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18 – CULTURAL CONTINUITY

18.1 INTRODUCTION

18.1.1 Regional Setting

The Project is located approximately 300 km northwest of the City of Whitehorse, Yukon Territory on Crown land that is administered by the Yukon Government. The Regional Study Area (RSA) for the Cultural Continuity VC includes the Selkirk First Nation (SFN) and Little Salmon/Carmacks First Nation (LSCFN) traditional territories. The Yukon River is located approximately 20 km north of the Casino mine site.

18.1.2 Rationale for VC Selection

The Cultural Continuity VC assesses the potential effects of the Project on the ability of a community or individual to sustain their cultural identity through having access to resources that support cultural retention and opportunities to participate in cultural activities. This VC was deemed important from consultation with local First Nation and other regional residents. For example, practicing culture may include participating in local community events, speaking a local language and participating in traditional land uses such as hunting and fishing. Resources that support cultural retention would include preservation of historical places, museums, and provision of language programs in schools. Cultural identity is based on shared behaviours, practices, beliefs, and values of a community that are gained over time.

From an Aboriginal perspective, maintaining cultural identity requires the use of land for harvesting traditional resources, opportunities to transfer traditional knowledge and skills, and speaking the local language. From a Yukon or northern lifestyle perspective, recreational hunting, fishing, and gathering are culturally important. This is evident from the high proportion of Yukon residents participating in subsistent and recreational hunting. In many cases, baseline data about land uses (e.g., hunting) were not differentiated between First Nation and non-First Nation land users. This VC is therefore representative of the broader culture practiced by all Yukon residents using the Project area as part of their culture. Where differences exist between the two, these differences are noted in the text.

The Cultural Continuity VC will specifically assess the following VC indicators:

- Language – from the standpoint of potential Project effects on the use of local First Nation languages;
- Places of historical, cultural, and archaeological value – from the standpoint of potential Project effects on places that are protected by the Yukon Government, or are considered important to local communities for retaining cultural identity;
- Social, community, and cultural events – from the standpoint of potential Project effects on participation in events that are considered important to retaining cultural identity;
- Subsistence and recreational harvesting – from the standpoint of potential Project effects on recreational and subsistence hunting, trapping, fishing, and plant harvesting; and
- Traditional knowledge – from the standpoint of potential Project effects on conveying or acquiring traditional environmental knowledge.

The rationale for the selection of the Cultural Continuity VC was based on available information compiled in the Socioeconomic Baseline Report (Appendix 13A) and Land Use and Tenure Baseline Report (Appendix 19A) as well as other published sources. Subsequent to the review of baseline information, including information received

during consultation activities and an assessment of the potential for impact, the above-identified VC indicators were selected. The VC indicators were validated through a consideration of the proposed issues (in the context of baseline conditions), a review of the Project Description (Section 4), and consideration of identified stakeholder and First Nation concerns. Potential concerns and issues associated with the Cultural Continuity VC were identified through consultation with the following groups:

- Territorial and federal government agencies;
- Local government representatives;
- First Nations; and
- General public and other stakeholders.

Traditional Knowledge

Traditional knowledge (TK) is gained and shared through oral communication and practicing Aboriginal traditional land uses and ceremonies. Traditional Ecological Knowledge (TEK) is defined using Usher's TEK category 1 and 2 TEK or TK, which is considered factual or rational knowledge about the environment and about past and current use of the environment (Usher 2000).

Information about wildlife, climate, plants, hydrology, and many other topics are included in TK. It is generally considered to be the body of knowledge of a people, often transmitted through oral means, about the land and natural resources that they use. TK information that is provided to developers is typically included in relevant sections of an impact assessment (such as this Proposal) or other development planning documents. Generally, TK adds to the robustness of western science. Recorded TK may also be useful in a general sense in the identification of indicator species for VCs.

Traditional Land Use

Traditional Land Use (TLU) is generally defined as an Aboriginal community's practice of their Aboriginal and Treaty rights. Information on TLU is usually provided by Aboriginal people with consent through interviews and workshops, and summarized in a TLU study report. These reports provided by Aboriginal communities are generally used as the main source of TLU information for an impact assessment, to be supplemented if required by other published sources of traditional use information. Information on modern TLU (such as plant harvesting, hunting, and trapping) is provided in a TLU report, as well as information on cultural sites and activities.

In this case, a TLU and/or TK study has not been completed for the Project. Offers of funding and capacity support to complete a TLU and/or TK study by CMC were declined. Secondary sources were used to compile the baseline provided in the Socioeconomic Baseline Report (Appendix 13A) and the Land Use and Tenure Baseline Report (Appendix 19A). Information about potential effects on TLU and/or TK were also gleaned from: *Opening the Land: A study of the impacts of the Casino Trail on the Northern Tutchone of Pelly Crossing and Carmacks, Yukon Territory (1988)*. This document was recommended to CMC by the SFN as relevant source of information. Many of the predicted effects in this section of the Proposal are therefore necessarily based on secondary data and should be verified through consultation with the LSCFN and SFN.

The ability of a community to continue to convey or acquire TK is tied to the ability of that community to practice TLUs, to speak their own language, to visit and use sites of historic/cultural importance and to participate in community, social, and cultural events. An assessment of potential Project effects on the ability to transmit or obtain TK is therefore reliant on the potential effects of the Project to these other VC indicators.

It should be noted that there is overlap between the effects assessment on hunting, trapping, and fishing in this section and in Section 19 (Land Use and Tenure). The latter is meant to be a general overview of potential effects on First Nation Settlement lands and this section of the Proposal is meant to provide more details on traditional harvesting, if appropriate, and tie the VC indicators into predictions of potential effects on cultural continuity.

18.2 ASSESSMENT BOUNDARIES

18.2.1 Spatial Boundaries

18.2.1.1 Local Study Area

The Local Study Area (LSA) for the assessment of the Cultural Continuity VC depends on the VC indicators assessed. For the VC indicators of language, and social, community and cultural events, the LSA includes the following communities closest to the Project site and the transportation route (Figure 13.1-1):

- Community of Pelly Crossing and SFN;
- Village of Carmacks and LSCFN; and
- City of Whitehorse.

The people living in Pelly Crossing and Carmacks are primarily members of the SFN and LSCFN whose traditional territories overlap with the LSA and RSA for the effects assessment and who would therefore have the greatest potential for their cultural continuity to be affected by the Project. The City of Whitehorse is included in the LSA due its importance as the Yukon capital and its role in providing cultural activities to its residents (17% of who are Aboriginal identity), the surrounding regional residents and visitors.

The spatial scale (LSA) used to describe effects on VC indicators that are related to land uses such as: places of historical, cultural and archaeological value, TK, and subsistence and recreational harvesting is identical to that used for the Land Use LSA (Figure 19.2-1). This LSA is comprised of a 500-m buffer around the entire Project footprint.

18.2.1.2 Regional Study Area

Similar to the LSA, the regional spatial scale used to determine cumulative effects will depend on the VC indicator assessed. For the language and social, community and cultural events, the RSA comprises Yukon and provides a broader geographic context for understanding how Project and other future foreseeable projects in the region could affect these cultural continuity indicators. For places of historical, cultural, and archaeological value, TK, and subsistence and recreational harvesting the Land Use RSA are used. This RSA is based on defined Game Management Areas (GMAs) and provides a representative buffer around the Land Use LSA that overlaps land uses potentially indirectly affected by the proposed Project. Information collected and summarized for the Land Use RSA is used to develop the list of other projects and activities occurring proximate to the proposed Project that may overlap temporally and spatially with potential Project effects. This information is incorporated into the cumulative effects assessment.

The temporal boundaries for the effects assessment is defined in Section 5.2 as the life of the Project. Details on activities associated with the construction, operation, closure and decommissioning and post-closure phases of the Project is provided in Section 4.

18.3 BASELINE CONDITIONS

Baseline conditions are provided in the sections below for the following indicators selected to assess potential effects on the Cultural Continuity VC:

- Language;
- Places of historical, cultural, and archaeological value;
- Social, community, and cultural events;
- Subsistence and recreational harvesting; and
- Traditional knowledge (transmission and retention).

Additional information about the baseline conditions with respect to Cultural Continuity is located in Appendix 13A: Socioeconomic Baseline Report.

18.3.1 Language

Within the LSA, the Aboriginal identity population comprises the majority of residents of Pelly Crossing (91%) and Carmacks (76.5%) and a smaller percentage of residents in Whitehorse (17%). Knowledge of or the ability to conduct a conversation in an Aboriginal language is considered a key indicator of cultural continuity. It is one reflection of the integration of culture into daily life and the continuance of culture from generation to generation.

The SFN and LSCFN are part of the Northern Tutchone and Athapaskan language group. Knowledge of an Aboriginal language varies throughout the LSA communities with residents of Carmacks being the most likely to have knowledge of an Aboriginal language. In 2006, 32% of Aboriginal residents in Carmacks reported knowledge of an Aboriginal language, compared to 7% in Whitehorse and 25% in Pelly Crossing. The percentage of the Aboriginal population in Carmacks, Whitehorse, and Yukon as a whole who speak an Aboriginal language at home decreased between 2001 and 2006. The Census data related to language were unavailable for Pelly Crossing in 2006 and therefore it is not known whether or not the knowledge and use of an Aboriginal language has decreased or increased in this community.

Across Canada, the loss of Aboriginal languages is the trend and norm for a variety of reasons including the residential school experience. The loss of the Northern Tutchone language and traditional practices were noted as concerns by community representatives. There are current efforts underway, particularly in Pelly Crossing and Carmacks, to revitalize and increase the use of the Northern Tutchone language. These efforts include the integration of Northern Tutchone culture and beliefs within the school curriculum and the development of booklets on Northern Tutchone history and culture by Tutchone elders (LSCFN 2013 pers. comm.; Tantalus 2013 pers. comm.). For SFN and LSCFN, language training is a key element of this integrated approach to culture.

