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# **CASINO**Building our future together

# CASINO MINE PROJECT PLAIN LANGUAGE SUMMARY



# **CASINO**Building our future together

### **EXECUTIVE SUMMARY**

Casino Mining Corporation (CMC) proposes to develop the Casino Project (the Project); an open pit copper, gold, silver, and molybdenum mine. The Project is located 150km northwest of Carmacks and 300km from Whitehorse. The Project is designed to process approximately 120,000 tonnes per day (t/d) of ore through the mill and 25,000 t/d at the heap leach facility over the operational mine life.

The mine site and a portion of the access road are located within the traditional territory of Selkirk First Nation. A portion of the access road is located within the traditional territory of Little Salmon/Carmacks First Nation and the water supply pipeline is located within the traditional territory of Tr'ondëk Hwëch'in. The Kluane First Nation traditional territory is located downstream from the proposed mine and aspects of the Project are within the asserted traditional territory of the White River First Nation.

The commercial life of the Project is 27 years after an approximate four-year construction period. During the life-of-mine operations, the Casino Project will produce an anticipated 6.95 million ounces of gold, 36.09 million ounces of silver, 4.27 billion pounds of copper and 346 million pounds of molybdenum. The Project requires a \$3.62 billion capital investment to proceed.

The Project will be accessed from Carmacks by the existing Freegold Road, and the proposed CMC controlled Casino Road. The existing Freegold Road is a Government of Yukon-controlled seasonally maintained single lane gravel resource road, which requires a number of upgrades to service the proposed mine traffic. From the end of the Freegold Road, CMC proposes to build the 120km road extension, referred to as the Casino Road, in order to access the property.

The main components of the Project are the open pit, processing facilities, including a mill, heap leach facility (HLF), tailings management facility (TMF), stockpiles and power plant, as well as supporting infrastructure such as the access road, airstrip, camp and water supply line.

Approximately 1,400 personnel will be required during the construction phase of the Project, although this number will vary both seasonally and from year to year. The workforce will be a combination of CMC employees and contracted workers. CMC is expected to employ approximately 600 to 700 permanent mining personnel during the operations phase of the Project, as well as an additional 100 to 200 contractor support personnel. Staff and contractors will access the site via aircraft using the on-site airstrip. Ore and supplies will be transported via truck along the Freegold and Casino Roads.



## **CASINO PROJECT HIGHLIGHTS**

COPPER

46%



MOLY 17%



GOLD

34%



**SILVER** 

4%



#### **Anticipated life-of-mine metal production:**

Copper 4.27 billion pounds

Molybdenum 346 million pounds

Gold 6.95 million ounces

Silver 36.09 million ounces



**Location:** Approximately 150km northwest of Carmacks.



**Commercial life:** 27 years, following a construction period.



**Capital investment:** \$3.62 B CAD total direct costs.



**Expected to process:** 120,000 tonnes of ore per day (t/d) through the mill and 25,000 t/d at the heap leach facility.



**Power:** 130MW running load with an installed capacity of 200MW for redundancy using liquefied natural gas.



**Peak construction phase:** Approximately 1400 employees.



Operation phase:

employees Approximately 600-700 employees.

### 1.0 HISTORY AND PROJECT BACKGROUND

The first documented work at the Casino Property area comprised the working of placer claims on Canadian Creek recorded in the mid-1900s. Since then, the Property has been the focus of numerous exploration programs. In 2006, Western Copper Corporation acquired the Casino Deposit and in 2011, Western Copper created a whollyowned subsidiary, CMC.

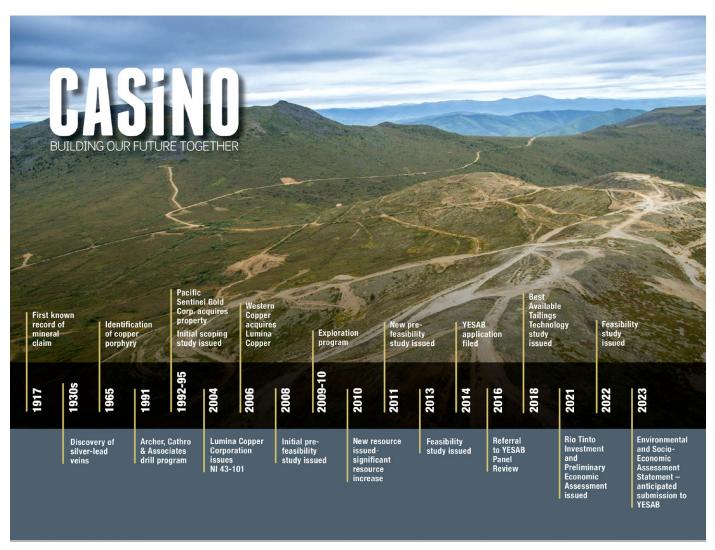
Environmental baseline studies were initiated at the Project site in 2007. Following that, a prefeasibility study was conducted in 2008 and geotechnical drilling continued from 2009 to 2011. The first feasibility study was published in January 2013 and a second feasibility study was published in August 2022. In 2014, CMC submitted a Project Proposal to YESAB's Executive Committee to start the environmental

assessment process. In 2016, the Project Proposal was referred to a YESAB Panel Review; the highest level of assessment in the Yukon. Since then, CMC has been actively working with a variety of technical consultants to produce the Environmental and Socio-economic Effects Statement (ESE Statement) for the Panel Review process.

Since 2008, CMC has been actively engaging with Yukon First Nations, YESAB, Yukon and federal agencies, renewable resource councils, city and village leadership and other interested parties.

The graphic presented below displays a timeline of significant events at the Casino Property.

