areas related to forestry cut blocks or utility corridors).
- Retaining existing vegetation and landforms, to the extent practicable, to screen activity and Project components.
- Selection and location of structures to minimize visibility and visual contrast with existing conditions.
- Implementation of mitigation measures to manage fugitive dust emissions.

17.5.2.3 Residual Effect Pathways

The following Project-environment interaction was predicted to result in a residual effect pathway for community health and well-being and was advanced for further assessment of residual effects (Section 17.5.3.1).

17.5.2.3.1 Viewscapes

Following analysis presented in TSD X, all identified visual impacts rated Strong or Moderate in the VAIA (TSD X) resulted in a residual effect pathway. The visual impact rating of the Project during operations was classified as Strong for three of the 10 selected VPs. Five of the evaluated VPs were concluded to have moderate visual impacts. Visual disturbance will most likely affect cabin residents and people who use the area for recreational purposes. The Project will not be visible from two of the selected VPs, i.e., the Fermont Shoreline (VP2) and Our Lady of Assumption Catholic Church in Wabush (VP8).

17.5.3 Residual Project Effects Analysis

This section provides results for the Project effects analysis for community health and well-being for the residual effects pathways identified in Section 17.5.2.3. Methods for completing the residual Project effects analysis for community health and well-being are presented in Section 17.5.1.4.

17.5.3.1 Residual Project Effects Characterization

A summary and characterization of residual Project effects on community health and well-being is included in Table 17-7. Negligble effect pathways for human health were identified in relation to environmental exposures of the Project (Section 17.5.2.2.1). Although the Project is anticipated to result in changes to air quality, water resources, noise, vibration and light, exposures are not expected to result in residual effects on human health, and were not carried forward to the residual effects analysis. Air quality, noise, vibration, light and water resources are addressed in other VEC chapters.

17.5.3.1.1 Viewscapes

Project operations and closure will result in long-term and continual changes to the landscape related to vegetation clearing, infrastructure, roads, rail, tailings and mine rock and overburden stockpiles within the SSA. Changes in viewscapes were characterized by qualitatively evaluating Project components from key VPs determined to have a view of the Project to identify contrast between the baseline characterization environment without and with the Project.

Simulated images of Project elements visible from each key viewpoint were used to illustrate and evaluate predicted visual contrast using methods described in Section 8.2.3 of the VAIA (TSD X). An overall contrast rating was assigned for each key viewpoint. A summary of the visual contrast ratings is provided in Table 17-7, along with a rationale for the rating of each viewpoint used in the evaluation. Simulations characterizing the visual effects of the Project are shown in Figures 5 through 23 in TSD X.

The visual contrast rating of the Project during the Operations and Closure phases were classified as Strong for three out of the 10 selected VPs – Mills Lake (VP1), Duley Lake (VP5) and Waldorf River (VP6) from where tailing, mine rock or overburden stockpiles will be visible (Table 17-7). As described in Section 17.5.1.2, the visual simulations for Operations and Closure represent the maximum extent and height of infrastructure as the worst-case scenario. One stockpile will be visible from the Mills Lake viewpoint (Figures 17-3 and 17-4), two will be visible from the Duley Lake viewpoint (Figures 17-5 and 17-6), and one from the Waldorf River viewpoint (Figures 17-7 and 17-8). Five of the evaluated VPs were concluded to have moderate visual impact and the other two to have no residual effects. The Project will not effect viewscapes at the Wabush or Labrador City townsites. Visual effects on landscapes in Fermont are discussed in Section 17.9.