18.3.2 Places of Historical, Cultural, and Archaeological Value

Places of historical, cultural, and archaeological value have been identified through archaeological and heritage investigations of the Project area, engagement with Aboriginal communities, and public and government consultation efforts and are considered an indicator of cultural continuity. The Project area has a recorded history of access for mining purposes dating back to 1917. Studies conducted in the Project area have identified historical and archaeological sites, namely Britannia Creek, Patton Gulch, and Patton Hill.

The Casino mine site footprint falls within the SFN traditional territory. Within the mine footprint area, there are a total of 11 archaeological sites and 19 historic sites, identified between 1994 and 2013. Of these sites, additional

exploratory excavations were undertaken at six sites to determine the type of archaeological resource and appropriate mitigation measures for each site. Five of the six sites were intact and undisturbed and the sixth was inadvertently disturbed by construction activities related to the upgrading and re-alignment of the Britannia Creek Road. All six sites are being protected from further disturbance by 'no work zone' tape around each site with a 30 m buffer. The Yukon Heritage Unit recommends these and the other 19 historic sites for avoidance pending review of the Heritage Resources Impact Assessment (HRIA) final report. If effects cannot be avoided, then staged archaeological mitigation of the archaeological sites and recording and archival research of the 19 historical sites are recommended. A Stage 1 Archaeological Mitigation Report for the Casino mine site is included as Appendix 18A of the Proposal.

The Freegold Road Upgrade and Freegold Road Extension fall within the SFN and LSCFN traditional territories. With respect to the Freegold Road Upgrade and Freegold Road Extension, heritage resource assessments identified five historic sites (e.g., log cabins, caches, pits) located along the Freegold Road Extension, within proposed borrow pit locations, and within the Freegold Road Upgrade realignment between kilometre 33 and kilometre 66 (Ecofor 2013). A Historic Resource Impact Assessment of the Freegold Road is included as Appendix 18B of the Proposal. The Yukon Heritage Unit recommends these five historic sites for avoidance pending review of the final report. If impacts are unavoidable for the area of any of the remaining sites, then review of proposed impacts and possible mitigation measures need to be discussed with the Yukon Heritage Resources Unit.

The Freegold Road Extension will generally follow the Casino Trail. The Casino Trail is a historic trail that has provided access into the Dawson Range for subsistence harvesting and travel, and historically, provided access to Fort Selkirk via a connecting trail (Dalton trail) for trading and cultural events. Fort Selkirk overlaps the northern edge of the RSA; it is a historic trading post along the Yukon River. Prior to establishment of Fort Selkirk for trading purposes, the Northern Tutchone people lived and gathered there for hunting and fishing activities as well as feasts and potlatches. Fort Selkirk is a heritage site and continues to be a culturally important place to the Northern Tutchone people.

The following areas are located outside the RSA (Figure 19.2-1) but are culturally important to the Northern Tutchone people:

- Ddhaw Ghro Habitat Protection Area, previously known as the McArthur Wildlife Sanctuary, is a habitat preserve (including a sacred healing place, hot spring) that was created to encourage conservation and support SFN harvesting practices;
- Lhutsaw Wetland Habitat Protection Area is an important wetland complex that was designated a habitat preserve to encourage conservation and support SFN harvesting practices;
- Ta'Tla Mun Special Management Area is an important food fish lake that was designated a habitat preserve to encourage conservation and support SFN harvesting practices; and
- Nordenskiold (Ts'awnjik Chu) Habitat Protection Area is a major wetland complex that was designated a habitat preserve to encourage conservation and support LSCFN harvesting practices.

To date, the only known spiritual or aesthetic location identified for the Project is the Yukon River (AECOM, 2009).

18.3.3 Social, Community, and Cultural Events

The LSA communities of Carmacks, Pelly Crossing, and Whitehorse are active with respect to hosting social, community, and cultural events. In Carmacks and Pelly Crossing, these occasions are wide-ranging and include numerous cultural events, which are based upon and promote the Northern Tutchone culture. Stick gambling, a

traditional game, remains popular in both Carmacks and Pelly Crossing, as do potlatches and other community cultural activities. Both communities enjoy sport-related events and host checkpoints along the 1,600 km Yukon Quest International Sled Dog Race that runs between Whitehorse and Fairbanks, Alaska. Interviews with community representatives from LSCFN have indicated that attendance at social and community events has decreased.

Whitehorse hosts and sponsors numerous community events throughout the year for residents and surrounding communities. Whitehorse maintains a vibrant arts and cultural community with many active arts groups and cultural facilities, including museums, historical archives, and performing arts theatres. It also serves as the starting point for the annual Yukon Quest International Sled Dog Race.

18.3.4 Subsistence and Recreational Harvesting

Most Yukon First Nations have a Final Agreement in place that set out harvesting rights. First Nation members can give, trade, barter, or sell meat or fish obtained through their subsistence rights with other beneficiaries of the Final Agreements or of adjacent Trans-boundary Agreement for domestic purposes but not for commercial purposes (meat and fish cannot be traded or sold to non-First Nation people).

The development of hunting and the traditional economy have been identified by the SFN as a priority (SFN 2011) and many members obtain a significant portion of their food supply through this means (Yukon Community Profiles 2004a). Similarly, the LSCFN's Integrated Community Sustainability Plan identifies subsistence hunting, fishing, and trapping as a way of life for their membership (Inukshuk Planning and Development, 2007).

18.3.4.1 Hunting

Hunting in the Yukon is both a subsistence and recreation activity and regulated under the *Wildlife Act* through Environment Yukon, which oversees permitting for hunting. Within the Project area, there are seven Game Management Areas (GMAs), which are legal boundaries for the regulated management of big game. First Nations do not require hunting licenses to harvest within their traditional territory where a Final Agreement is in place; however, to hunt on another First Nation's traditional territory, members require a license or written consent from that First Nation. Outside of traditional territories, or where Final Agreements are not in place, First Nation members require a valid license to hunt.

Harvested meat can have a high replacement cost value for First Nation households, and the subsistence harvesting activities represent an invaluable cultural and traditional experience for First Nation harvesters and a meaningful recreational pursuit (AECOM 2009).

18.3.4.2 Trapping

Trapping in the Yukon is regulated under the *Wildlife Act* by the Yukon Environment Provisions for management and use of wildlife, including trapping can also be found in the Yukon First Nation Land Claims Umbrella Final Agreement (including individual First Nation Final Agreements) (Council of Yukon First Nations, 1990). There are 333 registered trapping concessions, which are land parcels on which the holder is granted the rights to harvest fur-bearing animals. There are also 18 group areas, which are typically held by a family or First Nation.

Traditionally, trapping is an important part of the First Nation lifestyle, providing economic and subsistence benefits. An estimated 50% of Yukon trappers are First Nation (Environment Yukon 2013a). Within the RSA there are 30 registered trapping concessions; with 11 overlaps (Geomatics Yukon 2013). Traplines in the Project area are remote and access to the traplines can be time-consuming and costly (Registered Trapline Holders 2012 pers. comm.).

18.3.4.3 Fishing

Fishing in the Yukon is regulated by the Canadian government under the *Yukon Territories Fisheries Regulations*. Environment Yukon oversees the permitting. Similar to hunting, First Nations do not require fishing licenses to harvest within their traditional territory where a Final Agreement is in place; however, to fish on another First Nation's traditional territory, members require a license or written consent from that First Nation. Outside of traditional territories, or where Final Agreements are not in place, First Nation members require a valid license to fish. Salmon fishing in fresh waters is regulated through the Department of Fisheries and Oceans Canada.

SFN and LSCFN members are highly involved in salmon fishing; however, salmon populations are declining and in 2012, local residents were advised to reduce the catch of salmon (LSCFN 2013).

18.3.4.4 Plant Harvesting

Northern Tutchone people traditionally relied on plant gathering and harvesting as sources of food, medicine, and construction materials depending on their seasonal availability. This included birch bark and sap for canoe and basket construction; berries and other edible plants for medicinal purposes; and stones, copper, birch bark, and spruce roots for tools and utensils.

18.3.5 Traditional Knowledge and Traditional Use

To date, no Project-specific TK and/or TLU studies have been conducted. Discussions with SFN identified a lack of capacity within the community to conduct a TK and/or TLU study (SFN pers. comm. 2012); discussions between the SFN and CMC have continued and it is anticipated that a study may be conducted sometime in the future. Discussions with LSCFN have indicated that a TK and/or TLU study may be considered after the Proposal submission has been made and the community have had an opportunity to review the predicted Project effects (LSCFN pers. comm. 2013).

The RSA is primarily situated in the SFN and LSCFN traditional territories; these First Nations have historically lived in the Project area. The First Nations signed Final and Self-Government Agreements with the governments of Yukon and Canada in 1997 and 1998, respectively (SFN, Government of Canada and Government of Yukon 1997; LSCFN, Government of Canada and Government of Yukon 1998).

SFN and LSCFN are members of the Northern Tutchone, and as such, carry out similar traditional activities in varying parts of their respective territories. Traditional use of fish, wildlife, and plant species were managed to ensure population sustainability. Changes in activities, such as rotation or relocation, within the traditional territories were made to manage population availability and regeneration. Traditional activities continue to play an important role in providing food, medicine, and materials as well as supplementing income and store-bought foodstuffs/materials. There is an inter-relationship between the traditional (bush economy) and non-traditional (cash economy) economies with the latter helping to fund traditional activities. Distant areas within the traditional territory are important to First Nations; however, the high costs associated with accessing these distant areas limit traditional usage. First Nations access these distant areas when population numbers are high and there is an increased demand.

