



CASINO
COPPER AND GOLD

CASINO PROJECT

**PROPOSAL FOR
EXECUTIVE COMMITTEE REVIEW**

Pursuant to the Yukon Environmental and
Socio-Economic Assessment Act

January 3, 2014

INTRODUCTION

Casino Mining Corporation (CMC) proposes to develop the Casino Project (the Project) 150 km northwest of Carmacks and 300 km from Whitehorse. The mine site and a portion of the access road are located within the traditional territory of the Selkirk First Nation (SFN). The access road will also pass through the traditional territory of the Little Salmon/Carmacks First Nation (LSCFN). The Project is designed to process approximately 120,000 tonnes per day (t/d) or 43.8 million tonnes per day (t/y) of copper and gold ore over a 22 year mine life. During the life-of-mine operations, the Casino Project will produce an estimated 5.72 million ounces of gold, 30.26 million ounces of silver, 3.58 billion pounds of copper, and 325 million pounds of molybdenum.

The main components of the Project include the Open Pit, the Tailings Management Facility (TMF), the processing

facilities, the Heap Leach Facility (HLF), temporary stockpiles, and associated mine infrastructure components. Access to the Project area will be from Whitehorse via a network of existing paved highways linking Northern British Columbia and the Port of Skagway in Alaska. From Whitehorse, the paved Klondike Highway (Yukon Highway 2) affords access to the Village of Carmacks. From Carmacks, the access road will follow for approximately 83 km on the existing gravel Freegold Road, which will be upgraded to accommodate Project requirements (referenced herein as the Freegold Road Upgrade). At the terminus of the Freegold Road, an extension (referenced herein as the Freegold Road Extension) will be constructed to provide all-weather gravel access over the remaining 120 km to the Project, generally following the existing and historic Casino Trail alignment.

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Website	www.casinomining.com
Stock Exchange	TSX; NYSE
Stock Symbol	WRN; WRN

Benefits of the Project will extend beyond CMC to stakeholders including local communities, First Nations governments, and the Yukon as a whole by stimulating economic growth, creating local direct and indirect employment and providing tax revenues and royalties.

The Project will add value to many industries while minimizing effects to the environment.

A key objective of the Project is to build a modern mining operation that will minimize environmental impacts and leave the post closure mine site in conditions as close to baseline as possible. This key consideration has guided the design of all mine components such as the heap leach facility, which has been optimized to minimize environmental impacts.

ECONOMIC FACTS AND FIGURES



69%

of operational spending will occur in Yukon

\$43 million

in annual wages and salaries in the operating phase of the Project

Approximately

1,000 people

will be required during the construction phase of the Project

\$274 million

Annual GDP generated in Yukon by the operation of the Casino project is estimated at \$274 million, equivalent to 10.3% of the Territory's 2011 nominal GDP

Casino Mining Corporation is committed to advancing the Project while operating in an environmentally responsible manner. In this respect, CMC will adhere to or exceed the Guiding Principles described in “Towards Sustainable Mining” advocated by the Mining Association of Canada (Mining Association of Canada 2004). The guiding principles include:

- **Protecting the health and safety of employees, contractors and communities;**
- **Practicing continuous improvement through the application of new technology, innovation and best practices in all facets of operations; and**
- **Being responsive to community priorities, needs and interests through all stages of mining exploration, development, operations and closure**



The Project Proposal consists of five volumes of information with numerous detailed technical appendices. The Proposal responds to the information and assessment requirements identified in the “Proponent’s Guide to Information Requirements for Executive Committee Project Proposal Submissions” (YESAB 2005) and follows the format of this guide wherever possible.

LIST OF VOLUMES

VOLUME I: EXECUTIVE SUMMARY

VOLUME II: PROJECT INTRODUCTION & OVERVIEW

VOLUME III: BIOPHYSICAL VALUED COMPONENTS

VOLUME IV: SOCIO-ECONOMIC VALUED COMPONENTS

VOLUME V: ADDITIONAL YESAA REQUIREMENTS

YUKON ENVIRONMENTAL AND SOCIO-ECONOMIC ASSESSMENT BOARD PROCESS

The Yukon Environmental and Socio-economic Assessment Act (YESAA) is the legislation which creates the basis for assessment in all Yukon, federal, territorial, and First Nation lands of the Yukon. Outlining responsibilities, requirements, and procedures for environmental and socio-economic assessment, YESAA provides guidance to the assessment process, outlining responsibilities, requirements, and procedures for environmental and socio-economic assessment. YESAA is regulated and administered by the Yukon Environmental and Socio-economic Assessment Board (YESAB) with periodic revisions. More information can be found at <http://www.yesab.ca/>.

Assessment of the project Project is subject to section 47(2)(c) of YESAA in accordance to the following:

“47 (2) An activity listed under paragraph (1) (a) – and not excepted under paragraph (1) (b)—is subject to assessment if proposed to be undertaken in Yukon and if (c) an authorization or the grant of an interest in land by a government agency, an independent regulatory agency, municipal government or first nation is required for the activity to be undertaken”

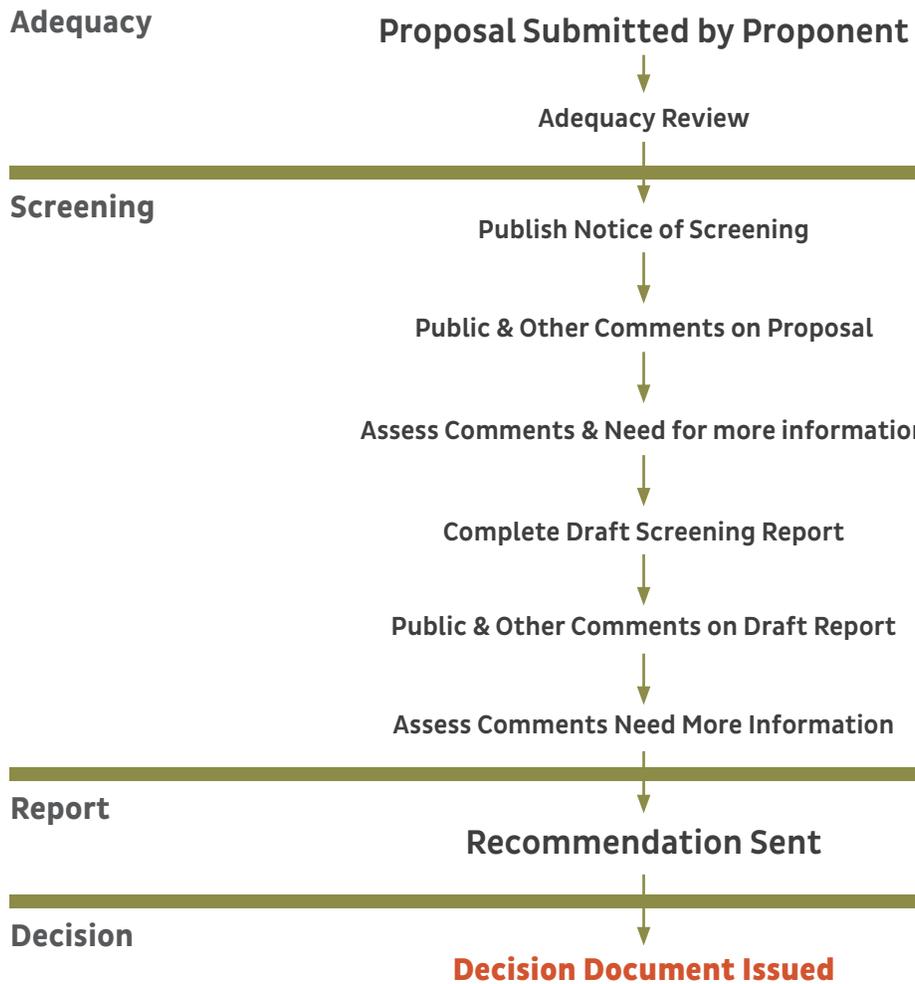
Additionally, the Project is subject to assessment under Schedule 3 item 3(b) of the Project Regulations, requiring an Executive Committee Screening for the construction, decommissioning, and closure of a gold mine with production capacity exceeding 300t/day.

YESAA requirements include the following:

- Section 47(2) of YESAA requires the proponent to gain approval through authorization or a grant of an interest in land by a government agency, independent regulatory agency, municipal government, or First Nations group for any activity undertaken in the Yukon Territories.
- Section 50(2) of YESAA requires a proponent to consider alternatives to the project or alternative ways of undertaking the project during the proposal stages. Consideration of alternatives and relative impacts facilitates the minimization of significant adverse environmental or socio-economic impacts. Section 42(1)(e) of YESAA directs the Executive Committee to make similar considerations in assessment.
- Section 50(3) outlines the proponent's responsibility to consult potentially affected First Nations and stakeholders. Consultation shall be conducted by providing: notice of the matter in sufficient form and detail to allow the party to prepare its views on the matter, a time period reasonable for the preparation and organization of views, as well as an opportunity to present the views of the affected party. Following the presentation of views they must all be considered fully and fairly by the proponent.

This Project will be subject to the legislation of federal and territorial legislation thus requiring many permits and approvals. A Quartz Mining Licence will be required pursuant to the Quartz Mining Act. Additionally CMC will be required to obtain a Type A Water Licence under the Waters Act for mine operations with use of water and deposit of waste, as well as tailings management according to the Project design.

EA PROCESS AND TIMELINE



Under YESAA, assessors consider the potential environmental and socio-economic effects of proposed activities by gathering and analyzing relevant information from various sources (federal, territorial and First Nation governments, experts in the field, the proponent, and the public) and by conducting research to allow for a complete and thorough assessment.

Casino Mining Corporation has been actively engaging since 2008, and will continue to engage, First Nations, YESAB, other Yukon

and federal agencies, renewable resource councils, city and village leadership, and other public stakeholders. The frequency and depth of these discussions varied depending on the scale and scope of First Nations' and stakeholders' interest in learning more about the proposed Project, providing input into the Project Proposal and as the status of the Project changed over time. The focus of CMC's efforts has been on those First Nations and other groups which are directly affected by the Project.



KEY PROJECT COMPONENTS & ACTIVITIES

OPEN PIT OPERATIONS



OPEN PIT	
Area	300 ha
Depth	600 m
Mill Reserves	965 Mt
Heap Leach Reserves	157 Mt
Waste Rock	658 Mt

The proposed Casino Project is an open pit mine in the Dawson Mountain Range of the Klondike Plateau in the Yukon Territory, approximately 300 km from Whitehorse.

The Casino Project's open pit mine will be located between the headwaters of Casino Creek and Canadian Creek. The pit will ultimately occupy an area of approximately 300 hectares and will extend to a depth of approximately 600 metres. The mine has a total of 965 million tonnes of proven and probable mill ore reserves and 157 million tonnes of proven and probable Heap Leach reserves that have been identified. Additionally, 658 million tonnes of waste material will be excavated during the 22-year mine life of the Project.

TAILINGS MANAGEMENT FACILITY



TAILINGS MANAGEMENT FACILITY	
Type	Two earth-rockfill-cyclone sand, zoned embankments
Area	1,120 ha
Capacity	947 Mt of tailings and 658 Mt of potentially reactive waste rock and overburden

The Casino Project's Tailings Management Facility (TMF) will be located southeast of the Open Pit, in the valley formed by the headwaters of Casino Creek. The principal objectives of the TMF area are to safely store the required volume of tailings and potentially reactive waste materials, while in a manner that protects the regional groundwater and surface waters throughout the mine life. The TMF is designed to fulfill the reclamation requirements of the Project at closure.

PROCESSING FACILITIES

The Casino Project will have two ore processes:

- A sulphide ore process, consisting of primary crushing followed by a single-line semi-autogenous (SAG) mill, ball mill circuit and conventional copper-molybdenum flotation circuits
- An oxide ore process, which will use cyanide leaching followed by Adsorption Desorption and Recovery (ADR) to recover gold and silver, and Sulphidization Acidification Recycle and Thickening (SART) to recover copper sulphide precipitate within the HLF process unit.

TEMPORARY STOCKPILES

Temporary stockpile areas for gold ore, supergene oxide ore, low-grade ore and marginal grade ore will be utilized in order to achieve a desired mill feed schedule. Topsoil and overburden stockpiles will also be generated to store material for reclamation use at the end of the mine life.

Mine Site Infrastructure Components and Activities

A number of components and activities have been designed for the purposes of mine site infrastructure, including:

- Mine Site Airstrip
- Freegold Road Extension
- Ancillary support features (e.g. admin offices, warehouses, etc.),
- Power Generation and Distribution (power plants, generators and transmission lines),
- Fuel Supply & Distribution,
- Accommodations Camp,
- Service Roads,
- Water Supply and Distribution (including make-up water supply),
- Wastewater treatment and disposal, and
- Communications infrastructure



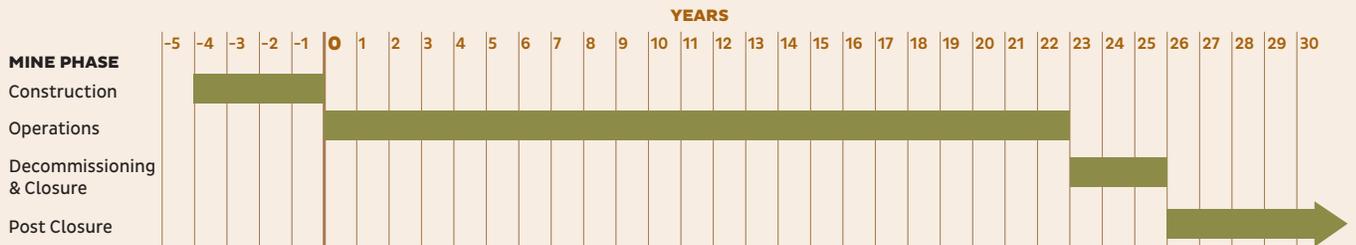
ACCESSORY ACTIVITIES

The existing Freegold Road from the village of Carmacks to the Big Creek crossing is the property of the Yukon Government and will remain a public road throughout the life of the Casino Project. The existing Freegold Road extends approximately 83 km northwest from the Village of Carmacks towards the mine site where it ends and meets the proposed Freegold Road Extension near an old washed out bridge on Big Creek.