FIGURE 1: TIMELINE OF SIGNIFICANT EVENTS AT THE CASINO PROPERTY



#### YESAB ASSESSMENT AND REFERRAL TO PANEL REVIEW

The Yukon Environmental and Socio-economic Assessment Act (YESAA) is the legislation which creates the basis for assessment in the Yukon. YESAA is administered by the Yukon Environmental and Socio-economic Assessment Board (YESAB) with additional responsibilities administered by Decision Bodies (First Nation, territorial, and/or federal governments).

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 and the public) and by conducting research to allow for a complete and thorough assessment.

In January 2014, CMC submitted a Project Proposal to YESAB's Executive Committee for an Executive Committee Screening (the second level of assessment under YESAA). From 2014 to 2016, CMC worked with the Executive Committee through the initial stages of the Screening process by providing additional information as requested on the Project. In February 2016, the Executive Committee referred the Project to a Panel Review; the first in the territory's history. YESAB's Panel Review is the highest level of environmental and socio-economic assessment in the Yukon.

A Panel Review is an assessment process by which a Panel of the Board (comprised of YESAB board members) conducts a technical analysis of an Environmental and Socio-economic Effects Statement submitted by CMC, followed by public hearings. The Panel of the Board then issues their recommendations (similar to the other levels of assessment under YESAA) to the relevant Decision Bodies. The Decision Bodies will then decide whether to accept, reject or vary the recommendation of the Panel of the Board and issue a Decision Document. Regulatory permitting, including obtaining a Water Use Licence and a Quartz Mining License, would follow a positive decision document being issued.

Guidelines for the Environmental and Socio-economic Effects (ESE) Statement were issued by YESAB on June 20, 2016. These guidelines outline the information that must be prepared and submitted by CMC in order to initiate the Panel Review Process. CMC is currently preparing the information that will be included in the ESE Statement in accordance with those guidelines, recognizing that revisions to those guidelines by YESAB are currently underway.

#### FIGURE 2: THE TYPES OF ENVIRONMENTAL AND SOCIO-ECONOMIC ASSESSMENT PROCESSES UNDER YESSA

# DESIGNATED OFFICE EVALUATION

MOST YESAB ASSESSMENTS
ARE CONDUCTED IN ONE OF SIX
COMMUNITY-BASED DESIGNATED
OFFICES LOCATED IN DAWSON
CITY, HAINES JUNCTION, MAYO,
TESLIN, WATSON LAKE AND
WHITEHORSE.

# EXECUTIVE COMMITTEE SCREENING

THE EXECUTIVE COMMITTEE OF
YESAB ASSESSES LARGER PROJECTS
THAT ARE SUBMITTED TO IT
DIRECTLY OR ARE REFERRED BY A
DESIGNATED OFFICE.

PANEL OF THE BOARD REVIEW
A PANEL OF THE BOARD MAY BE
ESTABLISHED TO ASSESS PROJECTS
WHICH HAVE POTENTIAL SIGNIFICANT
ADVERSE EFFECTS, ARE LIKELY
TO CAUSE SIGNIFICANT PUBLIC
CONCERN, OR INVOLVE THE USE OF
CONTROVERSIAL TECHNOLOGY.

#### **CASINO EFFORTS SINCE REFERRAL TO PANEL REVIEW**

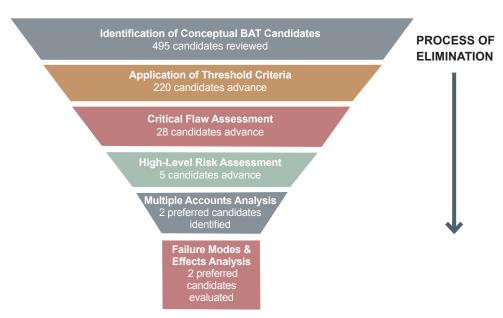
Since 2016, when the proposed Casino Mine Project was referred to Panel Review by YESAB, the team has continued to engage with affected Yukon First Nations governments and citizens, completing several Traditional Knowledge (TK) and environmental studies, conducting a number of exploration programs and conducting a 2021 Preliminary Economic Assessment as well as a 2022 Feasibility Study.

As a result of referral to Panel Review, CMC conducted a Best Available Tailings Technology (BATT) study from 2016 to 2018. Over an 18-month period, CMC worked with Yukon First Nations, YESAB and the Yukon Government to review the tailings and mine waste disposal plan for the Project. This process included input from CMC's Independent Engineering Review Panel (IERP), which provided independent expert review, guidance and recommendations. This collaborative process reviewed 11 different waste disposal locations and five different waste disposal technologies. During the BATT study, the participants considered the environmental, technical, economic, social and failure impacts of the possible options for the disposal of tailings and mine waste and selected the option considered to be the Best Available Technology for this Project.

The location and footprint of the Tailings Management Facility (TMF) are similar to those proposed in 2014. However, the BATT study identified and evaluated a number of design enhancements that will result in a more robust facility with reduced construction, operational and closure risks and less potential for environmental impacts.

CMC completed a new Feasibility Study which was released in August 20221. The Feasibility Study includes important refinements to many project components including the TMF. Table 1 describes the Project modifications since the 2014 submission. Most of the enhancements have come about because of issues raised during the previous Executive Committee Screening, requirements set out in the 2016 ESE Statement Guidelines and Project refinements due to new drilling and geotechnical investigations at site. Most of the updated Project design components are described in more detail in the new Feasibility Study. Additional details on Project enhancements and rationale for those differences are provided in the Proposed Casino Project Modifications memo provided to the Executive Committee in October 20222. The Project enhancements do not substantially change the Project that was originally presented in the 2014 Project Proposal and supplementary information submitted to the Executive Committee.