Originally, SFN people lived in the vicinity of Fort Selkirk where they had a trading relationship with the Coastal Tlingit and would meet to trade during summer fish camps (SFN 2013; Yukon Bureau of Statistics 2013a; Pearse and Weinstein 1988). SFN people settled there on a more permanent basis after the fur-trading fort was built, and continuing to hunt, trap, fish, and gather year-round in their traditional areas. SFN people moved to Minto with the construction of the Klondike Highway and later on, settled in Pelly Crossing and other communities. Traditionally, they relied on the land and one another for survival, travelling by foot over long distances for hunting, trading, and

celebrations (SFN 2013). Culture, traditions, customs, and survival skills were passed to children, who learned by listening and practicing. Members maintains strong links to hunting with many members obtaining a significant portion of their food supply through this means (SFN 2013)

The LSCFN traditional territory is rich in renewable and non-renewable resources. Their people lived on the land, using the rich supply of game animals, fish, birds, and plants, and travelled throughout their traditional territory during the year. The oral history of the LSCFN reveals early contacts and trade relationships with explorers and traders in the area.

Hunting, trapping, fishing, and gathering remain important traditional activities for First Nations throughout the year. Hunting, fishing, and gathering are now practiced more frequently than trapping. Caribou was once the principal food source hunted, but as their populations declined, moose became increasingly important and is now the major food source hunted (McClellan 1981). The First Nation communities are concerned that the Freegold Road Upgrade and Extension along with the increase in mining-related activity could affect the habitat and populations of wildlife and fish, and therefore, the First Nations' traditional use of these special places (ibid).

18.4 PROJECT-SPECIFIC EFFECTS

The following discussion summarizes how the Cultural Continuity VC could be affected by the Project in each of the four Project phases.

18.4.1 Project Interactions and Potential Effects

18.4.1.1 Project Components/Activities and Potential Interactions with VC Indicators

Potential interactions between the Project components and the Cultural Continuity VC indicators are described below and summarized in Table 18.4-1. Project components and activities that may directly or indirectly affect Cultural Continuity VC indicators during the Project construction, operation, decommissioning and closure, and post-closure phases include:

- Maximum Disturbance Area;
- Traffic;
- Reclamation and re-vegetation (associated with closure); and
- Employment.

The list of Project components and activities considered was derived from the Project Description (Section 4) and the potential interactions discussed below.

Table 18.4-1 Potential Interactions between the Project and Cultural Continuity

Project Components and Activities	Project Phase¹ (C, O, DC, PC)	Potential Interaction (Y/N)	Mechanism of Interaction (or Rationale for No Interaction)
Accommodations (Construction and Mine Staffing)	C, O, CD,	No	Included in Maximum Disturbance Area
Aggregate Sources/Borrow Sites	C,	No	Included in Maximum Disturbance Area
Airstrip and Airstrip Access Road	C, O, CD,	No	Included in Maximum Disturbance Area

Project Components and Activities	Project Phase¹ (C, O, DC, PC)	Potential Interaction (Y/N)	Mechanism of Interaction (or Rationale for No Interaction)
Ancillary Buildings (Explosives Storage, Security Shed, Truck Shop etc.)	C, O,	No	Included in Maximum Disturbance Area
Concentrate Transport and Loading	O,	No	Included in Maximum Disturbance Area
Concrete Batch Plant Operation	C, O,	No	Included in Maximum Disturbance Area
Contracted Employment	C, O, CD,	Yes	Change in opportunities to participate in cultural activities
Cyclone Sand Plant	C, O,	No	Included in Maximum Disturbance Area
Dismantling of Facilities	CD,	No	Included in Maximum Disturbance Area
Diversion of Canadian Creek	C, O,	No	Included in Maximum Disturbance Area
Drilling and Blasting	C, O,	No	Included in Maximum Disturbance Area
Fish Habitat Compensation Construction	C, O,	No	Included in Maximum Disturbance Area
Freegold Road Extension	C, O, CD,	Yes	Change (direct loss/disturbance) in area; Change in access to area; Change in local ambience due to Project footprint; Change in abundance of plant/animal resources available for harvesting
Freegold Road Upgrade	C, O, CD,	Yes	Change (direct loss/disturbance) in area; Change in access to area; Change in local ambience due to Project footprint; Change in abundance of plant/animal resources available for harvesting
Fuel Storage and Distribution System	C, O,	No	Included in Maximum Disturbance Area
Gold Extraction Plant/Oxide Ore Processing	C, O,	No	Included in Maximum Disturbance Area
Ground Preparation Activities (e.g. cut, fill, grub, etc.)	C,	No	Included in Maximum Disturbance Area
Hazardous Materials Storage, Transport, and Disposal	C, O,	No	Included in Maximum Disturbance Area
Heap Leach Facility	C, O,	No	Included in Maximum Disturbance Area
Heap Leach Pad	C, O,	No	Included in Maximum Disturbance Area
Laydown Areas	C, O,	No	Included in Maximum Disturbance Area
LNG Transport to site	C, O,	No	Included in Maximum Disturbance Area
Main and Supplemental Power Plant (Gas Turbine and Diesel)	C, O,	No	Included in Maximum Disturbance Area
Maximum Disturbance Area	C, O, CD,	Yes	Change (direct loss/disturbance) in area; Change in access to area; Change in local ambience due to Project footprint; Change in abundance of plant/animal resources available for harvesting

Project Components and Activities	Project Phase ¹ (C, O, DC, PC)	Potential Interaction (Y/N)	Mechanism of Interaction (or Rationale for No Interaction)
Mine Development	C, O, CD,	No	Included in Maximum Disturbance Area
Mine Staffing	C, O, CD,	Yes	Change in opportunities to participate in cultural activities
On-site equipment and vehicle use	C, O, CD,	No	Included in Maximum Disturbance Area
Open Pit Mining	C, O,	No	Included in Maximum Disturbance Area
Ore Conveyors	C, O,	No	Included in Maximum Disturbance Area
Ore Crushing	C, O,	No	Included in Maximum Disturbance Area
Ore Hauling	C, O,	No	Included in Maximum Disturbance Area
Ore Stockpiles	C, O,	No	Included in Maximum Disturbance Area
Processing Facilities for Sulphide Ore	O,	No	Included in Maximum Disturbance Area
Reagent Storage and Distribution	C, O,	No	Included in Maximum Disturbance Area
Site Reclamation / Re-Vegetation	O, CD,	Yes	Change (direct loss/disturbance) in area; Change in access to area; Change in local ambience due to Project footprint; Change in abundance of plant/animal resources available for harvesting
Site Security and Fencing	C, O, CD,	No	Included in Maximum Disturbance Area
Surface Water Management (Contact Water)	C, O, CD,	No	Included in Maximum Disturbance Area
Surface Water Management (Non-Contact Water)	C, O, CD,	No	Included in Maximum Disturbance Area
Tailings Management Facility	C, O, CD,	No	Included in Maximum Disturbance Area
Topsoil Stockpiles	C, O,	No	Included in Maximum Disturbance Area
Traffic (Equipment and Materials to Site)	C, O, CD,	Yes	Change in local ambience; Change in abundance of plant/animal resources available for harvesting
Waste Management: garbage and sewage waste facilities	C, O,	No	Included in Maximum Disturbance Area
Waste rock and Overburden Disposal	C, O,	No	Included in Maximum Disturbance Area
Water Supply	C, O, CD, PC	No	Included in Maximum Disturbance Area

Note:

1. C (Construction), O (Operation), DC (Decommissioning and Closure) and PC (Post-Closure) represent the Project phases when the potential interaction between the Project and valued component is anticipated to occur.
2. Potential mechanism(s) of interaction between the Project components and activities and the valued component are carried forward into the assessment by characterizing the potential effect(s).

Maximum Disturbance Area

- Interaction: Change (direct loss or disturbance) in area

Due to the Maximum Disturbance Area, the potential exists for a direct loss or disturbance of areas, plant and animals within the maximum disturbance area that may be used for cultural activities or for cultural purposes (such as subsistence hunting). This effect would occur in construction, operation, and closure and decommissioning phases and to a lesser extent in the post-closure phase. Project components and activities that contribute to this potential loss or disturbance include: clearing and preparing the mine site area; building the Project components (such as accommodations and ancillary buildings, fuel storage, processing facilities, surface water management facilities, water pipeline, airstrip and airstrip access road); development of stockpile areas for overburden, topsoil, waste rock and ore; open pit; and TMF. During the post-closure phase, most of the area will be reclaimed and the area could potentially be used for cultural activities and support resources used for cultural purposes. The Project will create new wetlands that may be available for future use, post closure.

The Freegold Road Upgrade will primarily follow the existing Freegold Road. Construction of the Freegold Road Upgrade will include a combination of cut and fill activities and overlanded. Cut and fill construction will involve excavating suitable material and placing it to construct the road embankment. Overlanded will be used through areas of low-lying wetlands and areas of permafrost, and will involve the placement of suitable embankment material over organic material. Borrow pits will be required as a source for embankment and road surfacing material. The maximum disturbance area includes the required borrow pits and laydown areas, which will be located along the Freegold Road Upgrade corridor within the Land Use LSA. Borrow pits will be progressively decommissioned when they are no longer needed by grading, restoring natural drainage patterns and re-vegetating. Where the Freegold Road Upgrade does not follow the existing road, in order to achieve design criteria, the potential effect would be a loss of area that may be used for cultural activities or to support resources used for cultural purposes. This effect would be experienced in the construction, operation and active phases of closure of the Project.

The Freegold Road Extension will mostly follow the existing Casino Trail that has been used intermittently for over 30 years to service the Project site and historically (and potentially currently), to access cultural sites (such as Fort Selkirk, and traditional harvesting areas such as the Dawson Range, Nansen, and Freegold areas as well as the mouth of Big Creek, and SFN traditional territory). Prior to the construction phase, the existing Casino Trail has provided limited access for equipment and fuel during the winter months as a winter road. It is anticipated that the construction will occur over a four-year period and be complete prior to the Operation Phase. Initially, a “first stage road” will be developed along the alignment to provide a single lane, low speed, access route from Carmacks to the mine site for fuel and materials and to mobilize heavy equipment required for construction. Construction activities for the first stage road will include limited clearing and grubbing, bridge construction and limited earthmoving.