From where the existing Freegold Road ends, CMC will construct a new, all-weather, gravel road to the mine site designated as the Freegold Road Extension. The Freegold Road Extension will be a 120 km, two-lane, gravel resource road designed to accommodate double-trailer and Tridem trucks. In general, the Freegold Road Extension will follow the existing historic Casino Trail that has been used in the past to service the mine site; however closer to the mine site, the road will deviate from the Casino Trail in order to ensure better grades and alignment for the mine traffic.

PROJECT PHASES AND SCHEDULING

There are four major phases identified for the Casino Project: the Construction Phase (lasting four years), Operation Phase (spanning 22 years post-construction), Closure and Decommissioning Phase (spanning three years after operations), and the Post-Closure Phase (lasting approximately five years).



A. CONSTRUCTION PHASE

Construction will commence when the necessary permitting and financing is in place for the Casino Project and is planned to span four years prior to the commissioning of mill operations (Years -4 to -1). The first stage will involve the establishment of road and air access facilities, followed by the Plant Site and the Stage 1A Starter Embankment for the TMF. Operation of the HLF and process unit will commence at the end of the second year of construction and continue through into the Operation Phase.

B. OPERATIONS PHASE

The Operation Phase commences at the end of commissioning of the sulphide mill and associated components (start of Year 1) and is projected to last for 22 years. Production is expected to be below full capacity in Year 1 (processing 34.5 Mt of ore) before ramping up to full production (120,000 tpd) for the remaining mine life (Year 2 to Year 22). Throughput will vary on a yearly basis from 44.7 Mt to 46.2 Mt. The mine site will operate 24 hours per day and 365 days per year for the duration of the Operation Phase.

C. CLOSURE AND DECOMMISSIONING PHASE

The active Closure and Decommissioning Phase is scheduled to commence at the end of operations and last three years. During this phase, surface facilities will be removed and the Casino mine site will be fully reclaimed according to the reclamation objectives in CMC's Conceptual Closure and Reclamation Plan. This Plan also include a contingency for temporary closure.

D. POST-CLOSURE PHASE

Post-closure activities include monitoring of the effectiveness of closure and decommissioning activities in the Project area. For the purpose of the Proposal and assessment, the Post-Closure Phase is expected to last five years, or until the results of ongoing monitoring demonstrate that the closure objectives have been achieved and are self-sustaining. Monitoring is anticipated to evaluate the predicted results of reclamation within this phase. There will continue to be limited activities following the post-closure phase to ensure protection of the surrounding environment.

COLD CLIMATE VIABILITY

Heap Leach Technology

To enable year-round operation of the Heap Leach Facility, the Casino Project area conditions and associated potential challenges have been taken into consideration as part of the heap leach design process. This technology including buried lines and seasonal ore stacking has been proven to be viable in similar conditions, such as at the Brewery Creek Mine (Yukon) in the late 1990s, and the Fort Knox Mine (Alaska) in the 2000s.

TMF Operations

The Casino Project TMF has been designed to ensure that it has the ability to remain operational beneath ice under freezing conditions. This will involve incorporating design considerations to be able to maintain and operate the TMF with a frozen ice layer covering the supernatant pond.

Cyclone Sand

There is potential for freezing conditions to reduce operational periods for cyclone sand placement, to prevent ice entrainment in the sand fill or snow drifting into sand cells. The Casino Project has dealt with this issue by limiting the proposed schedule for the cyclone plant operation. Further, any excess non-PAG earth and rock fill materials will be incorporated into the dam wherever possible, thus limiting the cyclone sand requirements. Other considerations will involve the draining of slurry pipelines for long shutdowns (to avoid freezing) and the staging of cyclone sand placement to avoid freezing conditions as much as possible.



CONSULTATION SUMMARY

CMC has been sharing information with First Nations, local communities, Yukon Government, federal agencies, NGOs, and individuals since 2008. The consultation program included a range of techniques to identify concerns and methods to address these concerns, such as: one-on-one group and community meetings, Open Houses, presentations, field trips, general and Project Proposal meetings, interviews and questionnaires as well as phone calls, e-mails and letters.

FIRST NATIONS CONSULTATION

CMC consulted First Nations and their respective Renewable Resource Councils through Open Houses, meetings, letters, e-mails, and phone calls. Through consultation activities, CMC identified and addressed a range of issues, concerns and information requests.

Consultations began with meetings to introduce the Project in late 2008, early 2009 and also at later dates. When appropriate and prior to each meeting, CMC sent a letter and information package that included agendas, PowerPoint presentations and other information to support the proposed discussion. In many cases, the letters and contents of the information packages were also sent by e-mail or dropped off in hard copy, in accordance with the preference requested by the First Nation.

Where appropriate, First Nations were invited to group meetings with Yukon government, federal agencies and regulators.

After introductory meetings and initial consultation, Selkirk First Nation and Little Salmon/Carmacks First Nation were identified as the most likely to be potentially affected by the Project.

CMC or their consultants regularly contacted the Selkirk First Nation seeking their participation in field programs taking place in the Traditional Territory or Settlement Lands. Where Selkirk First Nation members were available they participated in field programs. In 2011, CMC's heritage and archaeology consultant provided on-the-job heritage assessment fieldwork training to a Selkirk First Nation member. In 2013, CMC's heritage and archaeology consultant provided on-the-job training to three Selkirk First Nation members.

CMC engaged with Little Salmon/Carmacks First Nation on a range of matters related to Little Salmon/Carmacks direct involvement. CMC and the Little Salmon/Carmacks First Nation have discussed gathering traditional knowledge. Little Salmon/Carmacks First Nation advised CMC that they would like to revisit the need for, and collection and use of traditional knowledge following their opportunity to review the Project Proposal.

CMC also engaged with a number of First Nations not considered as likely to be potentially affected as Selkirk and Little Salmon/Carmacks First Nations. The First Nations consulted, through meetings, e-mails, letters, phone calls, presentations and Open Houses, included: Tr'ondëk Hwëch'in First Nation, White River First Nation, Champagne and Aishinik First Nations, and Kluane First Nations.

PUBLIC CONSULTATION

During the early stage of the Project, CMC identified a number of public stakeholders that may be affected by or may have an interest in the Project. These stakeholders as well as those who self-identified as interested were consulted.

Based on consultations and information in the socio-economic impact assessment, two communities were identified as most likely to be affected by the Project; the Village of Carmacks and the City of Whitehorse.

Consultation with members of the public that self-identified as having an interest in the Project area was conducted. CMC communicated with and consulted in relation to the Project with the public through a number of activities.

On several occasions, CMC met with municipal government agencies to provide information about the Project and an update on the Project activities.

CMC also conducted community Open Houses between 2008 and 2013 to provide information to the public, to introduce the Company and the Project, and to discuss any interests or concerns. CMC and its consultants were available at these Open Houses to answer question and provide an overview presentation about the Project.

Interviews were conducted with municipal representatives, service providers, and members of the public such as guide outfitters and trappers, to gather pertinent information related to the Project. Information from the interviews was considered and incorporated into the socio-economic baseline report and effects assessment and, where concerns or issues were raised, they were considered by CMC in Project planning and developing mitigation measures.

CMC also developed and distributed a communication booklet to provide accurate, plain-language information about the Project. The booklet was developed and distributed by request, starting in May 2012.

GOVERNMENT AND AGENCY CONSULTATION

Consistent with CMC's commitment to incorporate social responsibility and to implementing a thorough and on-going consultation process in relation to the Project, CMC conducted two significant rounds of formal consultation in 2009 and 2013 with government agencies that will have assessment and regulatory authority on the Project.

The first round in 2009 focused on presenting and securing feedback on baseline data collection. The objective was to ensure data collection was appropriate and addressed the expectations of technical review agencies when the Project proposal was submitted. The second round in 2013 was to present the initial results from the baseline program, and the methodology and approach planned for the Project proposal submission to YESAB.

CMC consultations with government and regulatory bodies included all those Yukon and Federal government agencies and regulators that had a legislative or policy mandate in relation to the Project and Project-related activities, those that either self-identified as having an interest or were identified by other stakeholders as having an interest in the Project.

In 2008, CMC began providing information to and engaging with government agencies and regulators and did so through written correspondence (digital and hard copy), phone calls, in-person meetings, site visits and interviews.



Consultation Activities

- Introductory meetings
- General meetings
- Project Proposal meetings
- Project update meetings
- Socio-economic meetings
- Site visits
- Community open houses

CONCERNS RAISED

Through consultation and information sharing, CMC identified issues and concerns and, in response, identified accommodation, through mitigation or adjustments to the Project to address concerns.

The key issues and concerns raised by First Nations, government, and the public have been arranged into three general categories; summarised as follows:

- Biophysical Environment Concerns (e.g. Potential wildlife habitat loss, Climate change effects, etc.)
- Human Environment Concerns (e.g. Project feasibility and sustainability, economic benefits, etc.)
- Physical Environment Concerns (e.g. Baseline information and reporting, access and transportation options, etc.)

The issues raised were registered by CMC, who considered and responded in a wide range of ways including providing additional information and changing Project design among other considerations.

Observations on Identified Concerns

- Recognizing the importance of minimizing potential negative social and economic effects
- Recognizing that economic benefits, employment and training are a necessity
- Identification of cumulative effects as a common concern
- Emphasizing the importance of continued consultation

PROJECT BENEFITS

The construction of the Project is planned to occur over four years and cost a total of \$2.5 billion in capital expenditures. According to a report prepared by Meyer Norris Penney LLP (MNP) in 2013, this will increase Yukon's GDP over that period by \$363 million. During the operations phase, the Project is expected to increase GDP by \$274 million, equivalent to 11.4% of Yukon's 2011 GDP of \$2.4 billion. Government revenues from the Project are forecasted to amount to \$219 million annually over the operations phase, of which \$61.1 million annually is expected to be raised through the Yukon Mining Tax. Revenues for the Yukon Government are estimated to amount to 7.4% of Yukon's 2012 overall revenue. The magnitude of this increase in resource revenue would be sufficient to change the nature of the funding arrangement between the federal and territorial governments, allowing a greater share of resource revenues to be retained by the Yukon Government. Residual effects on the economy post-operations would be limited to closure expenditures, which are of a relatively low magnitude and not expected to be noticeable, as well as ongoing economic returns from infrastructure investments made by CMC (notably the Freegold Road upgrade), human capital investments retained by workers (training and education), and returns from public investments funded by increased government revenue.

MNP's analysis estimates that construction of the mine would support 5,091 full-time equivalents (FTEs) of employment in Yukon over 4 years, of which 3,275 FTEs would arise from direct expenditures. It would also bring

\$195 million in wages and salaries within Yukon, of which \$137 million would come from direct expenditures.



CMC intends to employ as many people from Yukon as possible, including from First Nations communities. Additional personnel from outside Yukon may be necessary to fully staff the Project during the operations phase, but CMC plans to develop a rising share of Yukon-based employees as operations move to peak production.

CMC is committed to the continued recruitment, training, and advancement of Yukon workers and will work to increase the share of Yukon resident workers over the lifetime of the mine; however, to the extent that residency reflects worker preference and

given the competitive labour market for skilled workers, it is unlikely that the workforce would become fully resident. Workforce estimates may change based on changes in productivity, ongoing exploration activity, and changes in commodity prices.

In addition to direct employment opportunities, the operations of the Project are expected to impact Yukon's economy through expenditures on goods and services. MNP estimates that roughly 69% of operational spending will occur in Yukon. With this percentage and with projected annual operational spending data, MNP estimates that the operation of the mine would support an additional 313 FTEs of indirect and induced annual employment. In total, MNP estimates that operations of the mine would create annual employment of 855 FTEs and generate \$43 million in annual wages and salaries in Yukon.

Revenue from the sale of minerals from the Project is forecasted at \$25.1 billion over 22 years at a cash production cost of \$11.4 billion. The Feasibility Study for the Project forecasts tax payments arising from the mine over the construction and operations phases. Over the construction phase, total government revenue paid by CMC averages \$7.0 million annually, from Yukon mining royalties (on pre-production revenue). Over the operation phase, total government revenue from the project averages \$219.1 million annually, mostly through corporate taxes (\$130.8 million annually) and Yukon royalties (averaging \$88.2 million annually). Taxes raised by the Yukon Government average \$153.6 million annually while taxes raised by the Federal government average \$65.4 million. These figures do not reflect the amounts ultimately retained by the respective governments, since these amounts are adjusted in accordance with agreements between the Federal and Yukon Government (i.e., through the Territorial Formula Funding and Resources Revenue Sharing agreements).

POTENTIAL EFFECTS OF THE PROJECT

Baseline conditions and background information on the physical, social, and economic environment of the Casino Project were documented through multi-year and multi-disciplinary studies. These studies are included as appendices. Based on these studies, 14 Valued Components (VCs) were selected to focus the effects assessment on aspects of the environment that have the

potential to change due to direct or indirect interaction with the Casino Project. The VCs were also selected for environmental, scientific, social, aesthetic, or cultural reasons, as identified through consultation with First Nations, governmental organizations, regulatory authorities, and the public.