FIGURE 3: BEST AVAILABLE TAILINGS TECHNOLOGY STUDY PROCESS



- Casino Mine Feasibility Study, M3 Engineering & Technology Corporation, August 2022, http://westerncopperandgold.com/wp-content/uploads/2022/08/M3-PN200352-Casino-Feasibility-Study-NI-43-101-Technical-Report\_compressed.pdf, accessed November 2022.
- 2. Proposed Casino Project Modifications, YOR document #2022-0154-0016, https://yesabregistry.ca/projects/45ee830a-1129-4e59-9d3d-4a084fc4a6e3/documents, accessed November 2022.

PROJECT MODIFICATION	REASON
CMC changed the airstrip location from Dip Creek valley (south west and downstream from the mine site) to a new ridgetop location adjacent to the Casino Road, approximately 5 km east of the mine site.  Because the airstrip has been relocated, the Dip Creek access	Geotechnical studies showed there was extensive permafrost and ground ice in the Dip Creek airstrip location. The poor ground conditions, along with nearby environmentally sensitive watercourses and wildlife habitat (specifically the Klaza Caribou Herd), led to the decision to change the airstrip location. By moving the airstrip closer to the mine site, there will be less disturbance to Dip Creek and the Klaza Caribou Herd.
road (14 km), three borrow pits, and bridges across Dip Creek and Brynelson Creek are no longer needed. This will reduce the overall Project footprint and disturbance area.	
CMC has increased the overall mined material and extended the mine life.	Based on additional exploration drilling, CMC has been able to extend the commercial life of the Project. The mine production schedule was extended by five years as mill throughput remained the same. The increased proven and probable reserves resulted in more ore and less waste rock.  The length of the mine increases by five years but the changes in total mined material and waste quantities do not result in changes to the overall mine plan or mill throughput.
➤ The mine life has changed from 22 years to 27 years.	
➤ The total mined material has increased from 1.78 billion tonnes (Bt), to 2.04 Bt.	
➤ The total waste material has been reduced from 658 million tonnes (Mt), to 611 Mt.	
➤ Open Pit Dimensions have increased from 2,400 m x 1,900 m to 2,600 m x 2,000 m.	
➤ Total stockpiled low-grade ore (LGO) increased from 144 Mt to 268 Mt. Two new stockpile locations will manage the increased volume.	
Cyclone sand (created from tailings) is needed for the construction of the Tailings Management Facility (TMF) embankment. Total cyclone sand volume increased from 134 million cubic meters (Mm³) to 228 Mm³.	To build the TMF embankment with shallower overall slopes, CMC needed additional cyclone sand. To maximize the volume of cyclone sand available to build the TMF embankment, CMC now plans to cyclone bulk tailings year-round. This also reduces the volume of tailings requiring storage behind the TMF embankment.
The TMF's minimum operating pond volume has been reduced from 15 Mm³ to 2 Mm³.	Based on the BATT study and the Independent Engineering Review Panel (IERP) feedback, CMC optimized the minimum Operating Pond Volume (water pond within the TMF area). The TMF optimization and lower operational water volume reduces TMF stability risk while still managing the stored waste.
Updated waste disposal plan in the TMF.	CMC has optimized the waste disposal (e.g., where and how the waste rock and tailings are placed) in the TMF. This was based on the BATT study and IERP feedback.
	CMC is now planning to separate the different types of wastes in the TMF. A divider berm will also be constructed within the TMF to separate waste.
	This change leads to more stable waste disposal and lower stability risk of the TMF.
Updated closure concept for the TMF.	CMC has changed the closure concept for the TMF. Previously the closure concept used a water pond that covered the majority of the TMF surface. To lower the stability risk of the TMF (e.g., by not having the water pond against the TMF embankment), CMC has reduced the size of the TMF water pond.

PROJECT MODIFICATION	REASON
The workforce needed for construction has increased from 1,000 to 1,400. This will also need a larger mine site camp and higher number of people and material transportation to the mine site during construction.	Based on updated construction estimates, the construction workforce has increased by 400 people.
	Due to this increase in the construction workforce, the camp size and transportation volumes to the mine site are expected to increase.
	Although the size of the camp and frequency of transportation are larger, the general location of these works and activities remains unchanged.
The Carmacks By-Pass Road and Nordenskiold River Bridge have been removed from the Casino Mine Project scope.	The Nordenskiold River Bridge and Carmacks By-Pass project is a 5 km long bypass road connecting the North Klondike Highway south of Carmacks to the existing Freegold Road. This project went through a YESAB assessment and is currently under construction by the Yukon Government.
The size of the Freegold construction camp will increase from 84 people to approximately 140 people.	A larger construction camp is needed at the Freegold Camp location. Originally, CMC planned to have a camp in, or near, Carmacks to support access road construction. CMC now plans to only house road construction workers at the Freegold Camp, which is at the end of the existing Freegold Road before Big Creek (about km 70). This change will also increase the camp area from 6 hectares (ha) to about 7.5 ha.
CMC is proposing a new road construction camp near the Selwyn River.	An additional camp is needed to meet the proposed road construction schedule and so that construction can happen from two ends of the access road. The size of the camp is expected to be similar in size to the Freegold Camp.
CMC has increased the maximum power generation capacity from 150 MW to 200 MW to make sure the Project has reliable source of power during operation.  The Project still only requires 130 MW for mine operations which means the LNG consumption rates have not changed.	CMC wants to make sure that there is enough power in case one of the generators goes offline. The increased capacity of 200 MW will allow for one generator to be offline during operation which can serve as a backup in case of emergencies. It will also allow for maintenance on generators with no disruption to mine operations.
Originally, CMC planned to construct a water treatment plant only if needed for temporary or permanent closure.  CMC is now planning to construct a water treatment plant before mine operations start to allow for water treatment if needed.	Under normal operating conditions, CMC does not need water treatment. This is because CMC plans to use water for operations and does not need to discharge water.  CMC is planning to construct the water treatment plant before mine operations start. This will allow CMC to treat
CMC anticipates additional modifications and increased level of	and discharge water if there is in the unlikely event that is it required.  Based on the modifications discussed in this table, CMC
detail for the overall closure and reclamation plan.	anticipates some changes and further detail for the closure and reclamation plan. CMC is currently conducting a closure and reclamation alternatives assessment and options analysis with Selkirk First Nation which will be presented in more detail in the ESE Statement.