The Freegold Road Extension will provide a route between the mine site and the Village of Carmacks, which allows for transportation to and from Whitehorse, the Port of Skagway, and Fort Nelson. The Freegold Road Extension will be a 120 km long, two-lane, gravel resource road designed for all-weather use by haul trucks with highway legal loads and will support the level of traffic anticipated with year-round haulage of materials. A new alignment is required along the extension of Freegold Road in areas where the existing Casino Trail does not support design criteria. CMC intends to work with First Nations to ensure that any change in access formerly provided by the Casino Trail for cultural purposes is mitigated by a road use agreement for the Freegold Road Extension.

- Interaction: Change in access to area

Access to the Casino Mine Site will be restricted throughout the Project life and potentially limit access to areas that may have been historically used by First Nations to practice cultural activities. A security gate will be located

at the entrance to the Casino mine site and another security gate may be installed on the existing access road that generally follows the water pipeline. The effect of limiting access to the Project site will occur throughout the life of the Project and be reversed in the post-closure phase.

During the construction phase of the Freegold Road Upgrade, it is anticipated that access will be limited due to periodic road closures due to weather, requirement for repairs or others factors as may be required. The schedule and duration of closures will be determined as the Project proceeds, and whenever possible, one lane will remain open. These temporary closures may negatively affect access to areas that may be used for cultural activities.

The Freegold Road Upgrade will result in improved access after construction due to improved safety design of the road. The improvement will be experienced during the Operation Phase through the post-closure phase for individuals using the road for non-mining purposes north of Carmacks to kilometre 106.

Access along the Casino Trail will be limited once construction of the Freegold Road Extension commences to ensure safety of workers and the public. Conflicts with construction traffic may occur and gated access to the mine site at Big Creek will be implemented. Traffic allowed past the security gate will primarily be limited to mine site traffic and negotiated with permitted land users. It is the intent of CMC to negotiate a Freegold Road Extension Access Management Agreement with the Yukon Government, SFN and LSCFN. This agreement will address how the private road and access control could be managed to meet the Project requirements with consideration of existing tenure holders and individuals. Periodic, short-term road closures may be required. The schedule and duration of these road closures will be determined as the Project proceeds, and whenever possible, one lane will remain open. The Freegold Road Extension may facilitate easier and year-round access (compared to the Casino Trail which currently offers limited winter access to some areas) to relatively remote areas for some permitted users. This effect would last in all Project phases. Public access will not be allowed. This effect would be reversed in the post-closure phase when the Freegold Road Extension is removed and re-vegetated.

- Interaction: Change in local ambience

The local ambience in the environment surrounding the maximum disturbance area, which includes the Freegold Road corridor and airstrip (and associated traffic), will be disturbed by emissions and noise from mine site vehicles and construction equipment, aircraft and the corresponding change in the landscape. This could detract from the area from being used for cultural activities and harvesting. This effect is expected to occur throughout the life of the Project and be reversed in the post-closure phase.

- Interaction: Change in abundance of plant/animal resources available for harvesting

For resources (such as plants, wildlife, fish) that are used for cultural purposes (such as subsistence hunting), there is a potential for a direct loss of resources or disturbance of a resource's habitat resulting in their relocation due to the Maximum Disturbance Area. This effect is expected to occur throughout the life of the Project and be reversed in the post-closure phase.

Traffic (Equipment and Materials to/from Site)

- Interaction: Change in local ambience

Construction along both the existing Freegold Road Upgrade and Extension will change the local ambience due to increased vehicle traffic and associated emissions and noise. This effect is expected throughout the life of the Project and be reversed in the post-closure phase. As noted previously, during the construction phase, sections of the Freegold Road Upgrade and Extension will have traffic limitations.

- Interaction: Change in abundance of plant/animal resources available for harvesting

Increased traffic along the Freegold Road Upgrade and Extension will increase potential for wildlife mortality and dust deposition on adjacent plants. These effects could reduce the abundance or availability for subsistence hunting, and limit areas where culturally important plant species are harvested. Though there is expected to be no public recreational hunting from the Freegold Road Extension. These effects are expected throughout the life of the Project and be reversed in the post-closure phase when the Freegold Road Extension will be decommissioned.

Reclamation and Re-vegetation

- Interaction: Change (direct loss/disturbance) in area

The majority of the Maximum Disturbance Area will be reclaimed and re-vegetated during the post-closure phase. The Freegold Road Upgrade will remain in place, whereas the Freegold Road Extension will be reclaimed and re-vegetated.

- Interaction: Change in access to area

The majority of the Maximum Disturbance Area will not have access restrictions post closure; however, two areas (the open pit and TMF) will be modified which may restrict or change cultural uses. As well, increased accessibility associated with the Freegold Road Extension will end with the decommissioning of this section of the corridor.

- Interaction: Change in local ambience

Areas previously experiencing negative effects due to Project noise, emissions or traffic will cease to be disturbed during the closure/decommissioning and post-closure phases. This may increase the desirability of the area for cultural activities.

- Interaction: Change in abundance of plant/animal resources available for harvesting

The removal and re-vegetation of the Freegold Road Extension will eliminate the potential for wildlife mortality and dust deposition on adjacent plants due to traffic. These effects could increase the abundance or wildlife available for subsistence and recreational hunting and increase areas where culturally important plant species could be harvested. However, two areas (the open pit and TMF) will remain inaccessible for plant/animal resources habitat and associated harvesting.

Employment

- Interaction: Change in opportunities to participate in cultural activities

The Project is expected to employ an average of approximately 140 Yukon-based personnel during the during the last 3 years of the construction phase, approximately 470 personnel during the first 5 years of the Operation Phase (and progressively decrease over the remaining 18 years of operations), and a small fraction of the Operation Phase workforce in the decommissioning and closure phase. Limited workforce will be required for the post-closure phase due to limited activities associated with monitoring and inspection. Laborers and contractors are expected to be sourced locally, as much as possible (estimated average of 75% during the first 5 years of the Operation Phase), and is expected to have a positive effect (increase) on employment in the RSA communities. Due to employment time commitments, this could result in less time available for participation in cultural activities and events such as subsistence or recreational harvesting, potlatches and the like; however, it could provide the necessary economic resources to enable participation. The primary language that will be used at the Project site will be English, which could negatively affect cultural continuity through less exposure to Aboriginal languages.

These effects would be expected through the life of the Project and potentially into the post-closure phase as well if there has been no exposure to traditional language.

18.4.1.2 Summary of Potential Effects on VC Indicators

The following discussion summarises the potential effects (interactions) on the indicators selected for the Cultural Continuity VC in each of the four development phases using the information summarized in Table 18.4-2. Potential Project effects are primarily associated with the following issues:

- Change (direct loss/disturbance) in area;
- Change in access to area;
- Change in local ambience;
- Change in abundance of plant/animal resources available for harvesting;
- Change in opportunities to participate in cultural activities; and
- Change (direct loss/disturbance) in area.

The following indicators were used to assess the potential effect that the Project may have on the availability of area for the Cultural Continuity VC:

- Places of historical and archaeological value; and
- Subsistence and recreational harvesting.

Places of Historical and Archaeological Value

HRIA final reports have been submitted to the Yukon Heritage Unit. The potential effects associated with places of historical, cultural and archaeological value include the disturbance or destruction of these places.

Subsistence and Recreational Harvesting - Hunting

During the construction, operations, and closure/decommissioning phases, areas used for hunting that overlap with the Maximum Disturbance Area may be unavailable for subsistence and recreational harvesting. This affects 21,299.9 ha (.5%) of the SFN traditional territory, 1,280.1 ha (0.3%) of the SFN traditional territory, which is SFN Category A Land. The Maximum Disturbance Area also effects 8,757.6 ha (.4%) of the LSCFN traditional territory, 2692.8 ha (1.0%) of the LSCFN traditional territory, which includes overlaps of 2,570.0 ha (1.6%) of their Category A Land and 122.8 ha (0.1%) of their Category B Land.

During the post-closure phase, most of the mine site (with the exception of the open pit and TMF) and the Freegold Road Extension will again be available for hunting.

Hunting of caribou is presently limited to only one male animal in GMAs overlapping with portions of the Project site (522 – 526) and closed in 509-511 nearest to the proposed mine site. The GMAs that would be accessible to hunters for hunting moose (one of the most important food sources and sport-hunting species in Yukon) from the Freegold Road Upgrade (GMAs: 522–524, and 526) have been closed to licensed moose hunting since 1987. GMAs 509–511 are closest to the mine site and have historically had relatively low levels of moose harvest (≤ 1 moose harvested per year). The effects on other big game species resulting from habitat loss (Section 12) were assessed as not significant (Section 12).

Related potential effects are covered in separate sections, covering wildlife (Section 12), fish and aquatic (Section 10), vegetation (Section 11), and Land Use and Tenure (Section 19).

Subsistence and Recreational Harvesting – Trapping

The effects on trapping concessions are documented in the Land Use and Tenure effects assessment (Section 19). The effects are determined to be not significant during any of the Project phases.

Subsistence and Recreational Harvesting – Fishing

During the construction, operation, and decommissioning and closure phases, there are no popular fishing destinations that overlap with the Maximum Disturbance Area. Portions of Big Creek, which was historically and could still be used for fishing, overlap with the LSA adjacent to the Freegold Road corridor but will not be overprinted by it (bridge crossings will be constructed over the creek). Project effects on Big Creek and the sport/subsistence fish within it are documented in the Fish and Aquatic Resources effects assessment (Section 10). These effects are expected to be not significant and thus fishing in Big Creek would also not be negatively affected.

