



**Côté Gold Project
Fisheries Offsetting Plan
Amendment**

Prepared for:
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ACRONYMS AND ABBREVIATIONS

BMP - Best Management Practices

cm - centimetre

DFO - Fisheries and Oceans Canada

EA - Environmental Assessment

ECA - Environmental Compliance Approval

eDNA - Environmental Deoxyribonucleic Acid

EEM - Environmental Effects Monitoring

EER - Environmental Effects Review

EMP - Environmental Monitoring Plans

FAA - *Fisheries Act* Authorization

FOP - Fisheries Offsetting Plan

GIS - Geographic Information Systems

GPS - Global Positioning System

ha - hectare

HEP - Habitat Evaluation Procedure

HSI - Habitat Suitability Index

HU - Habitat Unit

IFC - Issued for Construction

km - kilometre

LWD - Large Woody Debris

MDMER - Metal and Diamond Mining Effluent Regulations

MLFP - Mattagami Lake Fisheries Plan

m - metre

MNO - Métis Nation of Ontario

MRA - Mine Rock Area

OMNDMNRF - Ontario Ministry of Northern Development, Mines, Natural Resources, and Forestry

OPG - Ontario Power Generation

TMF - Tailings Management Facility

WRC - Water Realignment Channel



1 INTRODUCTION

1.1 Project Background

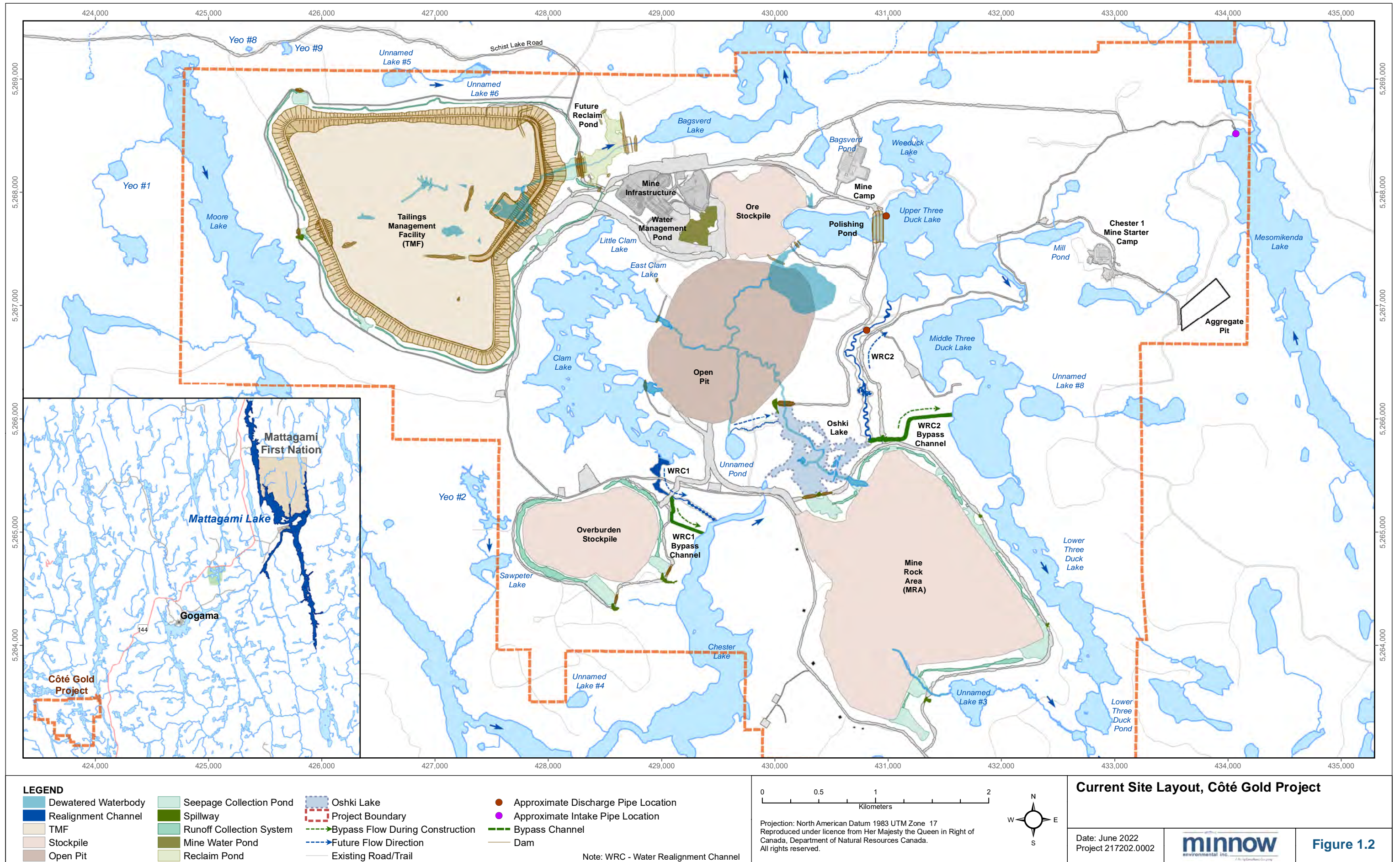
IAMGOLD Corporation (IAMGOLD) received federal (Environmental Assessment [EA] - April 2016) and provincial approval (Ontario Ministry of Environment and Climate Change, statement of approval - December 2016) to construct, operate, and eventually rehabilitate a new open pit gold mine in the Chester and Yeo Townships of the District of Sudbury, in northeastern Ontario. The Côté Gold Project (the Project) is located approximately 20 kilometers (km) southwest of Gogama, 40 km southwest of Mattagami First Nation, 130 km southwest of Timmins, and 200 km northwest of Sudbury (Figure 1.1).

Following receipt of EA approvals for the Project, IAMGOLD identified several opportunities to optimize the Project. The potential effects of these optimizations were evaluated and compared to the effects presented in the original Project proposal through an Environmental Effects Review (EER, IAMGOLD 2018) process. The results of the EER demonstrated that the optimized Project would result in similar or fewer potential effects to the aquatic environment as compared to the original Project proposal and was adopted as the working model for Project construction, operation, and rehabilitation.

The Project site layout has mine-related facilities in close proximity to the Open Pit (Figure 1.2). Ore processing will occur at a rate of up to approximately 36,000 tonnes per day. Overburden, mine rock, and ore extracted from the Open Pit will be stockpiled in the overburden stockpile, the mine rock area (MRA), and ore stockpile, respectively (Figure 1.2). With the development of the Project, several water features will be fully or partially overprinted as described in Minnow (2020a). Briefly, to accommodate the Open Pit and MRA, Côté Lake, the Mollie River, two small portions of Clam Lake, and several small tributaries and ponds will be lost (Figure 1.2). The Mollie River will be realigned, flowing around the southeast site of the Open Pit to Upper Three Duck (Figure 1.2). To accommodate the tailings management facility (TMF), several small unnamed waterbodies, West Beaver Pond, and their associated tributaries will be lost.

When projects are unable to avoid or mitigate the death of fish or harmful alteration, disruption, or destruction of fish habitat, the project requires an authorization (e.g., a *Fisheries Act* Authorization [FAA]) under Subsection 35(3) of the *Fisheries Act* in order for the project to proceed. IAMGOLD received a FAA and approval for a Fisheries Offsetting Plan (FOP; 20-HCAA-00766, Appendix G, Minnow 2020a; hereafter referred to as the original FOP) for the Project on June 29, 2020, from Department of Fisheries and Ocean Canada (DFO). Upon approval of the FAA, the fish salvage for the Project commenced in August of 2020 within the vicinity of the proposed TMF and IAMGOLD moved the Project into construction.





Since initiating construction, the FAA has been updated twice (November 2020 and February 2021; Appendix G).

The Project is currently in year two of construction and two years of fish salvages have been completed. Ongoing construction and updating of on-site conditions have resulted in optimizations to the Project that are not reflected in the current FAA (February 2021; Appendix G) and necessitates an amendment.

1.2 Offsetting Amendment Overview

Section 6.1 of the Applicant's Guide Supporting the "Authorizations Concerning Fish and Fish Habitat Protection Regulations" (DFO 2019a) states that "The holder of an existing authorization may request to amend the authorization. The request must be submitted to the Minister in writing and must include:

- "the file numbers indicated on the original authorization;
- a description of the amendment;
- the up-to-date information and documentation listed in Schedule 1 or 2, as the case may be, that are necessary to support the request; and
- a detailed description of the likely effects of the amendment on fish and fish habitat, if not otherwise submitted."

As a result of changes to the Project, IAMGOLD has identified that the existing FAA requires an amendment and that the original FOP must be updated to account for changes in habitat offsetting. Subsequently, IAMGOLD has prepared this amended FOP in support of a request to amend the approved FAA (20-HCAA-00766).

This FOP describes changes to the location of habitat overprinting and offsetting habitats as a result of Project optimization. An overview of the operational changes and results to offsetting habitats are described briefly below. None of these changes will affect the approved Schedule 2 Amendment (August 20, 2020; 20-HCAA-00766).

The Project has identified four additional areas where adverse effects on fish and fish habitat are unavoidable (see Sections 3.2.1 to 3.2.4), that were not included in the original FOP, and for which an offsetting approach must be developed, and a FAA amendment acquired. These four areas include installing a temporary discharge pipe in Upper Three Duck Lake, a discharge pipe in the Mollie River, a freshwater intake pipe in Mesomikenda Lake, and the installation of culverts for a small unnamed tributary road crossing.

In addition to these four areas affected by Project optimization, development and remediation of two aggregate pits (Bagsverd Aggregate Pit and Aggregate Pit #3) as fish habitat, will not be

created as planned. Bagsverd Aggregate Pit was a proposed aggregate pit located north of the mine. Upon further assessment for permitting the pit, it was determined that the option was not viable as the province would not allow its development due to the presence of a sensitive bog. Therefore, remediation of this area will not be required. Since IAMGOLD is no longer in a position where the remediation of the aggregate pit would be required, all offsetting habitat areas associated with the pit have been removed from the habitat accounting calculations presented in this FOP. Further investigations supporting Aggregate Pit #3 remediation revealed substantial rock cuts and blasting would be required to remediate the full extent of the pit into fish habitat as outlined in the original FOP (Minnow 2020a). To reduce the overburden/rock waste and blasting required to create the fish habitat as planned, the design for this area was modified to include a small portion of the pit as well as a new offsetting area to the south of the pit which is already disturbed (henceforth referred to as the extension of Middle Three Duck Lake). This design modification is being proposed as part of this amendment.

Lastly, one complementary measure was accepted in the original FOP (Minnow 2020a): IAMGOLD committed to funding research on environmental deoxyribonucleic acid (eDNA) barcoding methods to support Environmental Effects Monitoring (EEM). The research study was to be conducted in collaboration with researchers from the University of Guelph. However, the research team was unsuccessful in their application for matching funding. Therefore, due to conditions beyond IAMGOLD's control the measure cannot be completed.

Knowing the amendment would require additional offsetting habitat to account for the changes described above, IAMGOLD completed a widespread assessment of the Project area and watersheds to evaluate potential sites for habitat creation or improvement. Areas for the assessment were prioritized by DFO preference to offset habitat within the vicinity of the Project. The assessment included potential remediation of potential aggregate pits, previously harvested peat areas, and forested areas, to reduce the impact of the Project for not only aquatic habitats but terrestrial ones and to reduce excavation overburden associated with the creation of new habitats. However, only one site was identified for the creation of new habitat for the amendment which met the requirements of a reduction of overburden waste (compared to the previously proposed habitat areas). For this reason, the amendment includes habitat offsets within the vicinity of the Project but also offsetting areas outside of the Project area which were prioritized based on feedback provided during Indigenous engagement (Appendix E).

To counterbalance changes proposed in the original FOP (Minnow 2020a), IAMGOLD is proposing offsets recommended during engagement (Appendix E) that target improvements that will support the walleye fishery both within the Project Area and on a regional/local scale.

Specifically, the amendment is proposing to:



- construct offsetting habitat within portions of Aggregate Pit #3 and through an extension of Middle Three Duck Lake (south of Aggregate Pit #3),
- create walleye spawning habitat in the Mollie River (between Middle and Lower Three Duck lakes),
- stabilize sections of shoreline and add habitat complexity in Mattagami Lake, which was identified by Mattagami First Nation as a priority to the community, and
- support the development of a Mattagami Lake Fisheries Plan as a complementary measure.

The purpose of this FOP is to describe these offsetting opportunities, both in-kind and complementary, that will equal or exceed the habitat units (in quantity, quality, and purpose) that have been changed from the original FOP (Minnow 2020a). Full habitat accounting for the current Project development plan is outlined below (Section 3.5).

1.3 Offsetting Approach

To obtain a FAA Amendment, IAMGOLD has developed this FOP pursuant to Part 2 and 3 of the Policy for Applying Measures to Offset Adverse Effects on Fish and Fish Habitat Under the *Fisheries Act* (the Policy; DFO 2019b) and the Applicant's Guide to counterbalance unavoidable adverse residual effects to fish and fish habitat and, where possible, improve the productivity of the existing fish habitat. This offsetting plan addresses Section 35 habitat losses that were not identified in the original FOP and proposes alternative offsets to address changes in the original FOP (Section 1.2).

The proposed amendment to the offsetting plan has been developed to comply with the Policy and Applicant's Guide to support the conservation and protection of fish and fish habitat by counterbalancing the residual death of fish and/or harmful alteration, disruption or destruction of fish habitat associated with the Project. This will be accomplished in several ways:

- implementation of a fish salvage and relocation program to reduce the number of fish harmed;
- schedule the offset plan to limit the duration and spatial extent of fish habitat being affected;
- developing an "in-kind" approach to offsetting (habitat that is destroyed or permanently altered is replaced by similar or improved quality of the same type of habitat, with consideration of uncertainty and time lags); and



- additional complementary offsetting to contribute to fish habitat and fish productivity through the development of a fisheries plan for Mattagami Lake.

As noted within the Policy and Applicants Guide, by developing in-kind habitat and balancing the losses to fish and fish habitat caused by the Project, the benefits that result from offsetting measures can be a straight-forward calculation.

The offsetting approach used in this FOP will follow the method developed for the original FOP habitat assessment which allows for a quantitative comparison between current and post-development fish productivity (Minnow 2020a). Briefly, a habitat unit (HU) approach was employed as a surrogate for fish productivity which incorporated the habitat quality and quantity of pre- and post-development conditions such that the net change in productive fish capacity could be considered. This method is consistent with the approach applied during the federal EA process and was developed in consultation with DFO's habitat management program. The balance of habitat losses versus gains were considered together with other factors that can influence fish productivity (i.e., connectivity or access to better overwintering habitat) to provide for an overall assessment of change in fish productivity associated with the proposed undertaking. Furthermore, the proposed offsetting plan amendment integrates abiotic and biotic features which have been incorporated to minimize lag times and promote fish productivity.

Indigenous, public, and government consultation has been conducted in support of the Côté Gold Project and specifically for the amendment to this offsetting plan. A description of the consultation conducted, the comments and responses provided, and the materials presented are provided in Appendix E.

1.4 Objective

The objective of this offsetting plan amendment is to document and assess the residual death of fish and/or harmful alteration, disruption or destruction of fish habitat as a surrogate to assessing changes in fish productivity that may occur as a result of changes to the Project since the initiation of construction. The document outlines an updated offsetting plan and will support an Application for Authorization Amendment under Paragraph 35(2) (b) of the *Fisheries Act*. This report clearly documents the quality and quantity of additional habitat to be lost versus gained and considers the implications to fish productivity for key fish species within the affected watersheds. In addition, this report identifies mitigation measures to be conducted during the Project, outlines post construction monitoring, and provides the total costs of carrying out the amended offsetting plan.



2 METHODS

2.1 Summary of Habitat Accounting Approach

Minnow (2020a) outlines the methods utilized to describe, qualify, and quantify the residual effects of the Côté Gold Project and describes a method to account for the required offsetting given habitat losses under Section 35 and 36 of the *Fisheries Act*.

A habitat units (HU) approach was used to tally the gains and losses of fish habitat based on the mine development plan and identified habitat offsetting opportunities. This amended FOP utilizes the same methods and habitat accounting process as presented in Minnow (2020a) which was based on a habitat evaluation procedure (HEP). Briefly, this approach calculates a habitat unit by multiplying the habitat quality for each species by the spatial area of the habitat type affected (e.g., meters squared [m^2]). This was calculated for all the habitat that will be lost as well as the habitat gained (created or enhanced) through offsetting. These habitat units were used to calculate the expected net change in habitat attributed to the Project with respect to habitat quantity, quality, and the resulting units (Minnow 2020a). Both the quantity and quality of fish habitat for each target fish species at each life history stage was incorporated into the habitat unit's assessment such that the resulting metric accounts for both quantity and quality of all habitat types lost and gained, and therefore is a reasonable substitute for the net change in productive capacity. This calculation relies on a reasonable assumption of the habitat suitability index (HSI) for each life history stage for target fish species. Where HSI can have a minimum value of 0.0 and a maximum value of 1.0, representing unsuitable and optimal habitat, respectively. This can also be applied to word rankings where habitat can be rated by word descriptors such as "excellent", "good", "moderate," or "poor" (Table 2.1). Fish habitat quality (HSI value) for each species was based on habitat requirements found in key literature sources and existing habitat suitability models to document optimal habitat for all life stages of each species (Minnow 2020a). The quality of habitat associated with the proposed offsetting plan was based on the characteristics of the habitat to be created (i.e., gradient, substrate, vegetation, depth) and the habitat requirements established for each species (Appendix A). Life stages considered for each target large-bodied fish species included spawning and incubation, juvenile rearing, adult foraging, and overwintering (all life stages). Small-bodied fish species habitat were assigned one HSI value for all life stages.

As in the original FOP (Minnow 2020a), the quantity of stream and lake habitat are measured separately in this amendment. Lake habitats are divided into three areas based on surface area (0 to 2 m, 2 m to the end of the littoral zone, and the end of the littoral zone to maximum lake depth). Streams are classified based on permanency and gradients of low (1.5%), medium



Table 2.1: HSI Word, Numerical, and Value According to Habitat Conditions, Côté Gold Project

Word Ranking	Numerical Ranking	HSI Value
Excellent	4	1.00
Good	3	0.75
Moderate	2	0.50
Poor	1	0.25
None	0	0.00

Note: HSI = Habitat Suitability Index.

(1.5 to 2%) and high (3 to 5%) and area was calculated by multiplying stream width by its length for each gradient type.

The same data inputs are used herein to estimate habitat quantity and quality as have been previously described (Minnow 2020a), including water level data, aerial photographs, concept drawings, Issued for Construction (IFC) drawings, after design drawings, and reconnaissance data.

Lag times, the period between the construction of habitat and its ability to functionally support the fish community (Minns 2006, DFO 2013), have been discussed in the original FOP (Minnow 2020a). Measures to reduce lag times and their expected outcomes, as described in Minnow (2020a), will be employed in the same manner to new offsetting opportunities described in this FOP.

2.2 Methods Specific to the Offsetting Plan Amendment (Mattagami Shoreline)

In order to quantify the offsetting value of shoreline remediation a modified approach to the methods used in Minnow (2020a) is proposed. The modified approach calculates a habitat unit by multiplying the habitat quality for each target species and life stage by the spatial area of the offset (i.e., remediated shoreline area, Section 3.3.4). However, the quality of the proposed shoreline offsetting habitat is based on a combination of the direct (e.g., substrate, woody structures, vegetation) and indirect benefits to fish and the nearshore aquatic environment (i.e., water quality, stability, complexity).

Shoreline stabilization structures will be placed below the highwater mark and will be inundated for up to eight months of the year (May to January, OPG 2022). These structures will include boulders, large woody debris (LWD), and vegetation that will provide direct habitat to fishes. The total in-water area to be remediated is 2,280 m² which was multiplied by 0.66 to represent the time period that the structures will be underwater and available as fish habitat (i.e., 8 of 12 months). Additionally, it is assumed that the target fish species will indirectly benefit from improved water quality as well as increased nearshore habitat stability and complexity (e.g., Lake Superior; Hoff 2002), specifically during the juvenile rearing and adult foraging life stages. The relationship between the indirect benefits of shoreline remediation and direct benefits for target fish species (e.g., reduced sedimentation in spawning areas, improved foraging opportunities) is uncertain, and therefore a precautionary approach is applied. An HSI value of 0.25 (poor) is added to the expected suitability (HSI) of in-water stabilization structures (e.g., slope toe protection and shoreline habitat features, Appendix C) for relevant target fish species. For example, smallmouth bass are expected to utilize the shoreline habitat features for juvenile rearing (HSI = 0.50) when the structures are inundated (May-January) and the combined final HSI value is 0.75 (i.e., HSI = 0.5 + 0.25).

Sedimentation and erosion processes are natural and important and occur in all waterbodies. The shoreline stabilization methods and hardening structures will be designed to meet the needs of natural sedimentation and erosion of the shoreline while also reducing anthropogenic erosion. Natural design principles will be incorporated to decrease erosion and increase shoreline habitat complexity for small-bodied and juvenile fishes.

2.3 Fish Species Considered in Amended Assessment

The fish communities within stream and lake habitats of the Project area were generally dominated by northern pike (*Esox lucius*) and yellow perch (*Perca flavescens*; Minnow 2020a). Walleye (*Sander vitreus*), white sucker (*Catostomus commersonii*), and lake whitefish (*Coregonus clupeaformis*) were also common and varied in abundance depending on habitat. Smallmouth bass (*Micropterus dolomieu*) were present in low abundance in Upper Three Duck Lake and Mesomikenda Lake, and burbot (*Lota lota*) are present only in Mesomikenda Lake in the Project area (Table 2.2). Lake trout (*Salvelinus namaycush*) and cisco (*Coregonus artedii*) were observed in very low abundance in Mesomikenda Lake (OMNRF 2017a). In addition to these species, fourteen small-bodied species were also identified (Table 2.2). No endangered, threatened, or special concern fish species (COSEWIC 2021) were captured during baseline studies (AMEC 2011, Minnow 2014, 2017a). Mattagami Lake provincial fish monitoring surveys demonstrate the fish community is dominated by walleye, lake whitefish, cisco, yellow perch, and burbot, with lower abundance of white sucker, northern pike, and smallmouth bass (Table 2.2; OMNRF 2017b).

Based on the existing fish community composition, the habitat assessment was conducted for five target large-bodied fish: northern pike, yellow perch, lake whitefish, walleye, and smallmouth bass. The habitat requirements of these five species represent the range of conditions required to support all fish species found within the affected areas (Appendix Table A.1).

Due to the known overlap in habitat preferences, the assessed fish serve as surrogates for the expected changes in productivity of all fish species found in the affected waterbodies. It is assumed that all fish species and life stages being evaluated have equal weighting and therefore were not ranked (i.e., no fish species or life history stage was considered more important than others). In addition to considering the five main large-bodied fish species found within the Project site, several waterbodies only contain small-bodied forage fish species, therefore an additional category was developed for these areas. The loss of habitat and the offsetting habitat being proposed are to be similar; therefore, the goal is to maintain or enhance the productivity of the fish community as a whole and not for any particular species found within the project area. Coldwater species such as lake trout and cisco were not considered during habitat accounting,



Table 2.2: Summary of Fish Species Presence/Absence in Côté Gold Project Area^a

Watershed		Mollie River Watershed ^a																			Neville Lake Watershed ^a													Upper Mattagami River Watershed							
Species		Moore Lake	Chain Lake	Attach Lake	Unnamed Lake #4	Sawpeter Lake ^b	Chester Lake	East Beaver Pond	Unnamed Pond	Beaver Pond	Little Clam	Clam Lake	Clam Creek	Cote Lake	North Beaver Pond	Weeduck Lake	Upper	Three Duck Lakes	Lower	Unnamed Lake #3	Mollie River	Dividing Lake	Schist Lake	Unnamed Waterbody #1 ^d	Unnamed Waterbody #2	West Beaver Pond Watershed	Unnamed Waterbody #3	Unnamed Waterbody #4	Unnamed Waterbody #5	West Beaver Pond	Bagsverd Pond	Bagsverd Lake	Bagsverd Creek	Unnamed Lake #5	Unnamed Lake #6	Mesomikenda Lake ^e	Mattagami Lake ^f				
Large-bodied Fish Species	Burbot <i>Lota lota</i>											↙		↙																			↙		↙						
	Cisco																																		↙		↙				
	<i>Coregonus artedii</i>																																			↙		↙			
	Lake trout																																								
	<i>Salvelinus namaycush</i>																																								
	Lake whitefish			↙			↙								↙		↙		↙	↙				↙								↙				↙		↙			
	<i>Coregonus clupeaformis</i>														↙		↙		↙	↙													↙			↙		↙			
	Northern pike	↙	↙	↙	↙	↙	↙		↙		↙	↙		↙		↙	↙		↙	↙		↙	↙												↙		↙		↙		
	<i>Esox lucius</i>																																				↙		↙		
	Smallmouth bass												↙																								↙		↙		
	<i>Micropterus dolomieu</i>																																				↙		↙		
	Walleye																	↙		↙				↙													↙		↙		
	<i>Sander vitreus</i>																	↙		↙				↙													↙		↙		
	White sucker		↙			↙	↙			↙					↙		↙	↙	↙	↙											↙	↙	↙	↙					↙		↙
<i>Catostomus commersonii</i>			↙			↙	↙		↙					↙		↙	↙	↙	↙		↙	↙								↙	↙	↙	↙					↙		↙	
Yellow perch																																							↙		↙
<i>Perca flavescens</i>	↙	↙	↙		↙	↙			↙		↙	↙		↙		↙	↙	↙	↙	↙	↙	↙	↙														↙		↙		
Small-bodied Fish Species	Blacknose shiner						↙				↙	↙		↙		↙	↙	↙	↙		↙		↙																		
	<i>Notropis heterolepis</i>																																								
	Central mudminnow																									↙				↙	↙										
	<i>Umbra limi</i>																																						↙		
	Common shiner																	↙																							
	<i>Luxilus cornutus</i>																		↙																						
	Fathead minnow							↙		↙																					↙	↙									
	<i>Pimephales promelas</i>																																								
	Finescale dace	↙				↙				↙						↙								↙																	
	<i>Chrosomus neogaeus</i>					↙		↙		↙					↙											↙	↙		↙	↙					↙	↙					
	Longnose dace																																								
	<i>Rhinichthys cataractae</i>																																								
	Golden shiner	↙		↙		↙	↙				↙	↙		↙		↙					↙	↙									↙		↙	↙							
	<i>Notemigonus crysoleucas</i>														↙		↙																								
	Iowa Darter	↙	↙	↙		↙	↙			↙	↙	↙						↙	↙	↙	↙										↙	↙	↙	↙							
	<i>Etheostoma exile</i>					↙	↙			↙	↙	↙	↙				↙	↙	↙	↙	↙										↙	↙	↙	↙							
	Johnny darter																																								
	<i>Etheostoma nigrum</i>					↙						↙																													
	Mimic Shiner																																								
	<i>Notropis volucellus</i>																																								
	Northern redbelly dace					↙		↙								↙																									
	<i>Chrosomus eos</i>																																								
	Pearl dace																																								
	<i>Margariscus nachtriebi</i>										↙																														
	Sculpin sp.																↙			↙																					
	<i>Cottus bairdii</i>																																								
Spottail shiner						↙						↙					↙	↙																				↙		↙	
<i>Notropis hudsonius</i>																																									
Trout-perch																								↙																	
<i>Percopsis omiscomaycus</i>							↙																															↙		↙	

Waterbodies not included in the original FOP (Minnow 2020a).