## 2.0 FIRST NATION AND COMMUNITY CONSULTATION AND ENGAGEMENT

CMC has been actively engaging Yukon First Nations governments and citizens, YESAB, other Yukon and federal agencies, renewable resource councils, city and village leadership and other public stakeholders since 2008. The frequency and depth of these discussions varied depending on the scale and scope of First Nations' and each parties' interest in learning more about the proposed Project and in providing input. As CMC works towards submitting its ESE Statement to YESAB, its consultation and engagement activities are substantially increasing.

There are five Yukon First Nations affected by the proposed Casino Mine: Selkirk First Nation; Little Salmon/Carmacks First Nation; Tr'ondëk Hwëch'in; White River First Nation; and, Kluane First Nation. CMC is in regular communication with all five First Nations. CMC is planning to continue its ongoing, regular consultation and engagement with each First Nation's leadership and technical teams as the proposed Project continues to advance.

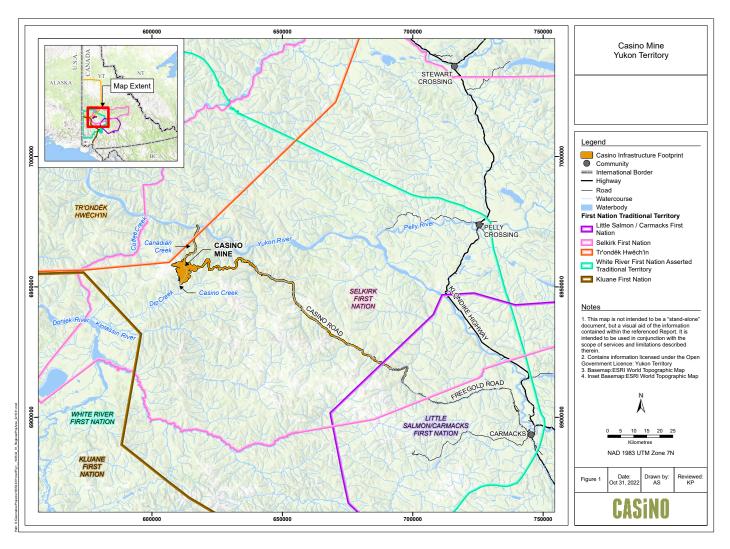


FIGURE 4: REGIONAL PROJECT AREA AND FIRST NATION TRADITIONAL TERRITORY

## 3.0 PROJECT PHASES

#### **ASSESSMENT AND PERMITTING PHASE**

This Project will require multiple permits and approvals from federal, territorial and Yukon First Nations governments and regulatory bodies.

A Quartz Mining Licence under the *Quartz Mining Act* will be required from the Yukon Government which will allow for mining and mining related activities. A Type A Water Use Licence under the *Waters Act* will be needed for mine operations which authorizes use of water and deposit of waste, as well as considerations of tailings creation and storage according to the project design. The Yukon Water Board would issue this licence.

From the federal government, a Fisheries Act Authorization under the Fisheries Act and a Schedule 2 Amendment of the Metal and Diamond Mining Effluent Regulations will be needed to construct the TMF in the upper Casino Creek drainage. Other authorizations and permits will be needed to allow activities such as road construction, camp operations and the use of explosives.

#### **CONSTRUCTION PHASE**

Construction can commence when the necessary permitting is complete. This phase is expected to last four years prior to the commissioning of mill operations. It will start with the construction of road and air access facilities and before the construction of permanent site infrastructure like the plant and initial stages of the TMF.

#### **OPERATIONS PHASE**

The Operations Phase will begin once the mill is operational (start of Year 1) and is projected to last for 27 years. Operations are expected to be below full production in Year 1 before ramping up to full production (approximately 120,000 tonnes per day) for the remaining mine life (Year 2 to Year 27). The mine will operate 24 hours per day and 365 days per year for the duration of the Operations Phase.

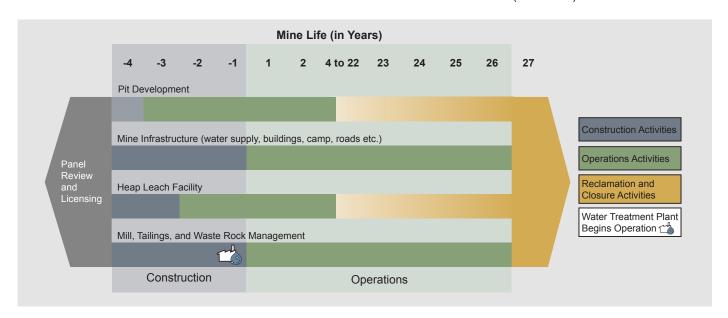
#### **CLOSURE AND RECLAMATION PHASE**

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 Closure and Reclamation Plan.

#### POST-CLOSURE PHASE

Post-closure activities include annual inspections of the Casino Project area. For the purpose of the Proposal and assessment, the Post-Closure Phase is expected to last 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 with the on-site conditions within this phase.

FIGURE 5: MINE LIFE (IN YEARS)



CMC does not indicate an absolute year for the Project timeline as it is difficult to predict when permits will be issued or funding is in place to allow construction to proceed. Year 1 indicates the first year the proposed mine is in operation.

THE DECISION BODIES FOR THE PROPOSED CASINO PROJECT ARE TERRITORIAL AND FEDERAL GOVERNMENT DEPARTMENTS AS WELL AS TWO YUKON FIRST NATIONS: SELKIRK FIRST NATION AND LITTLE SALMON/CARMACKS FIRST NATION.