Table 17-7: Visual Contrast Ratings for Key Viewpoints

Viewpoint	Name	Visual Contrast Rating	Rationale
VP1	Mills Lake	Strong	The smooth, broad and horizontally oriented mine rock stockpile contrasts with the existing forested shoreline. The elevated height and massive scale in relation to the surrounding topography makes the mine rock stockpile visually prominent. The linear, evenly contoured slope of the landform contrasts with the undulating and irregular existing landscape. The stockpile's dark, even tone and fine textured rock surface pattern contrasts with the surrounding varied forest vegetation and is dominant within the view.
VP3	Pike Lake	Moderate	The smooth, broad and horizontally oriented stockpiles contrast with the existing forested shoreline. The elevated height and substantial scale of the overburden stockpile in relation to the surrounding topography makes it visually prominent. The linear, evenly contoured slope of the overburden stockpile contrasts with the undulating and irregular existing landscape. The overburden stockpile's dark, even tone and fine textured rock surface pattern contrasts with the surrounding forest vegetation and begins to attract attention within the view. The mine rock stockpile is slightly visible above the existing tree line and small within the setting.
VP4	Duley Lake Provincial Park	Moderate	The smooth, broad and horizontally oriented mine rock and tailings management facility contrasts with the existing forested landscape. The elevated height and scale of the overburden stockpile and tailings management facility in relation to the surrounding topography begins to attract attention but are small within the setting. The linear, evenly contoured slope of the overburden stockpile and tailings management facility contrasts with the undulating and irregular existing landscape. The overburden stockpile and tailings management facility dark, even tone and fine textured rock surface pattern contrasts with the surrounding varied forest vegetation. The vertically oriented buildings contrast with landforms and vegetation but are small within the setting.

Viewpoint	Name	Visual Contrast Rating	Rationale
VP5	Duley Lake	Strong	The smooth, broad and horizontally oriented mine rock and tailings management facility contrasts with the existing forested landscape. The elevated height and massive scale in relation to the surrounding topography makes the mine rock stockpile and tailings management facility visually prominent. The linear, evenly contoured slope of the overburden stockpile and tailings management facility contrasts with the undulating and irregular existing landscape. The tailings management facility and mine rock stockpile's dark, even tone and fine textured rock surface pattern contrasts with the surrounding varied forest vegetation and is dominant within the view.
VP6	Waldorf River	Strong	The smooth, broad and horizontally oriented mine rock stockpile contrasts with the existing forested shoreline. The elevated height and massive scale in relation to the surrounding topography makes the mine rock stockpile visually prominent. The linear, evenly contoured slope of the landform contrasts with the undulating and irregular existing landscape. The stockpile's dark, even tone and fine textured rock surface pattern contrasts with the surrounding varied forest vegetation and is dominant within the view.
VP7	Riordan Lake	Moderate	The smooth, broad and horizontally oriented tailings management facility contrasts with the existing forested landscape. The elevated height and scale of the tailings management facility in relation to the surrounding topography begins to attract attention within the setting. The linear, evenly contoured slope of the tailings management facility contrasts with the undulating and irregular existing landscape. The tailings management facility dark, even tone and fine textured rock surface pattern contrasts with the surrounding varied forest vegetation. The vertically oriented buildings contrast with landforms and vegetation but are small within the setting. The elevated height and scale of the overburden stockpile in relation to the surrounding topography begins to attract attention but is small within the setting.
VP8	Wabush, Our Lady of Assumption Catholic Church	None	The Project is not visible from the Lady of Assumption Catholic Church in Wabush.
VP9	Smokey Mountain	Moderate	The smooth, broad and horizontally oriented tailings management facility and mine rock stockpile contrasts with the existing forested landscape; however, existing disturbances from mining activity, roadways and built structures in the RSA will reduce the visual contrast. The elevated height and scale in relation to the surrounding topography makes the mine rock stockpile visually prominent. The linear, evenly contoured slope of the landforms contrasts with the undulating and irregular existing landscape. The tailings management facility, pit and stockpile's dark, even tone and fine textured rock surface pattern contrasts with the surrounding varied forest vegetation and begins to attract attention within the view.

Figure 17-3: Viewpoint 1, Mills Lake, Existing Conditions

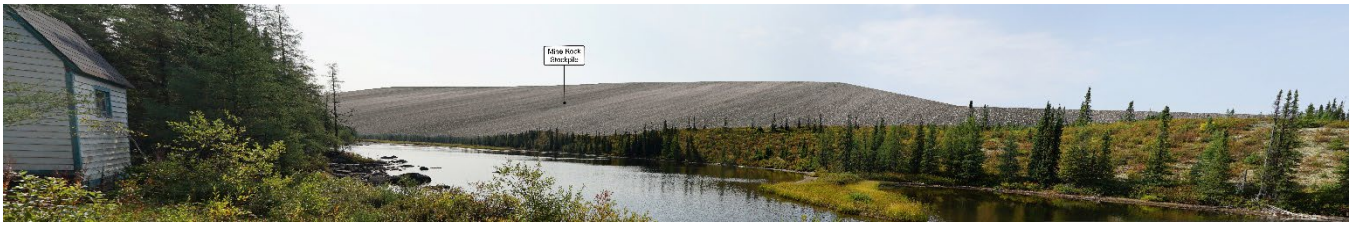
Figure 17-4: Viewpoint 1, Mills Lake, Operations and Closure (end of life of mine)