Note: ✓ = Species Present.

^a This table reflects fish species absence/presence in the current configurations of the Mollie River and Neville Lake watersheds. Watershed is used here to denote the local area reference and not the official quaternary watershed designation. The official watershed names for those listed under the Mollie River is the Minisinkwa Lake Dam – Minisinkwa River watershed, and those under the Neville Lake watershed belong to the Makami River watershed.

^b Includes North Complex, Sawpeter Lake, and South Outlet.

^c AMEC 2011.

^d Fish were observed in Waterbody #1 but not captured for identification.

^e Fish species presence taken from OMNRF BROADSCALE Monitoring Cycle 1 & 2 Monitoring results (OMNRF 2012, 2017).

^f Fish species presence taken from OMNRF BROADSCALE Monitoring Cycle 2 Monitoring results (OMNRF 2017).

due to extremely low abundance in the Project area (i.e., only present in low abundance in Mesomikenda Lake, OMNRF 2017a) and the very small area of impact in Mesomikenda Lake.



3 EXPECTED LOSS IN FISH HABITAT AND PROPOSED OFFSETTING

3.1 Overview

A summary of waterbodies affected by the Project undertakings (i.e., as described in Minnow 2020a and this FOP) are presented in Table 3.1 and Figure 3.1. Affected waterbodies discussed in the original FOP include Côté Lake, the arm of Upper Three Duck Lake, two portions of Clam Lake, and the Mollie River within the Mollie River watershed, and ponds and connecting streams flowing into the south arm of Bagsverd Lake in the Neville Lake watershed. Realignment will be constructed to maintain flow out of Clam Lake and in the Mollie River system. Flow from Clam Lake will be directed south to Chester Lake (Clam Creek realignment; WRC1 [Water Realignment Channel]; Minnow 2020a). Downstream of Chester Lake, Oshki Lake¹ (formerly referred to as New Lake) will be created over portions of the Mollie River and East Beaver Pond. The outlet of the Oshki Lake will flow north to the southwest corner of Upper Three Duck Lake around the Open Pit (Mollie River realignment; WRC2; Minnow 2020a). The updated Project development plan identifies additional areas of habitat loss and alteration which include:


- the installation of a temporary discharge pipe in Upper Three Duck Lake;
- the installation of culverts at a stream crossing (Unnamed Tributary outlet of Bagsverd Pond);
- the installation of a temporary freshwater intake pipe in Mesomikenda Lake;
- the installation of a discharge pipe in the Mollie River (WRC2; following its removal from Upper Three Duck Lake during operations);
- the alteration of fish habitat in the Mollie River between Middle and Lower Three Duck lakes to improve walleye spawning habitat; and
- the alteration of fish habitat in Mattagami Lake to remediate shoreline erosion and add habitat complexity (cover) within the littoral zone.

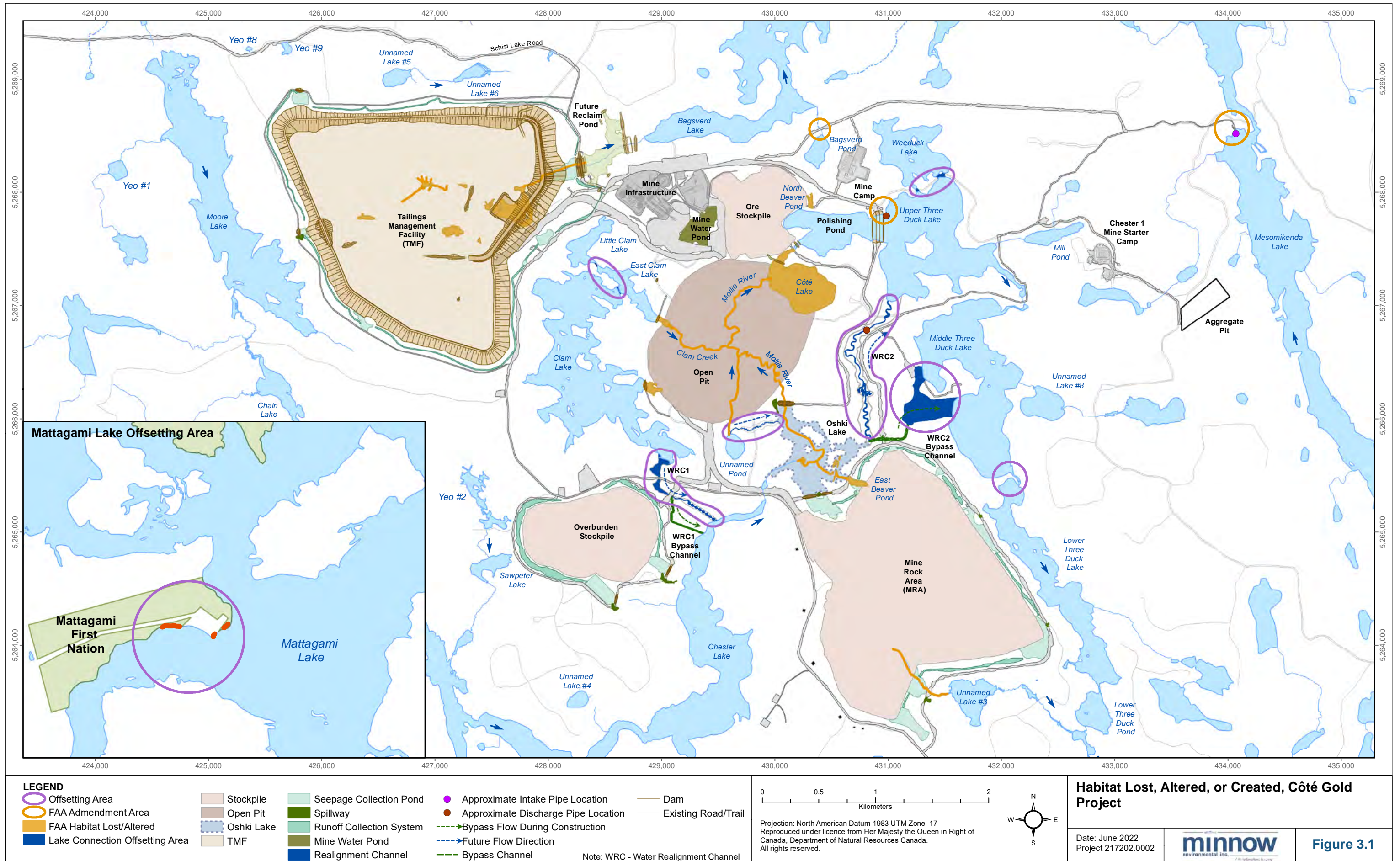
¹ For the purpose of the FOP, 'New Lake' is being referred to as 'Oshki Lake'. An application was filed in June 2021 to the Ontario Geographic Names Board to officially designate the new waterbody on the Project site as Oshki Lake (Oshki meaning 'young' or 'new' in Ojibwe). This name was proposed by Mattagami First Nation and Flying Post First Nation following an extensive consultation supported by IAMGOLD during which members of each community were invited to suggest names for New Lake. The communities short-listed the selections received and members of both communities registered their preferred selection via online survey.



Table 3.1: Summary of Waterbodies Affected by the Côte Gold Project Relative to the Requirement for a FAA Under Section 35 versus a Section 36 Schedule 2 MDMER Amendment

Location	Project	Fisheries Act Authorization (FAA) or Schedule 2	Change	Affected Areas	Rationale for Approval
Project Site	Open Pit	FAA	Habitat Lost	Côté Lake	Lost due to development of the Open Pit.
				Mollie River (portion of river from Chester to Côte)	Lost due to development of the Open Pit. Dam on Mollie River required to create Oshki Lake and flow realigned to Upper Three Duck Lake.
				Clam Creek	Lost due to development of the Open Pit.
				Unnamed tributary downstream of Unnamed Pond to Mollie River	Lost due to development of the Open Pit.
				Unnamed Pond	Eventually will be lost due to development of the Open Pit through water loss.
				Clam Lake (East Clam Lake - eastern section lost)	Lost to isolate East Clam Lake from Open Pit. Required to provide safe operating conditions for the Open Pit.
				Clam Lake (eastern section lost)	Lost to isolate Clam Lake from Open Pit. Required to provide safe operating conditions for the Open Pit.
				North Beaver Pond	Lost due to the development of the Open Pit and watercourse realignments around the Open Pit. The mine access road will remove upstream drainage to North Beaver Pond.
				Upper Three Duck Lake (west arm lost)	Lost to isolate Upper Three Duck Lake from the Open Pit. Note the dam location is based on engineering requirements and a safe setback distance and condemnation drilling that suggest a closer dam alignment may limit future pit expansion. The location of the Low Grade Ore Stockpile was identified after the requirement for the dam made this land available.
			Habitat Alteration	Mollie River (downstream of Chester Lake)	Habitat altered due to the creation of Oshki Lake.
				Portion of East Beaver Pond	Habitat altered due to the creation of Oshki Lake.
	Mine Rock Area (MRA)	FAA	Habitat Lost	Portion of Unnamed Tributary to Unnamed Lake 3	Dam for seepage collection pond and for the MRA will be constructed over a two portions of the Unnamed Tributary to Unnamed Lake 3.
		Schedule 2	Habitat Lost	Inlet Unnamed Lake #3 (upstream portion)	Lost due to MRA (overprinted) and seepage collection pond. Headwater stream that cannot be realigned.
				Portion of East Beaver Pond (southeast section lost)	Lost due to MRA (overprinted) and seepage collection pond.
	Tailings Management Facility (TMF)	FAA	Habitat Lost	Portions of Unnamed Tributary to south arm of Bagsverd Lake	Construction of TMF dam will be required as infrastructure prior to the deposit of tailings. The portion of the creek lost to the overprinting of dams will be included in the FAA.
				Portion of West Beaver Pond	Construction of the TMF starter dam will be required as infrastructure prior to the deposit of tailings. A portion of the waterbody lost to the overprinting of the dam will be included in the FAA.
				Portion of Unnamed Tributary to South Arm of Bagsverd Lake	Construction of Polishing Pond dam will be required as infrastructure prior to the operation of the pond. The portion of the creek lost to the over printing of the dam will be included in the FAA.
		Schedule 2	Habitat Lost	Unnamed Waterbody 1 to 6	Lost due to TMF (overprinted).
				Unnamed Tributaries connecting Unnamed Waterbodies	Lost due to TMF (overprinted).
				Portion of West Beaver Pond	Lost due to TMF (overprinted).
				Portion of Unnamed Tributary from West Beaver Pond to South Arm of Bagsverd Lake	Lost due to the TMF and TMF Reclaim Pond (overprinted). Small tributary that cannot be realigned due the TMF overprinting the watershed upstream.
	Infrastructure Support	FAA	Habitat Alteration	Small area in Upper Three Duck Lake (discharge pipe)	Habitat overprinted by infrastructure for temporary (during construction) discharge pipe.
				Small area in the Mollie River (WRC2; discharge pipe)	Habitat overprinted by infrastructure for a discharge pipe (for the life of the mine).
				Small area in Mesomikenda Lake (freshwater intake pipe)	Habitat overprinted by infrastructure for freshwater intake pipe (for the life of the mine).
			Habitat Lost	Culvert crossing in Unnamed Tributary between Bagsverd Pond and Bagsverd Lake	Habitat overprinted by road infrastructure including road widening and culvert installation.
	Habitat Offsets	FAA	Habitat Alteration	Small area in the Mollie River between Middle and Lower Three Duck Lakes	Habitat altered due to the creation of walleye spawning habitat.
Mattagami Lake	Habitat Offsets	FAA	Habitat Alteration	Mattagami Lake shoreline and nearshore augmentation locations	Habitat temporarily altered for the purpose of remediating and augmenting existing habitat.

 Changes in the FAA Amendment.



A description of the additional loss and alteration of existing fish habitat and expected habitat gains associated with the amended FOP are provided in Sections 3.2 and 3.3, respectively. For a description of previously approved offsetting habitats see Minnow (2020a). The description of existing habitat is based on information compiled during aquatic baseline surveys (AMEC 2011, Minnow 2014, 2017a) as well as field reconnaissance in the summer of 2021 (Appendix D). The quality of this habitat has been based on the habitat suitability indices and literature sources for each life stage assessed (Appendix A). The quantity of habitat is based on Geographic Information Systems (GIS) mapping, bathymetric maps, and field verification. The habitat quality, quantity, and resulting habitat units of the existing habitat to be lost is provided in Appendix B (Appendix Tables B.1 to B.13). Similarly, the habitat to be developed has been accounted for in the same tables in Appendix B based engineering drawings (concept or IFC drawings; Appendix C) and anticipated habitat conditions relative to the habitat requirements for the various life history stages of the key large-bodied and small-bodied fish species (Appendix A).

Habitat loss and alteration as a result of the updated Project plan are discussed below and are generally expected to result in the death of fish and/or harmful alteration, disruption, or destruction of fish habitat (the habitat units attributed to these alterations are provided in Appendix Tables B.1 to B.13).

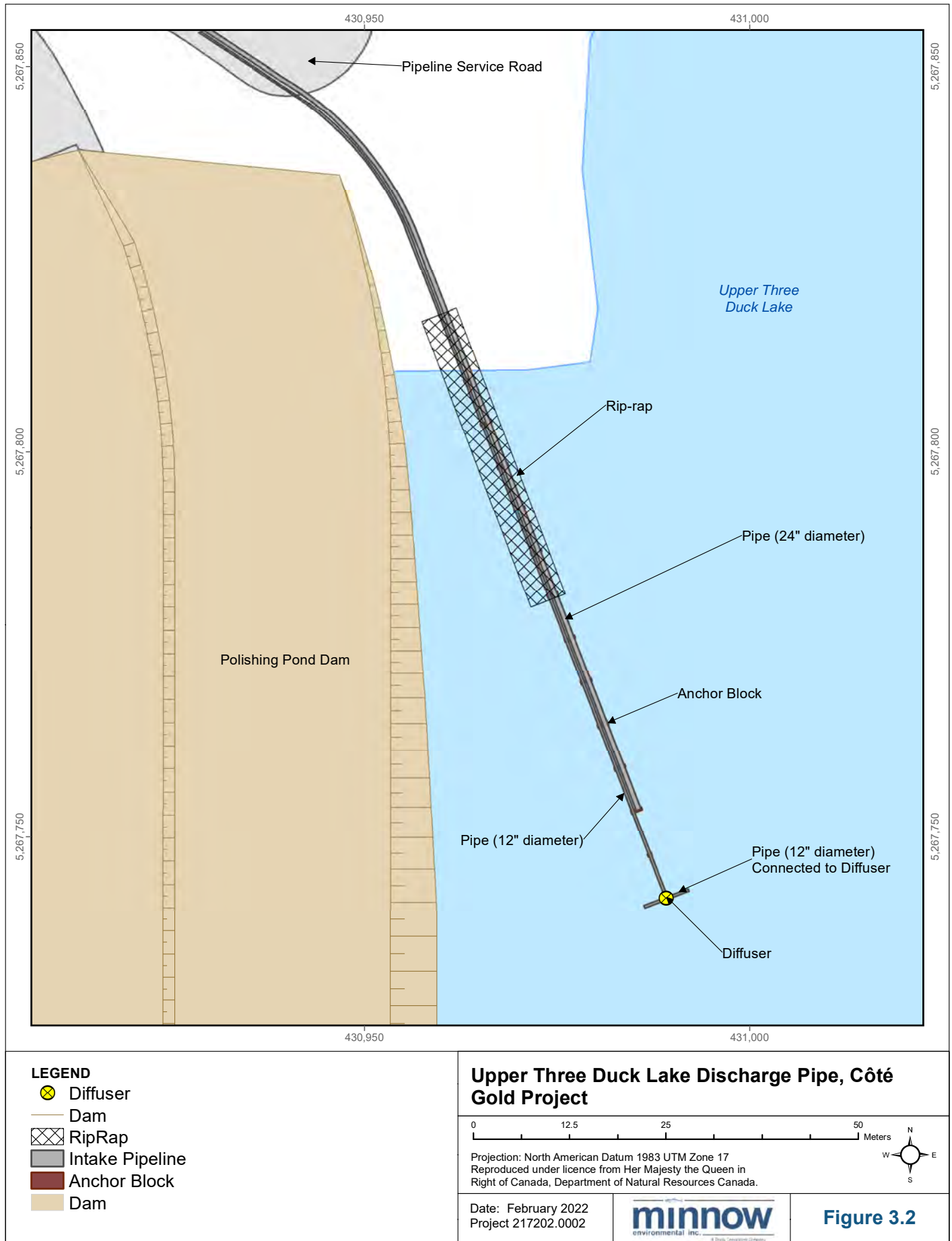
3.2 Additional Habitat Lost / Alteration

3.2.1 Upper Three Duck Lake

A temporary loss of fish habitat has occurred due to the construction and placement of a discharge pipe in the north basin of Upper Three Duck Lake (Figure 3.2). The discharge pipe was installed in March 2021 following an approved FAA amendment received on February 11, 2021 (Appendix G). The discharge pipe to Upper Three Duck Lake is essential to the construction of mine infrastructure to maintain safe construction conditions and to implement an approved water management plan on site. The Ontario Ministry of the Environment, Conservation, and Parks has provided approval for pipeline discharge (Environmental Compliance Approval [ECA] Number 6287-BRLHB2 issued September 23, 2020, with amendment ECA Number 9388-C7XLYY issued November 5, 2021).

The discharge pipe enters Upper Three Duck Lake on its north shore between the inlet arm and the main basin (Figure 3.2; 430963.23 E, 5267809.17 N). The discharge pipe is composed of two parallel pipes laid on the lake bottom: the first is 60.7 cm in diameter and 60 m in length, the second is 30.5 centimeter (cm) and 72 m in length. The pipe extends from the above the water's edge to its terminus at a screened diffuser. To secure the pipe to the lakebed, a series of 13 concrete slabs / blocks were to be placed on the lake bottom every 6 m. The slabs are long





and narrow (1.5 m length by 0.8 m width by 0.5 m in height) and to be placed perpendicular to the pipe. The total in-water footprint that the slabs are designed to occupy on the lakebed is 15.6 m². To further protect the pipe from ice and storm damage, rock-fill (D₅₀=500 millimeter [mm]) was to be placed over the pipe from 1 m above the water's edge to 2 m depth. The length of the rock-fill pile over the pipe was designed to be 41 m from the water's edge to 2 m water depth. The total in-water footprint that the rock-fill pile is designed to occupy on the lakebed is 194.34 m². The total area of in-water habitat overprinting in Upper Three Duck Lake is 210 m² (Table 3.2).


Upper Three Duck Lake has a surface area of approximately 83.2 ha with a total estimated volume of 1.86×10^6 m³. The lake has a maximum depth of approximately 6.2 m and mean depth of 2.6 m based on the annual average water level. The habitat along the north shore of Upper Three Duck Lake in the immediate vicinity of the pipe is bedrock transitioning to sand, sandy silt with occasional cobble. Substrate in the deeper areas of Upper Three Duck Lake is mainly organic silt. Emergent and submergent vegetation are present including emergent sedges (*Carex sp.*), spikerushes (*Eleocharis sp.*), bur-reed (*Sparganium sp.*) and horsetails (*Equisetum sp.*) and yellow pond lily (*Nuphar variegatum*). Submergent tape grass (*Vallisneria americana*) is also present. Fish species present include yellow perch, northern pike, walleye, white sucker, lake whitefish, and smallmouth bass. Dominant small-bodied fish species in the lake include blacknose shiner, spottail shiner, and Iowa darter. In the vicinity of the pipe, good spawning habitat for northern pike and yellow perch and moderate to good adult foraging and juvenile rearing habitat is present. Good foraging habitat for lake whitefish is present on the sandy-silt substrate with no spawning habitat in vicinity of the discharge pipe. Poor to good rearing/cover habitat is present for walleye from the combination of rocky habitat and submergent vegetation along the shoreline.

The total HU lost for the temporary placement of the discharge pipe in Upper Three Duck Lake is 1,352 HU (Table 3.2). The habitat that is temporarily lost along the pipe's route is not limiting for fish in Upper Three Duck Lake. The discharge pipe will be relocated to the Mollie River once WRC2 is fully constructed (anticipated to occur at the end of Q1 or beginning Q2 2023). The supporting infrastructure for the discharge pipe will be removed from Upper Three Duck Lake. Best practices will be employed during the removal of the infrastructure to limit the disturbance to fish and fish habitat.



Table 3.2: Summary of Lost and Altered Habitat Area, Côte Gold Project

Location of Impact		Fisheries Act Authorization (FAA) or Schedule 2	Area	Max Depth (m)	Depth (m)	Area (m²)	Habitat Units
Waterbody	Open Pit	FAA	North Beaver Pond	<0.5	0-max	4,076	1,019
		FAA	East Clam Lake (south end)	2.4	0-max	5,961	25,334
		FAA	Clam Lake (east arm)	3.0	0-2	7,365	36,825
					2-max	2,727	10,226
		FAA	Côté Lake	4.3	0-2	69,798	523,485
					2-max	118,748	712,488
	FAA	Upper Three Duck Lake (western arm)	4.1	0-2	60,346	467,682	
				2-max	154,132	1,001,858	
	Mine Infrastructure	FAA Habitat Alteration	Upper Three Duck Lake (Discharge Pipe)	6.2	0-2.3	210	1,365
		FAA Habitat Alteration	Mesomikenda Lake (Freshwater Intake)	60	0-3	84	525
	Oshki Lake	FAA Habitat Alteration	East Beaver Pond	<1.0	0-max	2,981	745
	Mine Rock Area (MRA)	Schedule 2	East Beaver Pond (small arm)	<2.0	0-max	7,758	3,879
	Tailings Management Facility (TMF) and Reclaim Pond	Schedule 2	Unnamed Waterbody #1	1.0	0-max	4,478	1,120
			Unnamed Waterbody #2	0.6	0-max	2,903	1,452
			Unnamed Waterbody #3	1.1	0-max	3,036	759
			Unnamed Waterbody #4	<1.0	0-max	11,574	2,894
			Unnamed Waterbody #5	<2.0	0-max	642	161
			Unnamed Waterbody #6	unknown	0-max	846	212
			West Beaver Pond	<2.0	0-max	3,178	1,589
			FAA (TMF Dam)	West Beaver Pond	3.0	0-max	49,265
Mattagami Lake	FAA Habitat Alteration	Shoreline ^a	1.0	0-1	1,520	0	
		Nearshore	3.0	0-3	1,000	3,000	
			FAA Losses				
Schedule 2 Losses						34,415	12,064
Lake Habitat Total						512,628	2,833,564
Location of Impact		FAA or Schedule 2	Area	Habitat Type	Length (m)	Area (m²)	Habitat Units
Stream	Open Pit	FAA	Mollie River (from New Lake Dam North to Côté Lake)	High-gradient	472	7,083	3,541
				Pool	66	1,990	11,940
				Low-gradient	373	3,952	26,678
				High-gradient	55	1,044	522
		FAA	Clam Creek (from East Clam Lake to the Mollie River)	Low-gradient	2,518	35,749	241,305
				Low-gradient	491	1,105	2,764
				Intermittent	243	121	0
				Intermittent	276	138	35
	FAA Habitat Alteration	Tributary from Unnamed Pond to Mollie River	Intermittent	276	138	35	
			Low-gradient	468	842	421	
	Oshki Lake	FAA Habitat Alteration	Tributary from East Beaver Pond	Intermittent	139	70	17
			Tributary between East Beaver Ponds	Intermittent	113	57	14
	Mine Rock Area (MRA)	FAA (Dam)	Tributary of Unnamed Lake #3	Low-gradient	76	38	48
		Schedule 2		Low-gradient	217	109	27
				Intermittent	104	52	13
				Low-gradient	22	11	3
				Low-gradient	162	81	20
				Tailings Management Facility (TMF) and Reclaim Pond	Schedule 2	Unnamed Stream from West Beaver Pond to Bagsverd South Arm	Low-gradient
	FAA (TMF Dam)	381	2,286		2,286		
	Schedule 2 (between dams)	107	642		642		
	FAA (Dam)	65	390		390		
	Schedule 2 (Reclaim Pond)	404	3,474		7,817		
	FAA (Dam)	73	896		2,689		
	Schedule 2 (between dams)	23	248		743		
	FAA (Dam)	25	302		980		
	Schedule 2	Unnamed Waterbody #2 Tributaries	Low-gradient		267	400	100
			Low-gradient		244	110	27
			Low-gradient	161	290	145	
	Road Crossing (SR6)	FAA	Unnamed Tributary between Bagsverd Pond and Bagsverd Lake	Low-gradient	19	46	12
	Mollie River	FAA Habitat Alteration	Mollie River (Middle to Lower Three Duck Lake)	Low-gradient	100	700	1,575
Chester Lake Road Crossing	FAA Habitat Alteration	Mollie River	Low-gradient	35	152	304	
			Culverts (3)	20	108	0	
			High-gradient	10	108	215	
FAA Losses						57,176	295,735
Schedule 2 Losses						5,520	9,615
Stream Habitat Total						62,696	305,351

 Changes for the FAA amendment.