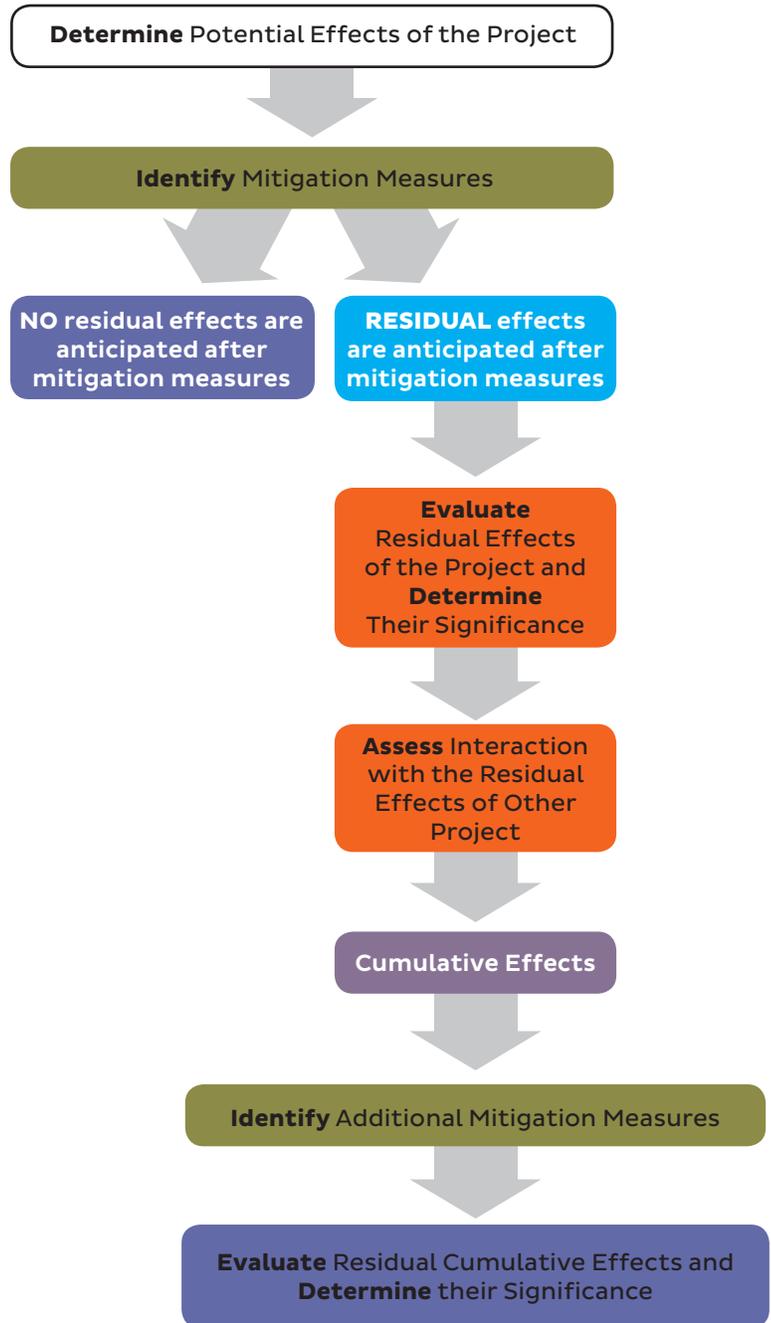
VALUED COMPONENT	DEFINITION	RATIONALE
Terrain Features	The geological surface features, topography, and layers of mineral and organic materials	<p>Terrain features were selected as a VC because of the potential for the Project to result in the loss of unique Beringian landscape features.</p> <p>Alteration of the VC could also result in indirect effects on vegetation health and growth and aquatic ecosystems.</p>
Water Quality	The chemical, physical and biological characteristics of surface water and ground water	<p>Water is the foundation supporting and maintaining healthy ecological processes for fish, wildlife, and humans.</p> <p>Water quality parameters such as total suspended solids, acidity, alkalinity, metals, sulphate, cyanide and nutrients are assessed relative to the requirements of one or more biotic species or to any human purpose.</p>
Air Quality	The composition of outdoor air	<p>Clean air in the Yukon is valued unto itself. Fugitive dust and particulate matter resulting from mining activities could cause deterioration of ambient air quality and affect other VCs such as surface water quality vegetation and wildlife.</p> <p>Major air pollutants that will be assessed are sulphur dioxide, nitrogen dioxide, carbon monoxide and particulate matter, as well as Greenhouse Gases (GHG).</p>

VALUED COMPONENT	DEFINITION	RATIONALE
Noise	Disagreeable sound resulting from pressure vibrations	In the Yukon, the tranquility of the landscape and lack of intrusion from anthropogenic sound sources has intrinsic value; noise from the Project could affect the use of the surrounding area by humans and wildlife.
Fish & Aquatic Resources	Aquatic organisms and the biotic and abiotic environment on which they depend.	<p>Fish have ecological, cultural, recreational and commercial value, and constitute a fundamental role in aquatic ecosystem functioning. Primary and secondary producers such as periphyton and benthic invertebrates are useful indicators of overall aquatic health.</p> <p>The Proposal will assess the potential effects of the proposed Project on aquatic habitat loss and alteration, and lethal and sub-lethal effects on fish and other aquatic organisms.</p>
Rare Plants & Vegetation Health	Rare plants are plants and ecological communities considered at risk or of conservation concern by the Yukon Conservation Data Centre. Vegetation health refers to the ability of an ecological community to be self-sustaining.	<p>Rare Plants and Vegetation Health were selected as VCs due to the potential loss in abundance within the Project footprint, and indirect effects on surrounding communities.</p> <p>Sensitive ecosystems such as wetlands and lichen-producing habitats are considered an indicator of Project effects on vegetation health.</p>
Wildlife	Terrestrial mammals, songbirds, raptors and waterfowl.	<p>Wildlife have intrinsic value and are also important for local communities that harvest them. The assessment is focussed on a number of Key Indicators, which are particular species or species groups.</p> <p>Key Indicators include the Klaza caribou herd, moose, grizzly bear, collared pika, cliff-nesting raptors, bird species at risk, and waterfowl.</p>
Community Vitality	Demographic conditions and well-being of individuals, families, and communities	Potential change in community demographics, and new project-related income and work schedules, could affect the well-being of individuals, families, and communities.

VALUED COMPONENT	DEFINITION	RATIONALE
Community Infrastructure & Services	Municipal infrastructure (water supply, water/sewage treatment, landfills, power supply, and recreational facilities); Housing; Transportation; Educational services; Health and Social Services; & Protective Services	Potential Project-related increased demands on regional infrastructure and services, and concern for the ability of the local infrastructure to cope with increasing demands.
Employability	Project-related employment opportunities	Employability was selected as a VC because of the potential effects of the Project on educational level and experience of study area residents.
Employment and Income	Ability to meet potential labour demands during the lifetime of the proposed Project	Employment and Income were selected as VCs to examine labour availability in the study communities, as well as direct, indirect and induced local employment and employment income derived from the proposed Project.
Economic Development & Business Sector	Economic Growth; Government Revenues; and Business Opportunities in the broader territorial economy	Economic Development and the Business Sector were chosen as VCs, since Project development would result in increased activity within the territorial economy.
Cultural Continuity	Defined by Traditional Language; Places of Historical and Archaeological Value; Traditional Knowledge; Social, Community and Cultural Activities; and Subsistence and Recreational Harvesting	Cultural continuity was selected as a VC to address the potential of the proposed Project to affect traditional activities and culture and existing heritage resources.
Land Use & Tenure	Human use of the land and the legal regime governing land ownership	Potential interactions of the Project with other land users in the area including Parks and Protected Areas, Trapping and Guide Outfitting, Hunting and Fishing, Recreation and Tourism, Permits and Licenses, Mining and Mineral Claims, Forest Uses (firewood collection and gathering), Transportation and Access, Energy and Utilities, and Traditional Land Use.

After the VCs were chosen, the spatial and temporal boundaries were defined typically as the Local Study Area (LSA) and Regional Study (RSA), and an effects assessment was undertaken, which was followed by a cumulative effects assessment. For each of the 14 VCs, the potential effects of the Project were characterized by determining how, when, and where the Project is anticipated to interact with the VC. These interactions are described based on how they could change one or more aspects of the VC, or components of the environment on which the VC depends, from pre-Project baseline conditions.

If an interaction is considered to be adverse, technically and economically feasible mitigation measures are described in terms of where and when they would be implemented and their effectiveness in eliminating or reducing the Project effect. Mitigation measures could include restitution, restoration, replacement, or compensation. After mitigation measures have been applied, residual effects may or may not be anticipated. If no residual effect is anticipated, the effects assessment for this effect is considered complete. If a residual effect is anticipated, it is evaluated to determine its significance based on the magnitude, geographic extent, duration, frequency, reversibility, and probability of occurrence of the effect, as well as the ability of the VC to accommodate the change. The residual effect is then rated as either Significant or Not Significant.



The residual effects of a VC are then carried over into a cumulative effects assessment. Cumulative effects are the combined impacts that accumulate from a series of similar or related individual actions, contaminants, or projects. The residual effects of the Casino Project on VCs are assessed in relation to the residual effects of other past, present or likely future projects and activities. These projects were compiled based on information from Yukon Government department websites, mining-related websites, resource use websites, and consultation with regulators, First Nations, and stakeholders. If the effects of other projects and activities overlap spatially or temporally with the

effects of the Casino Project, then a cumulative effect is possible.

Once a cumulative effect is identified, additional mitigation measures are recommended. These mitigation measures can require stakeholder involvement, since regional initiatives may be the only method to address complex cumulative effects. After mitigation measures have been applied, the significance of these cumulative effects is assessed following the same methodology and criteria used for determining the significance of residual Project-specific effects.



TERRAIN FEATURES

SCOPE OF ASSESSMENT

The Project is located in an area of glaciated and unglaciated terrain, characterized by landforms and geomorphic processes modified by widespread discontinuous permafrost (frozen ground) and periglacial processes (geomorphic processes associated with ice and freeze-thaw cycles). The assessment of the Project on Terrain Features focuses on issues related to three unique landforms of geological or ecological interest: thaw lakes (lakes found in thermokarst that develop in a depression and accumulate either permafrost melt water or rain water), pingos (mounds of earth-covered ice which grow as a result of periglacial processes), and tors (isolated pillar-like rock outcrops situated on ridges, associated with unglaciated terrain). The interaction assessed was clearing and earth moving within the Project footprint, the key indicator being the partial or total loss of some of these features.



ASSESSMENT AREA

The LSA is the zone where there is a reasonable potential for immediate interaction between Project components and terrain features. The LSA for terrain features includes a 1.5 to 2.5 km boundary around the mine site, airstrip, airstrip access road, and the Freegold Road extension and upgrade, encompassing an area of 896 km².

BASELINE CONDITIONS

Baseline investigations for surficial geology and terrain were conducted between 2009 and 2013 and were comprised of desktop studies, reconnaissance terrain mapping, and field investigation. Surficial geology was interpreted from air photos, LiDAR, ground-truthing, test pits, trenching and geotechnical boreholes. A map-based inventory of surficial geology and terrain features was produced. Terrain mapping followed the Terrain Classification System for British Columbia; this classification system describes surficial geologic material, texture, surface expressions and geomorphic processes.

Thaw lakes form and disappear relatively rapidly. A total of 29 thaw lakes were identified throughout the LSA, six of which are within the potential disturbance area. Pingos are dynamic and relatively uncommon, since they only persist in permafrost landscapes. Collapsed pingos can serve as unique habitat for wildlife and year-round sources of water. Fifteen pingos were identified within the LSA. Tors are present on many of the ridges throughout the LSA, both along the road and near the airstrip. Tor occurrence was identified within the LSA, covering an area of 5.0 km²; within the potential disturbance area, tors cover approximately 0.37 km².

Terrain features within the Project footprint maybe be removed or covered during the construction phase of the Project. The removal of terrain features during construction will be permanent. Mapping completed during the baseline work indicated that a total of six thaw lakes, 0.37 km² of tor area, and one pingo are present within the potential disturbance area and may be removed during footprint clearing. The percent loss of terrain features within the LSA is 21% for thaw lakes and 7% each for tors and pingos.

Potential Residual Effect	Key Mitigation Measures
Loss of or damage to terrain features	Where possible, CMC will realign or relocate footprint features to avoid removing/destroying unique terrain features
Covering existing terrain features	Avoidance, minimize footprint

CUMULATIVE EFFECTS

A qualitative effects assessment was conducted, since detailed regional terrain mapping is not available in sufficient detail. Mineral exploration, current and past producing quartz mines, and placer mining projects have occurred in, and are likely to continue to occur in the Project region. Active or historic quartz mines such as the Minto Mine and Mt Nansen Mine can have residual effects on terrain features within their project footprint, but the presence of terrain features like tors, thaw lakes and pingos within those project footprints is undocumented. The cumulative effect identified is the cumulative loss of terrain features in the Dawson Range within an additional 17.08 km² of footprint disturbance.

KEY FINDINGS

Project effects on terrain features are considered to be adverse and irreversible; however, the residual effect is considered Not Significant, since the impact will be on individual features and localized to the Project footprint. There is no indication that there are any particular concerns with the conservation and protection of these unique terrain features as a whole, nor protection of individual features.



WATER QUALITY

SCOPE OF ASSESSMENT

Water quality forms one of the vital links between the abiotic and biotic environments, and is the foundation for supporting and maintaining healthy ecological processes for a rich and varied community of users (e.g., fish, wildlife, humans). Changes in acidity, alkalinity, metals, sulphate, cyanide and nutrients were selected as key indicators to assess the potential Project effects on the water quality VC.



ASSESSMENT AREA

The water quality LSA is primarily defined by the boundaries of the two watersheds in which the Project components will be situated: the Britannia Creek watershed to the north, and the Casino Creek watershed to the south. The LSA also includes a 5 km-long reach of Dip Creek downstream of its confluence with Casino Creek, several Dip Creek tributaries within the airstrip and airstrip access road footprint, and several watersheds within the Freegold Road Extension and Freegold Road Upgrade corridor. The water quality RSA was defined as the LSA plus adjacent areas that have the potential to experience either indirect (mid-to-far field), or cumulative effects due to interactions with other projects.

BASELINE CONDITIONS

To understand potential effects on water quality, surface water sampling sites and groundwater wells were established in the Project area and monitoring was conducted. A total of 26 surface water monitoring stations were established between 2008 and 2012; the stations were concentrated in the Casino and Britannia Creek watersheds. A total of 20 groundwater quality monitoring wells were installed in the vicinity of and down-gradient from key Project facilities since the program began in 1993. Water samples were collected and analyzed for physical parameters, anions, nutrients and total and dissolved metals, cyanide, and organics. Minimum, mean, median and maximum concentrations were calculated for each parameter at all stations.

Several Project components and activities were identified as having potential interactions with water quality in the LSA. Potential effects focused on three key areas: discharges, seepages and runoff from the TMF; contaminant loading from blasting residues or atmospheric deposition; and erosion and sedimentation processes.