Figure 17-5: Viewpoint 5, Duley Lake, Existing Conditions

Figure 17-6: Viewpoint 5, Duley Lake, Operations and Closure (end of life of mine)

Figure 17-7: Viewpoint 6, Waldorf River, Existing Conditions

Figure 17-8: Viewpoint 6, Waldorf River, Operations and Closure (end of life of mine)



Mitigation measures for changes to viewscapes during Operations and Closure include:

- initiating progressive rehabilitation as a staged approach during operations
- implementation of mitigation measures to manage fugitive dust emissions

The previous EIS (Alderon 2012) determined that the Project would have potential adverse effects on viewscapes during Construction and Operations though the residual effects were predicted to be not significant. Although the Project would be seen from various locations, it would not be a unique feature on the landscape, as there are two operating mines present in Labrador West. In addition, based on public comments, Alderon had agreed to relocate prominent Project features (e.g., a waste rock disposal area) to reduce visibility. This determination was also made based on the results of a viewshed analysis and before and after simulations.

The VAIA (TSD X) determined that the disturbance to the viewscape will be adverse but of moderate magnitude, meaning it will create a noticeable change but not be overwhelmingly disruptive (Table 17-8). This assessment extends to potential effects on community health and well-being, as viewscape alterations are a form of visual pollution that may contribute to stress, anxiety and diminished quality of life (Hassan and Khalil 2024). However, mitigation strategies–particularly reclamation of stockpiles with plantings and vegetation–will help counteract these effects over time.

The geographic extent of residual effects will be localized to viewing within a 5 km radius of the SSA. However, Project effects will be most discernible within a 1 km radius of the SSA. Residual effects will be experienced by a portion of the population, as the Project will not be visible from the townsites of Labrador City, Wabush and Fermont. However, the presence of visible mine features may cause alterations in how recreational users participate in activities in the SSA.

Effects will begin during construction and continue for the life of the Project. Visual effects will be most noticeable beginning in operations as stockpiles advance. The region has experienced mining and industrial activity for approximately 65 years, though existing mining projects are less visible in the SSA than in other areas of the region. Some effects will be reversible upon Closure, as mine infrastructure will be removed, and stockpiles will be revegetated and thus become less visible.

Table 17-8: Characterization of Residual Effects on Community Health and Well-Being Measurable Parameters

Residual Effect	Criterion	Rating/Effect Size
Change in Viewscapes	Nature	Adverse
	Magnitude	None (1 viewscape), Moderate (4 viewscapes), Strong (3 viewscapes)
	Geographic Extent	Local
	Duration	Long term
	Timing	May be partially affected by seasonality, significant snow cover may reduce contrast and noticeability of changes produced
	Reversibility	Irreversible
	Frequency	Continuous
	Probability of occurrence	Certain
	Ecological and Socioeconomic context	Resilient

17.5.3.2 Significance Determination

As outlined in Section 17.5.1.4., a significant adverse residual effect on community health and well-being is one that results in long-term deterioration of community health and well-being over an extended period that cannot be managed or mitigated through planned Project mitigation measures or through current or adjusted public policies, plans or programs.

The Project will result in adverse residual effects on viewscapes. These effects are anticipated to be moderate or strong in magnitude. Once stockpiles are established, they will be visible on a continuous and long-term duration beyond the life of the Project as they will not be removed. Adverse effects will be mitigated through progressive rehabilitation, eventual removal of mine infrastructure and revegetation of stockpiles. Champion will also continue its engagement program with communities in the LSA. With mitigation and management measures, residual environmental effects on community health and well-being are predicted to be not significant.

17.5.4 Residual Cumulative Effects Analysis

This section discusses residual cumulative effects for community health and well-being. No residual effects were identified for human health. Therefore, a cumulative effects scenario for human health was not considered further.