^a No habitat units are assigned to the 0-1m depth of Mattagami Shoreline because HSI scores are calculated as nil.

3.2.2 Unnamed Tributary (Bagsverd Pond outlet) Crossing

To support Project development an access road was built along the northern extent of the mine. The road crosses an unnamed tributary that flows from Bagsverd Pond to Bagsverd Lake (South Arm; Figure 3.3; 430999.5 E and 5268590.5 N) and the installation of a culvert system was required to maintain flow and protect the road infrastructure. Three culverts were installed following an approved FAA amendment received on February 11, 2021 (FAA 20-HCAA-00766).

The unnamed tributary is a 280 m long, intermittent, low-gradient, shallow (<30 cm) stream with a wetted width at the site of crossing of approximately 2.5 m. The tributary is characterized by low, often subsurface, flow. In the area of the culvert the channel substrate is dominated by sand and organics. Small-bodied fish were observed in the tributary near Bagsverd Pond at the time of the baseline survey (2013; Minnow 2014). Fish species captured in Bagsverd Pond, in order of abundance, include fathead minnow (*Pimephales promelas*), finescale dace (*Chrosomus neogaeus*), northern redbelly dace (*Chrosomus eos*), central mudminnow (*Umbra limi*), Iowa darter (*Etheostoma exile*), and white sucker (Minnow 2014). Limited large-bodied fish habitat exists within the unnamed tributary due to the lack of water depth and presence of an intermittent channel. While white sucker juveniles may use the habitat for rearing, only one white sucker was captured in all the fishing completed in Bagsverd Pond and no spawning habitat was noted in the area. Additionally, access to the tributary would be limited to periods of high flow. Limited habitat is present for small-bodied species with no overwintering habitat.

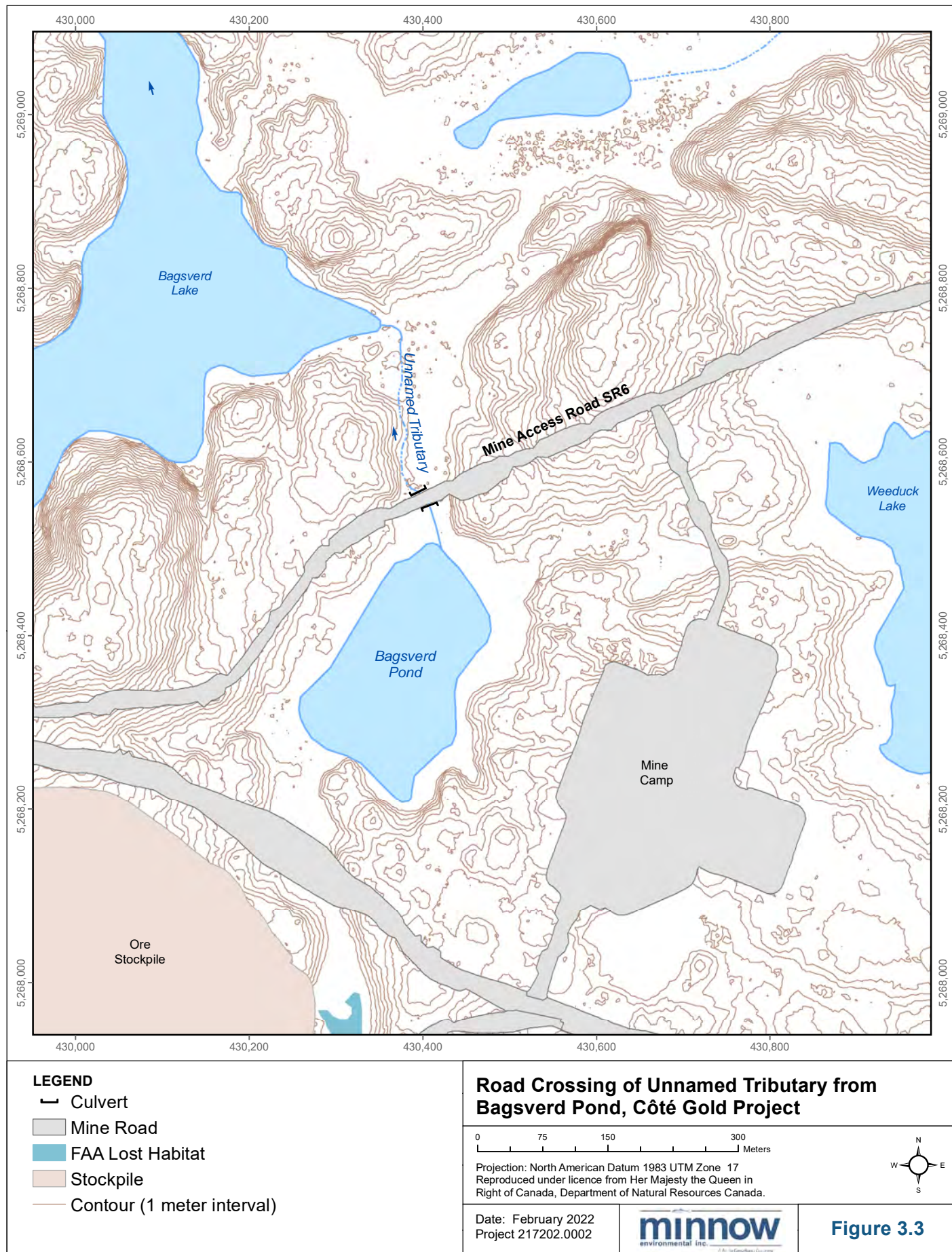
Mine infrastructure has been designed for the maximum probability flood event and therefore three culverts were installed at this location. Each culvert is 900 millimeters (mm), round, galvanized corrugation with a wall thickness of 2.8 mm and 18.5 m in length. The slope of the culverts is 0.25% and does not result in restricted fish passage. The total area impacted due to the culvert installation is 46 m² (Table 3.2).

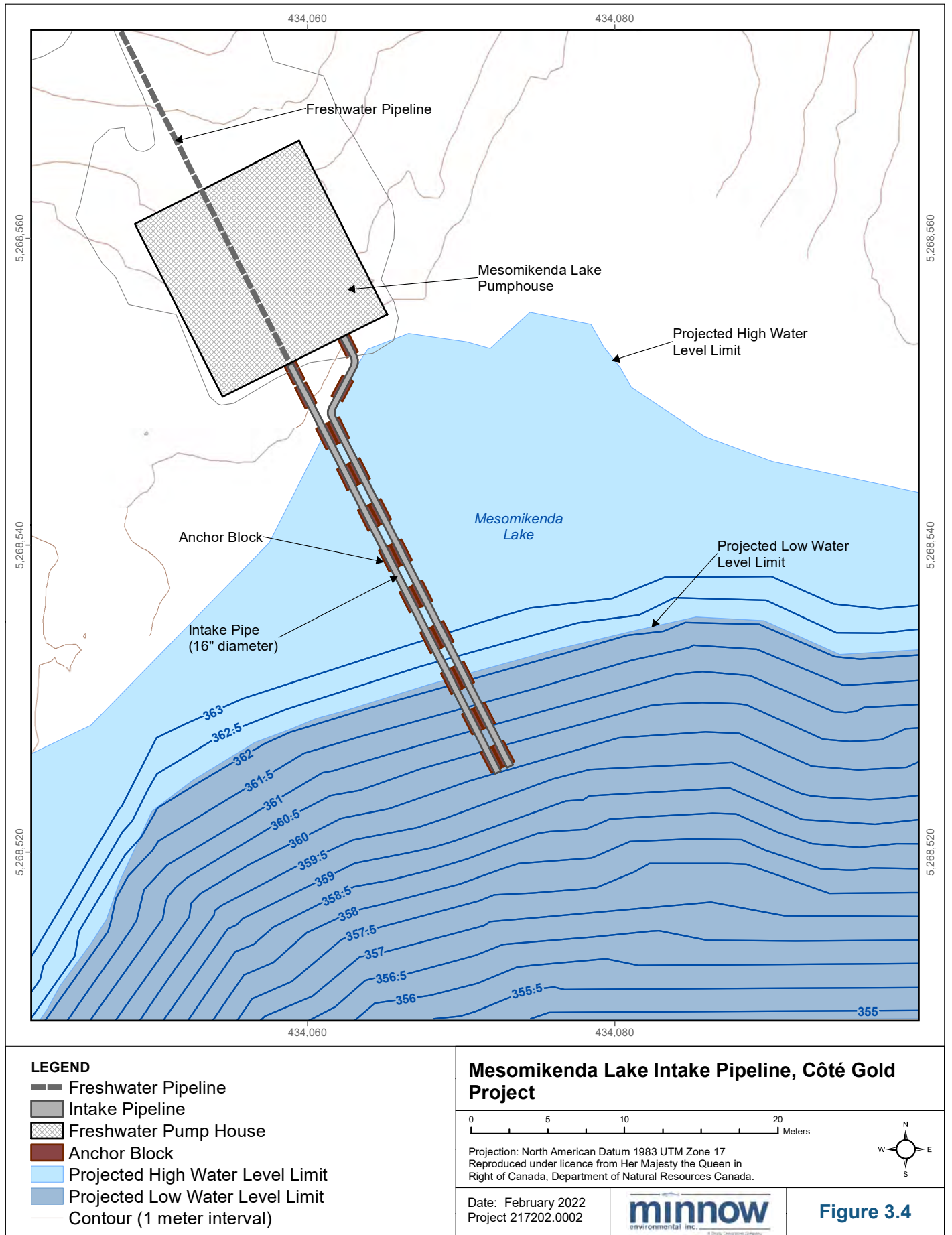
The total estimated habitat units (HU) lost due to culvert construction in the Unnamed Tributary is 12 HU (Table 3.2). Based on the intermittent nature of the channel and limited to no suitable habitat for large-bodied fish species, only small-bodied fish were considered during habitat unit calculations (Appendix Table B.12)

3.2.3 Mesomikenda Lake

A temporary loss of fish habitat will occur due to the construction and placement of a freshwater intake pipe in the northwest basin of Mesomikenda Lake (Figure 3.4). The intake pipe from Mesomikenda Lake is essential mine infrastructure to supply the mine with process water during operations and is part of the water management plan on site.







The intake pipe will enter Mesomikenda Lake on the northwest shore of Southcamp Bay (Figure 3.4; 434069.8 E, 5268518.8 N). The intake pipe is composed of two parallel pipes laid on the lake bottom. The pipes are 30 m in length and 40.6 cm (16 inches) in diameter, placed 0.5 m apart. The pipe will extend from above the water's edge to its terminus at a screened diffuser at approximately 5.5 m depth (Appendix C). To secure the pipe to the lakebed, a series of ten concrete slabs / blocks will be placed on the lake bottom every 3 m (with two blocks at the pipe terminus). The slabs are long and narrow (1.5 m length by 0.8 m width by 0.6 m in height) and will be placed perpendicular to the pipe. The total in-water footprint that the slabs will occupy on the lakebed is 24 m². To further protect the pipe from ice and storm damage, rock-fill ($D_{50}=500$ mm) will be placed over the pipe from 1 m above the water's edge to the pipe terminus (approximately 30 m). The total in-water footprint that the rock-fill pile will occupy on the lakebed is 60 m². Combined, the total in-water footprint that the intake pipe will occupy in Mesomikenda Lake is 84 m² (Table 3.2).

Mesomikenda Lake is part of the Minisinakwa watershed and receives drainage from Neville Lake (Figure 3.4). The lake is narrow and oriented in a north-south direction spanning approximately 27 km with widths varying from 50 m to >1 km. The lake has a surface area of 1,705 hectares (ha) with a maximum depth of approximately 60 m. Mesomikenda Lake flows north and discharge is regulated at the outlet of the lake by an Ontario Power Generation owned dam. The dam is 122 m long and 3 m high with three sluices.

Baseline surveys (Minnow 2014) were not completed in the area proposed for overprinting (Figure 3.4). However, Ontario Ministry of Northern Development, Mines, Natural Resources, and Forestry (OMNDMNRF) BROADSCALE Monitoring Program (OMNRF 2012, 2017a) data and baseline surveys (Minnow 2014) demonstrate the presence of northern pike, walleye, lake whitefish, white sucker, smallmouth bass, burbot, cisco, lake trout, and yellow perch. Northern pike and walleye were the most abundant large-bodied fish species captured in 2017, totaling 26 and 25% of the total catch, respectively (OMNRF 2017a). Lake trout and cisco made up less than 1% of the total catch in 2017 (OMNRF 2017a). Three small-bodied fish species were captured in the program (Table 2.2). The nearshore habitat that will be temporarily overprinted by the intake pipe is characterized as a series of shallow (~0.75 m deep), narrow shelves (approximately 1.5 m in length) with predominately cobble and boulder substrate (70% and 10%, respectively) with gravel (10%), and minimal sand and organics (5%; Appendix D). Limited submergent vegetation is present (5%; sedges and bladder wort). Organics and fines are dominant in depositional zones along the shore, often completely covering the substrate. Habitat characterization below 1.5 m is assumed to be small cobble with interstitial organics and



finer which is consistent with other areas surveyed in Mesomikenda Lake during baseline surveys (Minnow 2014). In the vicinity of the pipe, poor spawning habitat for lake trout and lake whitefish is expected based on the dominant substrate type of organic silt at water depth greater than 1.5 m (Minnow 2014). Moderate to good adult foraging and juvenile rearing habitat for other northern pike, walleye, smallmouth bass, and yellow perch is present. Poor to moderate rearing/cover habitat is present for walleye from the combination of rocky habitat and submergent vegetation along the shoreline.

The total HU lost during the temporary placement of the intake pipe in Mesomikenda Lake is 525 (Table 3.2). The habitat that will be lost along the pipe's route is not limiting for fish in Mesomikenda Lake.

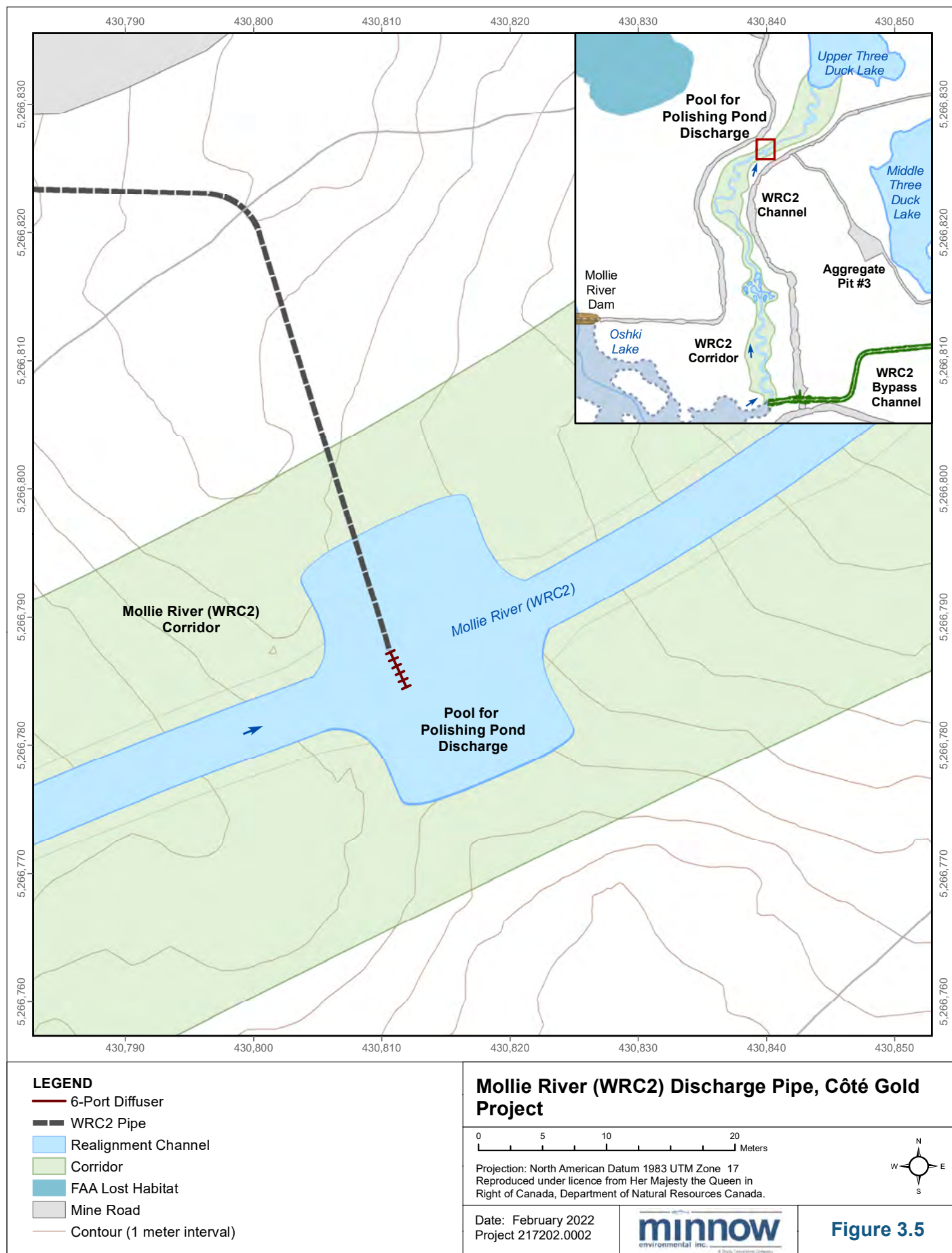
3.2.4 Mollie River (WRC2)

A temporary loss of fish habitat will occur due to the construction and placement of an effluent discharge pipe in the Mollie River (section HG3 of the WRC2; Figure 3.5). The discharge pipe supports essential mine infrastructure and the implementation of the approved water management plan on site. Effluent from the Polishing Pond will be discharged through a six-multiport diffuser into a pool in WRC2. The discharge will be relocated to WRC2 from its temporary location in Upper Three Duck Lake during operations (anticipated date is late Q1 or early in Q2 2023).

The discharge pipe will enter the newly constructed Mollie River channel on its east shore (Figure 3.5; 430814.37 E, 5266787.44 N). The Mollie River realignment is currently under construction and will direct flow around the Open Pit, through Oshki Lake and north to Upper Three Duck Lake. The discharge pipe will be composed of a single pipe that is 61 cm in diameter and extend from the water's edge to its terminus at a screened diffuser (approximately 12.5 m in length). The diffuser will be placed 4 m from the upstream end of the pool on the streambed and run perpendicular to stream flow. To secure the pipe and diffuser to the streambed, a concrete slab will be placed on the pool bottom near the pipe terminus. The slab is long and narrow (1.5 m length by 0.8 m width by 0.5 m in height) and will be placed perpendicular to the pipe. The total in-water footprint that the slab occupies in the pool is 1.2 m², and the pipe will occupy 7.6 m².

The receiving pool will have a water depth of approximately 2 m, with a length and width of 18.3 m and 25 m, respectively. The pool is designed to support a total volume of 750 m³ and will contain boulder and gravel substrate and is bounded on either end by constructed riffle habitat. The construction and placement of the discharge pipe will result in the loss of created fish habitat





in WRC2; however, the magnitude of this impact is very small as the pipe and slab (approximately 8.8 m²) will be installed prior to the introduction of fish or seasoning of the WRC2 channel. The overall quality and function of the pool habitat where the pipe is being placed is not anticipated to change meaningfully and the total HU for this offset therefore have not been adjusted (i.e., loss of constructed habitat in WRC2 will not appear in the habitat loss table; Table 3.2; Appendix Tables B.8 to B.13).

3.2.5 Mollie River Alteration of Habitat (between Middle and Lower Three Duck Lakes)

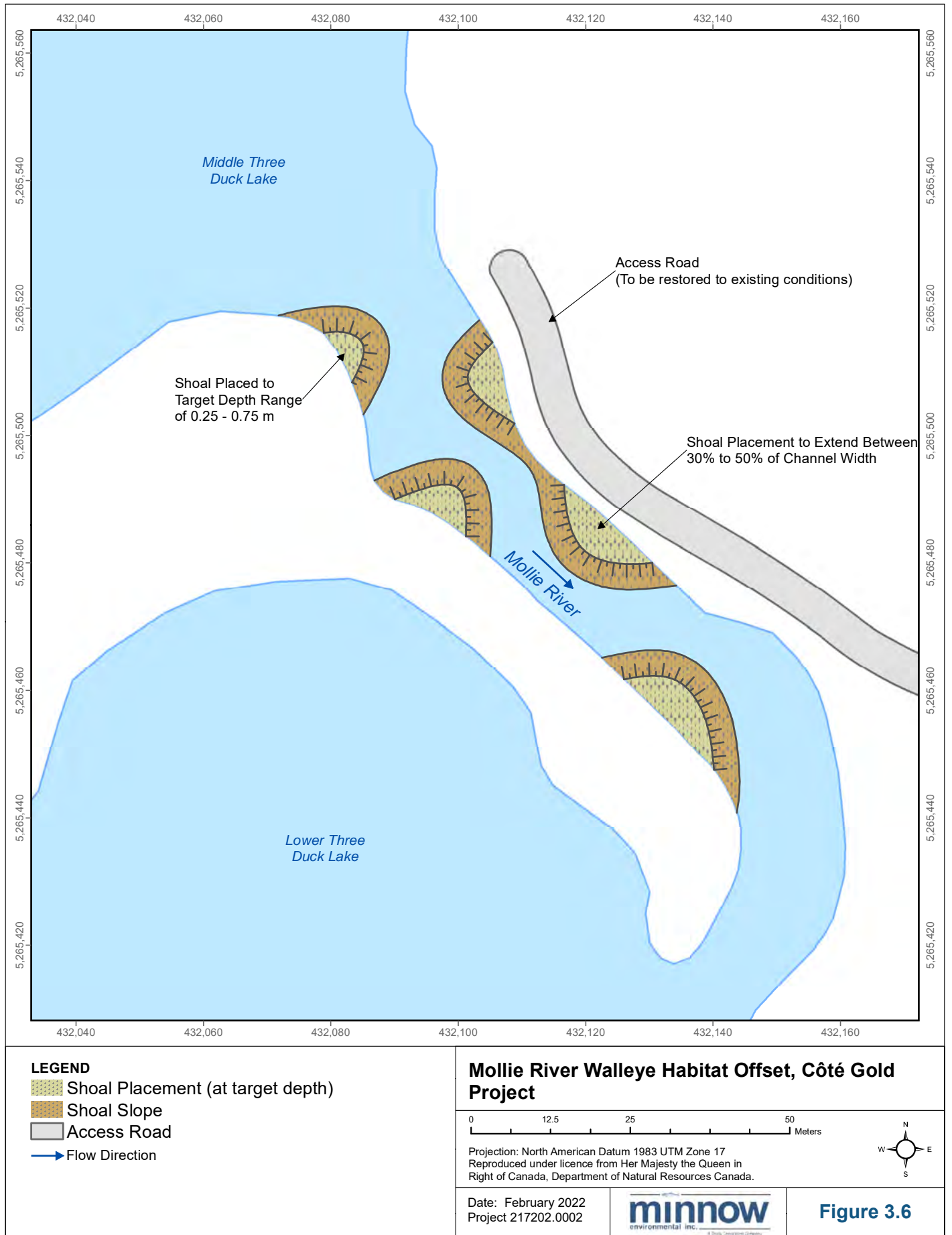
An alteration of fish habitat will occur in the Mollie River between Middle and Lower Three Duck lakes (Figure 3.6). The Mollie River in this section is represented by run and pool habitat approximately 15 to 20 m wide and varies from less than 0.5 to 2.5 m in water depth. The substrate is comprised entirely of fine sediments (sand and silts) with the presence of large woody debris along the shoreline of the channel. Submergent vegetation (yellow pond lily [*Nuphar variegatum*] and pondweed [*Potamogeton sp.*]) is present closer to the banks in the pool areas of the channel and more abundant closer to Lower Three Duck Lake. The channel within this area is bordered by mainly sedge (*Carex sp.*), speckled alder (*Alnus incana*), with shoreline areas lined by sweet gale (*Myrica gale*) and/or leatherleaf (*Chamaedaphne calyculata*). Fish species likely to use the habitat include yellow perch, northern pike, walleye, white sucker, and smallmouth bass. In the channel between Middle and Lower Three Duck lakes, poor to moderate juvenile rearing and adult foraging habitat is present for northern pike, smallmouth bass, and yellow perch. No walleye spawning habitat is present due to the lack of adequate spawning substrate (e.g., gravel and cobble), no juvenile rearing habitat is present, and poor adult foraging is poor. Very poor overwintering habitat exists due to the shallow water depth at the furthest upstream end of the channel.