Potential Residual Effects	Proposed Mitigation Measures
Change in surface water quality in Casino Creek and Dip Creek due to unrecovered seepage	<ul style="list-style-type: none"> Water management pond will intercept 90-95% of seepage and pump it back to the TMF
Change in surface water quality in Casino Creek and Dip Creek due to project discharge	<ul style="list-style-type: none"> Water Management, including Construction of two engineered wetlands
Changes in surface water quality due to blasting residues	<ul style="list-style-type: none"> Divert all contact water to the TMF; BMPs for explosives selection, drilling, handling and loading
Changes in surface water quality due to atmospheric deposition	<ul style="list-style-type: none"> Divert all contact water to the TMF BMPs for drilling, handling and loading ore Traffic speed limits Dust suppressants
Change in surface water quality from increased erosion and sedimentation	<ul style="list-style-type: none"> Effective water management and BMPs for sediment mobilization and erosion as outlined in the Erosion and Sedimentation Control Plan Modify culvert and bridge design for areas with increased sensitivity to disturbances

MONITORING

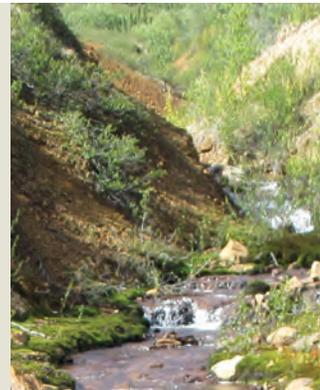
A water quality, sediment quality, and aquatic biota monitoring program will be developed for the Casino Project to verify the protection of water quality and fish habitat, and to meet the permitting and licence requirements of Yukon and federal regulatory agencies. During all project phases, the mine will be subject to monitoring requirements from the Yukon Water Board. Results from these monitoring programs will be used to confirm predictions made regarding downstream effects to water quality and aquatic biota.

CUMULATIVE EFFECTS

The projects and activities selected for the cumulative effects assessment on water quality were past mining in the Casino Creek watershed; present mining at the Minto Copper Mine; current development and future mining at the Carmacks Copper Mine; past, present, and future mineral exploration around the Casino Mine site and within watersheds along the Freegold access corridor; and past, present and future placer mining around the Casino Mine site and within watersheds along the Freegold access corridor. The only potential cumulative effect identified on water quality from the proposed Casino Project and the other identified past, present and likely future projects and activities was reduced water quality in Casino Creek via surface runoff to Meloy Creek from an old adit. Permanently sealing/plugging the adit to prevent the further discharge of water to surface was identified as a highly effective mitigation measure to address this cumulative effect; therefore, no significant cumulative effects on water quality are predicted to occur.

KEY FINDINGS

No significant water quality change or cumulative effects are predicted to occur due to the Casino Project with the implementation of mitigation measures. All residual effects are considered Not Significant due to the low geographical extent and low to medium magnitude of anticipated impacts.



AIR QUALITY

SCOPE OF ASSESSMENT

Air Quality was chosen as a VC since it could be used as an indicator of both environmental and human health due to the atmosphere's role in transporting air emissions to human, freshwater, and terrestrial environments. Air quality can be further subdivided into three key indicators: ambient air quality concentrations, particulate matter deposition, and greenhouse gasses in the atmosphere. The indicators used to assess the potential effects are ambient air quality concentrations, particulate matter deposition, and greenhouse gasses in the atmosphere.

Ambient air quality is assessed by focusing on major air pollutants such as sulphur dioxide, nitrogen dioxide, carbon monoxide and particulate matter. The particulate matter deposition assessment focuses on particulate matter deposition rates. Greenhouse gases are assessed by determining the potential contribution of Project-related greenhouse gases into the atmosphere, and comparing it with national total greenhouse release statistics.



ASSESSMENT AREA

Two LSAs have been chosen to encompass the areas where the concentrations of compounds resulting from emissions from the Casino Project have the potential to exceed a standard threshold: the LSA for the mine site was established as a 60 x 60 km area to provide an understanding of the regional dispersion of air contaminants, based on similar large capacity industrial developments. An additional LSA consisting of a 20 km² area surrounding the village of Carmacks was established to account for the effects of the Freegold Road Upgrade and Extension.

The RSA was set as the LSA for the mine site and the LSA for the Village of Carmacks, along with a 4 km buffer along the Freegold Road Upgrade and Extension.

BASELINE CONDITIONS

Four dustfall collection canisters were installed at the Casino climate station in areas north, east, south, and west of the mine in August of 2010. Dustfall measurements were collected for a month from August to September of 2010, for three months in 2011 (from May to June and in August to September), and from July to August in 2013. Information on total Yukon and Canadian GHG emissions from 1990 to 2011 was obtained from the National Inventory Report.

Project-specific effects on air quality were assessed using the US EPA approved version of the CALPUFF air dispersion modelling system. An air emission inventory for the Project was compiled for input into the model. The worst-case conditions for air emissions were modelled for the assessment: the peak in construction activities and the year of operations with the maximum tonnage of waste rock moved. The CALPUFF model was run for the entire year to ensure that all climatic conditions were considered. The air quality assessment for the Project includes the predicted concentrations of suspended particulate matters (total suspended particulates, PM_{2.5}, and PM₁₀) and total particulate matter deposition (dustfall), as well as NO₂, SO₂, and CO. The results of the air quality model were compared with the Yukon Ambient Air Quality Standards, the Canadian Air Quality Objectives or the British Columbia Air Quality Objectives, as relevant.

Potential Residual Effects

Proposed Mitigation Measures

Exceedance of Yukon Ambient Air Quality Standards for SO₂, NO₂, CO

- Adhere to Occupational Health and Safety Act
- Use ultra-low sulphur content fuel. Use construction and mining equipment that meets the latest applicable Canadian emissions standards. Ensure regular equipment maintenance recommended by manufacturers
- Institute a policy for all equipment and vehicles to reduce and limit idling

Exceedance of Yukon Ambient Air Quality Standards for TSP, PM₁₀, PM_{2.5}

- Adherence to Occupational Health and Safety Act
- Cover or use water sprays at dust generating areas
- Reduce drop heights for process plants
- Minimize land disturbance, grubbing and clearing activities
- Cover or use water sprays at dust generating areas

Exceedance of BC Air Quality Objectives for dustfall

- Adherence to Occupational Health and Safety Act
- Minimize wind exposure at conveyors, drop-off points and truck load/unload locations
- Establish blasting procedures for open pit activities to minimize dust
- Reduce drop heights for process plants
- Institute a policy for all equipment and vehicles to reduce and limit idling
- Use well maintained vehicles to minimize air emissions
- Minimize land disturbance, grubbing and clearing activities
- Utilize dust suppressants and watering along access corridors and enforce speed limits
- Enforce speed limits, staff training and road watering along truck hauling routes for mine site hauling

Contribute to global greenhouse gasses

- Use construction and mining equipment that meets the latest applicable Canadian emissions standards. Ensure regular equipment maintenance
- Institute a policy for all equipment and vehicles to reduce and limit idling

MONITORING

Monitoring requirements are based on the results of the air quality assessment, existing air quality regulations, Project permits, and commitments detailed in the Project Proposal. The following parameters will be monitored:

- Dustfall: construction and operation
- Nitrogen oxides (NOx): construction and operation
- Suspended Particulate Matter (PM10 and PM2.5): operations

Monitoring locations will be established based on the prevailing wind patterns identified in the baseline climate program. All data will be summarized and compared to applicable guidelines in an annual air quality compliance report.

CUMULATIVE EFFECTS

Projects located in the vicinity of the Freegold Road were selected for analysis as they could potentially share a spatial overlap with the Project. Of the three projects within the vicinity of the Freegold Road, two (Minto Copper Mine and Carmacks Copper Mine) were included in the cumulative effects assessment.

The potential residual cumulative effects on air quality that were identified were exceedances of Yukon Ambient Air Quality Standards for NO₂, exceedances of Canadian Air Quality Objectives for PM₁₀ and PM_{2.5}, and elevated levels in the atmosphere compared to national total greenhouse release statistics. Additional mitigation recommended was the development and implementation of an Air Quality Monitoring Plan and a Road Use Plan.

KEY FINDINGS

Dispersion modelling was used to assess the potential effects of SO₂, NO₂, CO, TSP, PM₁₀, PM_{2.5}, and dustfall associated with the Casino Project on air quality predicted concentrations of potential air contaminants for both the Casino mine site and the Freegold Road. With the implementation of mitigation measures concentrations of potential air contaminants would meet the applicable Yukon Ambient Air Quality Standards or Canadian/BC Air Quality Guidelines and thus any effects are considered Not Significant.



NOISE

SCOPE OF ASSESSMENT

Mining activities at the Casino project mine site will generate noise. This has the ability to affect sensitive receptors in the surrounding area via airborne sound propagation. Sound propagation is dependent on the atmosphere as it can be affected by wind speed, wind direction, and relative humidity. Noise has been chosen as a VC because airborne sound and ground vibration propagation can potentially affect human health.



ASSESSMENT AREA

Two LSAs were established for the effects assessment on noise: a 30 km² area surrounding the mine site and a 20 km² area surrounding the village of Carmacks to account for the sensitive receptors present in this area.

The RSA was set as the LSA for the mine site and the LSA for the Village of Carmacks, along with a 4 km buffer along the Freegold Road Upgrade and Extension.

BASELINE CONDITIONS

Sound levels around the mine site were assumed to be pristine at baseline. Sound levels were measured and recorded near the Freegold Road near Carmacks to establish baseline conditions in a disturbed

environment: a Larson Davis 831 Sound Level Meter was used to determine ambient sound levels over a 22-hour period from August 25, 2011 to August 26, 2011. The results were compared to British Columbia Oil and Gas Commission published standards, since the Yukon does not currently have any published noise guidelines or regulations.

Project effects on sound levels were modelled using the outdoor sound propagation software Cadna/A. The inputs to the noise model include noise sources described in the Casino Project Feasibility Study, including road traffic, open pit and haul road vehicles, stationary sources such as crushers, conveyors, power plants, heat recovery steam generators, and use of off-site roads. Noise modelling was completed for both construction and operations phases in the mine site LSA.

Potential Residual Effects	Proposed Mitigation Measures
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Increase in noise levels above baseline

- Ensure regular equipment maintenance, including lubrication and replacement of parts by following manufacturer's recommendations
- Keep noisy equipment inside of buildings and sheds whenever possible
- Equipment will be operated with covers, shields, and hoods if provided by their manufacturer
- Site workers will be trained in proper machine use and maintenance
- Adhere to a blasting plan developed by an explosives contractor
- Optimisation of blasting operations by licensed staff which maximise localised rock breakage while minimising non-productive noise and vibration
- Impose speed limits for all vehicles
- Institute a policy for all equipment and vehicles to reduce and limit idling
- Wherever practicable, noisy equipment will be located near ground level to minimize noise propagation

MONITORING

Noise monitoring or modelling was recommended if receptors exist at affected areas along the Freegold Road Extension.

CUMULATIVE EFFECTS

Projects located in the vicinity of the Freegold Road were selected for analysis as they could potentially share a spatial overlap with the Project. Of the three projects within the vicinity of the Freegold Road, two (Minto Copper Mine and Carmacks Copper Mine) were included in the cumulative effects assessment. The residual effects from these projects are assumed to be the same residual effects identified for the Casino Project; therefore, the cumulative residual effect would be an exceedance of Oil and Gas Commission published standards at the Freegold Road. Additional mitigation measures for cumulative effects could be either Project-specific mitigation which CMC can implement, or recommended mitigation measures for which other parties could implement. The additional mitigation measure recommended for the potential cumulative effects on the Noise VC was to conduct noise monitoring or modelling if receptors are present in the affected areas.



KEY FINDINGS

Sound modelling was used to predict noise levels and potential effects of Project activities. Casino Mining Corporation has proposed several mitigation measures to minimize the potential effects of the Project components and activities on noise; with the implementation of the measures noise levels are predicted to remain below existing guidelines. Therefore, the effects of the Casino Project on noise are Not Significant.

FISH & AQUATIC RESOURCES

SCOPE OF ASSESSMENT

In Yukon, fish have ecological, cultural, recreational and commercial value as they support various fisheries, and constitute a fundamental role in aquatic ecosystem functioning. Primary and secondary producers such as periphyton and benthic invertebrates are key components of the aquatic food web foundation, providing food sources for higher trophic levels, and are useful as indicators of overall aquatic health. The Project will interact with fish and aquatic resources through a variety of mechanisms that can influence fish and aquatic organism habitat and health. These mechanisms include effects that involve habitat losses and alteration associated with road and facility footprints, instream works, watercourse diversions, changes to water quality, and reductions in stream discharge. Any habitat losses not mitigated by design will be compensated through a No-Net-Loss Fish Habitat Compensation Plan which aims to ensure that there is no impact on the productive capacity of fish and fish habitat on a regional scale.



ASSESSMENT AREA

The LSA for the fish and aquatic resources assessment for the Project includes the direct footprint of the proposed Project mine and near-field affected areas which have the potential to be affected by the Project. The LSA is defined by the boundaries of the two watersheds surrounding the Project: the Britannia Creek watershed to the north and the Casino Creek watershed to the south. The LSA also includes a portion of Dip Creek downstream of its confluence with Casino Creek, several Dip Creek tributaries within the airstrip and airstrip access road footprint, and several watersheds along the Freegold Road corridor. The RSA was defined as the LSA plus adjacent areas that have the potential to experience either indirect (mid-to-far field), or cumulative effects due to interactions with other projects.

BASELINE CONDITIONS

Baseline surveys were focused on two general Project related areas; the Casino Mine site and the area encompassing the Freegold Road and Airstrip Access Road. Investigations conducted at the mine site were focused on describing the diversity, relative abundance, distribution, and habitat quality for fish and aquatic organisms in addition to assessing metal loadings in surface water and resident fish tissues. The objectives of the sampling efforts applied to the Freegold Road and Airstrip Access Road was to characterize aquatic habitat at each watercourse crossing and to determine fish bearing status in support of the design and permitting of watercourse crossings.

For the Casino mine site, baseline sites were concentrated in the Casino Creek and Britannia Creek watersheds as they have the potential to be directly affected by the Project. Fish and aquatic resource studies were conducted from 2008 to 2013 at 29 fish sampling sites, 18 fish habitat sites, and 14 aquatic biota sites throughout the Project LSA. Fish habitat in the Project area was surveyed relative to the potential for supporting rearing, spawning and overwintering activities of local fish species. No fish species at risk were caught within the Project LSA.

The fish and aquatic resource studies along the Freegold Road Upgrade, Freegold Road Extension and at sites associated with the Airstrip Access Road were conducted in 2010, 2011 and 2013. The Freegold Road Upgrade has 22 fish bearing streams, the Freegold Road Extension has 56 fish bearing streams, and the Airstrip Access Road contains six fish bearing streams.