17.5.4.1 Reasonably Foreseeable Developments and Potential Cumulative Effects

Table 17-9 provides a summary of cumulative effects identified for community health and well-being. No cumulative effects were identified for human health. The VAIA estimated cumulative effects from the contribution of effects of the Project and those of other developments in the RSA. The cumulative effects assessment for viewscapes is primarily qualitative and describes the outcomes of interacting cumulative effects for visual aesthetics criteria. The RFDs listed in Table 17-9 were identified as occurring in the RSA and having potential to have net effects within the RSA.

Table 17-9: Other Projects and Activities Considered in the Cumulative Effects Assessment

Project name or Physical Activity	Description of Project Effects	Approximate Direct Distance to Kami Mining Project Site	Status/Timing	Interaction with Residual Effects to Community Health and Well-Being from Kami Mining Project
Route 389 Improvement Project between Fire Lake and Fermont	Improvements to Route 389 between Fire Lake and Fermont to increase flow and safety of road traffic, improve the link with NL and facilitate access to natural resources. The project is divided into three sections: — Segment 1: (km 478 and 496: new alignment — Segment 2: km 496 to 507, major road rehabilitation — Section 3: km 507 to 566, new 45-km route	Approximately 6 to 93 km	Construction of Section 3 began in late summer 2023 and construction of Segments 1 and 2, in summer 2024. The three sections are scheduled to be complete by 2028.	Due to the existing terrain and distance between the two projects, the likelihood of new infrastructure or disturbance from the two projects being visible at the same time from any location is not anticipated.
Rio Tinto IOC Western Hillside Tailings Pipeline – Iron Ore Company of Canada	Optimizing available space at the existing Wabush Lake tailings storage facility and utilizing the Western Hillside. Includes development of an access road and pipeline alignment, transmission lines, pumps and pumphouses, and a modified strategy for deposition of tailings into Wabush Lake.	15 km	Released from environmental assessment in May 2024.	Due to the visual disturbance from the existing IOC mining operations and the likelihood of new infrastructure or disturbance from the two projects being visible at the same time from any given location, no additional cumulative effects are anticipated, and the residual cumulative effects are predicted to similar to the Project-related residual effects (i.e., moderate magnitude).
Scully Mine Tailings Impoundment Area Expansion Project	Tacora Resources Inc. is proposing to expand the tailings area at the Scully Mine in Wabush by up to 1,411 ha, allowing full use of ore reserves and extending operations to 2047. The existing tailings impoundment area is expected to be at capacity in 2025.	13 km	Released from environmental assessment in July 2022 Anticipated start in 2025 and expand operations by 22 years	Due to the visual disturbance from the existing Scully Mine Tailings Impoundment facility and the likelihood of new infrastructure or disturbance from the two projects being visible at the same time from any given location, no additional cumulative effects are anticipated, and the residual cumulative effects are predicted to similar to the Project-related residual effects (i.e., moderate magnitude).

17.5.4.2 Mitigation Measures

Mitigation measures for residual effects on viewscapes during Operations and Closure include:

- initiating progressive rehabilitation during operations
- implementation of mitigation measures to manage fugitive dust emissions

No additional mitigation measures were recommenced for cumulative effects on viewscapes from the Project and RFDs.

17.5.4.3 Residual Cumulative Effects Characterization

The cumulative effects assessment builds on the results of the residual Project effects assessment and considers incremental changes predicted to likely have residual adverse effects on community health and well-being. This includes the effects of past and current projects or other activities, which contribute to existing conditions upon which residual Project effects are assessed. Therefore, the cumulative effects assessment focused on analyzing the effects of other RFDs in combination with the Project.

17.5.4.3.1 Viewscapes

Cumulative effects were considered in the VAIA and three RFDs were identified as having potential for cumulative effects on viewscapes along with the Project:

- The Route 389 Improvement Project between Fire Lake and Fermont consists of three sections approximately 6 to 93 km away from the Kami Mining Project. Construction began in 2023 with completion expected by 2028. Due to the distance and terrain between the projects, and the nature of the Route 389 project, no cumulative effects on viewscapes are expected.
- The Rio Tinto - IOC Western Hillside Tailings Pipeline Project is 15 km from the Kami Mining Project. Although the two projects could be visible simultaneously from some locations, cumulative effects are predicted to be moderate due to the nature of the IOC project.
- The Tacora Resources Scully Mine Tailings Impoundment Area Expansion Project is 13.3 km from the Kami Mining Project. The two projects could be visible from some locations but, due to the nature of Tacora's project, cumulative effects are anticipated to be moderate.