A total of 1,575 HU will be temporarily altered during the construction of habitat offsets (Table 3.2).

3.2.6 Mattagami Lake Habitat Alterations

Mattagami Lake has a surface area of 3,975 ha, a maximum depth of 75 m, and an average depth of 8.4 m. The hydrology of the lake is controlled by the Mattagami Lake Control Dam which is located at the outlet of the lake at Kenogamissi Falls. Ontario Power Generation (OPG) operates the dam within the limits of the water management plan which allow for a water elevation of 326 m from September to the middle of May, and an elevation of 331.5 m from the middle of May until September (OPG, 2021). The water management plan results in a 3 to 5.5 m fluctuation in water level throughout the year. Bank destabilization and erosion along a 1.2 km of shoreline





in the community of Mattagami was identified for remediation by Mattagami First Nation during on-going engagement sessions (Appendix E).

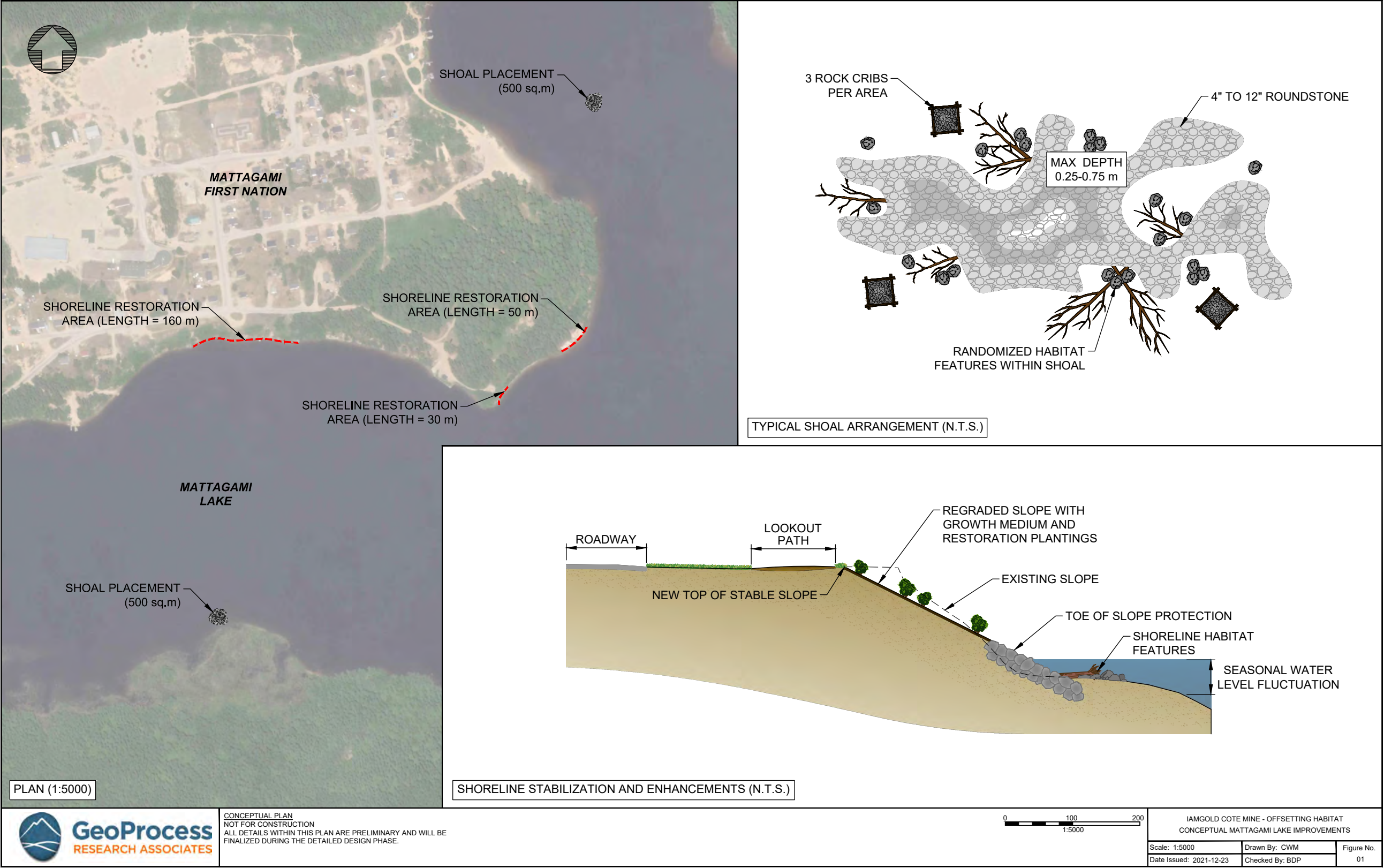
The shoreline remediation sites from west to east are 160 m (western site), 30 m (central site), and 50 m (eastern site) long, respectively (Figure 3.7; Appendix C). The western site consists of a bank with greater than 10 m high slope and obvious signs of slumping and erosion. The base of the slope includes a flat sand bar with eroded shoreline material. The bar is inundated during the summer but is exposed during low water level in the winter (Figure 3.8). The central site consists of a near-vertical sandy bank with vegetation at the top of the slope. The shoreline at this site is actively eroding (Figure 3.8). The eastern site consists of a large, bare sandy slope bank. Bank slumping and erosion has caused tree loss at the top of the bank. Both the central and eastern sites have flat sand bars with eroded shoreline material at the base of the slope that are exposed during low water (Figure 3.8). Fish use in the existing habitat adjacent to the shoreline remediation sites is expected to be nil (HSI = 0; Appendix Tables B.1 to B.5) because of the high rate of erosion and lack of habitat complexity (i.e., eroding, sandy, shallow beach). Therefore, a total of 0 HU are anticipated to be temporarily altered during construction of the shoreline in-water features (Table 3.2).

In addition to the shoreline sites that will be remediated, two nearshore habitat areas within Mattagami Lake have been identified for the installation physical structures to increase cover for fish (Figure 3.7). These areas are devoid of any in-water cover, and substrates are dominated by sand and silt (Appendix C). Large-bodied fish species present in Mattagami Lake include, in order of abundance, walleye, lake whitefish, cisco, burbot, yellow perch, smallmouth bass, northern pike, and white sucker (OMNRF 2017b). Dominant small-bodied fish species in the lake include mimic shiner, spottail shiner, and trout-perch (*Percopsis omiscomaycus*). In the vicinity of the installed habitat features, fish presence and habitat use is not known but anticipated to be low as a result of limited habitat complexity and cover. Fish use and presence will be confirmed prior to the installation of features (Section 5.5). Conservatively, poor adult foraging habitat is expected for northern pike, walleye, and yellow perch while good adult foraging habitat is expected for smallmouth bass (Appendix Tables B.1 to B.5). Further, poor spawning habitat is expected for yellow perch and smallmouth bass. Poor juvenile rearing is expected for walleye because of the lack of cover and habitat complexity (Appendix Tables B.1 to B.5).

A total of 3,000 HU will be temporarily altered during construction of the nearshore habitat offsets (Table 3.2).

3.2.7 Summary of Lost Fish Habitat

The small, additional habitat losses and/or alterations of fish habitat for the amendment are to accommodate a road crossing, placement of intake and discharge pipes, the installation of

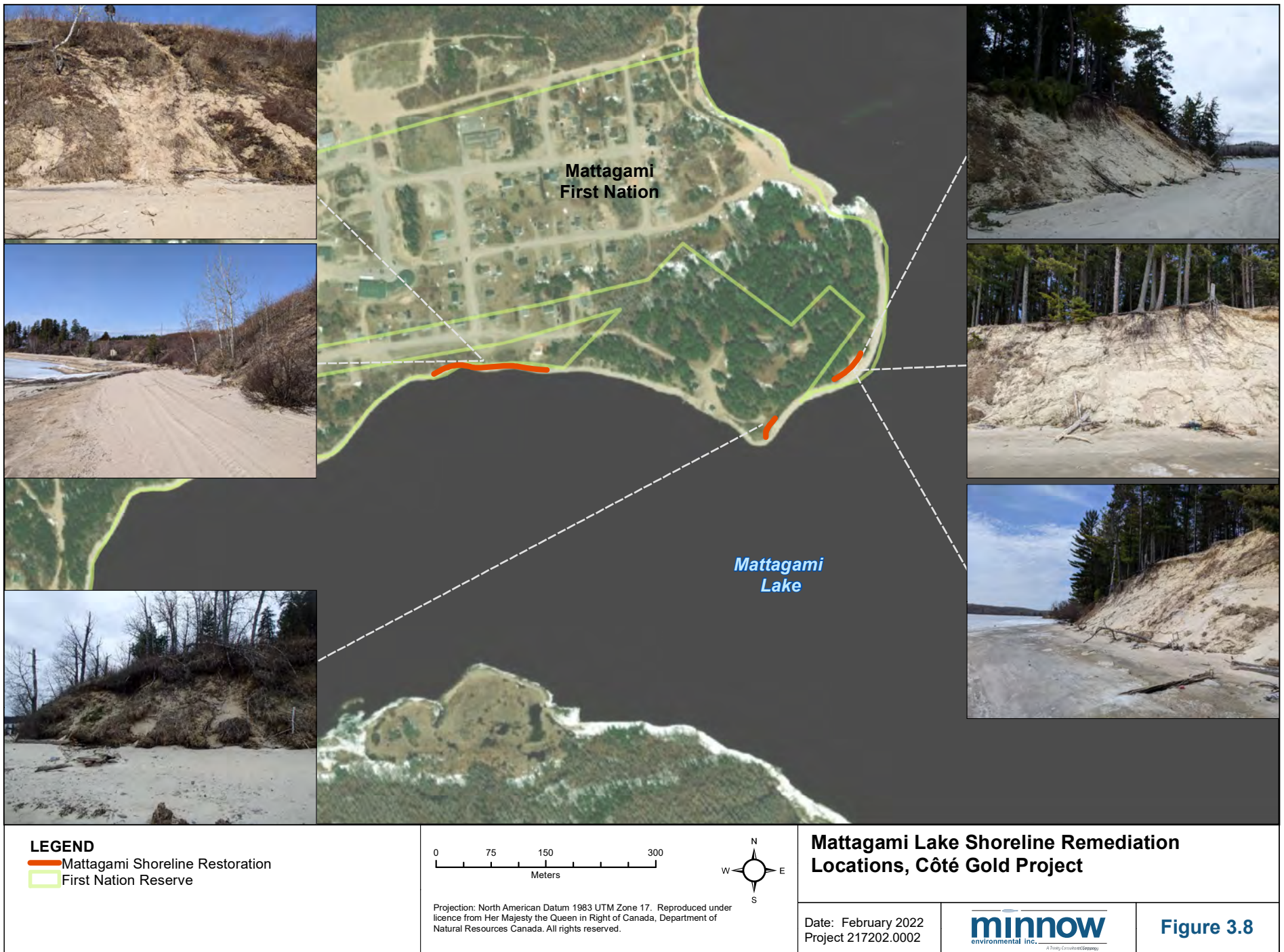


Mattagami Lake Conceptual Drawing

Date: February 2022
Project 217202.0002



Figure 3.7



walleye spawning habitat, and the alteration of habitat within Mattagami Lake that were not accounted for in the original Fisheries Offsetting Plan (Minnow 2020a). The total adjustment in this FOP is minimal with the addition of lost habitat equal to 46 m² (road crossing; Table 3.2) and altered habitat equal to 3,514 m², of which 294 m² will be altered for mine infrastructure and 3,220 m² will be altered to support habit offsets (Table 3.2). All of these changes fall under Section 35 losses (no changes to the Schedule 2 Amendment). The total area of lake habitat to be lost and altered is now estimated to be 512,628 m² (~51 ha) of which 478,213 m² will be lost or altered under Section 35 and 34,415 m² will be lost under Schedule 2 (Tables 3.1 and 3.2). The total length of stream habitat lost and altered is 7,769 m, which based on measured stream widths is equal to 62,696 m², of which 57,176 m² falls under Section 35 and 5,520 m² falls under Schedule 2 (Tables 3.1 and 3.2). The total updated habitat units for the Project to be lost is equal to 2,833,564 lake HU and 305,351 stream HU (Tables 3.2 and 3.3; Appendix Tables B.7 and B.13). Of these units, 2,821,501 lake and 295,735 stream HU will be lost under Section 35 and 12,064 lake and 9,615 stream HU will be lost under the Schedule 2 Amendment (Table 3.3).

3.3 Proposed Fish Offsetting Habitat

3.3.1 Overview and Summary of Key Considerations

Under the original FOP (Minnow 2020a) several offsetting habitats were proposed to offset the loss of habitat due to the development of the Project. The created and alteration of habitats included in the original plan are listed as follows (Figure 3.1):

- the relocation of Clam Creek,
- Chester Lake outlet road crossing;
- the creation of a Oshki Lake;
- the relocation of the Mollie River from Oshki Lake to Upper Three Duck Lake;
- the relocation of the outlet stream of Unnamed Pond to Oshki Lake;
- the connection of Weeduck Lake to Upper Three Duck Lake;
- the connection of Little Clam to Clam Lake;
- the remediation of the Aggregate Pit #3 and connection to Middle Three Duck Lake; and,
- the remediation of the Aggregate Pit North (Bagsverd Lake) and connection to the drainage to Bagsverd Creek.

With the commencement of construction and updating of on-site conditions, a number of site optimizations have resulted in changes to the proposed use and remediation of the



Table 3.3: Summary of FAA and Schedule 2 Habitat Unit Loss and Altered and Habitat Unit Created for the Côté Gold Project

Waterbody											
	Species	Fisheries Act Authorization (FAA)					Schedule 2				
		Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Over- wintering	TOTAL	Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Over- wintering	TOTAL
Habitat Lost/ Altered	Northern pike	104,324	174,789	279,493	274,925	833,531	0	0	0	0	0
	Yellow perch	106,158	175,060	310,692	274,925	866,835	0	0	0	0	0
	Walleye	0	205,922	169,981	136,482	512,386	0	0	0	0	0
	Lake whitefish	21	103,332	101,490	68,220	273,063	0	0	0	0	0
	Smallmouth bass	32,912	51,601	144,199	68,262	296,974	0	0	0	0	0
	Small-bodied Fish	-	-	-	-	38,713	-	-	-	-	12,064
Total Habitat Units Lost/ Altered		243,415	710,704	1,005,856	822,814	2,821,501	0	0	0	0	12,064
Habitat Created	Northern pike	193,643	188,042	203,826	259,423	844,933	1,800	1,800	1,275	0	4,875
	Yellow perch	193,893	222,317	305,933	223,104	945,247	1,800	2,325	2,325	0	6,450
	Walleye	0	177,317	154,494	137,669	469,480	0	950	525	0	1,475
	Lake whitefish	66,296	91,777	104,402	114,319	377,553	1,050	1,475	950	0	3,475
	Smallmouth bass	106,144	136,880	202,798	137,669	583,492	2,425	2,425	1,900	0	6,750
	Small-bodied Fish	-	-	-	-	-	-	-	-	-	0
Total Habitat Units Gained		559,975	816,334	971,453	872,184	3,220,705	7,075	8,975	6,975	0	23,025
Balance	Northern pike	89,319	13,253	-75,668	-15,502	11,403	1,800	1,800	1,275	0	4,875
	Yellow perch	87,735	47,257	-4,758	-51,821	78,412	1,800	2,325	2,325	0	6,450
	Walleye	0	-28,606	-15,488	1,187	-42,906	0	950	525	0	1,475
	Lake whitefish	66,275	-11,555	2,912	46,099	104,490	1,050	1,475	950	0	3,475
	Smallmouth bass	73,232	85,279	58,599	69,407	286,517	2,425	2,425	1,900	0	6,750
	Small-bodied Fish	-	-	-	-	-38,713	-	-	-	-	-12,064
Net Waterbody Habitat Units		316,560	105,630	-34,403	49,370	399,204	7,075	8,975	6,975	0	10,962
Stream											
	Species	FAA					Schedule 2				
		Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Over- wintering	TOTAL	Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Over- wintering	TOTAL
Habitat Lost/ Altered	Northern pike	32,328	33,062	32,019	20,924	118,334	1,091	2,047	930	62	4,131
	Yellow perch	33,137	33,487	21,846	21,145	109,614	2,047	2,047	930	62	5,087
	Walleye	4,117	10,450	10,598	9,925	35,090	0	0	0	0	0
	Smallmouth bass	38	11,000	10,738	10,423	32,199	0	62	0	0	62
	Small-bodied Fish	-	-	-	-	499	-	-	-	-	335
Total Habitat Units Lost/Altered		69,620	87,998	75,201	62,417	295,735	3,138	4,157	1,861	124	9,615
Habitat Created	Northern pike	11,492	10,989	9,010	6,523	38,014	2,255	3,423	1,038	0	6,715
	Yellow perch	14,075	12,036	9,899	6,523	42,533	2,385	3,423	1,088	0	6,895
	Walleye	3,150	8,586	2,311	3,261	17,309	0	1,088	0	0	1,088
	Smallmouth bass	3,261	7,569	6,270	3,261	20,362	0	1,088	0	0	1,088
	Small-bodied Fish	-	-	-	-	321	-	-	-	-	0
	Connectivity Weeduck Lake ^a	-	-	-	-	47,665	-	-	-	-	0
	Connectivity Little and East Clam ^a	-	-	-	-	41,789	-	-	-	-	0
Total Habitat Units Gained		31,979	39,180	27,491	19,568	207,992	4,640	9,020	2,125	0	15,785
Balance	Northern pike	-20,836	-22,073	-23,009	-14,401	-80,320	1,164	1,375	107	-62	2,584
	Yellow perch	-19,062	-21,451	-11,946	-14,623	-67,081	338	1,375	157	-62	1,808
	Walleye	-967	-1,864	-8,287	-6,664	-17,781	0	1,088	0	0	1,088
	Smallmouth bass	3,223	-3,431	-4,468	-7,162	-11,837	0	1,026	0	0	1,026
	Small-bodied Fish	-	-	-	-	-179	-	-	-	-	-335
Net Stream Habitat Units		-37,641	-48,819	-47,710	-42,850	-87,743	1,502	4,863	264	-124	6,170

Note: - indicates no habitat unit lost or gained.

^a Connectivity was determined by calculating 10% of the total area gained for access to habitat (e.g., 10% of total surface area for Upper Three Duck Lake and Clam Lake) by the suitability of the habitat gained (i.e., Upper Three Duck was assigned an HSI of 0.75, Clam Lake 0.5 as fish from Little Clam and East Clam had partial access to this area).

aggregate pits. To remediate all of Aggregate Pit #3, substantial bedrock cuts would be required. Therefore, the original design was updated to incorporate a portion of Aggregate Pit #3 and areas previously disturbed by the Project with less overburden production. Upon further assessment of the permitting of Aggregate Pit North (Bagsverd), it was determined that the provincial government would not allow the creation of the pit due to the presence of a sensitive bog. Therefore, remediation of this area is not possible. With these adjustments, additional offsetting habitat is required to offset the losses of the Project given that the above proposed habitats cannot be remediated as originally proposed (219,100 m² of lentic habitat and 600 m of lentic habitat; Minnow 2020a). The following will outline the proposed creation/alteration of 102,521 m² of lake habitat and 700 m² of alteration of stream habitat to offset these changes (Table 3.4). Similar to the original FOP, all areas will incorporate habitat features to enhance the created habitat, such as large boulders, rock shoals, LWD (including fallen trees, tree stumps, standing snags), riparian vegetation plantings, and cobble riffles. Additional measure to prevent erosion and establish food web components (e.g., planting of macrophytes) are discussed in the reduction of lag times (Section 4.3). A description of the fish habitat quality and quantity associated with each of these created habitats is provided below.

3.3.2 Mollie River Walleye Spawning Habitat

The Mollie River between Middle and Lower Three Duck lakes offers the opportunity to create walleye spawning habitat, which despite the small area could potentially have a large impact on the fish community of Middle and Lower Three Duck Lakes where walleye are present in moderate abundance (Minnow 2014). Walleye spawning habitat in the vicinity of Middle and Lower Three Duck Lake is limited and restricted to cobble points and sandy shorelines around the lake (Minnow 2014). It is unlikely the walleye in this area use the lake habitat for spawning as they are known to preferentially spawn in rivers within the vicinity of the mine.

Enhanced walleye spawning habitat can be achieved through the placement of physical in-water habitat structures and increased hydrodynamic variability in the outlet channel (Taylor et al. 2019). Cobble and gavel (50% 10 to 20 cm and 50% 20 to 30 cm of round stone; Appendix C) will be placed in the channel along each bank of the Mollie River in an alternating sequence for approximately 100 m to provide adequate depth (0.3 to 3 m), flow (0.15 to 0.3 metres per second [m/s] during the freshet), and suitable spawning substrate for walleye to spawn (Appendix A and Appendix C).

This alteration of substrate placement will result in 700 m² and 1,925 HU of improved habitat for walleye spawning (Figure 3.6, Table 3.4).



Table 3.4: Summary of Created Habitat, Côte Gold Project

Location of Impact		Fisheries Act Authorization (FAA) or Schedule 2	Area	Max Depth (m)	Depth (m)	Area (m ²)	Habitat Units
Waterbody	Oshki Lake	FAA for Côte Lake	Oshki Lake	6.3	0-2	112,757	902,056
					2-max	152,425	1,257,506
	Mollie River Watershed	FAA	Extension of Middle Three Duck Lake	5.5	0-2	80,476	623,689
					2-max	31,134	210,155
	Mollie River Watershed	Schedule 2	Weeduck and Upper Three Duck Lake Connection	1.5 - 2.0	0-max	2,100	11,550
	Mollie River watershed	Schedule 2	East Clam Lake and Clam Lake Connection	0.5 - 1.5	0-max	1,700	11,475
	Open Pit	FAA for Clam Creek	WRC1 - Extension of Clam Lake	1.0	0-max	21,450	166,238
	Open Pit	FAA for Mollie River	WRC2 - Pool/Wetland	1.8	0-max	7,149	44,681
	Mattagami Lake	FAA	Shoreline	1.0	0-1	1,520	9,880
Nearshore			3.0	0-3	1,000	6,500	
FAA Gains						407,911	3,220,705
Schedule 2 Gains						3,800	23,025
Lake Habitat Total						411,711	3,243,730
Location of Impact		FAA or Schedule 2	Area	Habitat Type	Length (m)	Area (m ²)	Habitat Units
Stream	Open Pit	Schedule 2	WRC1: Clam to Chester Lake	Higher-gradient	113	416	0
				Alternating Pools	250	4,150	14,525
				Low-gradient	50	200	350
	Chester Lake Road Crossing	FAA	Culvert Placement on Mollie River	Haul Rd Culverts	39	140	0
				Low-gradient	7	68	51
				Access Rd Culverts	19	68	0
	Mollie River Watershed	Schedule 2	Weeduck and Upper Three Duck Lake Connection	-	-	-	47,665
	Mollie River watershed	Schedule 2	East Clam Lake and Clam Lake Connection	-	-	-	41,789
	Mollie River Watershed	Schedule 2	Little Clam Lake to East Clam Lake	Low-gradient	235	520	910
	Open Pit	FAA for Mollie River	WRC2: Oshki Lake to Upper Three Duck Lake	Low-gradient	500	4,500	33,750
				Higher-gradient (riffle pool)	52	300	975
				Higher-gradient (riffle pool)	188	1,560	5,460
				Low-gradient	507	5,831	45,190
				Higher-gradient (riffle pool)	248	2,260	8,475
				Low-gradient	236	2,714	22,391
		FAA	Unnamed Pond to Oshki Lake	Intermittent	409	614	307
Road Crossing (SR6)	FAA	Unnamed Tributary between Bagsverd Pond and Bagsverd Lake	Low-gradient	21	57	14	
Mollie River Watershed	FAA	Mollie River (Middle to Lower Three Duck Lake Outlet)	Low-gradient	100	700	1,925	
FAA Gains						18,812	118,538
Schedule 2 Gains						5,286	105,239
Stream Habitat Total						24,098	223,777

Changes for the FAA amendment.

Connectivity was added to the summary of habitat units.