Potential Residual Effects	Proposed Mitigation Measures
Effects due to dust and emissions from blasting, ore transport and vehicle traffic	<ul style="list-style-type: none"> • Traffic speed limits, deployment of dust suppressants • Erosion and Sediment Control Management Plan • Best Management Practices for dust and other air contaminants as outlined in the Air Quality Management Plan
Fish-bearing in-stream and riparian habitat loss	<ul style="list-style-type: none"> • Implementation of Fish Habitat Compensation Plan for quantified habitat losses
Increased erosion and sedimentation causing habitat loss and alteration	<ul style="list-style-type: none"> • Erosion and Sediment Control Management Plan • Adhere to guidelines for fisheries working windows
Increased stream flows	<ul style="list-style-type: none"> • Modification of closure spillway discharge, magnitude and timing
Deleterious effects to periphyton, benthic invertebrates, and fish eggs due to infilling	<ul style="list-style-type: none"> • Adhere to guidelines for fisheries working windows
Deleterious effects on fish and aquatic organisms due to blasting	<ul style="list-style-type: none"> • Adhere to DFO guidelines for The Use of Explosives In or Near Canadian Fisheries Waters • ML/ARD risk assessment and Management Plan • Best Management Practices for explosives selection, drilling, handling and loading
Effects on fish and aquatic organisms such as trampling, impingement or entrainment during water extraction and de-watering	<ul style="list-style-type: none"> • De-water construction areas and conduct fish salvage • Adhere to guidelines for fisheries working windows • Adhere to guidelines for Freshwater Intake End-of-Pipe Fish Screen to prevent fish impingement and entrainment into water pumps
Lethal effects on local fish populations due to increased fishing pressure	<ul style="list-style-type: none"> • Zero fishing policy for CMC workforce, the Freegold extension will not be open to the public

Potential Residual Effects	Proposed Mitigation Measures
Change in water quality	<ul style="list-style-type: none"> • Water Management, including a Reclamation Plan (i.e. construction of two engineered wetlands: North TMF wetland and South TMF wetland), construction of a Winter Seepage Mitigation Pond • ML/ARD risk assessment and Management Plan • Erosion and Sediment Control Management Plan
Habitat avoidance, elevated stress or impaired health of fish and aquatic organisms	<ul style="list-style-type: none"> • Adhere to guidelines for fisheries working windows

MONITORING

A monitoring plan will be designed and implemented to monitor water quality, fish habitat, and biological communities in the LSA.

All construction activities will adhere to CMC’s Erosion and Sediment Control Management Plan, Environmental Management Plan and Water Management Plan, which aim to reduce or eliminate impacts on fish and aquatic resources by incorporating best management practices (BMPs).

Fish habitat compensation construction monitoring will minimize risks to fish and fish habitat during implementation of the compensation works. An environmental monitoring technician will be on-site

throughout the period of in-water work to document compliance with all environmental protection measures.

Fish habitat compensation effectiveness monitoring will be established to ensure that compensation measures are functioning as designed and to assess their effectiveness at achieving No-Net-Loss over the long-term. Seasonal assessments of physical and biological aspects of the compensation works will be conducted.

Water quality monitoring will document contaminant levels and additional water quality mitigation measures are possible if monitoring indicates that these are required.

CUMULATIVE EFFECTS

Directly around the Casino mine site, there is the potential for cumulative effects as a result of historic mining in upper Casino Creek, past and present mineral exploration of upper Canadian Creek, and past and potential future placer mining in Canadian and Britannia Creeks. Historic mining on the Casino property has resulted in the frequent discharge from a historical adit into the upper watershed, subsequently lowering water quality in downstream Casino Creek. On the northern side of the Casino property, present and future mineral exploration activities may increase erosion and sedimentation into Canadian Creek headwaters, disturb riparian habitat, and lower water quality. There is also the potential for placer mining in Canadian and Britannia Creeks to produce cumulative effects on local aquatic communities. Along the Freegold Road corridor, there are numerous mining, mineral exploration, and placer mining projects and activities with the potential to interact with the Casino Project. Possible cumulative effects along the corridor include lowered habitat productive capacity, and the potential for reduced aquatic organism health and survival.

KEY FINDINGS

No significant habitat loss and alteration, lethal effects, sub-lethal effects, or cumulative effects on fish and aquatic organisms are predicted to occur due to the Casino Project. All residual effects were considered Not Significant due to the low geographical extent, and low to medium moderate magnitude of the anticipated impacts. The assessment of significance is contingent on the complete implementation of mitigation measures, including the Fish Habitat Compensation Plan.

The primary impacts of the Casino Project on fish habitat are anticipated in the upper Casino Creek watershed in association with tailings management facility construction. Smaller-scale, in-stream impacts are also expected along lower Casino Creek, Dip Creek; lower Canadian Creek lower Britannia Creek and within the footprint of a new bridge pier in the Nordenskiöld River. Overall, the net habitat gain associated with the No-Net-Loss Fish Habitat Compensation Plan will ensure that there is no impact on the productive capacity of fish and fish habitat on a regional scale.

Impacts from mine effluent discharge are not anticipated to be significant based on the application of alternative water quality guidelines which take into account site-specific water chemistry including high water hardness, and elevated baseline metal concentrations. Monitoring of water quality and aquatic communities at near-field sites in Casino, Dip, Canadian and Britannia Creeks is required to identify and potentially mitigate/compensate any future impacts on the fitness of local fish species. Despite the uncertainty involved, potential project impacts are not predicted to yield far-reaching effects on regional productivity or diversity.



RARE PLANTS AND VEGETATION HEALTH

SCOPE OF ASSESSMENT

The Project may affect vegetation (vascular plants and lichens) and vegetation communities through clearing of the Project footprint (resulting in loss of individual plants or plant ecosystem associations), or through introduction of invasive species, or deposition of fugitive dust resulting from Project activities on surrounding vegetation (affecting vegetation health). Rare plants and vegetation health were selected as a VC because they may be particularly sensitive to disturbance. A rare plant is one that has a small population, either restricted to a small geographical area where it may be locally common or occur in low numbers over a wide area. Part of the Project area falls within Beringia, an area that has not been recently glaciated and that may have some unique plants and plant ecosystem associations. Rare plants included in the assessment are plant species on the Yukon Conservation Data Centre 'watch list' or 'track list'. Tracked species are those that are of global conservation concern identified by NatureServe, of specific conservation concern in the Yukon, or federally listed under the Species at Risk Act. The Watch List contains species for which there is not enough information to determine whether they are of conservation concern.



ASSESSMENT AREA

The assessment focussed on issues related to rare plants and vegetation health within the potential disturbance area of the Project and within the LSA. The potential disturbance area refers to the Project footprint and a surrounding buffer in which associated activities are assumed to occur; for the purpose of the assessment the buffer was set at 500 m around the mine site, 50 m on either side of linear component alignments (roads, pipelines) and 100 m around borrow sites. The Project footprint is estimated to be 23.5 km² while the potential disturbance area encompasses an area of 80.6 km².

The LSA is the zone within which there is a reasonable potential for immediate interaction with Project components. For the purpose of the rare plants and vegetation health effects assessment the LSA was set as the potential disturbance area with a 1 km buffer, for a total area of 536 km².

BASELINE CONDITIONS

Baseline inventories were completed in August 2010 and July 2012. Since there is no standardized system for classifying vegetation in the Yukon, the BC Terrestrial Ecosystem Mapping inventory standard was followed. The standard provides a uniform method of describing vegetation, soil, and terrain characteristics based on air photo interpretation and field data collection. Field sampling in the mine site LSA included reconnaissance surveys, full plots, ground inspections, and visual checks.

Populations of nine listed species were discovered during the 2010 and 2012 survey, three of which are on the Track List; the remainder were on the Watch List at the time of the surveys.

The Key Indicators used in the Rare Plant and Vegetation Health effects assessment were rare plant abundance, presence of invasive species, and vegetation health

Potential Residual Effects	Proposed Mitigation Measures
Loss of rare plants and rare plant habitat	<ul style="list-style-type: none"> Site selection to consider potential for rare plants, realign or in extreme circumstances transplant.
Loss of rare plant habitat due to introduction or expansion of invasive species	<ul style="list-style-type: none"> Use of clean equipment, allowing vegetation to re-establish naturally or by using native seed mixes, and establishing a program for invasive plant detection
Dust deposition on vegetation, particularly rare plants	<ul style="list-style-type: none"> Dust control measures will be implemented as per the Air Quality Management Plan.

CUMULATIVE EFFECTS

Within the LSA, human activity currently exists that may affect rare plants and/or vegetation health. These activities include mineral exploration, use of the existing section of the Freegold Road by various users, and active or historic quartz mines. Placer mining and other exploration activities are also likely to occur in the LSA. The assessment of cumulative effects on rare plants and vegetation health is qualitative because analysis is limited by the availability of detailed vegetation mapping in the region, making it difficult to quantify combined project effects in the region. The potential cumulative effects were identified as the cumulative loss of vegetation features in the Dawson Range within an additional 17.08 km² of footprint disturbance and the cumulative decrease in plant health due to emissions.



KEY FINDINGS

Construction and land clearing associated with the Project will cause a direct loss of terrestrial habitat. The residual Project effect on rare plants was rated as low significance primarily because it is localized and reversible. Dust deposition and emissions will have an adverse effect on vegetation throughout the life of the Project, but the residual effect was rated as Not Significant, since it was determined that effects will be localized to the Project footprint (therefore low magnitude), and will be reversible once the project is complete. The overall residual effect of the Project on rare plants and vegetation health is considered Not Significant.

WILDLIFE

SCOPE OF ASSESSMENT

The Project will interact with wildlife through potential effects to individuals, populations and their habitats. Wildlife was selected as a VC because it has intrinsic value, as a symbol of wilderness and a healthy ecosystem, and because it has cultural or economic value, since some species are harvested by subsistence and trophy hunters and trappers. Because the determination of effects on all species likely to interact with the Project is unrealistic and unlikely to provide information upon which to assess effects on wildlife as a whole, a sub-set of species, termed “Key Indicators”, were selected to represent the likely range of potential Project effects on wildlife. The Key Indicators selected are the Klaza caribou herd (KCH), moose, grizzly bear, collared pika, cliff-nesting raptors, bird species at risk, passerine birds, and waterfowl. The measurable parameters used to assess the effects of the Project on the Key Indicators are habitat availability; changes to movement patterns; direct mortality risk; and animal health (for waterfowl only).



ASSESSMENT AREA

Three spatial boundaries were identified for the effects assessment: the potential disturbance area, the LSA, and the RSA. The potential disturbance area is the Project footprint and a surrounding buffer in which associated activities are assumed to occur; it is a conservative estimate used to represent the maximum potential loss of habitat from the Project footprint. For the purpose of the assessment, the buffer was set at 500 m around the mine site, 50 m on either side of linear component alignments (roads, pipelines) and 100 m around borrow sites, for a total area of 80.57 km². The RSA varies by the Key Indicator species; in general, the RSAs for wildlife with large home ranges are either the annual or seasonal range of the species or the Game Management Subzones that intersect or interact with the Project. For wildlife with small seasonal home ranges or seasonal territories the RSA was delineated as the Project infrastructure with a 5 km buffer.

BASELINE CONDITIONS

Preliminary wildlife surveys for the Project were completed in the late 1980s by the Government of Yukon and various consultants. Recent work was initiated in 2006 and continued until 2013. The objectives of the wildlife studies were to summarize available wildlife information in the study area (abundance and distribution of key species); identify critical and sensitive habitats and transportation corridors; and complete a baseline inventory of wildlife species to gain an understanding of regional wildlife ecology. Field studies for birds were conducted in 2010, 2011 and 2013, consisting of point count surveys for songbirds and other upland bird species, encounter transects, aerial surveys for cliff-nesting raptors, a stand-watch survey for short-eared owl, and collection of incidental sightings.

Potential Residual Effects	Proposed Mitigation Measures
Klaza caribou herd reduced habitat availability within the winter range	<ul style="list-style-type: none"> Timing road construction activities to minimize or avoid disturbance during the late-winter period (1 February to 30 April) Implementing a policy to ensure caribou approaching the road are given the right-of-way Implementing snow bank management measures to facilitate caribou movement across the roadway Designing road embankment heights and materials to allow for caribou movement Placing construction camps and borrow pits to minimize or avoid disturbance to the KCH
Moose habitat loss	<ul style="list-style-type: none"> Manage roadside vegetation along Project roads to discourage moose foraging
Reduce moose movement	<ul style="list-style-type: none"> Designing pipeline to allow moose movement over or under

Potential Residual Effects	Proposed Mitigation Measures
Increased caribou mortality due to collisions with vehicles	<ul style="list-style-type: none"> Installing signage that warns drivers of known caribou crossing or foraging areas along the road Reducing speed limits where caribou interact with the road Enforcing road speed limits by remotely tracking truck traffic Snow plowing escape routes Reporting and investigating all Project-related caribou near-misses and mortalities Triggering adaptive management strategies if there is a Project-related caribou mortality
Increased Caribou mortality from harvest	<ul style="list-style-type: none"> Managing the Freegold Road Extension as a private resource road Decommissioning the Freegold Road Extension during the closure and decommissioning phase Development of a wildlife management planning group including regulators, First Nations governments and stakeholders
Grizzly bear denning habitat loss	<ul style="list-style-type: none"> Avoid active den sites during the denning season (November to May) Avoid blasting within 500 m of active bear dens
Grizzly bear mortality	<ul style="list-style-type: none"> Incorporating Best Management Practices for food, waste and fuel management into the design on the Project
Collared pika habitat loss	<ul style="list-style-type: none"> General mitigation measures that aim to reduce the Project footprint and unnecessary sensory disturbances
Passerine and Bird Species at Risk habitat loss	<ul style="list-style-type: none"> Where possible given the terrain and other site-specific features, Project design will incorporate a minimum 100 m buffer between Project infrastructure and any ponds or open-water wetlands
Cliff Nesting Raptors Nest-site Effects	<ul style="list-style-type: none"> Nest-specific management plans within 500 m of the potential disturbance area, wherever possible, a 500 m no-disturbance buffer around nests
Waterfowl health effects	<ul style="list-style-type: none"> Water quality monitoring, and if necessary, potential water quality mitigation, wildlife monitoring of tailings, and wildlife deterrence

MONITORING

The following programs will be initiated for the wildlife VC:

- Monitoring studies for caribou, moose, and grizzly bear to assess response to Project roads and road traffic
- Caribou, moose, and grizzly bear monitoring to determine distribution within the zone of influence
- Facility-wide monitoring for the presence of collared pika throughout the life of the Project
- Annual occupancy and productivity surveys of known cliff nests within 500 m of the potential disturbance area through the life of the Project to facilitate nest site management
- Water quality monitoring to document contaminant levels in contact water ponds

CUMULATIVE EFFECTS

Effects on habitat loss or reduced habitat effectiveness and increased mortality risk have the potential to overlap in time and space with other projects in the RSA, including past and ongoing quartz exploration, past and ongoing Placer mining, active and historic quartz mines, and harvesting activities. Residual effects on restrictions to movement and reduced waterfowl health are not expected to be measurable. Managing the cumulative effect of increased mortality risk to wildlife will need to have a multi-party approach that includes CMC, other stakeholders, communities and First Nation Governments. CMC will support the Yukon Government Environment and affected First Nations wildlife harvest management initiatives in the Project area but does not have the ability to manage the public's ability to hunt or the actions of other businesses (e.g., outfitting, trapping, mining) operating within the RSA.