The previous EIS (Alderon 2012) determined that there would be adverse effects to viewscapes, as some features of the Project would be visible from locations within the SSA. However, this would only affect a small portion of the population, as the Project would not be visible from most residential areas (i.e., Labrador City and Wabush townsites). Other current projects and activities had similar effects on viewscapes to those of the Project, though in other locations. Given the respective locations and distances to these projects, there would be no incremental cumulative effects between the Project and other projects or activities with respect to viewscapes.

17.5.4.4 Mitigation Measures

Based on the assessment of potential cumulative effects, no further mitigation measures are recommended for community health and well-being.

17.5.4.5 Residual Cumulative Effects Characterization

The residual cumulative effects analysis uses a reasoned narrative to describe anticipated changes to each measurable parameter caused by the Project along with changes caused by other projects. The results of the analysis are summarized in Table 17-10.

Table 17-10: Characterization of Residual Cumulative Effects on Community Health and Well-Being Measurable Parameters

Residual Effect	Criterion	Rating/Effect Size
Change in Viewscapes	Nature	Adverse
	Magnitude	Moderate
	Geographic Extent	Local
	Duration	Long term
	Timing	May be partially affected by seasonality, leaf-on conditions in the warmer months or significant snow cover may reduce contrast and noticeability of changes produced
	Reversibility	Irreversible
	Frequency	Continuous
	Probability of occurrence	Certain
	Ecological and Socioeconomic context	Resilient

17.5.4.6 Significance Determination

The cumulative effects of the Kami Mining Project combined with the identified RFDs are limited due to distance to these projects and the nature of the initiatives (e.g., a road and tailings impoundment expansions). Therefore, the cumulative effects of the Project in combination with other RFDs on community health and well-being are determined to be not significant.

17.6 Prediction Confidence and Uncertainty

A key element of a comprehensive environmental assessment is the prediction of future conditions of the environment because of the Project over previous and existing projects and activities and RFDs.

17.6.1 Human Health Risk Assessment

The confidence in the HHRA is high, considering the mitigations described in Chapter 5 and **Chapter 8, Surface Water** of the EIS and in the Project-specific Environmental Protection Plan (Annex 5D). These measures are based on accepted and proven best management practices that are well understood and have been applied to mining projects throughout North America. Uncertainty in the assessment was further reduced by making conservative assumptions as detailed in the HHRA and summarized below:

- Human health toxicity reference values that are used to characterize potential risks to people are generally considered to be conservative. Thus, use of the toxicity reference values may overestimate toxicity and potential health risks.
- Exposures and potential health risks, if any, to people were determined based on predicted maximum concentrations of contaminants in air, soil and water. The predictions are likely overestimated as they identify maximum exposure without variability in concentrations across a site that would result in lower exposures and potential human health risks.
- The assessment relied on predicted air concentrations and soil deposition rates provided by the air quality discipline and water concentrations provided by the water quality discipline. Various conservative assumptions were used in the air and water quality modelling such that predicted concentrations have likely been overestimated. For a summary of the conservative assumptions used in the air and water quality modelling, refer to Section 8.0 of the HHRA (TSD XI).
- The multi-pathway assessment assumed a conservative exposure term (i.e., 24 hours a day, 7 days a week, 365 days a year) for all pathways of exposure (e.g., country food consumption, soil contact, drinking surface water, swimming) which likely overestimates exposure by human receptors.

Given the conservative approach of the assessment described above, the results of the HHRA are likely to overestimate the effects of the Project on human health.

17.6.2 Visual Aesthetics Impact Assessment

There is a high degree of confidence in the effects predictions based on the viewshed analysis and photo-simulations prepared for the Project. The digital surface model data that include ground surface topography as well as surface features, such as trees, vegetation, and buildings, were not available during the production of the VAIA. When a viewshed analysis is conducted with a digital surface model, surface features act as a screen for visibility. Instead, ground surface topography was used for the viewshed analysis, which is a more conservative approach since there are no surface features to screen visibility and greater areas of the landscape will show as visible, such as areas around the townsites of Fermont, Labrador City and Wabush.