3.3.3 Extension of Middle Three Duck Lake

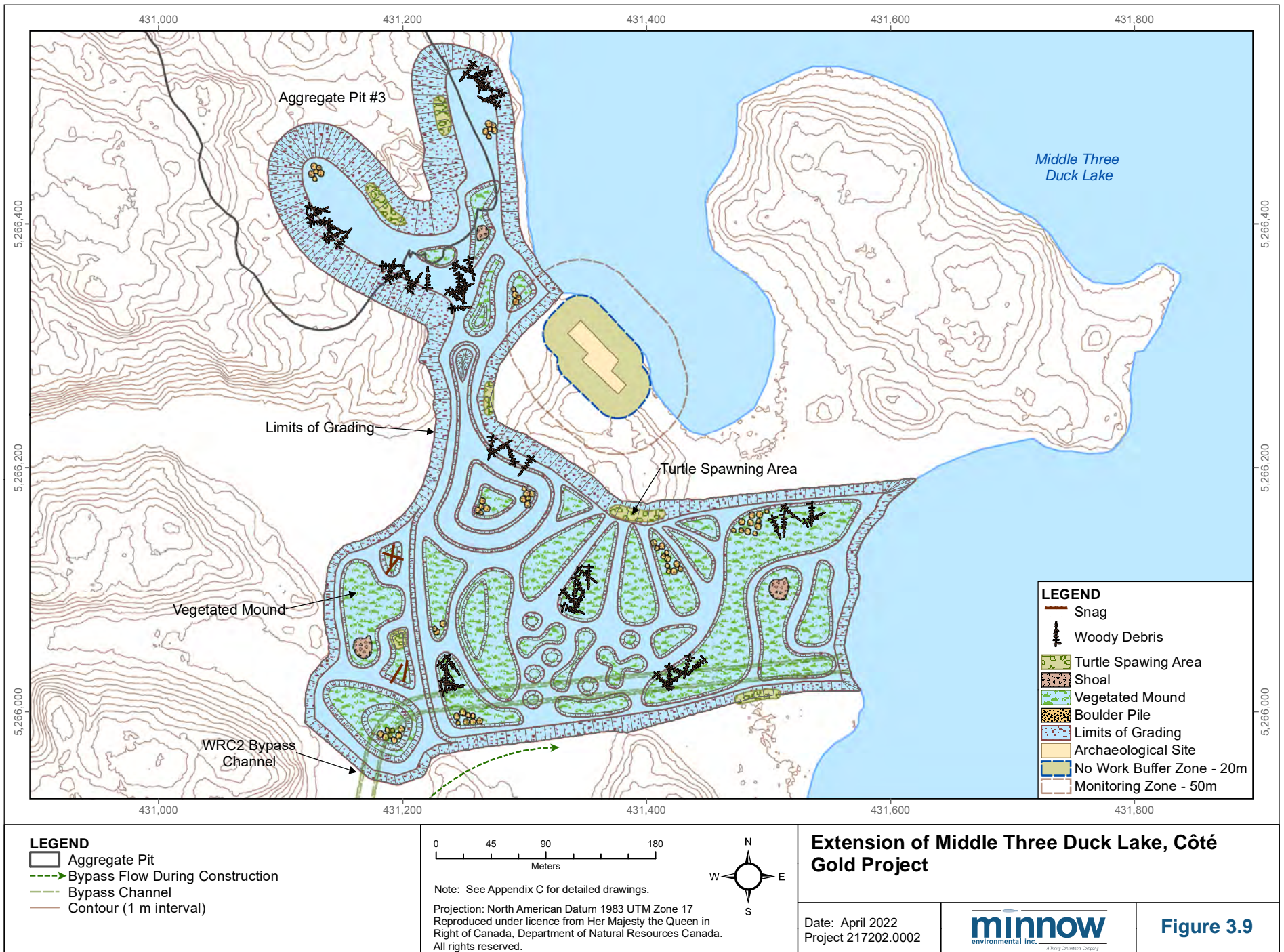
Aggregate Pit #3 is located west of Middle Three Duck Lake and east of the Mollie River realignment channel (Figure 1.2). The original FOP (Minnow 2020a) proposed to remediate the area by excavating the pit to below the water table and connecting the new flooded waterbody to Middle Three Duck Lake through a stream channel. The remediated pit would have resulted in 35,242 m² of 0-2 m lentic habitat and 17,358 m² of 2-5.5 m lentic habitat, while the connecting channel would have resulted in 450 m² of lotic habitat. These habitats would have supported spawning, rearing, and adult foraging habitat for northern pike, yellow perch, and smallmouth bass.

Upon further site evaluations, it was determined that a substantial amount of bedrock would be encountered requiring blasting for the construction of the proposed offsetting habitat within Aggregate Pit #3. To reduce the overburden/rock volumes to create fish habitat, the design was modified to reduce overburden waste, reduce blasting to create fish habitat, and target already impacted areas into the offset (e.g., bypass channel; Figure 3.9). The revised offsetting habitat will include a portion of Aggregate Pit #3 and extend to the south to encompass the already disturbed areas from the WRC2 Bypass channel. The proposed offsetting area south of Aggregate Pit #3 along the shoreline of Middle Three Duck Lake (Figure 3.9) is in close proximity to a known archeological site and therefore construction will be overseen by a licensed archeologist. Ultimately the offsetting habitat will create an extension of Middle Three Duck Lake and result in a 111,610 m² of lentic habitat (80,476 m² of 0 to 2 m and 31,134 m² of 2 to 5.5 m; Table 3.4) with a maximum depth of 5.5 m. The area will include two broad connections to Middle Three Duck Lake with an opening of 180 m to the south and 40 m to the north (Figure 3.9; Appendix C).

Terrestrial vegetation will be retained as close to the shoreline as feasible. This will aid in decreasing sediment erosion and turbidity along the shoreline and within the water column, especially in the first five years (Minnow 2013, 2017b). The floodplain will be planted with willow and alder live stakes/seedlings, and rush and sedge grasses, which will provide spawning substrate for northern pike in the spring under the flooded conditions. These plantings will aid in decreasing shoreline erosion and water turbidity.

Physical habitat features will be incorporated within the extension of Upper Three Duck Lake to increase habitat complexity. The habitat is designed to provide excellent spawning, rearing, and adult foraging habitat for northern pike, yellow perch, and smallmouth bass (Figure 3.9; Appendix Tables B.1 to B.5). Some rearing and adult foraging habitat for walleye and lake whitefish will be provided (Appendix Tables B.1 to B.5). Specifically, fallen trees, vegetated mounds, large boulders, standing snags, and rock piles will be installed at various locations.





These will provide spawning for yellow perch, northern pike, and smallmouth bass as well as cover for juvenile rearing (Appendix Tables B.1 to B.5). Aquatic macrophytes, both emergent and submergent, will be transplanted to expedite the aquatic vegetation community. All of these features will be incorporated to provide habitat complexity and enhance habitat suitability for the target species. The offsetting habitat will also provide some overwintering habitat (2 to 5.5 m) for all fishes.

This offsetting habitat will result in 833,844 HU of lake habitat (Table 3.4).

3.3.4 Mattagami Lake Shoreline Stabilization and Habitat Alterations

The Mattagami First Nation reserve is located on the shoreline of Mattagami Lake approximately 52 km northeast of Project site. The lake provides for a recreational and subsistence walleye fishery. Water level and flow in the lake are controlled by the Mattagami Lake Control Dam located at the outlet of the lake (Kenogamissi Falls). The current water management plan for the dam allows for a fluctuation of 3 to 5.5 m in lake level across the open water season (OPG 2021). In consultation with Mattagami First Nation, an offsetting opportunity was identified to support the FOP amendment for the IAMGOLD Côté Gold Project. Specifically, sections of eroding shoreline within the community are proposed for remediation to improve water quality, reduce sedimentation, and improve shoreline stability and complexity.

Shoreline stabilization within the identified areas will reduce the terrestrial slumping and sediment load to the lake while protecting community infrastructure. Furthermore, it is anticipated that the shoreline stabilization will decrease sedimentation and improve water quality in the immediate nearshore area. Sedimentation is known to degrade spawning habitat and negatively affect incubating fish embryos (Gatch et al. 2019). Shoreline stabilization and the reduction of sedimentation has been implemented to improve habitat suitability for walleye in other jurisdictions (e.g., Lake Superior; Hoff 2002) and it is expected to be generally benefit to all fish within Mattagami Lake (e.g., Britton et al. 2017)

At each site, the existing bank will be regraded to reduce the slope and growth medium will be installed to promote vegetation growth. In addition, restoration plantings will be used to encourage bank stabilization. Rock and rubble will be placed from above the water's edge and extend into the lake for 1 to 2 m as required. The in-water structures will provide a stabilizing toe to protect the new bank slope (Figure 3.7, Appendix C). Shoreline erosion mitigation will reduce sand deposition in the nearshore area, encourage vegetation growth in the riparian, and provide nearshore habitat features (when inundated with water) to support spawning, rearing, and foraging life stages of yellow perch and smallmouth bass, as well as potential rearing and foraging opportunities for walleye (Appendix Tables B.1 to B.5). A total of 240 m of riparian shoreline



habitat and 1,520 m² of seasonally inundated nearshore habitat will be stabilized to reduce erosion and sedimentation into the lake (Figure 3.7, Table 3.4).

In addition to the shoreline stabilization, the offsetting plan is proposing the installation of two habitat augmentations in the nearshore habitat of Mattagami Lake. These offsetting structures were suggested by the community to aid in the provision of cover (and supporting habitat) to newly released walleye fry. Mattagami Lake First Nation established a 12 Bell Jar walleye fish hatchery in 2013 that has the capacity to hatch over 2.5 million eggs annually, and since then has released roughly two million fry every year. Mattagami Lake near the release location lacks nearshore habitat complexity and therefore there are limited places for newly released fry to hide. To support the success of the hatchery and walleye production in Mattagami Lake, two nearshore habitat augmentations are proposed (Figure 3.7). The locations of the enhancements (461005 E, 5293561 N; 461563 E, 5294328 N) were chosen based on optimal water depth for structure placement and use by fish, and proximity to the hatchery. At each location, 500 m² of 0 to 2 m lentic habitat will be altered (Table 3.4; Appendix C). Maximum water depth over the structures will vary from 0.25 to 0.75 m depending on lake water level. Physical habitat features including cobble shoals, rock/brush cribs, LWD (i.e., fallen trees, root wads, and spruce boughs), and boulder/boulder clusters will be installed to enhance habitat complexity. Each of the constructed offsetting areas will contain approximately 500 m² of cobble shoal habitat (rock diameter greater than 300 mm), three rock cribs, and dispersed LWD (at least 7 m in length with a minimum diameter of 250 mm) and boulders (either single boulders greater than 1000 mm in diameter or a cluster of three or more boulders of at least 500 mm diameter each; Figure 3.7; Appendix C).

The installed physical features will increase habitat complexity in the nearshore area which is currently limiting in the lake and may also improve benthic community diversity providing a broader forage base for fish. The habitat is designed to provide good habitat for small-bodied fish species as well as good juvenile rearing and adult foraging habitat for walleye through access to a variety of cover. The habitat will also provide moderate to good spawning, rearing, and foraging for yellow perch and smallmouth bass (Appendix Tables B.1, B.2, B.3 and B.5).

This offsetting habitat will result in 9,800 HU of shoreline and 6,500 HU of improved nearshore lake habitat (Table 3.4).

3.3.5 Complementary Measures (Mattagami Lake Fisheries Plan)

Development and implementation of a Mattagami Lake Fisheries Plan (MLFP) is proposed as a complementary offsetting measure. Initial engagement with DFO and OMNDMNRF was held with IAMGOLD (November 17, 2021) to confirm this approach was a viable option as a



complementary measure for the Côté Gold Project. A Conceptual MLFP is presented in Appendix F and includes:

- a high-level summary of the current state of knowledge of Mattagami Lake fisheries and fish habitat;
- proposed MLFP objectives;
- a proposed MLFP development and implementation strategy including actions and schedules for execution, reporting, monitoring, and review;
- a proposed engagement plan allowing for Indigenous and regulatory input; and,
- proposed development and implementation costs (Appendix Table F.2).

The Conceptual MLFP is intended to demonstrate the feasibility and value of the MLFP as a component of the FOP Amendment. It is the first step in the development and implementation of a long-term, comprehensive fisheries plan for Mattagami Lake.

Objectives proposed in the Conceptual MLFP (Appendix F) are expected to have long-term conservation benefits to fish and fish habitat in Mattagami Lake, specifically to the walleye population. Initial actions to achieve these objectives are proposed. Proposed actions have the potential to be completed in the short-term (i.e., approximately six years). The conceptual objectives consider Ontario's Provincial Fish Strategy (OMNRF 2015) and DFO's Policy for fisheries offsetting (DFO 2019b). The conceptual objectives have been developed based on current knowledge, following initial engagement with Mattagami First Nation, DFO, and OMNDMNRF. The objectives are expected to be refined in iterative versions of the MLFP following further engagement with identified partners².

Conceptual objectives of the MLFP are:

- Sustainable Mattagami Lake fish populations that support cultural, recreational, and economic fishery opportunities for current and future fishery users, including future generations of Mattagami First Nation members.
- A Mattagami First Nation walleye hatchery that supports the walleye population in Mattagami Lake, engages local community members in stewardship of Mattagami Lake fisheries, and provides educational opportunities for local community members and youth.

² Identified partners are Mattagami First Nation, DFO, and OMNDMNRF.



- Mattagami Lake fisheries stewardship that is informed by Indigenous and scientific knowledge and involves engaged Mattagami First Nation community members and other stakeholders.

Long-term progress toward meeting the conceptual objectives requires a strategy to guide the development and implementation of the MLFP. A strategy is proposed in the Conceptual MLFP (Appendix F) and is separated into three phases, to be implemented over a period of six years. Phase 1 includes background data review and collection, engagement, and the development of the first version of the MLFP (i.e., Version 1.0). Phase 2 involves implementation of the actions proposed in MLFP Version 1.0. The MLFP will then be reviewed and updated (i.e., to Version 2.0) in Phase 3. The Conceptual MLFP (Appendix F) does not include all details associated with execution of the strategy, rather it proposes key actions including information requirements, methods, and an implementation schedule that will be refined in MLFP Version 1.0. The strategy also outlines annual reporting requirements and commitments (Appendix Table F.1). Finally, engagement with Mattagami First Nation, DFO, and OMNDMNRF has been incorporated into all three phases of the conceptual MLFP development and implementation strategy (Appendix Table F.1). Other Indigenous communities may also be engaged through information sharing and requests for feedback using the existing engagement and communication framework developed by IAMGOLD for the Project (IAMGOLD 2022).

A preliminary cost estimate has been proposed for development and implementation of the MLFP (Appendix Table F.1). Proposed costs represent a minimum investment by IAMGOLD. Changes to the proposed objectives, actions, and schedule for MLFP development and implementation are expected to influence the final allocation of the investment. Given that the cost estimate is preliminary and based on a conceptual development and implementation strategy, it is also assumed that final costs may be up to 30% greater or less than the proposed amounts.

As a complementary measure, the value of the MLFP offsetting is derived from the estimated cost of its development and implementation relative to the cost of implementing other offsetting measures in the FOP (DFO 2019b).

IAMGOLD has committed to fund the development and implementation of the MLFP in the amount of \$1,121,000. Funding will be allocated among MLFP phases and actions according to the development and implementation strategy as follows:

- Participation in regular engagement activities with MLFP consultation partners and contribution to consultation consortium governance valued at \$54,000.
- Mattagami Lake background data compilation and review valued at \$8,000



- Mattagami First Nation Hatchery review and optimization program valued at \$88,000.
- Mattagami Lake fish and fish habitat data collection efforts valued at \$312,000.
- Habitat enhancement and/or restoration work and monitoring in Mattagami Lake valued at \$520,000.
- MLFP development (Version 1.0), review, and updating (Version 2.0) valued at \$139,000.

3.3.6 Summary of Proposed Habitat in the Offsetting Plan Amendment

Following feedback provided from initial and ongoing engagement with stakeholders, the proposed offsetting amendment incorporates the creation of walleye spawning habitat which is limited in the vicinity of the Project, an extension of Middle Three Duck Lake, and habitat alterations to Mattagami Lake to improve nearshore lake environments for the fish community. Modification to the remediation of the area near Aggregate Pit #3 (extension of Middle Three Duck Lake) will reduce impact to the area including reduction of excavation volumes and required blasting to create fish habitat, as well as incorporating areas already disturbed by the Project. Lastly, the MFLP is being proposed as a complementary measure with the objective to promote and sustain Mattagami Lake fisheries. These habitat offsets will be added to the other approved offsets (i.e., WRC1, WRC2, Unnamed Pond outlet, Oshki Lake, and the lake connections; Table 3.5; Minnow 2020a). The updated total area of lake habitat to be created is to be 411,711 m² (Table 3.4) of which 407,911 m² are being proposed to offset the Section 35 habitat losses and 3,800 m² are to be allocated to the Schedule 2 Amendment (Table 3.4). The updated total length of stream habitat to be created/altered is 2,974 m which is based on design stream width and is equal to 24,098 m², 18,812 m² of stream habitat is to offset the Section 35 habitat losses, and 5,286 m² is to offset the Schedule 2 Amendment (Table 3.4). Based on habitat characteristics incorporated into the designs (see Appendix C) relative to the habitat requirements for the various life history stages of the fish species assessed, habitat quality values were assigned (none to excellent as previously described in Section 2.2). Habitat quality and quantity were used to calculate the habitat units to be created (gained). The total habitat units to be created is equal to 3,243,730 lake HU and 223,777 stream HU (Table 3.4). In addition to the habitat units created, the proposed offsetting plan will provide greater connectivity between habitats, allowing fish improved access to habitats created for various life stages. It is expected that the increase connectivity will result in increased fish productivity in most areas beyond that accounted for in the habitat unit's assessment. This is particularly true for walleye which will now have improved access to spawning habitat for resident walleye from Weeduck Lake, Upper, Middle, and Lower Three Duck Lake that was previously limited in the system.



Table 3.5: Net Balance of Habitat Units, Côté Gold Project

Area	Species	Fisheries Act Authorization (FAA)					Schedule 2				
		Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Over- wintering	TOTAL	Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Over- wintering	TOTAL
Waterbody	Northern pike	89,319	13,253	-75,668	-15,502	11,403	1,800	1,800	1,275	0	4,875
	Yellow perch	87,735	47,257	-4,758	-51,821	78,412	1,800	2,325	2,325	0	6,450
	Walleye	0	-28,606	-15,488	1,187	-42,906	0	950	525	0	1,475
	Lake whitefish	66,275	-11,555	2,912	46,099	104,490	1,050	1,475	950	0	3,475
	Smallmouth bass	73,232	85,279	58,599	69,407	286,517	2,425	2,425	1,900	0	6,750
	Small-bodied Fish	-	-	-	-	-38,713	-	-	-	-	-12,064
	TOTAL	316,560	105,630	-34,403	49,370	399,204	7,075	8,975	6,975	0	10,962
Stream	Northern pike	-20,836	-22,073	-23,009	-14,401	-80,320	1,164	1,375	107	-62	2,584
	Yellow perch	-19,062	-21,451	-11,946	-14,623	-67,081	338	1,375	157	-62	1,808
	Walleye	-967	-1,864	-8,287	-6,664	-17,781	0	1,088	0	0	1,088
	Smallmouth bass	3,223	-3,431	-4,468	-7,162	-11,837	0	1,026	0	0	1,026
	Small-bodied Fish	-	-	-	-	-178	-	-	-	-	-335
	Connectivity ^a	-	-	-	-	89,454	-	-	-	-	-
	TOTAL	-37,641	-48,819	-47,710	-42,850	-87,744	1,502	4,863	264	-124	6,170
Net Balance^b		278,919	56,811	-82,113	6,520	311,460	8,577	13,838	7,239	-124	17,131

Note: - indicates no habitat unit gained.

^a Connectivity of both Weeduck Lake and Little and East Clam Lakes.

^b Spatial areas used for the habitat unit calculations are based on current designs (Appendix C and those in Minnow 2020a).

3.4 Summary of Net Change in Habitat/Fish Productivity

The original FOP predicted the loss of fish habitat associated with the Côté Gold Project which was assessed relative to the planned habitat to be created (and altered) through the offsetting plan such that the net change in productive fish capacity could be considered (Minnow 2020a).

Project optimization identified four additional areas where adverse effects on fish and fish habitat are unavoidable (see Sections 3.2.1 to 3.2.4), that were not included in the original FOP, and for which habitat offsetting is required. These four areas include the installation of a temporary discharge pipe in Upper Three Duck Lake, a discharge pipe in the Mollie River, a freshwater intake pipe in Mesomikenda Lake, and the installation of culverts for a small unnamed tributary road crossing. The additional areas of adverse effects on fish and fish habitat represent changes in the location of habitat overprinting; there is no net increase in the amount of fish habitat to be lost or altered due to Project optimization. Additionally, this FOP describes changes to the location of two offsetting habitat areas (Bagsverd Aggregate Pit and Aggregate Pit #3; Minnow 2020a). None of the changes described herein require changes to the existing Schedule 2 Amendment.

The offsetting opportunities proposed in this amendment were identified through Indigenous consultation (Appendix E) and were chosen to maximize the benefit to fish and fish habitat while decreasing the amount of newly disturbed areas from the Project (e.g., Aggregate Pit #3; Section 3.3.3).

The methods proposed in Minnow (2020a) are used herein to calculate habitat units as a surrogate for fish productivity (Section 2). The results of the habitat assessment for losses and gains associated with this amendment were tabulated for each species for lake and stream habitat types before and after mine development (Appendix Tables B.1 to B.13). The overall results of the assessment (i.e., net balance in habitat units) for both originally submitted habitats and those considered in this amendment are summarized in Table 3.5.

The assessment suggests that the proposed habitat offsetting amendment will result in a net gain of 328,591 in HU with Section 35 having a net gain of 311,460 HU and Schedule 2 having a gain of 17,131 HU (Table 3.5). Based on the evaluation procedure, more offsets are being provided through lake (waterbody/lentic) habitat compared to stream (lotic). The overall net gain in lake habitat for both Section 35 and Schedule 2 is 399,204 and 10,962 HU, respectively (Table 3.5). Stream (lotic) habitat has a small net gain for Schedule 2 (6,170 HU), but a loss for Section 35 (-87,744 HU; Table 3.5). As explained in the original FOP, the limited amount of stream habitat offset is a result of stream length and not quality (Minnow 2020a). Furthermore, as outlined in the original FOP shallow lake habitat will adequately compensate for productive stream habitat (e.g., the Mollie River and Clam Creek) being lost. Additional high quality walleye spawning

habitat is being proposed in the Mollie River (between Middle and Lower Three Duck lakes; Figure 3.6) which will support walleye productivity in both Middle and Lower Three Duck lakes.

The proposed lake offsets indicate a net reduction in juvenile rearing habitat for walleye and lake whitefish and a reduction in adult foraging habitat for three of five representative species (Table 3.5). However, as described above, the offsetting plan will promote productivity by improving connectivity within the watershed and increasing access to existing habitats for all fish; this enhancement is not accounted for within the HU assessment and is expected to extend beyond the life of the mine. The proposed lake offsets also indicate an overall net loss in walleye habitat (-42,906 HU; Table 3.5); however, adult and juvenile rearing walleye habitat is not considered to be limited in the local watersheds and it is not expected to reduce walleye productivity as there are sufficient habitat within the watersheds to support these life history functions. Further, the HU evaluation for walleye was conservative; walleye habitat gains were only counted where they would clearly achieve the HSI requirements for the various life history stages assessed, but it is anticipated that walleye will use much of the offsetting habitat created. Suitable spawning habitat for walleye will be developed in the Mollie River (in WRC2 and between Middle and Lower Three Duck lakes) where the gradient and water depth are sufficient and will provide a connection to the necessary downstream juvenile rearing habitat.

The in-water features installed in Mattagami Lake will provide additional juvenile rearing habitat for fish and walleye fry released from the hatchery. Overall shoreline remediation in Mattagami Lake is expected to benefit juvenile rearing and adult foraging life stages through a combination of direct (e.g., substrate, woody structures, vegetation) and indirect benefits (i.e., water quality, stability, complexity). The HU evaluation for Mattagami Lake shoreline remediation was conservative to account for uncertainty associated with the benefit to species from indirect mitigation measures.

This FOP describes changes to the location of habitat losses and offsetting options and identifies new opportunities to increase fish productivity over existing conditions at the Project site and Mattagami Lake. There are no additional net losses associated with this amended FOP compared to the original offsetting plan (Minnow 2020a).



4 MITIGATION MEASURES

4.1 Updated Overview of Undertakings and Construction Sequencing

Project construction that has or will occur in or near water has been previously described in the original FOP (Minnow 2020a) and was originally proposed to occur over three phases. Fish salvage operations, offsetting, and monitoring were matched to each phase of construction. However, the timeline associated with each phase, and construction sequencing within each phase, has changed due to circumstances associated with the COVID-19 pandemic causing construction delays. An updated construction timeline (Table 4.1) is presented herein based on the latest schedule (January 2022). Notable deviations from the original construction, fish salvage, vegetation / fauna transfer, and monitoring schedule are described below.

Construction commenced in August of 2020 and is projected into the third quarter of 2023. Generally, construction surrounding the TMF east starter dam was initiated in the fall of 2020 along with the associated fish salvages. To reduce lag times of the entire Project, the two offsetting habitat connection areas were constructed in 2020 (Weeduck Lake to Upper Three Duck Lake and East Clam Lake to Clam Lake; Table 4.1; Minnow 2021).

In 2021, construction focused on the dams required around the Open Pit (Clam Lake Dam #2 and #3) along with the bypass channels (WRC1 and WRC2; Figure 3.1, Table 4.1) to divert water around the Open Pit while the realignment channels were under construction. Other dam construction initiated in 2021 included New Lake Dam North and South in addition to the realignment channels themselves. The bypass channels will continue diverting water until WRC1 and WRC2 are seasoned and ready for commissioning (in the spring 2022 for WRC1 and fall of 2022 for WRC2; Table 4.1). Construction of the Unnamed Pond outlet to Oshki Lake was initiated in the fall of 2021 and will be completed in the spring of 2022. The excavation of Oshki Lake began in January of 2022 by removing the terrestrial and organic soils³; installation of habitat features will follow prior to lake filling in the spring of 2022 (Table 4.1). Planting (riparian and aquatic vegetation) and biological transplants (benthic and fish) will be conducted in the spring and late summer, respectively; subsequent to construction completion of each habitat offsetting area (Table 4.1). Decommissioning of bypass channels is scheduled to occur in the spring and fall of 2022 for WRC1 and WRC2, respectively after the realignment channels are seasoned (i.e., from the spring freshet to late fall or one growing season; Table 4.1).