KEY FINDINGS

The assessment suggests that the effects of the Project are Not Significant on the Klaza caribou herd. The effect of the Project on late winter moose habitat availability is not significant at the scale of the moose RSA, as the loss is less than the identified low threshold. The Project roads and water pipeline will act as filters to moose movement; however, mitigation measures and Project design features will be implemented. Residual effects of the Project on moose mortality at the population level are not expected. Project-related mortality will be minimized through proper food and garbage management, implementation of wildlife Right-of-Way and No Hunting Policies, and by restricting access on the Freegold Road Extension. Residual Project effects on grizzly bear mortality are not expected. By reducing the Project footprint and avoiding known pika habitat where possible, effects to collared pika habitat can be minimized. Project-related effects to habitat for passerines and bird species at risk is limited to the LSA, and within the LSA, direct habitat loss for all passerines and bird species at risk is estimated as less than 10%. The Project is not expected to have population-level effects on cliff-nesting raptors but could affect a few known nest sites in close proximity to Project infrastructure. Adverse health effects to waterfowl could result from the use of Project water bodies, particularly the TMF during closure and post-closure; however, residual effects are Not Significant at the population level.

There will be a cumulative loss of habitat in areas that cannot be reclaimed entirely to pre-Project conditions. However, given the scale of the range of moose and Klaza caribou, cumulative loss can be mitigated by the collective actions of individual project proponents, which could include minimizing/mitigating disturbances to wildlife and reclaiming key habitats. It is unlikely that there will be large-scale anthropogenic disturbances that reduce population viability as a result of habitat loss. The Project's adverse effects on wildlife mortality risk could be combined with the potential adverse effects of other past, present and future projects and have an overall cumulative effect on regional wildlife mortality; however, it is unlikely that Project-specific mortalities will be the cause of a significant effect on populations. Given that tools are available to wildlife managers to manage human-related mortality, the cumulative effect on wildlife mortality is Not Significant.



COMMUNITY VITALITY

SCOPE OF ASSESSMENT

Potential population changes are important in determining community character and demands on infrastructure and services. Population changes and new Project-related income could also affect the well-being of individuals, families, and communities in the area. The key indicators used to assess the VC are Population and Demographics, and Community Well-being. Changes in size and characteristics of the local population affect a range of community and regional services that are driven by use levels. Therefore, the assessment of this indicator is linked to the assessment of other socio-economic VCs.



ASSESSMENT AREA

The LSA includes communities in proximity to the Project site and the proposed access route, since they represent potential sources of direct labour, goods, and services needed for the Project. The communities within the LSA include the Settlement of Pelly Crossing (Selkirk First Nation), the Village of Carmacks, the community of Little Salmon/Carmacks First Nation and the City of Whitehorse.

It is expected that some of the Project employment and economic opportunities will be experienced at the territorial level, therefore the RSA comprises the entire Yukon to provide a broader geographic context for understanding potential Project socio-economic effects.

BASELINE CONDITIONS

Populations in the communities within the LSA range from 500 in Pelly Crossing to 27,753 in the City of Whitehorse. Members of the Selkirk First Nation comprise the majority of the population in Pelly Crossing, making up approximately 80% of residents. The community of Little Salmon/Carmacks First Nation has a total reported membership of approximately 630 people, including status and non-status beneficiaries. Based on Yukon Health Care Registration data, the total population in the Village of Carmacks as of 2012 was 513 people. Little Salmon/Carmacks First Nation members comprise the majority of the population in Carmacks. Population growth is identified as a key long-term goal in the Carmacks Integrated Community Sustainability Plan, which suggests that population growth is needed to increase the ability of local governments to finance community services and infrastructure and would aid development of a thriving business environment.

Potential Residual Effects	Proposed Mitigation Measures
<p>Population changes from out-of-territory mine workers and their dependents moving residency to RSA</p>	<ul style="list-style-type: none"> • Priority hiring for qualified local residents • Employing a community liaison staff member to focus on community relationships and working with community staff on housing/planning issues related to mine staff
<p>Population changes from migration to the RSA to take advantage of higher incomes and employment rates generated by the Project</p>	<ul style="list-style-type: none"> • Implementing a hiring policy that encourages the employment of workers from Yukon and in particular the rural communities within the LSA • Implementing a procurement process that gives preference to suppliers from the RSA and LSA
<p>Employment opportunities and increased income would reduce economic hardship of local families and lead to positive economic well-being effects</p>	<ul style="list-style-type: none"> • None proposed as it is a beneficial effect
<p>Spending decisions of additional disposable income could affect family and community well-being: Negative spending decisions would reduce family and community wellbeing (e.g., crime, addictions)</p>	<ul style="list-style-type: none"> • Direct deposit option for salaries • Identify money management training opportunities to employees who do not have experience with high wage earnings. • Implement a zero tolerance policy with respect to drug and alcohol at the Project site for Project employees and contractors
<p>Potential lack of employment and income equity for Aboriginal peoples, women, people with disabilities, and visible minorities</p>	<ul style="list-style-type: none"> • Implement a hiring policy that encourages the employment of workers from rural communities within the LSA • Work with Yukon Government agencies and Yukon College to identify barriers to employment and offer training programs to improve local hire and retention of staff

Potential Residual Effects

Proposed Mitigation Measures

Influx of workers and their families could create negative behavioural changes and reduce family and community well-being if the transient population engages in socially disruptive or illegal activities

- The Project will have a self-contained camp on site to house workers
- A zero tolerance policy with respect to drug and alcohol use will be implemented at the Project site for Project employees and contractors.

Separation of workers from family and dependants for extended periods of time could lead to deterioration of family relationships

- Facilitate communication between workers and their families by providing phone and Internet services on-site.
- Explore shift schedules that meet the needs of the operation and that are attractive to local hires.

Loss of jobs and income and potential out-migration could negatively affect family and community well-being at mine closure

- CMC will work with the community to develop a plan that identifies strategies and actions to help minimize potential adverse effects from closing the mine.

CUMULATIVE EFFECTS

The effects assessment of the Project on Community Vitality takes into consideration past and existing actions and is based on forecasts for population growth incorporating those actions. Consequently, the assessment is already cumulative in nature.

KEY FINDINGS

The overall effect of the Project on Community Vitality is anticipated to be beneficial, since attracting and retaining skilled residents has been identified as a priority of the Yukon and some community governments. The magnitude of the change is expected to be low when considered in a regional context, therefore presenting a manageable challenge to the existing social structure. Yukon residents, and in particular LSA residents, are familiar with the cyclical nature and work schemes of the mining industry and also with the challenge of dealing with a rapidly growing population and can expect to be highly resilient in managing change. In general, the effects on community well-being from the Project are anticipated to be Not Significant.

Although some potential family and community well-being effects from construction and operations have the potential for adverse consequences, the net effects are expected to be slightly positive because Project-related employment incomes will reduce family economic hardship and enhance quality of life. The proposed mitigation and monitoring measures are anticipated to be effective as long as CMC, communities, and governments cooperate in management initiatives.

Direct income earned during the Project will reduce economic hardship and will also contribute to the retirement income of the workforce during operations and extend benefits beyond the operation phase of the Project. Investment in training and capacity-development will improve the employability of local residents to pursue higher-paying jobs after closure.



COMMUNITY INFRASTRUCTURE AND SERVICES

SCOPE OF ASSESSMENT

Community Infrastructure and Services was selected as a VC based on discussions with the public, First Nations, local communities, and government stakeholders. The potential effects of the Project on the VC are related to an increased demand on existing infrastructure and services as employees and their families move into the region. Six key indicators were used to focus the assessment on the VC: Municipal Infrastructure (water supply, water/sewage treatment, landfills, power supply, and recreational facilities); Housing; Transportation; Educational Services; Health and Social Services; and Protective Services.



ASSESSMENT AREA

The LSA includes communities in proximity to the mine site and the access route, since the communities represent potential sources of labour, goods, and services needed for the Project. The communities within the LSA include the Settlement of Pelly Crossing (Selkirk First Nation), the Village of Carmacks, the community of Little Salmon/Carmacks First Nation and the City of Whitehorse. Employment and economic activities associated with the Project could extend to the territory as a whole, therefore the RSA encompasses the Yukon.

BASELINE CONDITIONS

Baseline conditions were compiled using primary and secondary data sources. Primary data sources were one-on-one interviews conducted primarily in 2012 and 2013 with representatives from the Yukon government, City of Whitehorse, Whitehorse and Yukon Chambers of Commerce, Yukon Mine Training Association, the Yukon Housing Corporation, Wildland Fire Management, Energy Mines and Resources, Whitehorse International Airport, Selkirk First Nation (SFN), Little Salmon/Carmacks First Nation (LSCFN), the Village of Carmacks, Carmacks Renewable Resource Council, and Tantalus School. Primary information was also gained from community meetings. Data were also collected from secondary sources such as Statistics Canada, Yukon Bureau of Statistics, Canada Mortgage and Housing Corporation (CMHC), Yukon Health Care Review Committee, Official Community Plans, and civic and municipal websites.

Potential Residual Effects	Proposed Mitigation Measures
<p>Population change (influx of up to 645 people) will alter demand for municipal infrastructure.</p>	<ul style="list-style-type: none"> • Provide a fly in/fly out camp to offset the demand on municipal infrastructure • Employ a community liaison staff member to work with community staff on infrastructure and services/planning issues related to mine staff
<p>Population change (influx of up to 645 people) will create additional demand on housing and temporary accommodation, health and social services, protective services, air transportation infrastructure</p>	<ul style="list-style-type: none"> • Implement priority hiring for qualified local residents • Camp will partially offset demands on regional health services • On-site security services • Require employee compliance with company policy on drug and alcohol use and safe and secure workplace procedures • Stagger work rotation schedule to minimize airport and passenger congestion
<p>Project hiring requirements will increase incentive for educational attainment, which in turn will increase demand for education training services</p>	<ul style="list-style-type: none"> • Provide support programs and initiatives at local schools and Yukon College • Implement a Recruitment, Training, and Employment Plan
<p>Transport of equipment, services, and materials will increase road traffic and the risk for motor vehicle collisions, increased demand on first responders, increase the risk of spills</p>	<ul style="list-style-type: none"> • Implement Environmental Management Plans, including Road Use Plan • Control speed limits • Perform regular vehicle maintenance and regular road maintenance to reduce risk to motor vehicle safety
<p>Accidents at worksite could increase demand for regional health services and emergency services</p>	<ul style="list-style-type: none"> • Compliance with Environmental Health and Safety Management System • Health and medical equipment and personnel will be on site • Trained personnel and firefighting equipment will meet all on-site fire and rescue needs
<p>Road extension and upgrades will improve transportation infrastructure for other users</p>	<ul style="list-style-type: none"> • Beneficial effect – no mitigation required • A 24/7 staffed security gate at the start of the Freegold Road Extension will control access to permitted users

CUMULATIVE EFFECTS

The effects assessment of the Project on Community Infrastructure and Services takes into consideration past and existing actions and is based on forecasts for population growth incorporating those actions. Consequently, the assessment is already cumulative in nature.



KEY FINDINGS

The effects of an incremental increase in demand on Community Infrastructure and Services associated with in-migration of Project employees are considered to be Not Significant.

The housing market will be able to react to new housing demand given the large number of serviced lots either already purchased by developers or available to the public. The key residual effects of the Project are anticipated to be slightly increased demand for protective services (ambulance services, first responders, and police) and health care services, since any ill or injured mine workers will be transferred to the nearest health care centre capable of providing the required treatment. These effects are considered Not Significant because of their relatively low magnitude and proposed mitigation. Finally, there will be an enhancement of workforce experience and skills base resulting from additional training provided.

EMPLOYMENT AND INCOME

SCOPE OF ASSESSMENT

Employment and Income was selected as a VC based on discussions with the public, Aboriginal groups, local communities, and government stakeholders. The potential effects of the Project on the VC are related to labour availability in the study communities and their ability to meet Project labour demands and the direct, indirect and induced local employment and employment income derived from the Project.



ASSESSMENT AREA

The LSA includes communities in proximity to the mine site and the access route, since the communities represent potential sources of labour, goods, and services needed for the Project. The communities within the LSA include the Settlement of Pelly Crossing (Selkirk First Nation), the Village of Carmacks, the community of Little Salmon/Carmacks First Nation and the City of Whitehorse. Since potential effects associated with the Economic Development and Business Sector VC, such as changes to economic growth, business opportunities, government revenues, and employment and income, will be experienced throughout the Yukon, the RSA encompasses the territory.

BASELINE CONDITIONS

Statistics Canada information was compiled to characterize the Employment and Income levels in the communities within the LSA. Rural communities are characterized by low participation rates (the portion of the population 15 years of age and over either employed or seeking work), high unemployment rates, and low incomes compared to the City of Whitehorse. In addition to direct employment opportunities, Project operations are expected to impact Yukon's economy through expenditures on goods and services. The employment effects would depend on whether Project-related jobs are filled by residents or by non-residents; and whether non-residents relocate to the RSA or commute to work. Increased employment opportunities will positively affect labour incomes of local and regional residents. Rising incomes in one sector can shift workers into higher-paying sectors, affecting the overall industry composition of the labour market.