Fresh and make-up water for the Project is sourced from the Yukon River valley and will be piped from a well to the mine site. Project effects on the Yukon River and the sport/subsistence fish within it are documented in the Fish and Aquatic Resources effects assessment (Section 10). These effects are expected to be not significant and thus fishing in the Yukon River would also not be negatively affected.

The open pit is located between the headwaters of Casino Creek and Canadian Creek and occupies an area of approximately 300 ha. The initial water requirements for oxide ore processing will be met by pumping water retained behind a temporary cofferdam located within the TMF catchment area along Casino Creek until initial water usage is replaced by process water reclaimed from the TMF and processing plant. Canadian Creek will be partially impacted by the Maximum Disturbance Area (which includes the open pit), but the section of impact is within a non-fish bearing area. All of Casino Creek will be affected, with 50% completely removed by the TMF. Both creeks have grayling for 6 months of the year (these creeks are frozen to substrate in winter). Project effects on Casino Creek and Canadian Creek and any sport/subsistence use fish within them are documented in the Fish and Aquatic Resources effects assessment (Section 10). These effects are expected to be not significant.

Subsistence and Recreational Harvesting – Plant Harvesting

There is no spatial information about plants (or plant parts) such as birch bark/sap, spruce roots, Arctic raspberry, Labrador tea, cranberries, blackberries, or mushrooms harvested in the LSA or RSA. As such it is not known whether any areas of cultural importance will be affected by the Maximum Disturbance Area.

The Rare Plants and Vegetation Health effects assessment (Section 11) indicates that the majority of the Project is within the boreal biogeoclimate zone, with areas of subalpine and alpine occurring mainly in the western portion of the LSA. Plants in the boreal biogeoclimate zone consist mainly of open forest stands of white spruce (*Picea glauca*) and/or black spruce (*Picea mariana*). Mixed forests of aspen (*Populus tremuloides*) and/or birch (*Betula neoalaskana*) also occur and are common on well-drained slopes. Stunted aspen stands with associated grass and forbs (broad leaved, non-woody plants that die back to the ground in winter) dominate steep dry slopes, and are common features in the area. Subalpine areas are dominated by open coniferous stands with a dense shrub layer. Low and dwarf shrubs dominate as elevation increases. Tors (high rock piles) are common features, with graminoids (grasses and grass-like plants) and forbs present on ledges and in crevices. Alpine areas support mainly dwarf shrubs, forbs, mosses, and lichens. For the purposes of Cultural Continuity effects assessment, it is assumed that the plants used for subsistence and recreational harvesting are widespread and common throughout the Land Use LSA and RSA.

The Rare Plants and Vegetation Health effects assessment (Section 11) assesses the effect of the Project on rare plants and vegetation health and does not provide information about the amounts of individual plant types that

may be harvested for recreation or subsistence purposes that may exist in the Maximum Disturbance Area and are harvested due to their proximity to the roadway/historic Casino Trail. This would represent the maximum potential loss of plants harvested for recreation or subsistence use from the Project footprint. Approximately 2.3% of the RSA would be unavailable for plant harvesting during construction, operations, closure, and decommissioning phases of the Project. This effect would be reversed in the post-closure phase of the Project with the exception of the open pit and TMF.

Change in Access to Area

In general, improved accessibility to the area due to the upgrade of the existing public Freegold Road may attract additional interest and use of the area. Other land use activities may be easier to conduct on the upgraded road with less travel time and effort to access areas. The following indicators were used to assess the potential effects that the Project may have on access in the area for the Cultural Continuity VC:

- Places of historical and archaeological value; and
- Subsistence and recreational harvesting.

Places of Historical and Archaeological Value

HRIA final reports have been submitted to the Yukon Heritage Unit. Access to places of known (and unknown) historical and archaeological value will be facilitated by the Freegold Upgrade or restricted through gated access to controlled portions of the Freegold Road corridor (at kilometre 106 and the mine site).

Without a Project-specific TK and/or TLU study, there has been no consideration of places which may have historical and archaeological value from that perspective. The Freegold Road Upgrade will provide improved access into areas that may have been difficult to access previously. This access may result in increased disturbance of these places; however, access past kilometre 106 will be controlled.

Subsistence and Recreational Harvesting - Hunting

Access to hunting areas will either be facilitated by the Freegold Road Upgrade or restricted through gated access to controlled portions of the Freegold Road Upgrade corridor (at km 106 and the mine site).

Although there is no information on First Nation hunting from a Project-specific TK and/or TLU study, the SFN and LSCFN traditional territories and specifically the Category A and B Lands within the Land Use RSA and adjacent to the Freegold Road corridor could mean that these areas are accessed by the Casino Trail. Similarly, for other hunters, GMAs would also be accessed by the Casino Trail.

During construction, operations, and decommissioning and closure phases, access for hunting will not be restricted (other than by temporary construction delays) by CMC along the existing Freegold Road Upgrade section. The Freegold Road Extension beyond the security gate at kilometre 106 will be a private resource road with limited access; an agreement will be established between the Yukon Government, SFN, and LSCFN. There will be no public access and hunting on or adjacent to the mine site and Freegold Road Extension will not be permitted. From a First Nation perspective, the potential effect of limits to hunting and road access beyond the kilometre 106 gate may be considered positive since it reduces access to non-First Nation hunters in GMAs. From the perspective of non-First Nation hunters, this would be considered adverse. Both First Nation and non-First Nation hunters would be adversely affected by limited access to areas that may have been used for hunting, such as the Casino mine site.

Hunting of big game in the LSA is already limited with four of the seven GMAs that overlap with the Project (522–524, and 526) having been closed to licensed moose hunting since 1987. GMAs 509–511 are closest to the mine

site and have historically had relatively low levels of moose harvest (≤ 1 moose harvested per year). Hunters will not be permitted to hunt on active mining areas to provide for the safety of workers and mining infrastructure.

Related potential effects are covered in separate sections, covering Wildlife effects assessment (Section 12), and Land Use and Tenure effects assessment (Section 19).

Subsistence and Recreational Harvesting - Trapping

The effects on trapping concessions due to changes in access are documented in the Land Use and Tenures effects assessment (Section 19). The effects are determined to be not significant in any of the Project phases.

Subsistence and Recreational Harvesting - Fishing

During the construction, operation, and decommissioning and closure phases, the Freegold Road Upgrade will improve year-round access for subsistence and recreational fishing while the Freegold Road Extension will provide improved, year-round access to permitted land users only. The latter may be considered a positive effect for First Nations fishers since limiting fishers will limit competition for fish, but negative to other “general public” fishers who would not be able to access fishing areas beyond the km 106 security gate. This is not expected to be important to the general public, since there are no popular fishing destinations that overlap with Maximum Disturbance Area, and there are many other fishing sites with good road access available throughout Yukon.

Subsistence and Recreational Harvesting – Plant Harvesting

During the construction, operations, and decommissioning and closure phases, the Freegold Road Upgrade will improve year-round access for subsistence and recreational plant harvesting while the Freegold Road Extension will provide improved, year-round access to permitted land users only. Like hunting and fishing, the latter may be considered a positive effect for First Nations plant harvesters since limiting other plant harvesters will limit competition for plant resources, but negative to the “general public” who would not be able to access plant harvesting areas beyond the km 106 security gate. This is not expected to be important to the general public, since plants harvested for recreational or subsistence purposes are common and widespread throughout the region.

Change in Local Ambience

Potential receptors that could be adversely affected by the Project have been identified so that potential changes in local ambience could be considered. Based on a review of available information, it was determined that for the purpose of cultural continuity effects assessment, the mine site and road access was considered remote and relatively inaccessible; therefore, potential receptors were limited to the guide outfitting and trapper concession areas and the SFN and LSCFN traditional territory areas that are intersected by the proposed mine site. The following Subsistence and Recreational Harvesting indicator was used to assess the potential effects that the Project may have on local ambience and wilderness experience associated with the Cultural Continuity VC:

Subsistence and Recreational Harvesting – Hunting, Trapping, Fishing and Plant Harvesting

The ability to conduct harvesting may be affected by Project-related disturbances. During the construction phase, noise and emissions as well as traffic may adversely affect the local ambience (such as the wilderness experience) often sought as part of harvesting practices. These effects would be felt during construction, operations, closure/decommissioning phase and be reversed post closure.

Related potential effects are covered in separate sections, covering Land Use and Tenure (Section 19).

Change in Abundance of Plant/Animal Resources Available for Harvesting

The following indicators were used to assess the potential effects that the Project may have on abundance of wildlife (including fish) and plant resources available for harvesting in the area for the Cultural Continuity VC:

- Subsistence and recreational harvesting; and
- Traditional knowledge (transmission and retention).

Subsistence and Recreational Harvesting – Hunting and Trapping

Due to the improved, year-round access to the RSA from the Freegold Road Upgrade and Expansion, there is the potential for an increase in hunter competition for and hunting of wildlife resources that may affect their abundance. Increasing numbers of hunters affecting wildlife abundance is not expected to occur since access to hunting areas beyond the kilometre 106 security gate is not expected to increase for non-First Nation hunters and not change for First Nations hunters (as noted above).

Mortality of wildlife (and therefore reduced availability/abundance for hunting and trapping) related to Project effects such as increased hunter access, collisions with vehicles, and having to destroy animals as a result of human-wildlife conflict are assessed in the Wildlife effects assessment (Section 12) and are considered not significant. Similarly, wildlife avoidance of the Maximum Disturbance Area (and therefore reducing availability/abundance for hunting) due to Project disturbances was also considered not significant.

An assessment of Project effects on wildlife species that are trapped (such as snowshoe hare, red fox, lynx) was not conducted as they are not listed as a Species at Risk under the *Species at Risk Act*, and their populations (abundance) is considered secure.