³ IAMGOLD has committed to the removal of terrestrial vegetation and organic soils to prevent the decay and release of associated mercury (Minnow 2018).



Table 4.1: Timeline for Construction^a, Fish Salvage, Dewatering, Vegetation Planting, Commissioning, and Monitoring of Fish Habitat, Côté Gold Project

Activity	Task	2020					2021												2022												2023									2024	
		Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Apr	May
Construction	Weeduck to Upper Three Duck Lake Connection																																								
	East Clam to Clam Lake Connection																																								
	TMF Seepage East Dam Cofferdam																																								
	TMF East Starter Dam																																								
	Upper Three Duck Lake Discharge Pipe																																								
	Bagsverd Pond Outlet Culverts (SR6)																																								
	WRC1 Bypass Channel																																								
	WRC2 Bypass Channel																																								
	WRC 1																																								
	Clam Lake East Dam #2 Cofferdam																																								
	Oshki Lake Cofferdams																																								
	New Lake South Dam																																								
	Clam Lake East Dam #3 Cofferdam																																								
	Cote Lake Cofferdams																																								
	WRC 2																																								
	Little Clam Lake to East Clam Lake Connection Channel																																								
	Clam Lake East Dam #2																																								
	Unnamed Pond to New Lake Connection																																								
	New Lake North Dam																																								
	Polishing Pond East Dam																																								
	Mollie River Road Crossing (Chester Lake Outlet)																																								
	Oshki Lake Excavation																																								
	Extension of Middle Three Duck Lake																																								
	Clam Lake East Dam #3																																								
	TMF Seepage East Dam																																								
	Cote Lake Dam																																								
	Mesomikenda Freshwater Intake Pipe																																								
	WRC2 Discharge Pipe																																								
	Mollie River between Middle and Lower Three Duck Lake																																								

Note: Reclaim Pond East Dams and MRA Seepage Dam to be constructed during the operations of the mine. WRC= Water Realignment Channel, TMF= Tailings Management Facility, SCP= Seepage Collection Pond, TSS= Total Suspended Solids, TBD = to be determined.

^a Start and end dates are based on the most current construction schedule (October 2021) and subject to changes.

^b All fish salvages will be conducted in coordination with dewatering efforts.

^c Monitoring of fish and fish habitat will extend beyond 2023 as described in Section 4.

^d Will occur concurrently with the arm of Upper Three Duck Lake (UPTD) Lake fish salvage.

Table 4.1: Timeline for Construction^a, Fish Salvage, Dewatering, Vegetation Planting, Commissioning, and Monitoring of Fish Habitat, Côté Gold Project

Activity	Task	2020					2021												2022												2023									2024	
		Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Apr	May
Fish Salvages ^b	TMF Unnamed Waterbodies (1-6)																																								
	East Clam and Clam Lake Reconnection																																								
	North Beaver Pond																																								
	West Beaver Pond																																								
	Weeduck and Three Duck Lake Reconnection																																								
	West Beaver Pond Outlet																																								
	East Beaver Pond																																								
	East Clam Lake (#2 Dam)																																								
	Unnamed Pond Outlet																																								
	East Beaver Pond Outlet																																								
	Mollie River (North Dam Footprint)																																								
	Cote Lake (Dam Footprint)																																								
	Clam Creek																																								
	Clam Lake (#3 Dam)																																								
	Mollie River (New Lake Footprint)																																								
	Cote Lake (Post Dam Construction)																																								
	Upper Three Duck Lake (Silt Boom and Rock Wall)																																								
	Mollie River Road Crossing (Chester Lake Outlet)																																								
	Mollie River (Open Pit Footprint)																																								
	Upper Three Duck Lake (Arm)																																								
	Mesomikenda Intake Pipe																																								
	WRC1 and WRC2 bypass channels																																								
Vegetation, Fauna Transfers	Little Clam Lake to East Clam Lake																																								
	Weeduck to Three Duck Lake, East Clam to Clam Lake																																								
	WRC1 and WRC2 Seasoning																																								
	Install Features in Oshki Lake																																								
	Divert Water to Oshki Lake																																								
	Oshki Lake Seasoning																																								
	Oshki Lake Aquatic Vegetation Transplant																																								
	Vegetate Oshki Lake Shoreline																																								
	WRC1 and WRC2 Aquatic Vegetation Transplant																																								
	Vegetate WRC 1 and 2 Floodplains																																								
	Oshki Lake Benthic Invertebrate Transplant																																								
	Divert Water to Permanent WRCs																																								
	Reclaim WRC1 and WRC2 Bypass Channels																																								
	WRC2 Benthic Invertebrate Transplant																																								
	Expansion of Middle Three Duck Lake Vegetation																																								
	Mattagami Lake Shoreline Planting																																								
	Stock Oshki Lake with Large and Small-bodied Fish ^d																																								
Monitoring	TSS and Bank Erosion Monitoring																																								
	Channel Monitoring (GeoProcess)																																								
	Geomorphology, Habitat and Fish Community Monitoring ^c																																								

Note: Reclaim Pond East Dams and MRA Seepage Dam to be constructed during the operations of the mine. WRC= Water Realignment Channel, TMF= Tailings Management Facility, SCP= Seepage Collection Pond, TSS= Total Suspended Solids, TBD = to be determined.

^a Start and end dates are based on the most current construction schedule (October 2021) and subject to changes.

^b All fish salvages will be conducted in coordination with dewatering efforts.

^c Monitoring of fish and fish habitat will extend beyond 2023 as described in Section 4.

^d Will occur concurrently with the arm of Upper Three Duck Lake (UPTD) Lake fish salvage.

The connection of Little Clam to East Clam Lake was completed in the summer of 2021 and will be commissioned in the spring of 2022. Initial construction of the Polishing Pond Dam began in the fall of 2021 and is scheduled to be completed sometime in the fall of 2022. The TMF will continue to be built into the start of operations (now projected into the second quarter of 2023). The remaining offsetting habitat will be constructed in late 2022 and into 2023 (Table 4.1). The extension of Middle Three Duck Lake habitat offsetting (near Aggregate Pit #3) is scheduled to occur during the winter months of 2022/2023 as well as the walleye spawning habitat in the Mollie River and the Mattagami Lake shoreline remediation and habitat augmentations.

In addition to relevant construction timeline changes, there are related changes in seasoning proposed for WRC1 and WRC2. WRC1 will not require benthic invertebrate transport because water has been in the channel since its construction in the spring of 2021 and in effect has been seasoning since. However, sedentary invertebrates (i.e., freshwater mussels) will be opportunistically transplanted into WRC1 in the summer of 2022. No fish, nor benthic invertebrates, will not be stocked into the new offsetting habitat extension of Middle Three Duck Lake because of the large connections to the waterbody. Aquatic macrophytes transplants will occur in the spring of 2023 (Table 4.1).

Construction in or near water associated with habitat loss and creation described in this FOP will follow recommended best practices and construction constraints as per Minnow (2020a; i.e., adhering to construction timing windows, fish salvage temperature and dissolve oxygen guidelines). In addition, monitoring to verify HSI variables will be assessed as per Minnow (2020b).

4.2 Updated Fish Salvage/Relocation

Fish salvage operations will and have occurred as described in the original FOP (Minnow 2020a) and following an updated schedule (Table 4.1 and 4.2). As a result of updated construction sequencing and waterbody access during the timing of the salvage, fish transfer locations were adjusted for some waterbodies (Table 4.3). However, all fish were transferred to the closest reasonable waterbody to minimize stress and transport times.

No in water construction was associated with the placement of the discharge pipe in Upper Three Duck Lake which was completed in the winter by placing materials on the ice. Therefore, fish salvage and exclusion measures were not required. Similarly, a fish salvage and exclusion will not be required for the installation of the discharge pipe in WRC2, as the installation is planned prior to allowing fish access to the newly constructed habitat. The installation of walleye spawning substrate in the Mollie River between Middle and Lower Three Duck lakes shouldn't require a fish salvage and exclusion as construction is planned during winter months when fish access to this area should be limited. However, if on-site conditions necessitate in water works then a fish

Table 4.2: Construction Windows by Waterbody/Watercourse for the Northeast Ontario Region, Côte Gold Project

Waterbody	Fish Salvage Timeline	Fish Present	Applicable Spawning Periods
Clam Lake	May 25 to August 26, 2021 Clam Lake connection: August 11 to September 18, 2021	Blacknose Shiner, Burbot, Central Mudminnow, Common Shiner, Fathead Minnow, Golden Shiner, Iowa Darter, Mottled Sculpin, Northern Pike, Slimy Sculpin, Smallmouth Bass, White Sucker, Yellow Perch	Smallmouth Bass: May 15 to July 15 Northern Pike: April 1 to June 15 Other spp.: April 1 to June 15
Côté Lake	June 15 to September 9, 2021	Blacknose Shiner, Brown Bullhead, Burbot, Common Shiner, Finescale Dace, Golden Shiner, Iowa Darter, Lake Whitefish, Mottled Sculpin, Northern Pike, Smallmouth Bass, Spottail Shiner, Walleye, White Sucker, Yellow Perch	Walleye: April 1 to June 20 Northern Pike: April 1 to June 15 Lake Whitefish: September 15 to May 15 Other spp.: April 1 to June 15
East Beaver Pond and East Beaver Pond Outlet	East Beaver Pond: May 5 to May 20, 2021 East Beaver Pond Outlet: May 13 to June 9, 2021	Blacknose Shiner, Central Mudminnow, Fathead Minnow, Finescale Dace, Iowa Dater, Northern Pearl Dace, Northern Redbelly Dace	Other spp.: April 1 to June 15
East Clam Lake and Clam Creek	East Clam Lake: May 7 to June 9, 2021 Clam Creek: June 10 to June 29, 2021 ^a East Clam Connection: August 11 to September 18, 2021	Blacknose Shiner, Brown Bullhead, Burbot, Central Mudminnow, Common Shiner, Emerald Shiner, Fathead Minnow, Finescale Dace, Golden Shiner, Iowa Darter, Northern Pike, Northern Redbelly Dace, Smallmouth Bass, White Sucker, Yellow Perch	Northern Pike: April 1 to June 15 Other spp.: April 1 to June 15
Mesomikenda Lake	August - September 2022	Burbot, Cisco, Common Shiner, Lake Trout, Lake Whitefish, Northern Pike, Smallmouth Bass, Spottail Shiner, Trout-perch, Walleye, White Sucker, Yellow Perch	Walleye: April 1 to June 20 Northern Pike: April 1 to June 15 Cisco: October 1 to May 31 Lake Trout: September 1 to May 31 Lake Whitefish: September 15 to May 15 Other spp.: April 1 to June 15
Mollie River Oshki Lake and Mollie River Open Pit	Mollie River Oshki Lake: June 6 to August 28, 2021 Mollie River Open Pit: June 15 to September 19, 2021	Blacknose Shiner, Brown Bullhead, Burbot, Common Shiner, Central Mudminnow, Fathead Minnow, Finescale Dace, Golden Shiner, Iowa Darter, Northern Pearl Dace, Northern Pike, Northern Redbelly Dace, Spottail Shiner, Smallmouth Bass, Trout-Perch,	Walleye: April 1 to June 20 ^d Northern Pike: April 1 to June 15 Other spp.: April 1 to June 15
North Beaver Pond	October 4 to October 25, 2020	Fathead Minnow, Finescale Dace, Northern Redbelly Dace,	Other spp.: April 1 to June 15
Unnamed Pond Outlet	May 5 to May 31, 2021 ^b	Blacknose Shiner, Brown Bullhead, Burbot, Common Shiner, Fathead Minnow, Finescale Dace, Iowa Darter, Northern Pearl Dace, Northern Pike, Northern Redbelly Dace, Spottail Shiner	Northern Pike: April 1 to June 15 ^c Other spp.: April 1 to June 15
Unnamed Tributary crossing (SR6) between Bagsverd Pond and Bagsverd Lake	August 9 to August 11, 2021	Brook Stickleback, Central Mudminnow, Fathead Minnow, Finescale Dace, Iowa Darter, Johnny Darter, Northern Redbelly Dace, Spottail Shiner	Other spp.: April 1 to June 15
Unnamed Waterbodies in TMF & associated Tributaries	August 11 to September 18, 2020	Blacknose Shiner, Central Mudminnow, Fathead Minnow, Finescale Dace, Golden Shiner, Iowa Darter, Johnny Darter, Northern Redbelly Dace, Northern Pearl Dace	Other spp.: April 1 to June 15
Upper Three Duck Lake (polishing pond)	TBD (summer - fall 2022)	Blacknose Shiner, Brown Bullhead, Burbot, Golden Shiner, Iowa Darter, Northern Pike, Smallmouth Bass, Spottail Shiner, Walleye, White Sucker, Yellow Perch	Northern Pike: April 1 to June 15 Lake Whitefish: September 15 to May 15 Other spp.: April 1 to June 15
Upper Three Duck Lake (Silt Boom and Rock Wall)	August 27 to September 11, 2021	Blacknose Shiner, Brown Bullhead, Burbot, Golden Shiner, Iowa Darter, Northern Pike, Smallmouth Bass, Spottail Shiner, Walleye, White Sucker, Yellow Perch	Northern Pike: April 1 to June 15 Lake Whitefish: September 15 to May 15 Other spp.: April 1 to June 15
Weeduck Lake	October 20 to October 27, 2021	Golden Shiner, Iowa Darter, Lake Whitefish, Northern Pike, White Sucker, Sculpin ssp., Spottail Shiner, Yellow Perch	Northern Pike: April 1 to June 15 Lake Whitefish: September 15 to May 15 Other spp.: April 1 to June 15
West Beaver Pond and Outlet	West Beaver Pond: August 6 to October 26, 2020 West Beaver Pond Outlet: September 30 to October 27, 2020	Brook Stickleback, Central Mudminnow, Common Shiner, Fathead Minnow, Finescale Dace, Golden Shiner, Iowa Darter, Johnny Darter, Northern Redbelly Dace, Northern Pearl Dace, Yellow Perch	Other spp.: April 1 to June 15

Changes for the FAA amendment.

Notes: TMF = Tailings Management Facility, spp.= species, TBD = To Be Determined

^a Due to flooding in the area, Clam Creek was re-fished from July 24, 2021 to August 5, 2021.


^b Due to flooding in the area, Unnamed Pond Outlet was re-fished from July 26, 2021 to August 5, 2022. Additional fishing occurred on September 15 and 16, 2021 for fish habitat connection construction from Unnamed Pond to Oshki Lake.

^c No suitable spawning habitat for northern pike is present in the upper portions of the tributary.

^d Assumption that walleye can utilize this habitat for spawning, as they are present in both Chester and Côté lakes.

Table 4.3: Fish Transfer Locations for Fish Relocations for the Côté Gold Project

Area	Transfer Location	
	Primary	Secondary
West Beaver Pond Outlet	Bagsverd Creek	-
West Beaver Pond	Bagsverd Creek	-
North Beaver Pond	Upper Three Duck Lake	Weeduck Lake
TMF Unnamed Ponds	Bagsverd Creek	-
Clam Creek	Chester Lake	Clam Lake, Upper Three Duck Lake
Clam Lake (#3 Dam)	Clam Lake	-
Côté Lake (Dam Footprint)	Upper Three Duck Lake	-
Côté Lake (Post Dam Construction)	Upper Three Duck Lake	Chester Lake
East Beaver Pond	Chester Lake	-
East Beaver Pond Outlet	Chester Lake	-
East Clam Lake (#2 Dam)	East Clam Lake	-
Mollie River (Open Pit Footprint)	Upper Three Duck Lake	Clam Lake, Chester Lake
Mollie River (Oshki Lake Footprint)	Upper Three Duck Lake	Clam Lake, Chester Lake
Mollie River (North Dam Footprint)	Upper Three Duck Lake	Chester Lake
Unnamed Pond Outlet	Chester Lake	Upper Three Duck Lake
Upper Three Duck Lake (Silt Boom and Rock Wall)	Upper Three Duck Lake	-
Mesomikenda Lake (Freshwater Intake Pipe)	Mesomikenda Lake	-
Upper Three Duck Lake (West Arm)	Oshki Lake	Upper Three Duck Lake
WRC 1 Bypass Channels	WRC1	Chester Lake
WRC 2 Bypass Channel	Oshki Lake & WRC2	Middle Three Duck Lake

 Changes for the FAA amendment.

Note: - indicates no secondary transfer location.

salvage will occur following mitigation measures for working in water as outlined in the Fish Salvage Environmental Monitoring Plan (EMP; Minnow 2020c).

Construction and placement of a freshwater intake pipe in Mesomikenda Lake will require a fish salvage and exclusion measures which will occur in the late summer or early fall of 2022 (Table 4.1). The approach, timing, and special considerations for the salvage will follow the methods outlined in the Fish Salvage EMP (Minnow 2020c).

Nearshore habitat enhancement feature installation and shoreline stabilization in Mattagami Lake will occur during the winter and winter low flows, respectively. The nearshore habitat enhancements will be placed on the ice during the winter and will not require in water work. During the winter, the water level in Mattagami Lake will expose the shoreline area such that remediation and stabilization will occur not require in water work. Therefore, fish salvage operations are not planned for this area. However, if on-site conditions necessitate in water works then a fish salvage will occur following mitigation measures for working in water as outlined in the Fish Salvage EMP (Minnow 2020c).

4.3 Reduction of Lag Times

Lag times represent the time between commissioning of new habitats and the ability of the habitat to be as fully productive as designed (Minns 2006). Lag times have the potential to affect the productivity of the system through limiting the ability of fish to fully utilize constructed habitats for their various life stages. Measures have been described in the original FOP (Minnow 2020a) to minimize lag times to the extent possible within construction constraints. Principally, lag times will be minimized through pre-commissioning measures that will enhance the habitat stability, succession, and recolonization of biological communities (food web). These measures will include placement of physical structures (e.g., boulder clusters, LWD), vegetation planting (aquatic and riparian), and invertebrate transplanting. These efforts are to stimulate the establishment of the aquatic ecosystem in the newly constructed fish habitat (lotic or lentic). Through the promotion of vegetation and biological communities (e.g., benthic invertebrates), lag times for the newly constructed habitat are anticipated to be less. In addition, reconnection of lake habitats, specifically Weeduck and East Clam lakes, were prioritized to occur early in the construction phase (2020; Table 4.1) to remediate these areas, improve connection, and available habitat (i.e., overwintering habitat) to the resident fish populations as soon as possible thereby minimizing lag times.

4.4 Contingency Measures

In the event that the designed offsetting habitats do not function as designed (as shown through monitoring, Section 5) to successfully offset the project losses, mitigations measures will be taken,



and the habitat will be repaired/ adjusted/ augmented to function properly. Detailed methods for the monitoring, triggers for mitigation, and reporting will follow the Fish and Fish Habitat EMP (Minnow 2020b).



5 MONITORING

5.1 Overview of Monitoring in Offsetting Areas

A biological monitoring program was proposed and accepted by DFO to assess the success of the mitigation and offsetting measures outlined in the original FOP (Minnow 2020a). The mitigation and monitoring measures for the proposed amendment will adhere to the same overall principals and methods as described in the Côté Gold Project Fish and Fish Habitat Environmental Monitoring Plan (EMP; Minnow 2020b). The EMP outlines the procedures and processes to assess habitat structure, vegetation growth, benthic invertebrate community composition, and fish species composition and abundance in the newly constructed habitats (Table 5.1). The objective of the monitoring program is to document the post-commissioning habitat (Figure 5.1) relative to the original design and relative to the habitat and life history requirements of target species (e.g., northern pike, yellow perch lake whitefish, walleye, smallmouth bass, and small-bodied fish species). Success of offsetting habitats over time will be evaluated by comparing measurements of key habitat characteristics (e.g., water velocity, depth, percent cover, substrate composition, etc.) from each monitoring period to HSI criteria for the five representative target fish species and small-bodied fish species. Collection of habitat data will enable comparison of built HUs to the original HU predicted for the proposed offsetting habitat and will ensure that the habitat meets requirements for the intended species use. Other success criteria will include benthic invertebrate endpoints (e.g., composition, density, diversity, biomass), fish abundance, and fish condition in the newly constructed areas relative to data collected from baseline surveys and/or the salvage works for the site. Triggers will be developed to initiate mitigation measures and will focus on the baseline distribution or ± 2 standard deviations from baseline/reference. In the event that the monitoring demonstrates that the habitat is not functioning as intended, mitigation measures will be taken, and the habitat will be repaired/ adjusted/ augmented to function properly. It is expected that the monitoring will document the establishment and succession of habitats over the first few years following commissioning. Detailed methods for the monitoring, triggers for mitigation, and reporting are included in the EMP (Minnow 2020b). The following sections describe monitoring methods that are novel to habitat offsets presented in this FOP.

5.2 Mollie River Walleye Spawning Habitat

The success of the walleye spawning habitat in the Mollie River between Middle and Lower Three Duck lakes will be qualitatively assessed using visual surveys of walleye in the river during the known spawning window (April/May). A non-invasive, overnight spotlight survey will be used to determine walleye presence or absence in the spawning habitat during the spawning window



Table 5.1: Summary of Côté Gold Project Offsetting Monitoring Program

Area	Component	Endpoints	Objective	Location	Scope	Timing Within Year/Frequency
WRC1 and WRC2	Habitat	Aquatic/Riparian Vegetation	To document the progress of plant (aquatic and riparian vegetation) succession. To determine stability of habitat and identify any erosion issues.	Key locations (i.e., critical fish habitat) within the channel. Three 2 x 2 quadrats established at each of three locations per area.	Visual inspection (photo documentation) of aquatic and riparian vegetation growth and survival conducted in June. Survey of species diversity, assessment of functionality (e.g., percent cover) and photo documentation conducted in August; sweep for invasive species at each area on the first day of each field program.	Visual inspection twice yearly (e.g., June and August) during first three years, then years 5 and 10. Annual survey of species diversity, function, and invasive species in August during the first three years, then years 5 and 10.
		Structure	To document whether key habitat structures ^a are functioning as designed.		Visual inspection of constructed habitat, size, form and function.	Visual inspection for stability and function to occur annually during the first three years, then in years 5 and 10.
	Geomorphology	Recon / Photo Inventory	To visually assess and document (via temporal photographs) realignment performance. Augments quantitative evaluation discussed below.	The entirety of WRC1 and WRC2.	Visual inspection (and photo documentation in set locations) of realigned channels.	Once per year for the first three years, then in years 5 and 10.
		Quantitative Performance Metrics	To quantitatively document channel adjustment using established performance targets and temporal monitoring surveys.		Detailed geomorphic survey (longitudinal profile, cross-sections, bank erosion and substrate measurements). Evaluation via performance metrics.	Once per year for the first three years, then years 5 and 10.
	Water	Quality	To track temporal change in water quality and compare to water quality guidelines for the protection of aquatic life.	Up and downstream of WRC1 and WRC2.	Water samples will be taken concurrent with supporting <i>in situ</i> field measurements such as water depth, pH, temperature, dissolved oxygen, specific conductivity, and turbidity.	Water samples will be taken monthly during ice-free conditions.
		Flow	To track water flow through the realignment channels, to aid in the evaluation of habitat use and passage.	Within WRC1 and WRC2. Exact locations to be determined	Continuous water level monitoring with water level surveys (minimum twice per year).	Continuous for WRC2, spot measurements for WRC1 (3x per year) in every monitoring year (Year 1, 2, 3, 5, and 10).
	Benthic Invertebrate	Community	To track temporal change in benthic invertebrate communities.	Riffle Habitat	Hess benthic samples at 3 stations within each area.	Yearly for the first three years in August, then years 5 and 10.
				Pools/Lentic Area	Kick and Sweep (CABIN) or Petite Ponar ^b benthic samples at 3 stations in each area.	Commencing in year 2 in August of annual monitoring, then in years 5 and 10.
		Biomass	To assess secondary productivity (food source for fish).	Riffle Habitat	Hess benthic samples at 3 stations within each area.	Yearly for the first three years in August, then in years 5 and 10.
				Pools/Lentic Area	Petite Ponar or area based kick and sweep benthic samples at 3 stations in each area.	Commencing in year 2 in August of annual monitoring, then years 5 and 10.
	Fish	Spawning	To assess spawning success.	Target key areas within the channels ensure coverage of all habitat (riffles, pools, etc.).	Document number and where young-of-the-year fish are captured through all components of the monitoring program. Sample habitat characteristics to verify habitat is functioning as intended (i.e., water velocity, presence of spawning substrate).	Yearly for the first three years in August, then years 5 and 10.
		Abundance	To track temporal change in fish occupancy, abundance and population structure.		Abundance will be estimated by 3 closed station electrofishing stations in each area. Density and total biomass will also be determined. Supplemental spot electrofishing and minnow trapping may be employed.	Yearly for the first three years in August, then years 5 and 10.
		Usage	Evaluate available fish habitat and use, and to track temporal change.		Document where fish are captured and what habitat they are using through all components of the monitoring program.	Yearly for the first three years in August, then years 5 and 10.
		Health	Provide fish population health, specifically growth and condition.		Subsample target species for length, weight and age. Determination of growth, condition, age, and size class composition (if possible).	Yearly for the first three years in August, then years 5 and 10.

Changes for the FAA amendment.

Note: WRC = Water Realignment Channel. Recon - Reconnaissance. CABIN= Canadian Aquatic Biomonitoring Network.