Casino Mining Corporation intends to employ as many people from Yukon as possible, including from First Nations communities; additional personnel from outside Yukon may be necessary to fully staff the Project during the operation phase, but CMC plans to develop a rising share of Yukon-based employees as construction moves to peak production. The assessment of economic effects in terms of quantitative estimates of employment and income were derived from Statistics Canada's 2008 Input/Output ("I-O") Model using estimates of future operational and capital spending.

Potential Residual Effects	Proposed Mitigation Measures
<p>Project purchases would generate employment opportunities for residents</p>	<ul style="list-style-type: none"> • Procurement process that gives preferences to suppliers from the RSA and in particular rural communities within the LSA
<p>Project workforce demands would increase local and regional employment</p>	<ul style="list-style-type: none"> • Providing on-the-job training to assist local and regional workers to develop mining-specific skills • Providing training and education for potential employees from Yukon and in particular the rural communities within the LSA • Partnering with First Nation communities to access additional funding for training • Implementing career training and development opportunities for employees once hired; and providing continuous, on the job safety training
<p>Project-related competition for local labour may result in shortages in other sectors and industries</p>	<ul style="list-style-type: none"> • Work with closing mines to transfer workers; • Target unemployed for trainable positions

CUMULATIVE EFFECTS

The assessment of potential Project effects on employment and income was conducted in the context of all past and existing economic activity, as well as forecasts industry employment that take into consideration other proposed and anticipated development projects and activities. Consequently, the effects assessment of the Casino Project is inherently cumulative.



KEY FINDINGS

Employment and income effects from the Project would be beneficial, amounting to 5.6% of Yukon's workforce and raising incomes by an average of 6.9%. These effects would be expected to reduce the unemployment rate in the RSA, increase participation, and increase the rate of migration into Yukon.

Local effects in rural LSA communities would be Beneficially Significant, given the very high baseline rates of unemployment, low overall populations, and the commitment of CMC to work with First Nation leaders to maximize local recruitment, training, and advancement within the Project workforce.

EMPLOYABILITY

SCOPE OF ASSESSMENT

The Project will require substantial amounts of labour with different skill levels during the construction and operation phases, and meeting labour demand is expected to require substantial investments in training and capacity-development. Employability was selected as a VC because changes in an individual's ability to obtain employment affect the well-being of the individual, families and communities. The key indicators used to assess Employability are Experience and Educational Level. These indicators can extend past Project closure and decommissioning and can be transferred to other activities or areas.



ASSESSMENT AREA

The LSA includes communities in proximity to the mine site and the access route, since the communities represent potential sources of labour, goods, and services needed for the Project. The communities within the LSA include the Settlement of Pelly Crossing (Selkirk First Nation), the Village of Carmacks, the community of Little Salmon/Carmacks First Nation and the City of Whitehorse. The RSA encompasses the Yukon.

BASELINE CONDITIONS

Employment figures and education levels were obtained from secondary sources and used to characterize the communities in the LSA. Considerable differences were noted in educational attainment between rural and urban areas: fewer adults had any educational certificate, diploma, or degree in the communities of Pelly Crossing and Carmacks compared to Whitehorse. In addition, census data for the rural communities indicates that few residents have any resource industry experience. However a small proportion of the workforce is employed in trades, transport, and equipment operation as well as in primary industries which indicates that a sizable share of the labour force may be gaining experience in areas relevant to the needs of the mining sector. Whitehorse was found to have a diversified industrial workforce with experience in resource-based industries, trades, transport, heavy equipment operation and related maintenance.

Potential Residual Effects	Proposed Mitigation Measures
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Improved capacity and industry experience of contractors

- Procurement process that gives preference to suppliers from the RSA and LSA
- Contractors would be encouraged to hire local/regional/territorial residents to the extent practical



Employment opportunities will increase incentive for educational attainment and training of local residents; training programs during operations would enhance the local and regional skills profile and employment levels, and project employment will improve capacity and industry experience of workers

- Implementation of a Recruitment, Training, and Employment Plan that would seek to encourage recruitment of local/regional/territorial residents to the extent practical



CUMULATIVE EFFECTS

The effects assessment of the Project on employability takes into consideration past and existing projects and activities and is based on cumulative labour market forecast for Yukon's mining industry. Consequently, the assessment is inherently cumulative in nature.



KEY FINDINGS

Existing mines in Yukon depend on a high percentage of non-resident workers, amounting to roughly half of the workers. Casino Mining Corporation has set a target of obtaining 80% of their production workforce from regional workers by 2024. In order to achieve this objective, the company plans to work cooperatively with the Yukon College Centre for Northern Innovation in Mining in developing and delivering training programs that would serve the needs of the Project, as well as other mining operations in Yukon. Work will also be required with other government departments and the communities towards ensuring appropriate services are in place to attract and retain Yukon-based employees. Skill attainment and upgrading in the RSA would represent a sustained and substantial benefit for the employability of the region's workers. The effects would be particularly important for low-skilled workers in rural communities within the LSA that face high levels of unemployment. In general, the residual effects of the Project on Employability is anticipated to be Beneficially Significant.

ECONOMIC DEVELOPMENT AND BUSINESS SECTOR

SCOPE OF ASSESSMENT

The Project will require substantial amounts of staff, contracted employment, and procured goods and services in order to meet the demands of construction, operations, and closure and decommissioning. Economic Development represents a means to raise the livelihood of residents and has the capacity to fund public services associated with human development and social progress. Project effects on the Business Sector represent a direct and tangible form of regional participation in the long-term benefits arising from the Project. The Economic Development and Business Sector VC is assessed using the key indicators of Economic Growth, Business Opportunities, and Government Revenues



ASSESSMENT AREA

The LSA includes communities in proximity to the mine site and the access route, since the communities represent potential sources of labour, goods, and services needed for the Project. The communities within the LSA include the Settlement of Pelly Crossing (Selkirk First Nation), the Village of Carmacks, the community of Little Salmon/Carmacks First Nation and the City of Whitehorse. The RSA encompasses the territory.

BASELINE CONDITIONS

Secondary information sources (Whitehorse Chamber of Commerce, Yukon Chamber of Mines) were reviewed to characterize the regional economy and business climate. Yukon's economy has consistently grown over the past nine years to varying degrees, with a peak growth of 8.7% in 2008. The growth rate was less than 1% for 2013; however, the forecast for 2014 is for a return to rapid expansion due to increased mineral production, mining development expenditures, and large capital projects planned for the year.

Whitehorse-based businesses and services related to the mining industry include communications, catering, and camp services; drilling and heavy equipment operations; engineering, environmental, and geological consulting; expediting, logistics, and transportation; and Aboriginal and community engagement consulting.

The assessment of economic effects, in terms of quantitative estimates of economic growth and some elements of government revenue were derived from Statistics Canada's 2008 Input/Output Model using estimates of future operational and capital spending.

Potential Residual Effects

Proposed Mitigation Measures

Project purchases of goods and services and workforce demands would increase Yukon GDP and employment

- Contractors would be encouraged to hire local/regional residents to the extent practical.
- CMC would seek to recruit local/regional/territorial residents to the extent practical

Increased use of the public portion of the Freegold Road may occur

- None

Re-spending by households of additional income derived directly or indirectly from the mine employment will increase economic activity and businesses

- CMC would use local and regional suppliers when these suppliers can provide products and services at competitive prices and timeframes.

Project purchases will create contract and business opportunities across the Yukon

- CMC would use local and regional suppliers when these suppliers can provide products and services at competitive prices and timeframes.

Direct and indirect taxes by Project, contractors and individuals will positively contribute to the Yukon tax revenues

- CMC would use local and regional suppliers when these suppliers can provide products and services at competitive prices and timeframes.
- CMC would seek to recruit local/regional/territorial residents to the extent practical.

During operations Project will pay royalties / Yukon Mining Tax to Yukon

- None

Additional direct and indirect taxes paid by Project employees will increase government revenues

- CMC would use local and regional suppliers when these suppliers can provide products and services at competitive prices and timeframes
- CMC would seek to recruit local/regional/territorial residents to the extent practical

CUMULATIVE EFFECTS

The assessment of potential Project effects on the Economic Development and Business Sector VC was conducted in the context of all past and existing economic activity, as well as forecasts of economic growth that take into consideration other proposed and anticipated development projects and activities. Consequently, the effects assessment of the Project is inherently cumulative and therefore no further assessment of cumulative effects is required.



KEY FINDINGS

The assessment of potential effects on the Project in terms of economic growth, business opportunities, and government revenues found effects of construction and operations to be beneficial.

The construction of the Project is expected to occur over four years and cost a total of \$2.5 billion in capital expenditures, increasing Yukon's GDP over that period by \$363 million. During the operation phase, the Project is expected to increase GDP by \$274 million, equivalent to 11.4% of Yukon's 2011 GDP of \$2.4 billion. Government revenue from the Project is forecasted to amount to \$219 million annually over the operation phase, of which \$61.1 million annually is expected to be raised through the Yukon Mining Tax. Revenues for the Government of Yukon are estimated to amount to 7.4% of Yukon's 2012 overall revenue. The magnitude of this increase in resource revenue would be sufficient to change the nature of the funding arrangement between the federal and territorial governments, allowing a greater share of resource revenues to be retained by the Government of Yukon. Residual effects on the economy post-operations would be limited to closure expenditures, which are of a relatively low magnitude and not expected to be noticeable, as well as ongoing economic returns from infrastructure investments made by CMC (notably the Freegold Road), human capital investments retained by workers (training and education), and returns from public investments funded by increased government revenue.

CULTURAL CONTINUITY

SCOPE OF ASSESSMENT

Cultural identity is based on shared behaviours, practices, beliefs, and values of a community that are gained over time. Practicing culture may include participating in local community events, speaking a local language or participating in traditional land uses such as hunting and fishing. 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. 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 access to resources that support cultural retention and opportunities to participate in cultural activities. The key indicators used to assess this VC were Language (specifically local First Nations languages); places of historical, cultural, and archaeological value; social, community, and cultural events; subsistence and recreational harvesting; and Traditional knowledge.



ASSESSMENT AREA

The LSA boundaries for the Cultural Continuity VC vary by indicator. For the VC indicators of language, and social, community and cultural events, the spatial scale includes the Community of Pelly Crossing and Selkirk First Nation, the Village of Carmacks and Little Salmon/Carmacks First Nation, and the City of Whitehorse, the communities closest to the Project site and its proposed access route. The LSA used to describe effects on VC indicators that are related to land uses is comprised of a 500 m buffer around the entire Project.

The RSA also varied with VC indicator. For the language and social, community and cultural events, the RSA comprises Yukon to provide a broader geographic context for understanding how the Project and other future foreseeable projects in the region could affect these cultural continuity indicators. For places of historical, cultural, and archaeological value, traditional knowledge, and subsistence and recreational harvesting the RSA is based on defined Game Management Areas (GMAs) and provides a representative buffer around the Land Use.

BASELINE CONDITIONS

Secondary sources such as census data were primarily used to compile the baseline information on the VC indicators; the sources were supplemented with some first-hand information. There is a potential for a direct loss or disturbance of areas that are used for cultural purposes such as subsistence hunting, as well as a change in local ambience that could detract from the area from being used for cultural activities.

Potential Residual Effects	Proposed Mitigation Measures
Some sites of historical, cultural and archaeological value may be displaced or destroyed by the Project	<ul style="list-style-type: none"> • Avoidance of sites • Adherence to Heritage Management Plan • Adherence to Access Management Strategy
Loss of or decreased area for recreational or subsistence hunting and plant harvesting	<ul style="list-style-type: none"> • Reclamation and Closure Plan • Compact Project footprint
Improved access for recreational and subsistence harvesting	<ul style="list-style-type: none"> • Project employees and contractors will be restricted from hunting and fishing while on the job at any time
Temporary loss of road access during construction	<ul style="list-style-type: none"> • Traffic Management Plan (in conjunction with Government of Yukon, SFN, and LSCFN) • Communications Plan (ensuring ongoing communications with First Nations)
Increased noise, emissions and traffic may affect the wilderness experience	<ul style="list-style-type: none"> • Implement Environmental Management Plans and a Communications Plan • Maintain equipment; install sound buffering on equipment and in buildings
Increased local employment may result in reduced participation in cultural activities (language, community events, harvesting activities)	<ul style="list-style-type: none"> • Support efforts to revitalize Northern Tutchone language and incorporate Northern Tutchone language into mine signage as appropriate • Allow shift flexibility to accommodate Aboriginal community and cultural events, deaths, illnesses • Incorporate Aboriginal ceremonies at the mine site in consultation with the SFN and LSCFN • Support 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.
Abundance and availability of plant/animal resources available for cultural activities and harvesting	<ul style="list-style-type: none"> • Project employees and contractors will be restricted from harvesting within the mine footprint while on the job at any time; • Implement an Access Management Plan.

Some sites of historical, cultural and archaeological value may be displaced or destroyed by the Project

- Avoidance of sites
- Adherence to Heritage Management Plan
- Adherence to Access Management Strategy

Loss of or decreased area for recreational or subsistence hunting and plant harvesting

- Reclamation and Closure Plan
- Compact Project footprint

Improved access for recreational and subsistence harvesting

- Project employees and contractors will be restricted from hunting and fishing while on the job at any time

Temporary loss of road access during construction

- Traffic Management Plan (in conjunction with Government of Yukon, SFN, and LSCFN)
- Communications Plan (ensuring ongoing communications with First Nations)

Increased noise, emissions and traffic may affect the wilderness experience

- Implement Environmental Management Plans and a Communications Plan
- Maintain equipment; install sound buffering on equipment and in buildings

Increased local employment may result in reduced participation in cultural activities (language, community events, harvesting activities)

- Support efforts to revitalize Northern Tutchone language and incorporate Northern Tutchone language into mine signage as appropriate
- Allow shift flexibility to accommodate Aboriginal community and cultural events, deaths, illnesses
- Incorporate Aboriginal ceremonies at the mine site in consultation with the SFN and LSCFN
- Support 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.

Abundance and availability of plant/animal resources available for cultural activities and harvesting

- Project employees and contractors will be restricted from harvesting within the mine footprint while on the job at any time;
- Implement an Access Management Plan.

CUMULATIVE EFFECTS

Cumulative effects on the VC could accrue through increased placer and quartz staking and exploration activities due to the improved access associated with the upgrade and extension of Freegold Road. Additional mitigation measures recommended to manage cumulative effects include collaborative (First Nation and Government of Yukon) 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.