# 4.0 PROJECT DESCRIPTION

The key Project components associated with the development of the Casino Mine include a conventional open pit, a mill, a heap leach facility, a tailings management facility, temporary stockpiles, an LNG power plant, and a 203 km access road. The Project will also require numerous supporting components and infrastructure, such as a camp, airstrip, mine site roads, water supply line, borrow pits, water management infrastructure, explosives facility, fuel handling and storage and many other supporting buildings. The following sections provide a brief description of the key and supporting Project components.

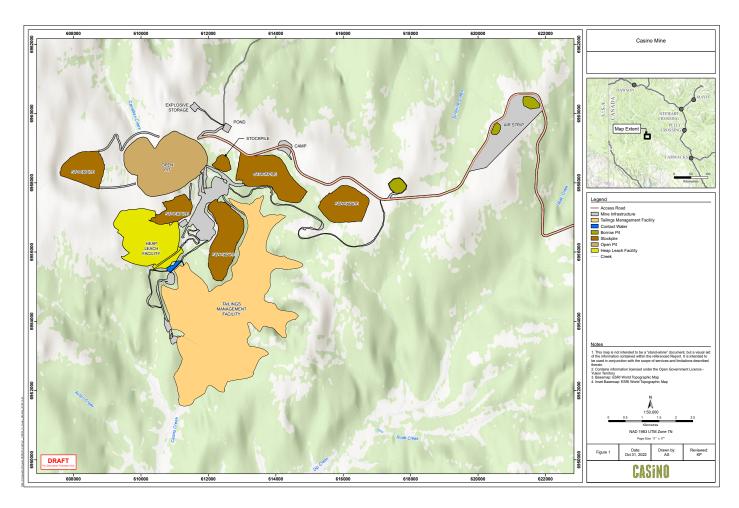


FIGURE 6: CASINO MINE PROJECT SITE

#### **OPEN PIT**

CMC will develop a conventional open pit mine, meaning all mining is done at the surface and requires no tunnels or shafts. The Project will be open pit because the gold, silver, copper and molybdenum deposits are found relatively close to the earth's surface. The open pit will cover an area of approximately 300 hectares and will be approximately 600 metres deep. The pit will have a series of benches built into its walls and trucks will move between the layers using ramps. There will be two main mining zones in the open pit: The Main Pit and the West Pit. These two pits will be developed at the same time.

There are four types of material that come out of the pit:

- Sulphide ore goes through milling to extract copper, gold, molybdenum and silver.
- Oxide ore is placed in a Heap Leach Facility to extract gold, silver and copper.
- Waste rock is sent to the Tailings Management Facility.
- Overburden is stockpiled for future use.

In order to be able to dig out the rocks from the pit, blast holes will be drilled into the ground and explosives will be placed inside. This will break the rock into smaller pieces and allow it to be loaded into trucks for transportation. CMC will have a fleet of large equipment to move materials and maintain the working areas of the pit, stockpiles and haul roads.

#### MILL

Once mined from the open pit, the sulphide ore will be hauled to the crusher and reduced in size to ready it for further processing. The crushed ore will be stockpiled and then fed into the mill via a conveyor system. The conveyors will be covered to reduce exposure to wind and the potential for ore dust to be blown off the conveyors. Dust collectors will also be installed at critical points to limit dust emissions. Once the crushed sulphide ore reaches the mill, it undergoes further crushing to reduce the particle size even smaller. Through a process called flotation, the metals will be separated out into a copper-gold-silver concentrate and molybdenum concentrate that will be sent to a refinery for further processing.

#### **HEAP LEACH FACILITY**

The Heap Leach Facility (HLF) is where the oxide ore is crushed to a small size and stacked on a liner system designed to collect all of the chemical solution and rain water that falls on the HLF. A chemical solution containing cyanide is dripped over the ore which releases the gold, silver, and copper. The solution with the gold, silver, copper and cyanide (the pregnant solution) is then collected by the liner system and a series of pipes. The solution is then pumped to a plant where the gold and silver are recovered by the Adsorption/Desorption/Recovery (ADR) process. Copper in the oxide ore will also be recovered as a copper precipitate using SART (Sulphidization, Acidification, Recycling and Thickening) technology. Once the minerals are removed from the solution it is recycled and reapplied to the HLF.

Construction of the HLF will begin in Year -4 and the first layer of ore will be stacked in Year -2. The heap leach pad will be stacked with ore and leached continuously from Year -2 through Year 22. The approximate footprint of the HLF will be 2.8 km<sup>2</sup> once stacking is complete. Approximately 210 million tonnes (Mt) of ore will be processed at the HLF. The ore will be leached at an approximate rate of rate of 9.125 Mt per year at a stacking rate of approximately 25,000 tonnes per day. The HLF will be stacked in seven stages over the life of the mine. The HLF will contain an In-Heap Pond where the pregnant solution will be collected before it is pumped to the ADR plant. It will also contain an events pond, which will provide additional storage for potential flood events. Two liner systems have been developed for the leach pad. The HLF will have a single liner for the upper portion of the heap leach pad and a double liner design for the lower portion of the heap leach pad. The HLF is designed to be a zero-discharge facility. Additionally, the pond system will be fenced to reduce the risk of danger to wildlife.

#### TAILINGS MANAGEMENT FACILITY

Mining for metals like those at Casino creates waste and other by-products. A Tailings Management Facility (TMF) is a structure that ensures safe storage of these mining by-products so that nothing harmful produced through the mining process escapes into the surrounding environment. These by-products are stored on-site at the mine, and mainly include tailings, waste rock and overburden materials.

Tailings are a combination of mined materials, chemicals used in processing and water. Tailings are classified into two categories: potentially acid generating (PAG) and non-acid generating (NAG). Waste rock is the rock that is removed from the open pit but does not contain the minerals being mined for. Overburden is the rock or soil that lies above the mineral deposit and does not contain minerals of interest. Overburden is valuable for site reclamation so it will be managed carefully to save as much as possible.