Subsistence and Recreational Harvesting – Fishing

The effect of the Project on abundance of fish was determined to be not significant (Section 10).

Subsistence and Recreational Harvesting – Plant Harvesting

As noted earlier, there is no spatial information available about plants (or plant parts) such as birch bark/sap, spruce roots, Arctic raspberry, Labrador tea, cranberries, blackberries, or mushrooms harvested in the LSA or RSA. As such, it is not known whether the availability of these plant species in areas where they are harvested will be affected by the Project.

For the purposes of the cultural continuity effects assessment it is assumed that the plants used for subsistence and recreational harvesting are widespread and common throughout the Land Use LSA and RSA and that if the entire LSA is unavailable for plant harvesting, that this will affect 2.3% (the Maximum Disturbance Area or LSA) of the RSA during the Project construction, operations, closure and decommissioning phases. This effect would be reversed in the Project post-closure phase with the exception of the open pit and TMF.

Traditional Knowledge (Transmission and Retention)

As noted earlier, TK is gained and shared through oral communication and practicing Aboriginal TLUs and ceremonies (including participation in cultural events). Opportunities to share or gain TK could be impaired due to the Project if it results in lower abundance of the wildlife and plant resources.

Change in Opportunity to Participate in Cultural Activities

The following indicators were used to assess the potential effects that the Project may have on an individual's ability to participate in cultural activities as a result of employment for the Cultural Continuity VC:

- Language;
- Social, community and cultural events;
- Subsistence and recreational harvesting; and
- Traditional Knowledge (transmission and retention).

Language

The loss of Northern Tutchone language is a known concern amongst the First Nation communities. During all Project phases, and primarily for safety and security reasons, English will be language of business operations and communications at the mine site. All employees and contractors will be required to understand, speak and read basic English during work hours. As a result, employment at the mine could further erode the use and practice of the Northern Tutchone language.

Social, Community, and Cultural Activities

The potential effects on social, community and cultural events by the Project are employment-related and are both adverse and beneficial. Due to work schedules and the remoteness of the mine site, individuals may not attend or participate in these events. However, because of employment, individual may have the economic resources available to participate in events that they previously may not have due to economic limitations.

Subsistence and Recreational Harvesting – Hunting, Trapping, Fishing, and Plant Harvesting

The ability to conduct recreational or subsistence harvesting may be impaired by Project employment since times for harvesting may overlap with shift work.

Conversely the ability to participate in hunting, trapping, fishing and plant harvesting may be improved since equipment (and associated maintenance) needed for these activities such as guns, ammunition, traps, ATVs and fuel would be purchased using employment income.

Traditional Knowledge (Transmission and Retention)

Generally, TK is gained and shared through oral communication and practicing Aboriginal TLUs and ceremonies (including participation in cultural events). Opportunities to share or gain TK could be impaired due to Project employment if times for participating in TLUs and ceremonies may overlap with shift work. Conversely, opportunities to participate in TLUs (hunting, trapping, fishing, and plant harvesting) and ceremonies may be facilitated through employment income as described earlier.

Table 18.4-2 Potential Effects on Cultural Continuity

Mechanism of Interaction	VC Indicator(s)	Project Phase² (C, O, DC, PC)	Potential Effect	Direction
Change (direct loss/disturbance) in area	Places of historical and archaeological value	C, O, CD,	Some archaeological sites might be affected by overprinting from the Freegold Road Upgrade, Freegold Road Extension, or mine site infrastructure (Maximum Disturbance Area)	Adverse
	Subsistence and recreational harvesting	C, O, CD,	Areas within the Project footprint that may be used for harvesting will not be available for use during the construction, operation, and decommissioning/closure phases	Adverse
Change in access to the area	Places of historical and archaeological value	C, O, CD,	Some historical and archaeological sites may be permanently affected	Adverse
	Subsistence and recreational harvesting	C, O, CD,	Temporary loss of road access via the existing Casino Trail	Adverse
		C, O, CD,	Improved access for subsistence or recreational harvesting	Beneficial/Adverse
		C, O, CD,	Removal of improved access with decommissioning/closure of Freegold Road Extension	Adverse
C, O, CD,		Loss of or decreased area for recreational or subsistence harvesting	Adverse	
Change in local ambience	Subsistence and recreational harvesting	C, O, CD,	Increased noise, emissions and traffic may affect the wilderness experience	Adverse
Change in abundance of plant/animal resources available for harvesting	Social, community, and cultural events	C, O, CD,	Plant and animal resources used in events may not be available due to changes in abundance	Adverse
	Subsistence and recreational harvesting	C, O, CD,	Change as a result of increased competition for resources, decrease in resources due mortality or unavailability of resources	Adverse
	Traditional Knowledge (transmission and retention)	C, O, CD,	Opportunities to share or gain traditional knowledge could be impaired due to Project if it results in lower abundance of the wildlife and plant resources upon which it is dependant	Adverse

Mechanism of Interaction	VC Indicator(s)	Project Phase ² (C, O, DC, PC)	Potential Effect	Direction
Change in opportunities to participate in cultural activities	Language	C, O, CD,	Employment at the mine could further erode the use and practice of the Northern Tutchone language	Adverse
	Social, community, and cultural events	C, O, CD,	Increased local employment may result in reduced participation in social, community, and cultural activities	Adverse
	Subsistence and recreational harvesting	C, O, CD,	Increased local employment may result in reduced participation in harvesting activities	Adverse
		C, O, CD,	Increased employment income would lead to increased resources to support subsistence harvesting activities	Beneficial
	Traditional Knowledge (transmission and retention)	C, O, CD,	Opportunities to share or gain traditional knowledge could be impaired due to Project employment if times for participating in traditional land uses and ceremonies may overlap with shift work	Adverse
		C, O, CD,	Opportunities to participate in traditional land uses and ceremonies may be facilitated through employment income	Beneficial

Note:

1. Key indicators are defined as measurable parameters or attributes to qualitatively or quantitatively evaluate the potential effect.
2. C (Construction), O (Operation), CD (Closure and Decommissioning) and PC (Post-Closure) represent the Project phases when the potential interaction between the Project and valued component is anticipated to occur.

18.4.2 Identification of Mitigation or Enhancement Measures

Mitigation measures are outlined below to help avoid or minimize potential effects of the Project. Mitigation measures are not appropriate for potential beneficial effects. For potential beneficial effects, if enhancement measures are recommended they will be denoted in italics. Mitigation or enhancement measures will be organized by Project interaction.

Generally, social or community effects associated with the Project will be managed through a socioeconomic management plan. Socioeconomic management plans are recognized internationally by organizations such as the International Council on Mining and Metals as being an effective mechanism for enhancing the potential beneficial socioeconomic or cultural effects or mitigating any potential negative effects of mining projects. To be effective, socioeconomic management plans must be developed jointly with community and regional partner organizations such as training institutions, economic development agencies, and municipal and provincial/territorial government agencies. Successful mitigation of socioeconomic and cultural effects depends more on establishing an ongoing joint process for monitoring and addressing issues than by identifying specific conditions to be addressed by CMC alone.

Mitigations for Maximum Disturbance Area

Decreased areas available for cultural activities and overprinting of any archaeological or culturally important areas will be minimized or avoided by:

- Designing the Project to have as compact a mine site footprint, to the extent practical;
- Progressive reclamation of the Maximum Disturbance Area (with the exception of the open pit and TMF) back to pre-mine conditions; and
- Effects on archaeological sites will be mitigated through Heritage Resource Protection Plan.

A Heritage Resource Protection Plan (Section 22) will be developed to detail the methods for avoiding, mitigating, reporting, and recovering any heritage resources that are found during Project development activities. Employees and contractors will be trained on the heritage resource protection policies and mandatory actions, as well as how to identify and record potential finds.

In general, the proposed mitigation measures include avoidance of known or suspected historical, cultural, or archaeological places. If the places cannot be avoided, then the necessary stage archaeological mitigation of the archaeological sites and recording and archival research as well as excavation and removal will be completed following the Yukon Heritage Policy.

Mitigations for Access

A Road Use Plan (Appendix 22A) will be developed for the Project in coordination with First Nations and the Yukon Government. The purpose of the plan will be to:

- Manage and limit public access to the mine operating area and site;
- Manage the potential for increased hunting pressures on wildlife;
- Reduce possible wildlife-human conflicts; and
- Protect existing wildlife-dependent land users (e.g., First Nations).

The Freegold Road Extension will be managed as a privately owned and operated road from kilometre 106, on which there will be no public access. Use of the road will be restricted to mine-related activities. Some limited use by others may be required; however, this is subject to negotiations with the land users as well as agreement by the First Nations and Yukon Government under the terms of Project-specific management plans. Key elements of the transportation component of the Road Use Plan (Appendix 22A) include:

- No public access (access by permit, as directed and agreed by the Steering Committee);
- Controlled, gated, manned access (located at the new bridge over Big Creek – or as otherwise agreed); and
- Develop a stakeholder communication/engagement plan to ensure concerns are identified and addressed.

During the construction phase, there is the potential for road closures along both the Freegold Road Upgrade and Extension. Wherever possible one lane will be kept open to allow travel (limited to permitted uses along the Freegold Road Extension); however, complete closures may be required periodically. To ensure users are informed of the current road status, a traffic communication bulletin/update will be circulated in local communities and to key stakeholders on a routine basis. An information line will also be established to answer questions regarding the Project status.

A monitoring program will also be implemented to aid in identifying and reporting potential alternative access points that may be created by local land users (i.e., recreational hunters) along the existing Freegold Road that parallel the gated Freegold Road Extension or provide access to areas that were previously inaccessible. The specific requirements and deliverables for this monitoring program will be developed in consultation with the Yukon Government, First Nations, and stakeholders to ensure local interests and concerns are adequately addressed and mitigated.