^a Key habitat structures can include fallen trees, riffle, pools, rocky shoals, etc.

^b Sampling protocol will depend on habitat available.


^c Depositional area to be sampled, above thermocline - reference baseline.

^d Water quality monitoring will be completed as per ECA quarterly and monthly requirements for Upper Three Duck Lake.

^e To assess the presence of spawning walleye in the Mollie River a non-invasive overnight flashlight survey will be used.

Table 5.1: Summary of Côté Gold Project Offsetting Monitoring Program

Area	Component	Endpoints	Objective	Location	Scope	Timing Within Year/Frequency
Oshki Lake	Habitat	Aquatic/Riparian Vegetation	To document the progress of plant (aquatic and riparian vegetation) succession. To determine stability of habitat and identify any erosion issues.	Key locations (i.e., critical fish habitat) within the channel. Three 2 x 2 quadrats established at each of three locations per area.	Visual inspection (photo documentation) of aquatic and riparian vegetation growth and survival conducted in June. Survey of species diversity, assessment of functionality (e.g., percent cover) and photo documentation conducted in August; sweep for invasive species at each area on the first day of each field program.	Visual inspection twice yearly (e.g., June and August) during first three years, then years 5 and 10. Annual survey of species diversity, function, and invasive species in August during the first three years, then years 5 and 10.
		Structure	To document whether key habitat structures (boulder clusters, fallen trees, etc.) are functioning as designed.		Visual inspection of constructed habitat, size, form and function.	Visual inspection for stability and function to occur annually during the first three years, then in years 5 and 10.
	Water	Quality	To track temporal change in water quality and compare to water quality guidelines for the protection of aquatic life.	Outlet of Oshki Lake.	Water samples will be taken concurrent with supporting <i>in situ</i> field measurements such as water depth, pH, temperature, dissolved oxygen, specific conductivity, and turbidity.	Water samples will be taken monthly during ice-free conditions. Water quality profiles to be taken monthly during ice-free conditions during the first three years.
			To track <i>in situ</i> water quality for overwintering conditions.	Deepest area of the lake.	Water samples will be taken concurrent with supporting <i>in situ</i> field measurements such as water depth, pH, temperature, dissolved oxygen, specific conductivity, and turbidity.	Yearly (late winter conditions) for the first three years.
	Benthic Invertebrate	Community	To track temporal change in benthic invertebrate communities.	Nearshore (< 2m water depth)	Kick and Sweep (CABIN) benthic samples at 3 stations in each area.	Commencing in year 2 in August of annual monitoring, then years 5 and 10.
				Depositional area above thermocline ^c .	Petite Ponar benthic samples at 3 stations in each area.	Commencing in year 2 in August of annual monitoring, then years 5 and 10.
		Biomass	To assess secondary productivity (food source for fish).	Nearshore (< 2m water depth)	Area based Kick and Sweep benthic samples at 3 stations in each area.	Commencing in year 2 in August of annual monitoring, then years 5 and 10.
				Depositional area above thermocline ^c .	Petite Ponar benthic samples at 3 stations in each area.	Commencing in year 2 in August of annual monitoring, then years 5 and 10.
	Fish	Spawning	To assess spawning success.	Target key areas within the channels ensure coverage of all habitat (riffles, pools, etc.).	Document number and where young-of-the-year fish are captured through all components of the monitoring program. Sample habitat characteristics to verify habitat is functioning as intended (i.e., water depth, presence of spawning substrate).	Yearly for the first three years in August, then years 5 and 10.
		Abundance	To track temporal change in fish occupancy, abundance and population structure.		Abundance will be estimated by a varied of standardized fishing techniques (e.g., hoop netting, minnow trapping, seining). Catch-per-unit-effort will be determined. A mark-recapture population estimate will be conducted once in year 5.	Yearly for the first three years in August, then years 5 and 10. A fish population estimate will be conducted in year 5.
		Usage	Evaluate available fish habitat and use, and to track temporal change.		Document where fish are captured and what habitat they are using through all components of the monitoring program.	Yearly for the first three years in August, then years 5 and 10.
		Health	Provide fish population health, specifically growth and condition.		Subsample target species for length, weight and age. Determination of growth, condition, age, and size class composition (if possible).	Yearly for the first three years, then years 5 and 10.

 Changes for the FAA amendment.

Note: WRC = Water Realignment Channel. Recon - Reconnaissance. CABIN= Canadian Aquatic Biomonitoring Network.

^a Key habitat structures can include fallen trees, riffle, pools, rocky shoals, etc.

^b Sampling protocol will depend on habitat available.

^c Depositional area to be sampled, above thermocline - reference baseline.

^d Water quality monitoring will be completed as per ECA quarterly and monthly requirements for Upper Three Duck Lake.

^e To assess the presence of spawning walleye in the Mollie River a non-invasive overnight flashlight survey will be used.

Table 5.1: Summary of Côté Gold Project Offsetting Monitoring Program

Area	Component	Endpoints	Objective	Location	Scope	Timing Within Year/Frequency
Extension of Middle Three Duck Lake ^d	Habitat	Aquatic/Riparian Vegetation	To document the progress of plant (aquatic and riparian vegetation) succession. To determine stability of habitat and identify any erosion issues.	Key locations (i.e., critical fish habitat) along the margins and in the basin. Three 2 x 2 quadrats established at each of three locations per area.	Visual inspection (photo documentation) of aquatic and riparian vegetation growth and survival conducted in June. Survey of species diversity, assessment of functionality (e.g., percent cover) and photo documentation conducted in August; sweep for invasive species at each area on the first day of each field program.	Visual inspection twice yearly (e.g., June and August) during first three years, then years 5 and 10. Annual survey of species diversity, function, and invasive species in August during the first three years, then years 5 and 10.
		Structure	To document whether key habitat structures (boulder clusters, fallen trees, etc.) are functioning as designed.		Visual inspection of constructed habitat, size, form and function.	Visual inspection for stability and function to occur annually during the first three years, then in years 5 and 10.
	Fish	Spawning	To assess spawning success.	Key locations within the habitat (around habitat structures).	Document number and where young-of-the-year fish are captured through all components of the monitoring program. Sample habitat characteristics to verify habitat is functioning as intended (i.e., water depth, presence of spawning substrate).	Yearly for the first three years in August, then years 5 and 10.
		Abundance	To track temporal change in fish occupancy, abundance and population structure.		Abundance will be estimated by a varied of standardized fishing techniques (e.g., hoop netting, minnow trapping, seining). Catch-per-unit-effort will be determined.	Yearly for the first three years in August, then years 5 and 10.
		Usage	Evaluate available fish habitat and use, and to track temporal change.		Document where fish are captured and what habitat they are using through all components of the monitoring program.	Yearly for the first three years in August, then years 5 and 10.
		Health	Provide fish population health, specifically growth and condition.		Subsample target species for length, weight and age. Determination of growth, condition, age and size class composition (if possible).	Yearly for the first three years in August, then years 5 and 10.
East Clam Lake and Clam Lake Connection Weeduck Lake and Upper Three Duck Lake Connection Mollie River (Walleye Spawning Substrate)	Habitat	Aquatic/Riparian Vegetation	To document the progress of plant (aquatic and riparian vegetation) succession. To determine stability of habitat and identify any erosion issues.	Key location within the connections. A minimum of 1 area will be identified.	Visual inspection (photo documentation) of aquatic and riparian vegetation growth and survival conducted in June and August.	Twice yearly (e.g., June and August) during every monitoring year (Year 1, 2, 3, 5, and 10).
		Structure	To document whether key habitat structures (boulder clusters, fallen trees, etc.) are functioning as designed.		Visual inspection of constructed habitat, size, form and function.	Visual inspection for stability and function to occur during every monitoring year (Year 1, 2, 3, 5, and 10).
	Geomorphology	Recon / Photo Inventory	To visually assess and document (via temporal photographs) channel performance. Augments quantitative evaluation discussed below.	Connection between lakes.	Visual inspection (and photo documentation in set locations) of realigned channels.	Once per year for the first three years, then years 5 and 10.
		Quantitative Performance Metrics	To quantitatively document channel adjustment using established performance targets and temporal monitoring surveys.		Detailed geomorphic survey (longitudinal profile, cross-sections, bank erosion and substrate measurements). Evaluation via performance metrics.	Once per year for the first three years, then years 5 and 10.
	Fish	Spawning	To assess spawning success.	Key locations within the habitat (around habitat structures).	Document number and where young-of-the-year fish are captured through fishing. Sample habitat characteristics to verify habitat is functioning as intended (i.e., water depth, presence of spawning substrate). Qualitative walleye spawning survey ^e	Yearly for the first three years in August, then years 5 and 10.
		Abundance	To track temporal change in fish occupancy, abundance and population structure.		Abundance will be estimated by a variety of fishing techniques in each area. Cath-per-unit-effort will be determined.	Yearly for the first three years in August, then years 5 and 10.
		Usage	Evaluate available fish habitat and use, and to track temporal change.		Document where fish are captured and what habitat they are using through all components of the monitoring program.	Yearly for the first three years in August, then years 5 and 10.
		Health	Provide fish population health, specifically growth and condition.		Subsample target species for length, weight and age. Determination of growth, condition, age and size class composition (if possible).	Yearly for the first three years in August, then years 5 and 10.

Changes for the FAA amendment.

Note: WRC = Water Realignment Channel. Recon - Reconnaissance. CABIN= Canadian Aquatic Biomonitoring Network.

^a Key habitat structures can include fallen trees, riffle, pools, rocky shoals, etc.

^b Sampling protocol will depend on habitat available.

^c Depositional area to be sampled, above thermocline - reference baseline.

^d Water quality monitoring will be completed as per ECA quarterly and monthly requirements for Upper Three Duck Lake.

^e To assess the presence of spawning walleye in the Mollie River a non-invasive overnight flashlight survey will be used.

Table 5.1: Summary of Côté Gold Project Offsetting Monitoring Program

Area	Component	Endpoints	Objective	Location	Scope	Timing Within Year/Frequency
Small Tributary Connections (Unnamed Pond Outlet, Little Clam Lake to East Clam Lake)	Habitat	Aquatic/Riparian Vegetation	To document the progress of plant (aquatic and riparian vegetation) succession. To determine stability of habitat and identify any erosion issues.	Key location within the connections. A minimum of 1 area will be identified.	Visual inspection (photo documentation) of aquatic and riparian vegetation growth and survival conducted in June and August.	Twice yearly (e.g., June and August) during every monitoring year (Year 1, 2, 3, 5, and 10).
		Structure	To document whether key habitat structures (boulder clusters, fallen trees, etc.) are functioning as designed.		Visual inspection of constructed habitat, size, form and function.	Visual inspection for stability and function to occur during every monitoring year (Year 1, 2, 3, 5, and 10).
	Geomorphology	Recon / Photo Inventory	To visually assess and document (via temporal photographs) channel performance. Augments quantitative evaluation discussed below.	The entirety of each connection channel.	Visual inspection (and photo documentation in set locations) of realigned channels.	Once per year for the first three years, then years 5 and 10.
		Quantitative Performance Metrics	To quantitatively document channel adjustment using established performance targets and temporal monitoring surveys.		Detailed geomorphic survey (longitudinal profile, cross-sections, bank erosion and substrate measurements). Evaluation via performance metrics.	Once per year for the first three years, then years 5 and 10.
	Fish	Spawning	To assess spawning success.	Locations to include a variety of habitat (riffle, pool).	Document number and where young-of-the-year fish are captured through fishing. Sample habitat characteristics to verify habitat is functioning as intended (i.e., water depth, presence of spawning substrate).	Yearly for the first three years in August, then years 5 and 10.
		Abundance	To track temporal change in fish occupancy, abundance and population structure.		Abundance will be estimated by spot electrofishing and minnow trapping. Cath-per-unit-effort will be determined.	Yearly for the first three years in August, then years 5 and 10.
		Usage	Evaluate available fish habitat and use, and to track temporal change.		Document where fish are captured and what habitat they are using through all components of the monitoring program.	Yearly for the first three years in August, then years 5 and 10.
		Heath	Provide fish population health, specifically growth and condition.		Subsample target species for length, weight and age. Determination of growth, condition, age an size class composition (if possible).	Yearly for the first three years in August.
Mattagami Shoreline	Habitat	Aquatic/Riparian Vegetation	To document the progress of plant (terrestrial riparian vegetation) succession. To determine stability of habitat and identify any erosion issues.	Key locations (i.e., planting locations) along the shoreline. A minimum of 1 area will be identified in each shoreline stabilization.	Visual inspection (photo documentation) of terrestrial vegetation growth and survival conducted in June and August.	Twice yearly (e.g., June and August) during every monitoring year (Year 1, 2, and 3)
		Structure	To document whether key habitat structures (e.g., shoreline stabilizing structures) are functioning as designed.		Visual inspection of constructed habitat, size, form and function.	Visual inspection for stability and function to occur during every monitoring year (Year 1, 2, and 3).
	Geomorphology	Recon / Photo Inventory	To visually assess and document (via temporal photographs) channel performance. Augments quantitative evaluation discussed below.	The entirety of the remediated shoreline	Visual inspection (and photo documentation in set locations) of realigned channels.	Once per year for the first three years.
		Quantitative Performance Metrics	To quantitatively document shoreline adjustment using established performance targets and temporal monitoring surveys.		Detailed geomorphic survey (cross-sections, bank erosion and substrate measurements). Evaluation via performance metrics.	Once per year for the first three years.
Mattagami Lake In-water Structures	Habitat	Structure	To document whether key habitat structures (boulder clusters, fallen trees, etc.) are functioning as designed.	Key locations (i.e., install locations)	Visual inspection of constructed habitat, size, form and function.	Visual inspection for stability and function to occur annually during the first three years.
	Fish	Abundance	To track temporal change in fish occupancy, abundance and population structure.	Key locations within the habitat (around habitat structures).	Abundance will be estimated using standardized fishing techniques (e.g., hoop netting, minnow trapping, seining and provincial monitoring standards, Fall Walleye Index Netting). Catch-per-unit-effort will be determined.	First year post-construction, and then years 2 and 4 thereafter.
		Usage	Evaluate available fish habitat and use, and to track temporal change.		Document where fish are captured and what habitat they are using through all components of the monitoring program.	First year post-construction, and then years 2 and 4 thereafter.

Changes for the FAA amendment.

Note: WRC = Water Realignment Channel. Recon - Reconnaissance. CABIN= Canadian Aquatic Biomonitoring Network.

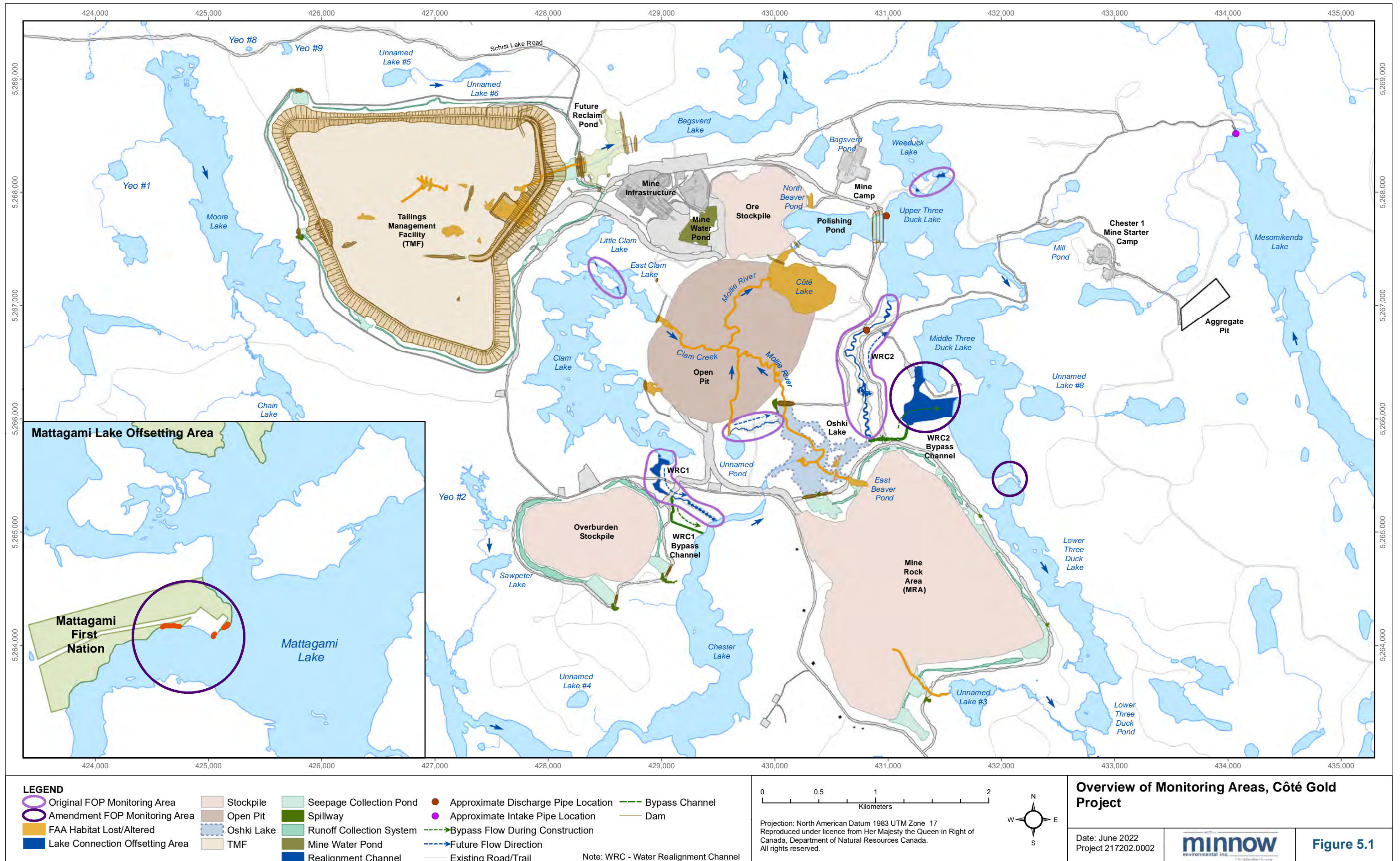
^a Key habitat structures can include fallen trees, riffle, pools, rocky shoals, etc.

^b Sampling protocol will depend on habitat available.

^c Depositional area to be sampled, above thermocline - reference baseline.

^d Water quality monitoring will be completed as per ECA quarterly and monthly requirements for Upper Three Duck Lake.

^e To assess the presence of spawning walleye in the Mollie River a non-invasive overnight flashlight survey will be used.



(e.g., when water temperatures reach 6.7 to 8.9°C; Appendix A). Walleye have reflective eyes that illuminate under light and are easily distinguished from white sucker which also use similar spawning habitat in the early spring (Dustin and Jacobson 2003). The spotlight survey will be performed from the shoreline or using a boat at low speed and will target water depth that is less than a meter (Nohner and Diana 2015). Four surveys, two per week, will be completed after dusk during the first two weeks of the spawning period for walleye (early to mid-April depending on ice-off date and water temperature). During each survey, four passes of the entire length of the Mollie River between Middle and Lower Three Duck lakes will be completed (with 15 minutes between each subsequent pass) with more search effort focused on the constructed walleye spawning habitat. Each pass will start and stop in the same location (e.g., each pass will include a visual survey moving in the upstream and downstream direction). This survey will provide evidence of walleye presence in the enhanced spawning habitat during the spawning window but will not quantitatively estimate the amount or success of spawning.

5.3 Extension of Middle Three Duck Lake

The creation of habitat offsets in the extension of Middle Three Duck Lake (formerly the Aggregate Pit #3 remediation site) will follow similar monitoring procedures to what was outlined in the original FOP (Minnow 2020a) and in the Fish and Fish Habitat EMP (Minnow 2020b) with a few modifications (Table 5.1). Modifications to the monitoring program include the removal of channel assessment methods to be replaced with monitoring of habitat features and structures within the created basin and along the basin margins (i.e., habitat and geomorphology; Table 5.1) and removal of benthic invertebrate community monitoring. Water quality and fish abundance, usage, and health will be monitored as outlined in the original plan (Table 5.1).

5.4 Mattagami Lake Shoreline Stabilization

The success of the Mattagami Lake shoreline stabilizations measures will be assessed based on the ability of installed stabilization and habitat features to withstand water level changes and winter ice flow (i.e., reduced erosion). Installed habitat features (e.g., vegetation and structures) and geomorphic parameters will be monitored following the methods in Table 5.1 and Table 5.2, and as per the methods described in the Fish and Fish Habitat EMP (Minnow 2020b).

5.5 Mattagami Lake Habitat Structures

Habitat structures and features created in Mattagami Lake will be monitored for size, form, and function (i.e., as cover for fish) and compared to the habitat design specifications (Table 5.1; Appendix C) to determine that habitat structures are functioning as designed. The habitat quality and quantity in both areas will be documented and augmented with photographs for key structures and/or habitats similar to a reconnaissance-level baseline survey.



Table 5.2: Proposed Initial Geomorphic Stability Performance Targets, Côte Gold Project

Monitoring Component	Description	Minimum Tier 1 Performance Target (Local Scale)	Tier 2 Performance Target (Reach Scale / System Wide)
Longitudinal Profile	<p>The rate of bedform development, erosion and deposition in the longitudinal direction. Includes monitoring the location and arrangement of riffles, runs and pool zones (if present), as well as other features of geomorphological significance.</p> <p>Objective bedform analysis will also be undertaken to better quantify the nature of the bedform changes over time. While this type analysis is less telling in a single year's data set, over the course of the program the observed changes provide an unbiased, quantitative measure of the degree in changes to bed morphology. The primary advantage to the objective methods is that they remove operator bias in the identification of the beginning and end of bedforms. For example, even the most experienced practitioners can have different definitions for these features.</p>	<p>WRC Channels ±15% change (beyond survey variability) in discrete pool depth or riffle/run crest based on objective (residual pool) method.</p> <p>Habitat Enhancement Locations ±25% change (beyond survey variability) in discrete pool depth or riffle/run crest based on objective (residual pool) method.</p>	<p>WRC Channels ±25% change (beyond survey variability) in reach averaged pool depth or riffle/run crest based on objective (residual pool) method.</p> <p>Habitat Enhancement Locations ±25% change (beyond survey variability) in reach averaged pool depth or riffle/run crest based on objective (residual pool) method.</p> <p>All Longitudinal plot of net erosion and deposition based on surveyed longitudinal profiles. This metric helps to identify inherent survey variability associated with temporal measurements of river systems.</p>
Cross-sections	The rate of cross-sectional change of the bankfull channel.	<p>WRC Channels ±15% change in bankfull cross-sectional area (beyond survey variability).</p> <p>Habitat Enhancement Locations ±25% change in bankfull cross-sectional area (beyond survey variability).</p>	<p>WRC Channels Longitudinal plot of cross-sectional area change.</p> <p>±15% change in reach averaged bankfull cross-sectional area (beyond survey variability).</p> <p>Habitat Enhancement Locations Longitudinal plot of cross-sectional area change.</p> <p>±25% change in reach averaged bankfull cross-sectional area (beyond survey variability).</p>
Lateral Bank Erosion	Excess erosion is determined visually based on the degree of bank exposure, bank angle and absence of stabilizing vegetation.	<p>All ±10 cm annual lateral bank migration (averaged over identified eroding bends) (beyond survey variability).</p>	<p>All Longitudinal plot identifying bank erosion rates. Reach averaged trends to be identified based on analysis of longitudinal plot.</p>
Substrates	The rate of change of the size of channel bottom materials.	<p>All Local changes exceeding an order of magnitude will be flagged and investigated.</p>	<p>All Plotting of longitudinal trend of substrate coarsening or fining. No metric is proposed. Rather, the results will be compared back to the longitudinal bedform findings.</p>
Reconnaissance/ Photo Documentation	<p>Overall review of each reach, looking for instances of significant instability that might not otherwise have been captured by the four metric categories (above). For example, construction of a beaver dam at a critical location or erosion at a pedestrian bridge.</p> <p>This component also includes the overall collection and compilation of the photographic record.</p>	N/A	N/A

Note: WRC = Water Realignment Channel.

Key structures (e.g., boulders/boulder clusters, LWD, and rocky cribs) incorporated within the Mattagami Lake offsetting habitat will also be documented (i.e., Global Positioning System [GPS] coordinates recorded, and photographs taken) and inspected to ensure they are secure and able to function as designed. Data collected from the assessment of habitat and habitat structures will be compared to the habitat designs to confirm the analysis of impacted habitat and offsetting habitat. Habitat variables will then be compared relative to designed habitat quality ratings for spawning, rearing, and adult stages of target species in the offsetting habitat (Appendix Tables B.1 to B.5). Habitat variables will be identified as either meeting, or not meeting, these criteria. Geomorphic success criteria triggers have been developed and focus on the area of habitat created (Table 5.2).

Post-construction fish community structure in Mattagami Lake will also be included in the monitoring program (expected to run concurrently with the monitoring proposed in the Mattagami Lake Fisheries Plan; Appendix F). The objective of this aspect of the program will be to demonstrate fish usage (i.e., by the species targeted in the design; walleye, yellow perch, smallmouth bass, and small-bodied species) of the created habitat for the intended life history stage (e.g., juvenile rearing and adult foraging). To assess the performance of the Mattagami Lake offsetting habitat post-construction, baseline fish community and fish use data will be collected in each of the offsetting locations in the fall of 2022. Standardized, non-destructive fish collection methods including hoop nets, seines, and minnow traps will be used to evaluate structure, diversity, and fish use within the areas the habitat structures will be installed (Table 5.1). All fish captured will be identified, enumerated, and sampled (measured for weight and length) prior to release at their capture location. For each collection method, supporting information including sampling effort, GPS coordinates, *in situ* water quality, and habitat descriptions will be recorded. The habitat descriptions will include observations of shoreline and littoral substrate characteristics in the vicinity of the offsetting habitat, riparian vegetation, macrophytes (if present), as well as any potential confounding influences or other observations deemed relevant to interpretation of the fish survey data.