The components of the TMF include waste rock storage areas, tailings cells, a divider dam, a tailings dam and a water management pond.

- ➤ The waste rock areas provide dry and stable surfaces that help contain tailings. There are two waste rock areas: The North Waste and the West Waste.
- ➤ PAG and NAG tailings are contained in two separate areas called tailings cells.
- The divider dam is a physical barrier, made of waste rock, that separates PAG and NAG tailings into two different tailings cells. The divider dam is a key part of designing a safer TMF. By placing the PAG tailings cell behind the NAG tailings cell, the divider dam acts as a second physical barrier to keep the PAG tailings safely stored.
- ➤ The tailings dam is a physical barrier that holds NAG and PAG tailings in place. Sand made from NAG tailings will be used to build the dam. The dam has an overall slope of 6:1. This includes the final dam and the dam buttress. This means the slope of the dam is shallower, longer and therefore, safer.
- ➤ The water management pond collects water that drains from the TMF. Located downstream of the TMF, the water management pond receives water from drainage systems within the tailings dam, as well as from surface runoff. A pump station and piping will return water to the TMF.

Each TMF is unique. The best type of TMF is the one that is designed for the environmental and physical characteristics of the mine site. The Casino TMF has been carefully designed and engineered over several years to ensure it is best suited for the Yukon and a changing climate.

A TAILINGS MANAGEMENT
FACILITY (TMF)
IS A STRUCTURE THAT ENSURES
THE SAFE STORAGE OF MINING
BY-PRODUCTS, SO THAT NOTHING
HARMFUL THAT IS PRODUCED
THROUGH THE MINING PROCESS
ESCAPES INTO THE SURROUNDING
ENVIRONMENT.

In 2015, a Tailings Working Group (TWG) was formed to identify the best available tailings technology. Yukon First Nations, federal and territorial governments, as well as industry representatives were included in this group. The TWG began by creating a long list of options for storing tailings and waste at the Casino site. It started with 495 options in total and through the process of elimination, ended with two design options. The Casino TMF has a surface area of about 1,100 Ha (11 km²) and will store approximately 800 million tonnes of tailings and 600 million tonnes of waste rock and surface material that cannot be saved and used during reclamation.

In addition to the TWG collaborating on a safe and environmentally friendly design, CMC:

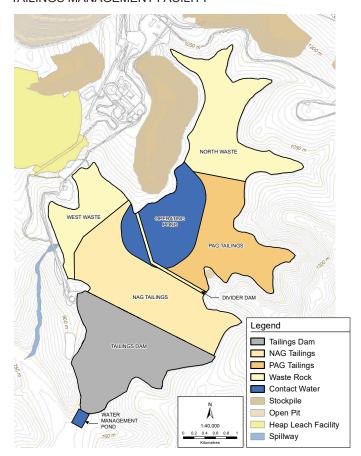
- Retained the advice of an Independent Engineering Rev iew Panel (IERP), which independently reviewed the tailings design and provided advice and guidance on how to make the TMF safer;
- ➤ Used the Dam Safety Guidelines of the Canadian Dam Association to guide selection of key design criteria, such as designing for scenarios like floods and earthquakes;
- Committed to adherence to the Global Industry Standard on Tailings Management. These are international standards that establish the safer management of tailings. The goal is zero harm to people and the environment; and,
- Joined the Mining Association of Canada and participates in the *Towards Sustainable Mining* initiative, which provides industry standards on a variety of topics, including the Tailings Management Protocol.

#### **STOCKPILES**

Stockpiles refer to the storage of topsoil, overburden and ore. There are two different ore stockpiles; one for the HLF and one for the mill, each containing a different type of ore.

The topsoil and overburden stockpiles will be created during the construction phase, when heavy equipment is clearing vegetation and removing the organic layer. This material will be stored for future use during closure and reclamation. The ore stockpiles will be temporary as the material will be processed later in the mine life. In general, stockpiles will be located within two km of the material source to keep haul distances to a minimum. Surface water diversion ditching will be constructed to divert surface water flow around the stockpiles to minimize contact with water.

FIGURE 7: PROPOSED CASINO MINE PROJECT TAILINGS MANAGEMENT FACILITY



#### **POWER PLANT**

Electrical power generation for the Project will be developed in two phases.

Phase 1 will include construction of an initial power plant (i.e., the Supplementary Power Plant). The Supplementary Power Plant will meet the initial power requirements for the mine. It will provide power to the camp, power for construction activities, power for crushing and conveying ore and initial HLF activities.

Phase 2 will include the construction of the Main Power Plant. This power plant will meet the power requirements of the mine during operations.

The Supplementary Power Plant will consist of three 2,250 kW diesel internal combustion engines. The three generators will provide another 6.75 MW of power for black start capability, emergency power and to complement the gas turbine generation when required.

The Main Power Plant will consist of three LNG gas turbine generators (50 MW each) and a steam generator (40 MW), for a total installed capacity of approximately 200 MW. The running load to the mine is approximately 130 MW, meaning one of the LNG generators will be kept as a back-up in case issues arise with the other three.

CMC anticipates that LNG will be transported to the Casino Mine from Fort Nelson, BC via double wall vacuum tanker trucks.

An LNG vaporization facility is planned to convert the LNG into gas at a suitable supply pressure to operate the power generation equipment.

#### **ACCESS ROAD**

The Project will be accessed from Carmacks by the existing Freegold Road, and the proposed CMC-controlled Casino Road. The existing Freegold Road is a Government of Yukon-controlled seasonally maintained single land gravel resource road.

From the end of the Freegold Road, CMC proposes to build the 120km road extension, referred to as the Casino Road, in order to access the Property. Once complete, the access road will be a two-lane, gravel resource road that is designed for all-weather use by haul trucks with highway legal loads. CMC intends to complete the construction of the Casino Road within three years.