17.7 Monitoring, Follow-Up, and Adaptive Management

This section presents a summary of identified monitoring and follow-up required to confirm effects predictions and address uncertainty identified in Section 17.6. Follow-up and monitoring for air quality, surface water quality, and noise, vibration and light will be used to:

- evaluate the effectiveness of reclamation and other mitigation actions, and modify or enhance as necessary through monitoring and developing updated mitigation measures (if needed)
- identify unanticipated negative effects including possible accidents and malfunctions
- contribute to the overall continual improvement of the Project

No specific monitoring programs are recommended for viewscapes. The relevant monitoring and adaptive management programs to community health and well-being include those identified for air quality, water quality, and noise, vibration and light. Champion will continue to engage with resource users and communities to assess the success of mitigation measures related to community health and well-being as well as other VECs.

17.8 Predicted Future Conditions Should the Project Not Proceed

The predicted future condition of the environment for community health and well-being are described in the sections below.

17.8.1 Human Health

The predicted future conditions if the Project was not to proceed were not considered in the HHRA. However, it would be a reasonable assumption that conditions in the region would remain unchanged from the description of the existing environment.

17.8.2 Viewscapes

The predicted future conditions if the Project was not to proceed were not considered in the VAIA. However, it would be reasonable to assume viewscapes would remain unchanged from the existing conditions.

17.9 Fermont

The analyses for HHRA and the VAIA considered potential effects in Fermont, which are in discussed as part of community health and well-being. Residents and stakeholders in Fermont have expressed concerns about the Project in terms of air quality and visual aesthetics (Table 17-11).

Table 17-11: Summary of Issues and Concerns Related to Community Health and Well-Being by Fermont Stakeholders

Comment Theme	How it is Addressed in the Assessment	Where it was Addressed in the Assessment	Indigenous Group or Local Stakeholder	Raised in the Alderon EIS (Yes/No)
Shared concern regarding potential visual, noise and dust impacts from Rose Pit for the people of Fermont.	Champion has prepared a Visual Aesthetics Impact Assessment (VAIA) to illustrate potential effects on viewscapes.	— Visual effects are addressed in this VEC (Section 17.5.3).	Town of Fermont	Yes

Comment Theme	How it is Addressed in the Assessment	Where it was Addressed in the Assessment	Indigenous Group or Local Stakeholder	Raised in the Alderon EIS (Yes/No)
Raised concern about dust accumulation creating brown snow that could be visible on trails or mountains near Lac Daviault and lakes at the NL border. Shared concerns that this could impact attractiveness of Fermont, which is known for nearby nature opportunities.	Champion has prepared modelling to better understand potential effects on air quality.	— Chapter 5, Air Quality and Climate (Section 5.5.2) — Visual effects are addressed in this VEC (Section 17.5.3).	Fermont citizens	Yes
Shared concern about visual impacts of Project infrastructure or light pollution from the Project.	Champion has prepared a Visual Aesthetics Impact Assessment (VAIA) to illustrate potential effects on viewscapes and has completed an assessment of how light from the Project will affect surrounding areas.	— Chapter 6, Noise, Vibration, and Light (Section 6.5.5) — Visual effects are addressed in this VEC (Section 17.5.3).	Fermont citizens	No
Raised concern about potential visual, dust, noise and vibration effects during construction phase and excavation of the Rose Pit.	Champion has prepared modelling to better understand the effects on air quality and noise and during Construction and Operations. An assessment of potential vibration effects has also been completed. Champion has prepared a Visual Aesthetics Impact Assessment (VAIA) to illustrate potential effects on viewscapes.	— Chapter 5, Air Quality and Climate (Section 5.5.2) — Chapter 6, Noise, Vibration, and Light (Sections 6.5.3 and 6.5.4) — Visual effects are addressed in this VEC (Section 17.5.3).	Fermont citizens	No
Fermont identified its main concerns as being water quality, air quality (dust), visual and noise effects for the residents of Fermont.	Champion's environmental management program includes water management infrastructure and a water treatment plant to protect lakes near the Project. Champion has prepared modelling to better understand the effects on air quality and noise and during Construction and Operations. An assessment of potential vibration effects has also been completed. Champion has prepared a Visual Aesthetics Impact Assessment (VAIA) to illustrate potential effects on viewscapes.	— Chapter 5, Air Quality and Climate (Section 5.5.2) — Chapter 6, Noise, Vibration, and Light (Section 6.5.3) — Chapter 8, Surface Water (Section 8.5.3) — Visual effects are addressed in this VEC (Section 17.5.3).	Town of Fermont	Yes
Fermont shared that its concern with the Rose Pit would be for minimal visual, noise and dust impacts for the people of Fermont.	Champion has prepared modelling to better understand the effects on air quality and noise and during Construction and Operations. Champion has prepared a Visual Aesthetics Impact Assessment (VAIA) to illustrate potential effects on viewscapes.	— Chapter 5, Air Quality and Climate (Section 5.5.2) — Chapter 6, Noise, Vibration, and Light (Section 6.5.3) — Visual effects are addressed in this VEC (Section 17.5.3).	Town of Fermont	No