At closure, public health and safety assessment will be conducted for the mine site to identify potential risks and develop appropriate, specific long-term mitigation and management measures (such as fencing and signage).

Mitigations for Ambience

Change in local ambience, such as traffic, noise and emissions, and related wilderness experience will be mitigated by:

- Minimizing traffic noise and emissions by incorporating accepted best management practices;
- Employees flown to mine site to avoid multiple busses creating additional traffic on access road;
- Ensuring on-site equipment is regularly maintained to control noise and emissions;
- Proper sound buffering of the ore processing facility on site;
- Implement an Air Quality Management Plan; and
- Ongoing communications and engagement with First Nations will ensure that potential effects associated with traffic, emissions and noise along the Freegold Road corridor will be identified, documented and addressed.

Mitigations for Availability of Plant/Animal Resources

This will be managed in part through limited access at kilometre 106 and also by the Freegold Road Upgrade sections through provincially regulated hunting draws for big game. In addition, mine employees and contractors will be restricted from harvesting within the mine site footprint and while on shift at any time.

Other mitigations for managing wildlife mortality are contained in the Wildlife effects assessment (Section 12).

Mitigations for Opportunities to Participate in Cultural Activities

The effects associated with employment opportunities at the mine (such as reduced participation in harvesting activities or harvesting competition with non-Aboriginal employees) could be mitigated through:

- Shift flexibility to accommodate subsistence harvesting and participation in cultural activities/events, as appropriate for continuity with mining activities;
- Support efforts to revitalize Northern Tutchone language and incorporate Northern Tutchone language into mine signage in consultation with the SFN and LSCFN;
- Incorporating Aboriginal ceremonies at the mine site in consultation with the SFN and LSCFN;
- Providing support for community cultural events based on input from SFN and LSCFN and other local communities; and
- Conduct cultural awareness training for all employees and contractors working at the mine site.

Table 18.4-3 Identification of Mitigation Measures and Potential Residual Effects for Cultural Continuity

Potential Effect	Project Phase ¹ (C, O, CD, PC)	Direction	Proposed Mitigation (or Enhancement) Measure	Predicted Effectiveness	Residual Effect
Some sites of historical, cultural and archaeological value may be overprinted by Project infrastructure in construction phase	C, O, CD	Adverse	Avoidance of sites, Heritage Management Plan, Access Management Strategy	High	No
Loss of or decreased area for recreational or subsistence hunting and plant harvesting in construction, operations and closure/decommissioning phases	C, O, CD	Adverse	Reclamation and Closure Plan; compact Project footprint; Access Management Strategy	High	Yes
Improved access for recreational and subsistence harvesting during operations, closure and active decommissioning phases	C, O, CD	Adverse/Beneficial	Access Management Strategy; Project employees and contractors will be restricted from hunting and fishing while on the job at any time	High	Yes
Temporary loss of road access during construction	C, O, CD	Adverse	Traffic Management Plan (in conjunction with Yukon Government, SFN, and LSCFN); Communications Plan (ensuring ongoing communications with First Nations)	High	No
Increased noise, emissions and traffic in construction, operations, closure and decommissioning phases may affect the wilderness experience	C, O, CD	Adverse	Implement appropriate EMPs (i.e. Air Quality Management Plan); equipment maintenance; sound buffering equipment/buildings; employees flown to site; Communications Plan (ensuring ongoing communications with First Nations and local stakeholders)	High	Yes

Potential Effect	Project Phase ¹ (C, O, CD, PC)	Direction	Proposed Mitigation (or Enhancement) Measure	Predicted Effectiveness	Residual Effect
Increased local employment may result in reduced participation in cultural activities (language, community events, harvesting activities)	C, O, CD	Adverse / Beneficial	Support efforts to revitalize Northern Tutchone language and incorporate Northern Tutchone language into mine signage as appropriate; Shift flexibility to accommodate Aboriginal community and cultural events, deaths, illnesses, as appropriate for continuity of mining activities; Incorporating Aboriginal ceremonies at the mine site in consultation with the SFN and LSCFN; CMC support for community cultural events based on input from SFN and LSCFN and other local communities; Conduct cultural awareness training for all employees and contractors working at the mine site.	High	No
Abundance and availability of plant/animal resources available for cultural activities and harvesting	C, O, CD	Adverse	Project employees and contractors will be restricted from harvesting within the mine footprint while on the job at any time; implementation of an Access Management Plan.	High	No

Notes

1. C (Construction), O (Operation), DC (Decommissioning and Closure) and PC (Post-Closure) represent the Project phases when the potential interaction between the Project and valued component is anticipated to occur.
2. For beneficial potential effects, opportunities, where possible, to enhance potential environmental and socioeconomic benefits are included as proposed enhancement measures.

18.4.3 Significance of Residual Effects

The residual effects carried forward for assessment of significance are:

- Loss of area for recreational or subsistence harvesting (hunting and plant harvesting);
- Changes to access for recreational and subsistence harvesting; and
- Increased noise, emissions, and traffic affecting the wilderness experience/ambience.

The specific matrices developed for determining the significance of residual effects for the indicators selected to assess the Cultural Continuity VC are presented in Table 18.4-3. These criteria describe both the characteristics

of the effect (e.g., direction, magnitude) and the characteristics of the VC being considered (e.g., context). Quantitative values (i.e., 2.3%), are used preferentially (when available) over qualitative criteria. Professional judgement is used in determining if a criterion is given more or less weight in assigning impact significance and the justification for the weighting is provided where necessary for clarification. The level of confidence associated with the assessment is described for each effect.

In general, to be considered to have a significant effect, the residual effect on the VC indicator being assessed must meet one of the following criteria:

- Have a medium magnitude at a regional spatial extent and have a long term or permanent duration;
- Have a high magnitude at a localized spatial extent and be permanent in duration; or
- Have a high magnitude at a regional extent of any duration.

The challenge with socioeconomic and cultural assessments is that neither guidelines nor predefined thresholds exist, so the assessment often relies on the setting, intensity, public concerns, and professional judgement gained from working on similar projects.

Table 18.4-4 Determining Significance of Residual Effects for Cultural Continuity

Criteria	Rating	VC Specific Definitions
Magnitude	Low	Effect that occurs might or might not be detectable, but is within the normal range of variability
	Medium	Effect is unlikely to pose a serious risk or benefit to the VC or to represent a management challenge
	High	Effect is likely to pose a serious risk or benefit to the selected VC and, if negative, represents a management challenge
Geographical Extent	Localized	Within the identified Local Study Area
	Widespread	Outside the identified Local Study Area
Duration	Short Term	Effect is limited to the construction period
	Long Term	Throughout operations, decommissioning and closures
	Permanent	Effects measureable Post-Closure
Frequency	Infrequent	Occurs occasionally
	Frequent	Occurs often or continuously
Reversibility	Reversible	Pre-Project conditions will return following the cessation of the interaction.
	Irreversible	Pre-Project conditions will not return following the cessation of the interaction.
Context	Low Resilience	Low resilience to imposed stresses, or will not easily adapt to the effect.
	High Resilience	High resilience to imposed stresses, or will easily adapt to the effect.
Probability of occurrence	Low	Low likelihood that the predicted residual effect will occur.
	Moderate	Moderate likelihood that the predicted residual effect will occur
	High	High likelihood that the predicted residual effect will occur.

Significance of Loss of Area for Recreational or Subsistence Harvesting

Hunting

An adverse residual effect is predicted during the construction, operations, and closure and decommissioning phases associated with the loss of area available for recreational and subsistence harvesting (hunting, trapping, fishing, and plant harvesting).

The effects on hunting will be, at most, an overlap of .5% of the SFN traditional territory and .4% of the LSC/FN traditional territory. Hunting of caribou is limited to only 1 male animal in GMAs overlapping with portions of the Project site (522 – 526) and closed in 509-511 nearest to the proposed mine site. The GMAs that would be accessible to hunters for hunting Moose (one of the most important food sources and sport-hunting species in the Yukon) from the Freegold Road Upgrade (GMAs: 522–524, and 526) have been closed to licenced moose hunting since 1987. GMAs 509–511 are closest to the Mine Site and have historically had relatively low levels of moose harvest (≤ 1 moose harvested per year). The effects on other game species (Section 12) were assessed as not significant. Therefore effects on hunting related to loss of area from the maximum disturbance area of the Project is considered low in magnitude, localized, long-term and infrequent (occurs during hunting seasons). The effect is reversible at closure and hunters are expected to adapt to the effect (high resilience) and the probability of occurrence is high. The effect is therefore considered not significant.

Plant Harvesting

Effects on areas that may be used for harvesting plants is considered low in magnitude since at most 2.3% of the land use RSA would be unavailable for this use. This effect is localized (within the Land Use LSA), long term (lasting throughout the life of the Project), frequent (occurs during spring, summer, and fall when plants are primarily harvested), and reversible at closure. Since plants available for harvesting are widespread and common in the region, plant harvesters are expected to adapt easily to the effect (high resilience). The probability of occurrence is moderate since specific information about locations where plants are harvested is not known. The overall significance rating is therefore not significant.

Significance of Access for Recreational and Subsistence Harvesting

Hunting

Access for hunting is determined by the Yukon Government and will be determined by the Access Management Agreement that will be negotiated by the Governments of Yukon, SFN, and LSCFN with CMC. Hunting on or adjacent to the mine site will not be permitted. From a First Nation perspective the effect of limits to hunting access beyond the kilometre 106 gate may be considered positive since it reduces access to non-First Nation hunters in GMAs. From the perspective of non-First Nation hunters this would be considered adverse. Both First Nation and non-First Nation hunters would be adversely affected by limiting access to areas that may have been used for hunting at the mine site. Given the relatively low levels of licensed hunting (for the purpose of this assessment licensed hunters are assumed to be non-First Nation) that occurs in the land use RSA, this is considered a low magnitude effect, negative (for non-First Nations hunters) and positive (for First Nations hunters), widespread (affecting access to GMAs outside of the LSA), long-term (lasting for the life of the Project), frequent (occurs regularly during hunting seasons), and reversible at closure. Hunters are expected to adapt easily to this effect as the bag limits for this area are already restricted although it may increase competition for game in other GMAs. The probability of occurrence of the effect is high as the potential effects are relatively well understood. Overall, the effect on recreational/subsistence hunters is considered not significant.