The existing Freegold Road is a gravel resource road that starts at the intersection of the Mt. Nansen Road outside Carmacks (km 0) and travels north and west to the confluence of Seymour and Big Creeks (km 83). The Government of Yukon owns and maintains the road to km 60 on a seasonal basis beyond which it is unmaintained. The Freegold Road ends at Big Creek where the existing bridge crossing has been washed out. The proposed 120 km Casino Road will generally follow the historic Casino Trail along the Big Creek and Hayes Creek drainages to the Selwyn River where it ascends the north face of the Dawson Range to the mine. Construction of the new road will start at the end of the existing Freegold Road.

The Casino Road will be accesscontrolled via a staffed gate at the Big Creek Crossing. Road use will be restricted to mine traffic and others, as allowed according to a Road Users Group that will include affected Yukon First Nations and the Yukon Government.

FIGURE 8: FREEGOLD ROAD

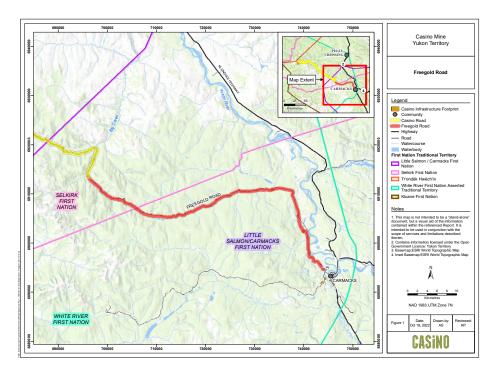
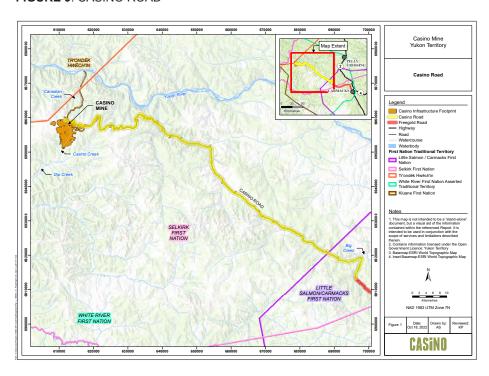


FIGURE 9: CASINO ROAD



#### **SUPPORTING MINE SITE INFRASTRUCTURE**

#### **CAMP**

The camp will be built in two phases.

The first phase will include the construction of a "pioneer camp"; a 300-person, fabric structure camp used during the construction phase. The pioneer camp will include three worker's dorms, one supervisor's dorm and a kitchen/diner/recreation unit for approximately 500 personnel.

The second phase will expand the construction camp by approximately 900 personnel for a total of approximately 1,400 personnel. It will include seven additional worker's dorms, one additional supervisor's dorm and two new executive dorms. It will also include additional kitchen/dining and recreation facilities. This camp will transition from a construction camp to an operations camp at the end of the mine's construction phase.

Additional temporary camps for off-site construction will be provided by individual construction contractors, such as for the construction of the Casino Road. CMC staff will use the accommodations throughout the Casino Project life from the construction phase to decommissioning and closure.

#### FRESHWATER SUPPLY

Fresh water (potable and non-potable) will be sourced from the Yukon River. A riverbank well system will be installed adjacent to the Yukon River. Water will be pumped 17 km from a pumping station to the 22,000 m³ capacity freshwater pond near the plant site. The pipe will be above-ground and insulated and will travel through four booster stations. The flow rate of the system is 3,200 m³/hr. The water supply pipeline will be constructed prior to the commencement of operations. Potable water during construction will be sourced from groundwater wells located near the camp. This temporary source of potable water will be replaced during the operation phase with water from the Yukon River water pipeline.

#### WASTEWATER TREATMENT

Sewage will be managed and treated onsite in accordance with the standards of the Waters Act and *Public Health and Safety Act*. A packaged sewage treatment plant system will be used to treat all sanitary wastewater. Treated wastewater will be disposed of in a septic field that dissipates the effluent into the ground. The field will be designed to the standards of the Yukon Government.



#### **AIRSTRIP**

The Project includes a new 1,600 m airstrip and terminal building.

The airstrip is planned to be located off the Casino Road near the mine. It will be located approximately six kilometres east of the permanent camp. Various aircraft have been considered to provide air services to the site. Aircraft considered suitable for this service include the ATR 42 (capacity 42 passengers) and the Bombardier Dash 8- 200 series turbo-prop aircraft. Flights to the site will originate from Whitehorse and other Yukon communities when desired.

#### **BORROW PITS**

Borrow pits are natural quarries of rock and sand. The borrow material can be excavated and used for construction activities, such as construction of the Casino Road and various mine site infrastructure including the TMF. A number of borrow pits will be developed along the Casino Road and around the mine site.

#### **EXPLOSIVES FACILITY**

The explosives facility will be located north of the open pit and away from habitable structures. All materials will be stored in accordance with the applicable regulations and standards and will be managed by a licensed explosives contractor. All hazardous materials and wastes will be removed for off-site disposal at an approved facility.

#### MINE SITE ROADS

Two categories of mine site roads will be constructed to serve the Casino mine site: those designed for haul trucks; and, those designed for light-duty and commercial traffic. A main haul road suitable for large haul trucks will connect the open pit, mill site, HLF and TMF. Access and service roads will be constructed to handle light-duty and commercial traffic, including the road from the mine site to the airstrip and the explosives facility. Mine site roads will be inspected regularly, sprayed with dust suppressants to reduce fugitive emissions and ploughed and repaired as necessary.