Comment Theme	How it is Addressed in the Assessment	Where it was Addressed in the Assessment	Indigenous Group or Local Stakeholder	Raised in the Alderon EIS (Yes/No)
Fermont community members raised concerns regarding commuting generated by Champion's operations, which they think may cancel out the reduction in greenhouse gas emissions caused by the high-purity iron produced by the company and sold to steelmakers.	Champion prepared greenhouse gas modelling to estimate the quantity of emissions expected from various Project processes and activities that result in GHG emissions.	— Chapter 5, Air Quality and Climate (Section 5.5.3)	Town of Fermont	No
Fermont shared concerns about light pollution and mitigation methods to reduce the concern.	Champion has completed an assessment of how light from the Project will affect surrounding areas.	— Chapter 6, Noise, Vibration, and Light (Section 6.5.5)	Town of Fermont	Yes
Fermont shared that assurances for siren or horn noises would be considered in its noise model. Fermont was interested in sound mitigation measures to be integrated so that the Kami Mining Project site cannot be heard from Fermont.	Champion has prepared modelling to better understand the effects on noise and during Construction and Operations.	— Chapter 6, Noise, Vibration, and Light (Section 6.5.3)	Town of Fermont	Yes
Fermont shared concerns about potential vibrations coming from the Project.	Champion has completed an assessment of potential vibration effects.	— Chapter 6, Noise, Vibration, and Light (Section 6.5.4)	Town of Fermont	Yes
Fermont shared a concern about Lac Daviault being connected to nearby lakes.	Champion's environmental management program includes water management infrastructure and a water treatment plant to protect lakes near the Project.	— Chapter 8, Surface Water (Section 8.5.3)		Yes
The main concerns for Fermont were identified and discussed as being water quality, air quality (dust), visual and noise effects for the residents of Fermont.	Champion's environmental management program includes water management infrastructure and a water treatment plant to protect lakes near the Project. Champion has prepared modelling to better understand the effects on air quality and noise and during Construction and Operations. Champion has prepared a Visual Aesthetics Impact Assessment (VAIA) to illustrate potential effects on viewscapes.	— Chapter 5, Air Quality and Climate (Section 5.5.3) — Chapter 6, Noise, Vibration, and Light (Section 6.5.5) — Chapter 8, Surface Water (Section 8.5.3) — Visual effects are addressed in this VEC (Section 17.5.3).	Town of Fermont	Yes

NL = Newfoundland and Labrador; VAIA = Visual Aesthetics Impact Assessment; VEC = Valued Environmental Component.

17.9.1 Human Health

The HHRA determined that no residual effect pathways for human health were identified in relation to environmental exposures of the Project including for Fermont.

17.9.2 Viewscapes

Two of the key VPs selected for the VAIA are in Fermont: Fermont Shoreline and Mont Daviault Lookout (Table 17-12, Figure 17-10 and Figure 17-12). Receptors identified for each viewpoint largely consisted of cottagers and recreational users including Fermont residents. The existing scenic quality for each of the VPs was identified as high based on the scenic quality assessment.