KEY FINDINGS

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. 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 traditional knowledge 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.

No residual effects on language; places of historical, cultural, and archaeological value; and social, community, and cultural events are anticipated. Some residual effects were identified for recreational and subsistence harvesting (hunting, trapping, fishing, and plant harvesting) as a result of loss of the land base and increased pressure resulting from changes to access to the region. 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. The loss of area directly for harvesting associated with the Project footprint is determined to be relatively minor when compared to the total available area in the region for this activity. 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 on the Freegold Road Extension. The ability of a community to continue to convey or acquire Traditional knowledge is tied to the ability of that community to speak their own language, to visit and use sites of historic/cultural importance and to the participate in community, social and cultural events. Overall, the residual effects of the Project on Cultural Continuity VC is Not Significant.



LAND USE AND TENURE

SCOPE OF ASSESSMENT

The Land Use and Tenure VC examines the potential interactions of the Project on other land users in the area. Key indicators used to assess the Land Use and Tenure VC are: First Nation Settlement Lands; traditional and domestic use; hunting / guide outfitting / trapping; recreation and tourism; mining, prospects, exploration and mineral tenures; and transportation and access.



ASSESSMENT AREA

A 500 m buffer around the entire Project footprint was selected as the Local Study Area to ensure potential direct effects of the Project on land use are addressed. The Land Use Regional Study Area is based on defined Game Management Areas and encompasses land uses potentially indirectly affected by the Project.

BASELINE CONDITIONS

The Land Use RSA is primarily situated in the Selkirk First Nation and Little Salmon/Carmacks First Nation Traditional Territories. In addition to hunting, trapping and fishing activities, the Selkirk First Nation and Little Salmon/Carmacks First Nation in the area participate in a variety of traditional land uses. Recreational hunting, guide outfitting and trapping take place within the Land Use LSA and RSA. Recreation opportunities in the Yukon are abundant and include boating (rafting, kayaking, canoeing), dog sledding, hiking/backpacking, recreational hunting, cross-country skiing and snowshoeing, horseback riding and mountain bike riding. Mining activities that occur in the Yukon and are present within the Project area include placer (gold), quartz (hard rock), coal, and quarries for borrow source material. The existing Freegold Road serves as a corridor for a number of placer mines and exploration in the area, and is also used for accessing hunting, fishing and gathering. Access west of the existing Freegold Road is by the Casino Trail.

Potential Residual Effects

Proposed Mitigation Measures

Loss of available area for First Nation traditional land use activities

- Limit mine footprint
- Implement appropriate best management practices and reclamation and closure measures
- Ensure ongoing communication with First Nation and local stakeholders.

Loss of available area for quartz and placer mining

Loss of available area for trapping and outfitting

Freegold Road Upgrade - Easier access to area for others whose activities may conflict with First Nation traditional land use activities; Reduced access to Traditional Territory due to Project traffic but easier access at other times for traditional land use activities; Easier access to existing tenure areas and new permitted exploration activities; Reduced access to recreational areas due to Project traffic

- Existing tenure and individual access arrangements will be negotiated under the Freegold Road Extension Access Management Agreement.
- Implement access management measures and associated monitoring and communication plans. Ensure ongoing communication with First Nation and local stakeholders.

Freegold Road Extension: No road access to area for recreational activities; Negotiated road access to area for existing trappers and guide outfitters;

Reduced wilderness experience for First Nation traditional land use activities

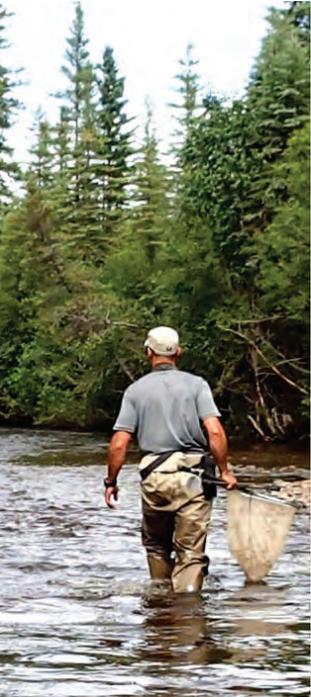
- Limit mine footprint
- Implement appropriate EMPs (i.e. Air Quality Management Plan) and reclamation and closure measures
- Ensure ongoing communication with local stakeholders

Reduced wilderness experience for recreational land use activities

Reduced wilderness experience for trappers and outfitters utilizing the area

CUMULATIVE EFFECTS

Potential residual cumulative effects associated with new future exploration and mining activities along both the Freegold Road Upgrade and Freegold Road Extension could include an increase in noise levels, emissions and traffic and change in disturbed and reclaimed areas. Any residual cumulative effects would have low magnitude and be localized and reversible, and therefore would be considered Not Significant.



KEY FINDINGS

The Project has the potential to have both beneficial and negligible adverse effects on land use and tenure activities within the Land Use study area. A direct loss or disturbance of area available for other land uses is expected within the Project footprint. Following closure and decommissioning the area occupied by the Freegold Road Extension and within the mine site that will not be permanently disturbed will be available for a variety of land uses. In general, improved accessibility to the area due to the Freegold Road Upgrade will benefit existing permitted land user groups (e.g. mining exploration); however, it may also attract additional third party interest and use in the area. Traffic along the Freegold Road Extension will be strictly through individual access arrangements with tenure holders. Any change in ambiance and wilderness experience for land use activities occurring proximate to the LSA is considered Not Significant due to the remoteness of the area. Casino Mining Corporation is committed to monitoring potential effects of the Project and ensuring emerging issues are addressed in consultation with the Yukon government, Selkirk First Nation and Little Salmon/Carmacks First Nation.

EFFECTS OF THE ENVIRONMENT ON THE PROJECT

A range of environmental events have a potential to affect the Casino Project components and activities during all phases of the Project. These include:

- Seismic Activity
- Terrain Instability
- Extreme Weather Events
- Wildfires
- Climate Change

SEISMIC ACTIVITY

Seismic activity could damage Project infrastructure directly through ground shaking or indirectly through landslides. A review of the regional tectonics and historical seismicity of the Project area was carried out to determine mitigation measures that were subsequently integrated into the design for key Project components. The consequence of seismic activity on the Casino Project is anticipated to be minimal and restricted to the minor deformation of surface facilities. There would be a negligible effect on the integrity of the Project components and little, if any, effect on critical activities and timing of operations. The tailings dam and facilities will be designed to withstand extreme earthquake events and will adhere to Canadian Dam Association guidelines.

TERRAIN INSTABILITY

Terrain instability can take the form of landslides, avalanches, or permafrost degradation. Of these three forms, permafrost degradation is the dominant potential terrain instability hazard for the Project. A terrain hazards assessment was conducted at the Casino mine site and included terrain mapping, terrain stability mapping, and a permafrost hazard assessment. The Casino mine site, Casino airstrip, and Freegold Road Extension are

located within a zone of widespread but discontinuous permafrost, and there is regional evidence of permafrost degradation in the Project area. CMC has used design-based mitigation measures for all potentially sensitive structures and will establish monitoring and response measures prior to construction of the Casino Project. The overall potential effects of terrain instability, in particular permafrost degradation, on the Casino Project is not considered significant.

EXTREME WEATHER EVENTS

Extreme weather events are considered to be unusual, severe or unseasonal weather at the extremes of the historical distribution. In general, the climate of the Casino Project area is characterized by long, cold, dry winters and short, warm, wet summers, with conditions varying according to altitude and aspect. During the life of the Casino Project, the Emergency Response Plan and other associated environmental management and monitoring plans will define actions and procedures to ensure that human and environmental health and safety is considered in relation to potential effects on the Casino Project from extreme weather events. Although extreme weather events have the potential to occur during the life of the Project, the Casino Project has incorporated design-based measures to mitigate any potential effects.

WILDFIRES

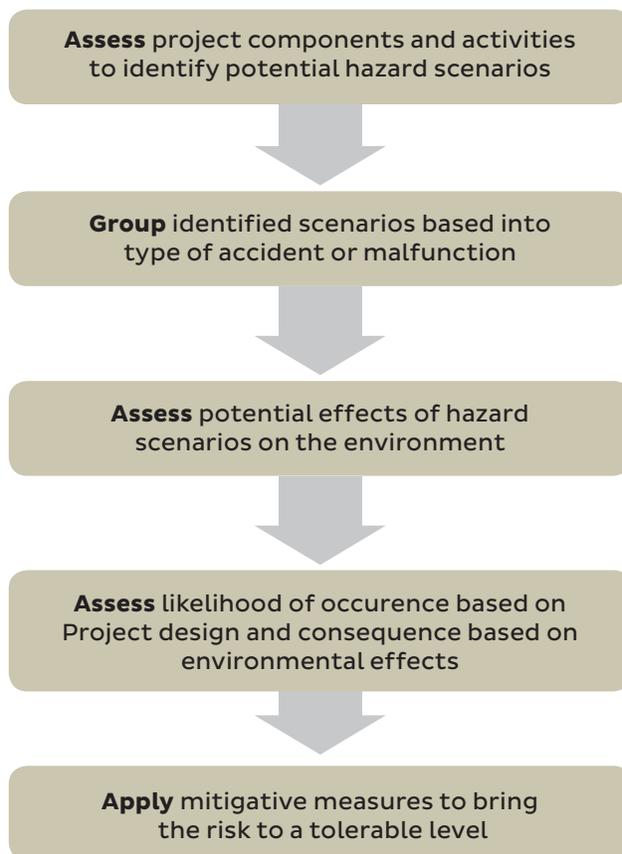
Wildfires have the potential to cause widespread damage to ecosystems and property if not contained. The potential effects of wildfires on the Casino Project include damage to onsite buildings and structures within the Casino mine site, the Casino Airstrip, Yukon River water pipeline and the access road. Based on various categories of likelihood, and taking into consideration the wildfire data provided by the Yukon Government, the overall likelihood of a wildfire event occurring that has the potential to affect the Casino Project during the life of the Project is moderate. Given the likelihood of occurrence, CMC has incorporated design based measures to avoid wildfires and minimize the potential severity and consequence to the Project. The overall potential effect of wildfires on the Project components and activities is not considered to be significant.

CLIMATE CHANGE

Climate change reflects abnormal variations to the expected climate, and is most commonly associated with increasing temperatures. A preliminary assessment of potential climate change effects was conducted for the Casino Project. Historical trends were compared to global climate models developed for the Intergovernmental Panel for Climate Change in order to assess a full range of possible climate change scenarios for the Project. It is believed that current climatic and hydrologic records provide an appropriate basis for assessing the general conditions in the Project area over the expected life of the mine.

ACCIDENTS AND MALFUNCTIONS

Accidents and malfunctions are unplanned events that may be caused by design failure, equipment malfunction, or human error. Potential accidents or malfunctions associated with the Project components were assessed for all Project phases. Typical risks associated with mining developments include transportation accidents resulting in fuel or chemical spills, tailings line rupture or release, and tailings impoundment or spillway failure. The method used to assess the significance of potential accidents and malfunctions follows the general approach and framework of a Failure Modes and Effects Analysis (FMEA). The purpose of a FMEA is to assess the risk of failure in a process and identify the most important areas for improvement. A qualitative risk assessment was conducted for the Casino Project in order to identify all components or activities and potential hazard scenarios that could pose a risk to the Project VCs.



Professional judgment and experience was used to identify potential accidents and malfunctions associated with each of the major Project components and activities and resulting hazards that were determined to be credible. A Risk Register, which is a tool used to record details of all risks identified for a component or activity, was developed for the Casino Project and includes 61 potential accident or malfunction hazard scenarios.

Credible Hazard Scenarios

- Embankment failures
- Slope failures
- Spills or leaks
- Transportation accidents
- Water conveyance and storage systems failure
- Fires and explosions
- Failure of erosion and sediment control measures
- Reclamation measures failure

The Casino Project considered site-specific geotechnical, hydrogeological and hydrometeorological characteristics in developing the feasibility level design to minimize the likelihood of any potential accidents or malfunctions. All construction, operation, closure and reclamation activities will be closely governed by environmental management and monitoring plans, including an Emergency Response Plan, to ensure that the consequences of any accidents or malfunctions, should they occur, are minimized and remediated. Based on the likelihood and consequence ratings, none of the accidents or malfunctions were considered to have a significant impact on any of the Project VCs.

ENVIRONMENTAL MANAGEMENT PLANS

Casino Mining Corporation is committed to conducting its operations and activities in a manner that protects the natural and social environments, protects the environmental health and welfare of its employees and contractors, meets or exceeds requirements of all applicable environmental acts, regulations and permitting requirements, and keeps employees and the public informed about its environmental plans through its internal and external communication programs.

The following conceptual Environmental Management Plans (EMPs) have been developed for the Casino Project:

- Waste Management Plan;
- Hazardous Materials Management Plan;
- Wildlife Management Plan;
- Spill Contingency Management Plan;
- Erosion and Sediment Control Management Plan;
- Occupational Health and Safety Management Plan;
- Heritage Resource Protection Plan;
- Air Quality Management Plan;
- Road Use Management Plan; and
- Metal Leaching / Acid Rock Drainage Management Plan.

The overarching goal of the EMPs is to demonstrate operational procedures and Best Management Practices to minimize adverse effects to the environment and employee and public health and safety, and ensure the stability of Project facilities and infrastructure.

CONCLUSIONS

The development of the Casino Project Proposal has relied upon many years of study, analysis, interpretation, and consultation in order to present findings with a high degree of understanding. The content and format of the Proposal was guided by input from YESAB, as well as from First Nations and other stakeholders.

Fourteen Valued Components were identified and assessed with due consideration of the temporal and geographic boundaries. Wherever possible, impacts to each VC were eliminated or reduced through Project design. Where this proved unfeasible, mitigation was proposed such that none of the identified residual adverse effects were assessed as Significant. An analysis of potential Accidents and Malfunctions likewise revealed no areas of High Risk to any of the identified Valued Components.

Several positive effects were identified, including employment opportunities with an expected \$43 million in annual wages during operations. It is anticipated that during operations, approximately \$274 million of the Yukon GDP will be generated by the Casino Project.

Casino Mining Corporation believes that the Project will be developed and operated in an environmental and socially acceptable manner. As the Project progresses, CMC will uphold its commitments to undertake comprehensive monitoring and management to ensure avoidance of unacceptable Project effects.