#### **SUPPORTING BUILDINGS**

The majority of supporting buildings are proposed to be located at or near the processing site. An administration building will provide office space during construction and operations. Laboratory buildings will be located near the mill and flotation buildings. A warehouse and laydown area will be provided for receiving, for the storage of parts and supplies and for maintenance of plant mechanical and electrical equipment. A guard shed at the facility entrance will provide 24/7 site security and truck scale service. A truck shop and associated facilities will be constructed on a 4.5-hectare pad adjacent to the open pit. Other facilities located on the truck shop pad are the truck warehouse and the truck wash. A light vehicle maintenance building is proposed at the plant site apart from the truck shop.

## 5.0 CURRENT CONDITIONS

Baseline conditions are the existing setting and state of the physical, environmental and socio-economic surroundings in which a project is proposed to occur. The upcoming environmental and socio-economic effects assessment for the Casino Project must include baseline information for components of the physical and socio-economic environment that are important in the project area; also known as Valued Components (VCs). This includes collecting relative qualitative or quantitative information and data for all study areas. For example, CMC has been collecting baseline data on wildlife, water quality, heritage resources, and traditional economy, among others.

For CMC to consider potential effects and for YESAB to assess the significance of Project effects on selected VCs, it is necessary to understand the baseline conditions of those VCs prior to Project activities occurring. The baseline conditions provide an important reference point to analyze the predicted changes to the state of a VC due to the Project activities and associated effects. Characterizing the nature of the change will determine the significance of the positive or adverse project effect. Therefore, the accurate collection and reporting of baseline data is essential for monitoring and measuring change in identified VCs resulting from project activities.

As part of CMC's submission to YESAB's Executive Committee in 2014, 14 VCs were identified and assessed with due consideration of the temporal and geographic boundaries. For many of these VCs, environmental and socio-economic baseline studies were completed.

The development of the Casino Project ESE Statement has relied upon many years of study, analysis, interpretation and consultation in order to present findings with a high degree of understanding. For example, wildlife surveys for the Casino Project began in the late 1980s by the Government of Yukon and various consultants and have been conducted periodically up until present day.

The baseline studies completed for the 2014 Project Proposal submission included wildlife, vegetation, fish and aquatic resources, surface and groundwater quality and quantity, air quality, meteorology, soils and socio-economic values. Much of the data collection that was presented in these studies began long before the Project Proposal submission to YESAB.

Since the original Casino Project Proposal was submitted to YESAB in 2014, the baseline studies completed as part of that submission are several years old. In some cases that data is still relevant and in others, it needs to be updated. Therefore, more recent baseline studies and reports are being completed to accompany the ESE Statement submission for a Panel Review in 2023. Most of the up-to-date baseline studies data collection has been completed. The technical consultants are now in the process of analyzing their data and drafting their summary reports. The outstanding baseline reports are expected to be completed in early 2023. These baseline reports will form the foundation of the VC effects assessment.

### 6.0 **SUMMARY**

CMC is developing the proposed Casino Mine Project, which ranks among the largest copper-gold deposits in Canada. The mine site and a portion of the access road are located within the traditional territory of Selkirk First Nation. A portion of the access road is located within the traditional territory of Little Salmon/Carmacks First Nation, and Casino's proposed water supply pipeline is located within the traditional territory of Tr'ondëk Hwëch'in. Kluane First Nation's traditional territory is located downstream of the proposed mine and the Project is within the asserted traditional territory of the White River First Nation.

Guidelines for the ESE Statement were issued by YESAB on June 20, 2016. These guidelines outline the information that must be prepared and submitted by CMC in order to initiate the Panel Review Process. Since 2016, CMC has continued to engage with affected Yukon First Nations governments and citizens, completing several Traditional Knowledge (TK) and environmental studies, conducting a number of exploration campaigns, and conducting a 2022 Feasibility Study.

CMC has been actively working to produce the ESE Statement for the Panel Review process. Baseline studies and reports are being updated and completed to accompany the ESE Statement submission for a Panel Review in 2023. Most of the up-to-date baseline studies data collection has been completed and the technical consultants are now in the process of analyzing their data and drafting their summary reports. The outstanding baseline reports are expected to be completed in early 2023. These baseline reports will form the foundation of the VC effects assessment.

Once the YESAB Executive Committee issues revised ESE Statement Guidelines, CMC will work on finalizing and submitting its ESE Statement to initiate the Panel Review Process. This will include providing all of the information specified in the revised ESE Statement Guidelines.

CMC will finalize all baseline reporting, conduct an environmental and socio-economic effects assessments and identify mitigation measures and monitoring needs for the project. At all stages, CMC will continue to consult and engage with affected Yukon First Nations and communities to further develop the Casino Mine Project.

# VALUED ENVIRONMENTAL AND SOCIO-ECONOMIC COMPONENTS (VC):

COMPONENTS OF THE PHYSICAL AND SOCIO-ECONOMIC ENVIRONMENT THAT ARE IMPORTANT IN THE PROJECT AREA (I.E., FOR ENVIRONMENTAL, SCIENTIFIC, SOCIAL, TRADITIONAL OR CULTURAL REASONS), AND MAY BE ADVERSELY AFFECTED BY THE PROJECT.

#### **POTENTIAL EFFECT:**

A POSSIBLE CHANGE IN THE CONDITION OF A VC CAUSED BY A PROJECT. AN EFFECT CAN BE POSITIVE (A BENEFIT) OR NEGATIVE (ADVERSE).

BASELINE CONDITIONS:
THE EXISTING SETTING AND STATE OF
THE ENVIRONMENTAL AND SOCIOECONOMIC SURROUNDINGS WHERE
THE PROJECT WILL HAPPEN AND MAY
HAVE AN EFFECT. THESE CONDITIONS
ARE PRE-PROJECT CONDITIONS
AND ARE THE FOUNDATION FOR
THE ENVIRONMENTAL AND SOCIOECONOMIC EFFECTS ASSESSMENT.

# **CASINO**Building our future together