Plant Harvesting

During the construction, operations, and closure/decommissioning phases, the Freegold Road will improve year-round access for subsistence and recreational plant harvesting while the Freegold Road Extension will provide improved, year-round access to permitted land users only. Similar to hunting, the latter may be considered a positive effect for First Nations plant harvesters since limiting access for non-First Nation plant harvesters will limit completion for plant resources, but negative to the general public who would not be able to access plant harvesting areas beyond the kilometre 106 security gate (if access is by motor vehicle). This is not expected to be important, however, to the general public, since plants harvested for recreational or subsistence purposes are common and widespread throughout the region. Effects on access to areas that may be used for harvesting plants is considered low in magnitude since access would be limited only for those non-First Nation plant harvesters who would currently use the Casino Trail to access remote harvesting areas presumed to be very few people. This effect is localized (within the Land Use LSA), long-term (lasting throughout the life of the Project), infrequent (occurs during spring, summer and fall when plants are primarily harvested), and reversible at closure. Since plants available for harvesting are widespread and common in the region, plant harvesters are expected to adapt easily to the effect (high resilience). The probability of occurrence is moderate since specific information about locations where plants are harvested is not known. The overall significance rating is therefore: not significant.

Significance of Increased Noise, Emissions, and Traffic (Ambience)

The wilderness experience/ambience experienced during recreational or subsistence harvesting will be adversely affected due to increased noise and air emissions from Project traffic along the Freegold Road as well as emissions from equipment operating at the mine site. Noise emissions will be limited to the area surrounding the mine site. This effect is considered medium in magnitude since it is not within the normal range of variability in this relatively remote area but is unlikely to pose a serious risk to the VC. The effect is localized (within the Land Use LSA), long term (lasting for the life of the Project), and frequent (occurs often and continuously throughout all Project phases), and land users are not expected to adapt easily to the effect (low resilience) and may choose to conduct recreational or subsistence harvesting practices in different areas as a result. The probability of occurrence of this effect is high. Overall, the significance of the effect is not significant.

Table 18.4-5 Significance of Residual Effects for Cultural Continuity

Residual Effect	Predicted Degree of Effect After Mitigation (or Enhancement) Measures								Significance of Residual Effect
	Direction	Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Context	Probability of Occurrence	
Loss of or decreased area for recreational or subsistence hunting	Adverse	Low	Localized	Long Term/Permanent	Infrequent	Reversible	High Resilience	High	Not Significant
Loss of or decreased area for recreational or subsistence plant harvesting	Adverse	Low	Localized	Long Term	Infrequent	Reversible	High Resilience	Unknown	Not Significant
Access for recreational and subsistence hunting	Adverse/Beneficial	Low	Widespread	Long Term	Frequent	Reversible	High Resilience	High	Not Significant
Access for recreational and subsistence plant harvesting	Adverse/Beneficial	Low	Localized	Long Term	Infrequent	Reversible	High Resilience	Moderate	Not Significant
Increased noise, emissions and traffic	Adverse	Medium	Localized	Long Term	Frequent	Reversible	Low Resilience	High	Not Significant

18.4.4 Discussion of Significance

An assessment of the potential Project interactions with the VC indicators selected for cultural continuity, showed that with the application of mitigation measures the significance of the residual effects are predicted as not significant. The rationales for selecting not significant as the overall residual effects rating are:

- The loss of area directly associated with the Project maximum disturbance area for harvesting is determined to be relatively minor when compared to the total available area in the region for these activities.
- After application of the Access Management Plan, access for First Nations recreational or subsistence harvesters will be not adversely affected for the majority of the LSA and to most areas of their traditional territories. Access is only restricted on the Freegold Road Extension beyond the gate at kilometre 106 – access for an all-weather road that did not exist prior to the mine being built. The exception will be at the mine site itself where no hunting, trapping, fishing or plant harvesting will be permitted. For non-First Nation or hunters/trappers that do not have permitted/licensed need to access areas beyond the security gate at kilometre 106, the effect is considered adverse.

- Increased traffic and mining activities will increase noise and air emissions at the mine site and along Freegold Road, which is expected to detract recreational and subsistence harvesters from using the area.

The ability of a community to continue to convey or acquire TK is tied to the ability of that community to practice TLUs, to speak their own language, to visit and use sites of historic/cultural importance and to the participate in community, social, and cultural events. An assessment of Project effects on the ability to transmit or obtain TK is therefore reliant on effects to these other VC indicators. Since the effects to these VC indicators are considered not significant, the ability to transmit or obtain TK may also not be adversely affected. This would be one of the social elements under the proposed socioeconomic monitoring. This determination should be discussed and verified with the SFN and LSCFN.

Table 18.4-6 Summary of Residual Effects for Cultural Continuity

Potential Residual Effects	Direction	Significance	Confidence
Loss of or decreased area for recreational or subsistence harvesting in construction, operations and closure/decommissioning phases	Adverse	Not Significant	Moderate
Improved access for recreational and subsistence harvesting during operations, closure and decommissioning phases	Adverse and Beneficial	Not Significant	Moderate
Increased noise, emissions and traffic in construction, operations, closure and decommissioning phases affecting the wilderness experience/ambience	Adverse	Not Significant	Moderate

Moderate confidence ratings were assigned based on the following factors: lack of primary data on recreational and subsistence of this specific area and relatively small proportion of the RSA that is affected by the Maximum Disturbance Area.

18.5 CUMULATIVE EFFECTS ASSESSMENT

The Land Use and Tenure section provides a cumulative effect assessment (CEA) of increased placer and quartz staking and exploration activities due to the improved access associated with the upgrade and extension of Freegold Road (Section 19). This assessment is considered similar and relevant to the VC indicators with residual effects for cultural continuity and is not re-stated here.

Additional mitigation measures were recommended to manage cumulative effects such as collaborative (First Nation and Yukon Government) decisions about permitting access to new placer and quartz claims, and monitoring traffic along Freegold Road. With these mitigation measures in place, the significance of the residual cumulative effect was considered not significant.

18.6 SUMMARY AND CONCLUSIONS

The Cultural Continuity VC assesses the potential effects of the proposed Project on the ability of a community or individual to sustain their cultural identity through having access to resources that support cultural retention and opportunities to participate in cultural activities. From an Aboriginal perspective, this includes the use of land for harvesting traditional resources and engaging in related traditional practices such as opportunities to transfer TK and skills, and speak Aboriginal languages. From a Yukon or northern lifestyle perspective, recreational hunting,

fishing, and gathering are culturally important. This is evident by the high proportion of residents participating in subsistence and recreational hunting.

The Cultural Continuity VC assessed the following VC indicators:

- Language – from the standpoint of potential Project effects on traditional, non-English languages;
- Places of historical, cultural and archaeological value – from the standpoint of potential Project effects on places that are considered significant to a community or individual;
- Social, community and cultural events – from the standpoint of potential Project effects on participation in events that are considered significant to a community or individual;
- Subsistence and recreational harvesting – from the standpoint of potential Project effects on non-commercial hunting, trapping, fishing and gathering activities (primarily for subsistence or recreation); and
- Traditional knowledge – from the standpoint of potential Project effects on conveying or acquiring traditional environmental knowledge – which is differentiated from TLUs that are assessed in Section 19.

VC indicators were assessed within a LSA, which was defined for community/individual based effects on language and social, community, and cultural events as:

- Community of Pelly Crossing and SFN;
- Village of Carmacks and LSCFN; and
- City of Whitehorse.

The LSA used to describe effects on land-based VC indicators such as places of historical, cultural, and archaeological value, and subsistence and recreational harvesting was a 500-m buffer around the entire Project footprint (or maximum disturbance area). Effects were assessed by Project phase including construction, operation, closure/decommissioning and post-closure.

With the application of mitigation measures, there were no residual effects on: language; places of historical, cultural, and archaeological value; and social, community, and cultural events. Residual effects were determined to be felt as a result of loss of land base from the maximum disturbance area (Project footprint) for recreational and subsistence harvesting (hunting, trapping, fishing, and plant harvesting), and as a result of changes to access to the region from the upgrade and extension of the Freegold Road. Additional residual effects to recreational and subsistence harvesting are expected to result from increased noise and air emissions from mining activities at the mine site and traffic along Freegold Road. None of these residual effects were considered significant since:

- The loss of area directly associated with the Project maximum disturbance area for harvesting is determined to be relatively minor when compared to the total available area in the region for these activities;
- After application of the Access Management Plan, access for First Nations recreational or subsistence harvesters will be not adversely affected for the majority of the LSA and to most areas of their traditional territories. The exception will be at the mine site itself where no hunting, trapping, fishing or plant harvesting will be permitted and road access will be restricted to permitted users beyond the security gate at kilometre 106, the effect is considered adverse; and
- Increased traffic and mining activities will increase noise and air emissions at the mine site and along Freegold Road, which is expected to detract recreational and subsistence harvesters from using the area.

The ability of a community to continue to convey or acquire TK is tied to the ability of that community to practice TLUs, to speak their own language, to visit and use sites of historic/cultural importance and to the participate in community, social and cultural events. An assessment of project effects on the ability to transmit or obtain TK is therefore reliant on effects to these other VC indicators. Since the effects to these VC indicators are considered not significant, the ability to transmit or obtain TK may also not be adversely affected. This determination should be discussed and verified with the SFN and LSCFN.