Table 17-12: Visual Contrast Ratings for Key Viewpoints

Viewpoint	Name	Visual Contrast Rating	Rationale
VP2	Fermont Shoreline	None	The Project is not visible from the Fermont shoreline.
VP10	Mont Daviault Lookout	Moderate	The smooth, broad and horizontally oriented stockpiles contrast with the existing forested landscape; however, existing disturbances from mining activity, roadways and built structures in the RSA will reduce the visual contrast. The elevated height and scale in relation to the surrounding topography makes the mine rock stockpile visually prominent. The linear, evenly contoured slope of the landforms contrasts with the undulating and irregular existing landscape. The stockpile's dark, even tone and fine textured rock surface pattern contrasts with the surrounding varied forest vegetation; however, previous forest clearing within the RSA will reduce the visual contrast. The stockpiles begin to attract attention within the view.

RSA = regional study area.

The visualization exercise concluded that changes from the Project would not be visible from the Fermont shoreline and minimally visible from Mont Daviault Lookout. Before and after images are shown in Figures 17-9 to 17-12.

Figure 17-9: Viewpoint 2, Fermont Shoreline, Existing Conditions

Figure 17-10: Viewpoint 2, Fermont Shoreline, Operations and Closure (end of life of mine)

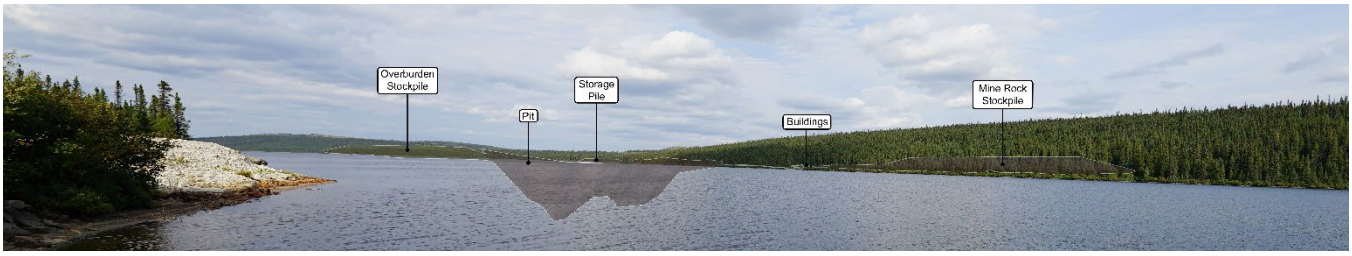


Figure 17-11: Viewpoint 10, Mont Daviault Lookout, Existing Conditions

Figure 17-12: Viewpoint 10, Mont Daviault Lookout, Operations and Closure (end of life of mine)

The Visual Aesthetic Impact Assessment determined that the disturbance to the viewscape of Fermont will be adverse, but of moderate magnitude, meaning it will create a noticeable change but not be overwhelmingly disruptive. In addition, mitigation strategies–particularly reclamation of stockpiles with plantings and vegetation–will help counteract these effects over time.

The geographic extent of residual effects will be localized to viewing within a 5 km radius of the SSA. However, Project effects will be most discernible within a 1 km radius of the SSA. Residual effects will be experienced by a portion of the population, as the Project will not be visible from the townsite of Fermont.

17.10 Key Findings and Conclusions

17.10.1 Human Health

The HHRA assessed predicted potential risks to human health through exposure to potential air quality, soil quality, water quality and country foods contaminants. However, considering the assumptions and conservative approach relied upon as well as mitigation measures incorporated in Project design, only negligble residual effect pathways for human health were identified in relation to environmental exposures of the Project for all Project phases, and were not carried forward to the residual effects analysis.

17.10.2 Viewscapes

Given the findings in the Visual Aesthetic Impacts Assessment, visual impacts can be minimized through mitigation. Upon implementation of the recommended mitigation measures, the Project may still have some visual impacts on users of the surrounding landscape. Project visibility, from most viewing locations, will be predominately limited by establishment of vegetation on the stockpiles to help mitigate visibility. The end goal is to have the stockpiles resemble the rolling vegetated hills in the surrounding landscape. At higher elevations, such as Smokey Mountain, viewers will see much of the Project site including the pit and areas cleared for infrastructure though at a far distance. After final rehabilitation of stockpiles, the resulting natural landscape will feature three vegetated landforms that resemble the surrounding hills and a mosaic of woodlands, grasslands and wetlands that will be in balance with the natural, industrial and development landscape patterns. Thus, while the Project may produce some impacts on community health and well-being through altered viewscapes, no long-term adverse effects beyond the lifetime of the Project should be anticipated.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