The proposed monitoring will demonstrate whether the fish populations are using the habitat for the intended life history stages (see Section 3.3.4). Species richness and fish relative abundance will be used to evaluate fish use near the structures and will be compared to the baseline survey. Summary statistics (sample size, mean, standard deviation, minimum and maximum value) will be calculated separately by year. Installed habitat features will be evaluated for structure stability and fish use in year one, two, and four post-construction (Table 5.1). The biological success criteria triggers (see Table 4.2 in Minnow 2020b) for the structures will focus on a comparison of baseline (i.e., baseline data collected in Mattagami Lake; Tables 5.1 and 5.2) to post-construction monitoring results as outlined in the Fish and Fish Habitat EMP (Minnow 2020b).



5.6 Reporting and Scheduling

Monitoring the functionality of the created habitat, succession of vegetation, colonization of benthic communities, and fish use will be completed each year for the first three years following commissioning, and at year five and ten thereafter for offsetting habitats at the Project site. The functionality of created habitat in Mattagami Lake will be monitored in year one and two post-construction and year four, to follow the monitoring plan presented in the MLFP (Appendix Table F.1). Progress reports will be prepared following each field monitoring program for submission to DFO by May 30 of the following year, with an integrated report prepared following the first three years of monitoring and then subsequent reports prepared at year five and ten (Table 5.1).



6 COSTS

Costs have been developed, and updated for this amendment, for each component/phase of the project which include construction, dewatering and fish salvages, implementing mitigation measures (planting and biological transplants) and monitoring (including during and post-construction) broken down by year and Section 35 versus Schedule 2 activities (Minnow 2020a; Tables 6.1 and 6.2). Construction of the Project commenced in the summer of 2020 and is anticipated to continue for approximately three years (see Section 4.1 and Minnow 2020a for more details). Specifically, construction costs⁴ include construction (i.e., all new habitat and installation of culverts), fish salvage and dewatering, planting and biological transplants, and monitoring during and post-construction (Tables 6.1 and 6.2). Costs associated with implementing mitigations measures include fish salvages preconstruction, monitoring during construction, and vegetation and benthic invertebrate transplants, as well as fish relocations, post-construction in the constructed habitat to reduce lag times (described in detail in Minnow 2020a). Lastly, post-construction monitoring will evaluate the habitat constructed and is proposed to occur annually for the first three years and at year 5 and 10 (see Section 5). Total estimated costs ($\pm 30\%$; excluding taxes) associated with the Project have been updated and summarized in Table 6.1 for Section 35 activities and Table 6.2 for Schedule 2 activities.

⁴ Based on IFC and concept design drawings.



Table 6.1: Summary of Construction, Fish Salvage, Dewatering, Biological Transplants, and Monitoring Costs Under Fisheries Act Authorization (FAA) for the Côté Gold Project

Activity	Location	Description	Estimate Cost (± 30%)							Total Cost (± 30%)
			2020	2021	2022	2023 to 2024	Operations			
			1st Year of Construction	2nd Year of Construction	3rd Year of Construction	4th Year of Construction	Years 1-3 Post-Construction	Year 5 Post-Construction	Year 10 Post-Construction	
Construction	WRC1	Excavate & install features, riparian vegetation in the extension of Clam Lake	-	\$273,043	\$109,370	-	-	-	-	\$382,413
		Installation of culverts	-	\$990,000	-	-	-	-	-	\$990,000
	WRC2	Excavate & install features, riparian vegetation planting	-	\$2,155,530	\$1,231,732	-	-	-	-	\$3,387,262
	Oshki Lake	North Dam Diversion Ditch	-	\$255,000	-	-	-	-	-	\$255,000
		North Dam	-	\$1,974,750	\$658,250	-	-	-	-	\$2,633,000
		South Dam	-	\$1,318,000	-	-	-	-	-	\$1,318,000
		Excavation & install features	-	-	\$3,699,000	-	-	-	-	\$3,699,000
		WRC2 Bypass (Water Diversion)	-	\$450,000	-	-	-	-	-	\$450,000
	Mollie River Road Crossing	Install culverts for access & haul roads	-	-	\$2,778,000	-	-	-	-	\$2,778,000
	Unnamed Pond Outlet	Excavate & install features, riparian vegetation planting	-	\$421,496	\$421,496	-	-	-	-	\$842,992
	Unnamed Tributary SR6 Road Crossing	Install culverts for access road	-	\$86,089	-	-	-	-	-	\$86,089
	Extension of Middle Three Duck Lake ^b	Excavate & install features, riparian vegetation planting	-	-	\$2,828,024	\$629,608	-	-	-	\$3,457,632
	Mollie River (Walleye Spawning) ^b	Install spawning substrate	-	-	\$192,400	-	-	-	-	\$192,400
	Mattagami Lake In-water Features	Install features	-	-	-	\$76,800	-	-	-	\$76,800
Mattagami Lake Shoreline Stabilization	Install features and shoreline stabilization measures	-	-	-	\$868,707	-	-	-	\$868,707	
Fish Salvage	East Clam Lake & Clam Creek	Fish capture, transport, & release to appropriate relocation areas as described in Table 4.3	-	\$150,000	-	-	-	-	-	\$150,000
	Clam Lake		-	\$70,000	-	-	-	-	-	\$70,000
	West Beaver Pond & Outlet to TMF Seepage East Dam		\$100,000	-	-	-	-	-	-	\$100,000
	Unnamed Pond Outlet		-	\$10,000	-	-	-	-	-	\$10,000
	East Beaver Pond Outlet		-	\$8,000	-	-	-	-	-	\$8,000
	Mollie River (within Oshki Lake & Open Pit footprint)		-	\$650,000	-	-	-	-	-	\$650,000
	North Beaver Pond		\$10,000	-	-	-	-	-	-	\$10,000
	Côté Lake		-	\$250,000	-	-	-	-	-	\$250,000
	Mesomikenda (Freshwater Intake)		-	-	\$8,000	-	-	-	-	\$8,000
	West Arm of Upper Three Duck Lake		-	-	\$645,000	-	-	-	-	\$645,000
Dewatering ^a	Clam Lake, East Clam Lake, West Beaver Pond, Mollie River & Tributaries	Staged dewatering in coordination with fish salvage	\$1,502,500	\$1,502,500.00	-	-	-	-	-	\$3,005,000
	North Beaver Pond & East Beaver Pond		\$10,000	-	-	-	-	-	-	\$10,000
	Côté Lake & West Arm of Upper Three Duck Lake		-	\$186,500	\$186,500	-	-	-	-	\$373,000
Planting and Biological Transplants	WRC1 (lake extension) & WRC2	Aquatic vegetation planting & biological transfers (benthic invertebrates and fish)	-	-	\$75,000	\$75,000	\$75,000	-	-	\$225,000
	Oshki Lake									
	Unnamed Pond Outlet									
	Extension of Middle Three Duck Lake									
	Mattagami Lake Shoreline Stabilization									
Monitoring	WRC1 (lake extension) & WRC2, Oshki Lake, Unnamed Pond Outlet, Extension of Middle Three Duck Lake, Mollie River Spawning Habitat, Mattagami Lake Shoreline Stabilization, Mattagami Lake in-water features	Construction Monitoring (e.g., TSS, erosion, entrainment, entrapment, impingement)	\$100,000	\$50,000	\$50,000	-	-	-	-	\$200,000
		Geomorphology & Stability	-	\$100,000	\$95,000	-	\$285,000	\$100,000	\$100,000	\$680,000
		Fish & Fish Habitat Monitoring (Habitat Structure, Aquatic Vegetation Growth, Benthic Invertebrate Community Composition, Fish Utilization, Abundance, Community Structure & Health)	-	-	\$50,000	\$50,000	\$300,000	\$100,000	\$100,000	\$600,000
Complimentary Measure	Mattagami Lake	Mattagami Lake Fisheries Plan Development and Implementation	-	-	\$223,800	\$28,400	\$338,400	\$234,400	\$296,000	\$1,121,000
TOTAL			\$1,722,500	\$10,900,909	\$13,251,572	\$1,728,515	\$998,400	\$434,400	\$496,000	\$29,532,296

Changes for the FAA amendment.

Notes: WRC = Water Realignment Channel. TMF= Tailings Management Facility. TSS = Total Suspended Solids. - indicates not applicable.

^a Includes cost of water barriers and fuel.

^b Construction may continue into early 2023.

Table 6.2: Summary of Construction, Fish Salvage, Dewatering, Biological Transplants, and Monitoring Costs Under Schedule 2 for the Côté Gold Project

Activity	Location	Description	Estimate Cost (± 30%)						Total Cost (± 30%)
			2020	2021	2022	Operations			
			First Year of Construction	Second Year of Construction	Third Year of Construction	Years 1-3 Post- Construction	Year 5 Post- Construction	Year 10 Post- Construction	
Construction	WRC1 (stream habitat)	Excavate & install features, riparian vegetation planting	-	\$382,413	-	-	-	-	\$382,413
		WRC1 Bypass (Water Diversion)	-	\$700,000	-	-	-	-	\$700,000
	Reconnection of Weeduck Lake & Upper Three Duck Lake	Excavate & install features, riparian vegetation planting	\$112,481	-	-	-	-	-	\$112,481
	Channel between Little Clam Lake & East Clam Lake	Excavate & install features, riparian vegetation planting		\$133,199	-	-	-	-	\$133,199
	Reconnection of East Clam Lake & Clam Lake	Excavate & install features, riparian vegetation planting	\$57,956	-	-	-	-	-	\$57,956
Fish Salvage	Unnamed Waterbodies #1-6 & associated tributaries East Beaver Pond	Fish capture, transport, & release to appropriate relocation areas as described in Table 4.3	\$100,000	-	-	-	-	-	\$100,000
			-	\$20,000					\$20,000
Dewatering ^a	Unnamed Waterbodies #1-6 & associated tributaries East Beaver Pond	Staged dewatering in coordination with fish salvage	\$566,000	-	-	-	-	-	\$566,000
			-	\$10,000	-	-	-	-	\$10,000
Planting and Biological Transplants	WRC1 Reconnection of Weeduck Lake & Upper Three Duck Lake Channel between Little Clam Lake & East Clam Lake Reconnection of East Clam Lake & Clam Lake	Aquatic vegetation planting & biological transfers (benthic invertebrates and fish)	-	\$20,000	\$10,000	-	-	-	\$30,000
Monitoring	WRC1	Construction Monitoring (e.g., TSS, erosion, entrainment, entrapment, impingement)	-	\$50,000	\$15,000	-	-	-	\$65,000
	Reconnection of Weeduck Lake & Upper Three Duck Lake	Geomorphology & Stability	-	\$25,000	\$20,000	\$45,000	\$15,000	\$15,000	\$120,000
	Connecting Channel between Little Clam Lake & East Clam Lake	Fish & Fish Habitat Monitoring (Habitat Structure, Aquatic Vegetation Growth, Benthic Invertebrate Community Composition, Fish Utilization, Abundance, Community Structure & Health)	-	\$30,000	-	\$100,000	\$20,000	\$20,000	\$170,000
	Connecting East Clam Lake & Clam Lake								
TOTAL			\$836,437	\$1,370,612	\$45,000	\$145,000	\$35,000	\$35,000	\$2,467,049

Notes: WRC = Water Realignment Channel, TMF= Tailings Management Facility, TSS = Total Suspended Solids; West Beaver Pond outlet and Unnamed Lake #3 tributary are not included in the table as they will be fished out during operations.
- indicates not applicable.

^a Includes cost of water barriers and fuel.

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APPENDIX A
HABITAT SUITABILITY

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A1 HABITAT SUITABILITY INDICES

A1.1 Introduction

The fish communities within stream and lake habitats of the study area were generally dominated by northern pike (*Esox lucius*) and yellow perch (*Perca flavescens*). Walleye (*Sander vitreus*), white sucker (*Catostomus commersonii*), and lake whitefish (*Coregonus clupeaformis*) were also common and varied in abundance depending on habitat. Smallmouth bass (*Micropterus dolomieu*) and burbot (*Lota lota*) were only present in low abundance in a few lakes. In addition to these species, sixteen small-bodied fish species were also identified. Representative small-bodied fish species habitat associations are described in Table A.1. Based on the existing fish community composition, the habitat assessment was conducted for five key large-bodied fish (northern pike, yellow perch, lake whitefish, walleye, and smallmouth bass) and small-bodied fish species (in areas where only small-bodied fish were observed, Table A.1).

Fish habitat was evaluated based on the quality of spawning and incubation, rearing (juvenile), foraging (juvenile/adult), and overwintering habitat available. It is assumed that these species requirements should cover the gamut of habitat required for the remaining fish community within the affected area. Habitat requirements for each life stage of each large-bodied species are described in detail in the following sections. Burbot, white sucker, lake trout, and cisco were included in the summaries to demonstrate the overlap in habitat requirements of other large-bodied fish species. The availability of these habitat requirements within a waterbody has been ranked for each combination based on a scale from 1 (excellent) to 0 (no available habitat), for which the available habitat within the study area lakes and streams could be evaluated. These classifications/rankings are presented in Table A.2 for each large-bodied species evaluated.

A1.2 Burbot

Burbot are a widely distributed fish species in Canada; their range extends west from New Brunswick to central and eastern British Columbia and north to the continental portion of the Northwest Territories, Yukon, and Nunavut (Scott and Crossman 1998).

Burbot spawn in lakes (Boag 1989), rivers (Johnson 1981, Paragamian 2000), and streams (Arndt and Hutchinson 2000) between January and March, depending on latitude. In lakes, spawning usually occurs under ice cover in near-shore shallows (1.5-10 m deep; Johnson 1981, Boag 1989) or over shallow off-shore reefs and shoals (McCrimmon 1959). Preferred spawning substrate is usually gravel, cobbles, and sometimes sand, and that is



relatively free of silt (Boag 1989). In rivers, burbot spawn in low velocity areas in main channels (Breeser et al. 1988) and in side channels behind deposition bars (Sorokin 1971). The preferred substrate in rivers is fine gravel or sand. Male burbot arrive on the spawning grounds first, followed in three or four days by the females; there is no nest preparation and most spawning activity takes place at night (Scott and Crossman 1998). Surface water temperature during the spawning period is usually 0.6°C to 1.7°C. Burbot eggs are small (1.3 to 1.8 mm) and are broadcast randomly in the water column well above the substrate (Fabricius 1954). Eggs are semi-buoyant when first spawned, then become demersal.

Embryos typically hatch in 30 days at 6°C, however depending on latitude the larvae appear from late February to June. In the Great Lakes, young-of-the-year (YOY) undergo a diel vertical migration (Oyadomari and Auer 2004), presumably to avoid predation, to pursue migrating prey, and/or for energetic optimization (Donner and Eckmann 2011). Young-of-the-year are initially pelagic; they settle to the bottom at about 68 days, then migrate along the profundal zone toward shore, where they presumably stay (Fischer 1999, Hofman and Fischer 2001), sheltering under stones and debris in shallow bays and along rocky shores during the day and then foraging at night (Boag 1989). In rivers and streams, YOY burbot also shelter in weed beds, under rocks, debris, and undercut banks during the day (Hanson and Qadri 1980). Sub-adult burbot occupy essentially the same habitat as YOY: shallow littoral environments with rocks, weeds, or debris as cover (McPhail and Paragamian 2000). Young burbot continue to inhabit shallow lake waters but eventually move to deeper water during the summer to take advantage of cooler temperatures.

In central and southern Canada, adult burbot are typically found in deep waters of lakes where they are restricted to the hypolimnion in summer and co-occur with lake trout, whitefishes, and sculpins; in northern Canada they are also present in large, cool rivers. The optimal temperature range for adult rearing is 15.6°C to 18.3°C with an upper limit of approximately 23.0°C (Scott and Crossman 1998). Burbot may move from deep to shallower water at night during the summer months. In the north, summer habitat is often in the river channels of lakes (Scott and Crossman 1998). In lakes, small burbot feed primarily on benthic invertebrates but at lengths greater than 500 mm burbot feed almost exclusively on other species of fish including ciscoes, walleye, yellow perch, alewife, smelts, sculpins, trout-perch, and sticklebacks (Scott and Crossman 1998).

Although information on optimal criteria for dissolved oxygen in burbot habitat is scarce, levels in excess of 6 mg/L are likely preferred for overwintering.



A1.3 Cisco

Cisco, commonly referred to as Lake Herring throughout its range, is widely distributed across Canada (east of the Rocky Mountains) and the northeastern United States (Scott and Crossman 1998). It is a highly plastic species with similar but numerous life history strategies and morphologies and the species inhabits cold, well oxygenated lakes or very large northern rivers (e.g., in the Hudson Bay area).

Cisco spawn in the late fall (September to December) but the exact timing depends on latitude and water temperature. In inland lakes, males typically arrive on the spawning grounds first and large spawning schools form over gravel or rocky substrate in 1 to 3 m depth along the lakeshore; however, cisco have been observed spawning over all kinds of substrate. Fertilized eggs are broadcast over the spawning area and incubate overwinter: fry are hatched the following spring after ice-off often between April and May (George 2019). Cooler the winter water temperature results in an increased number of days required for incubation (Scott and Crossman 1998). Eggs are sensitive to dissolved oxygen concentrations and winter minima of 1 mg/L can result in near total egg mortality (George 2019). Larvae often congregate and utilize surface waters during the day but distribute throughout the water column at night (George 2019). Young-of-the-year cisco require at least 90 days with water temperatures greater than 15 °C to ensure over-winter survival (Scott and Crossman 1998). Juvenile cisco use both nearshore and offshore nursery habitats depending on water temperature and the state of thermal stratification and prefer warmer temperatures than adults. Optimal summer temperature for juvenile cisco ranges from 13 to 18 °C in southern Ontario and their upper lethal temperature is 26 °C (Ebener et al. 2008). Adults utilize the pelagic zone of the water column to forage on plankton, often forming large day-time schools found in or just below the thermocline during stratification (Milne et al. 2005). Adult upper lethal temperature has been estimated as 20 °C. Adults may demonstrate diel migration in some populations which has been associated with predator avoidance and food availability (George 2019). Age of maturity varies between populations and ranges from 2 in southern to 13 years old in the northern parts of the species range.

A1.4 Lake Whitefish

Lake whitefish are a cool water species (Scott and Crossman 1998). Spawning usually takes place in lakes in late fall, September to December depending on latitude, at water temperatures of less than 8 °C (Bradbury et al. 1999, Bégout Aras et al. 1999, Scott and Crossman 1998). Lake whitefish are littoral spawners; spawning usually occurs in shallow water at depths of less than 7.6 m, but can occur at depths up to 30 m in larger lakes (Bradbury et al. 1999, Scott and Crossman 1998). Typically, eggs are broadcast at depths ranging from 2 to 4.5 m



(Bégout Anras et al. 1999). Preferred spawning substrate is a hard or stony bottom usually composed of gravel, cobble, flat stones, or boulder but spawning may occasionally occur over sand (Bradbury et al. 1999, Bégout Anras et al. 1999, Scott and Crossman 1998). Lake whitefish have been observed spawning in rivers over gravel or rubble substrates at depths less than one meter (Bradbury et al. 1999, McPhail 2007). Site fidelity has been observed for lake whitefish towards specific substratum and slope characteristics, and low fidelity toward geographical location (Bégout Anras et al. 1999). Mud bottoms are generally avoided by both lake and river spawners (Bradbury et al. 1999).

Eggs will remain on the spawning substrate for four to six months and typically hatch from April to May. Once hatched, fish will remain within the general vicinity of the spawning area (Scott and Crossman 1998, Bégout Anras et al. 1999). Young-of-the-year are generally found over gravel, cobble, or boulder substrate and typically remain in these shallow inshore areas until water temperatures increase (Bégout Anras et al. 1999, Scott and Crossman 1998). They can be associated with emergent vegetation, often within 1 m of shore (McPhail 2007). Juvenile lake whitefish occupy similar habitat to those used by adults, however they are tolerant of higher temperatures (15.5 to 19.5 °C), and therefore can be found in the summer in shallower waters compared to adults (McPhail 2007). By late fall, juveniles begin to move into deeper water as the adults migrate to shallower water to spawn (McPhail 2007).

Adult lake whitefish are bottom feeders consuming a wide variety of bottom-living invertebrates and small fishes (Scott and Crossman 1998). They descend into cooler waters of the hypolimnion during summer months if thermal stratification exists. Preferred temperature range is from about 8 to 14 °C, although they can tolerate ranges from near 0 to 22 °C (McPhail 2007). Outside of the spawning period, adults show no preference for substrate type (Bégout Anras et al. 1999). During spring both juveniles and adults leave deeper water and move into shallower water, returning to deeper, cooler depths as summer water temperatures increase (Scott and Crossman 1998, Bégout Anras et al. 1999).

A1.5 Lake Trout

Lake trout are large, apex predators that occur naturally in lakes throughout North America and prefer deep, cold-water habitats (Scott and Crossman 1998). Their distribution within Canada ranges from British Columbia to Nova Scotia and from the arctic to southern Ontario. Their range and distribution have been linked to the retreat of Pleistocene ice sheets (Wilson and Mandrak 2004). Optimal conditions include cold (10-12 °C), well oxygenated lakes that are oligo to mesotrophic and provide thermal refugia during summer (Tunney et al. 2013).



Lake trout spawn in the fall (typically September to November), but timing is highly variable and depends on the latitude, size, and bathymetry of the lake, along with local weather patterns (Scott and Crossman 1998). Fall turnover (dissolution of the lake thermocline) and rapid decline in water temperature may trigger spawning activity (Smith 1985). In Lake Ontario, lake trout spawn between water temperatures of 12.7 °C to 8.8 °C (Casselman 1995). Lake trout are broadcast spawners and spawn over large boulders and rubble in lakes, usually between 1 and 12 m; however, river spawning and spawning over deep water reefs (> 65 m) has also been observed (Tibbitts 2008). Age of sexual maturity differs among populations and life history strategies (e.g., piscivore or not) and ranges between 4 and 6 years old. Homing behaviour has been observed in some populations of lake trout which is accomplished through chemical stimulation, but lake trout will also use new and artificial spawning habitat (Marsden et al. 1995; Scott and Crossman 1985). Fertilized eggs fall into crevices among the rocks and rubble and incubate for up to four or five months (Scott and Crossman 1998). Fry hatch between March and June depending on latitude; optimal temperature thresholds for hatching and rearing are not known (Hasnain et al. 2010). Fry move offshore following hatching and yolk-sac absorption and typically remain at depth for several years. Lake trout demonstrate spatial segregation between juvenile and adults with juveniles typically occurring deeper than adults during thermal stratification (Evans 2005).

Lake trout diet is variable depending on forage availability and season. During thermal mixing (i.e., from fall until water temperatures reach 9 to 12 °C) lake trout utilize the entire water column for movement and foraging (Evans 2005) consuming a wide range of forage fish, plankton, insects, and small mammals (e.g., voles). However, during stratification lake trout typically remain in the deeper, cooler waters of the hypolimnion except for rapid littoral foraging excursions (Dolson et al. 2009). In lakes without forage fish lake trout are slow growing, smaller, and do not live as long as lake trout that are piscivorous (Scott and Crossman 1998).

Dissolved oxygen concentrations are usually the most important variable affecting overwintering survival (Inskip 1982) and dissolved oxygen is an important parameter for year-long lake trout survival and growth. Lake trout fry and juveniles are not tolerant of low dissolved oxygen conditions during the winter and typically require concentrations of > 5 mg/L for survival and > 7 mg/L optimal growth. Adults are tolerant of dissolved oxygen concentrations < 5 mg/L for brief periods of time but demonstrate avoidance behaviour when concentrations fall below 3 - 4 mg/L (Evans 2005). Optimal conditions for lake trout require dissolved oxygen concentrations > 7 mg/L. Recruitment success of lake trout in Ontario lakes



is very poor when dissolved oxygen concentrations fall below 4 mg/L during either summer or winter low oxygen conditions (Evans 2005).

A1.6 Northern Pike

Northern pike are large piscivores that are important in “top–down” predatory regulation of the fish community and can tolerate a wide range of environmental conditions (Casselman and Lewis 1996). Their occurrence over a broad latitudinal belt (e.g., from Great Bear Lake in the Northwest Territories to Lake Mendota in southern Wisconsin) demonstrates their adaptability to a variety of thermal regimes (Inskip 1982). Optimal conditions include cool-water, shallow (less than 12 m), productive, mesotrophic to eutrophic environments (Casselman and Lewis 1996).

Northern pike are spring spawners with spawning taking place shortly after the ice melts when water temperatures reach 8 to 12 °C (Casselman and Lewis 1996, Inskip 1982). Pre-spawning movements are typically triggered by warming water and movement of ice from the shoreline. Both lake and river populations of northern pike can migrate up tributaries to flooded marshes, wetlands, or shallow pools (Inskip 1982). Spawning occurs over vegetation in areas of calm, shallow water (Inskip 1982). Optimal substrate for spawning includes flooded vegetation, with preference for grasses and sedges, but other vegetation is also used (Casselman and Lewis 1996). The substrate should be adequate to trap eggs and suspend them above the bottom sediment where anoxic conditions can develop (Casselman and Lewis 1996). Eggs are broadcast and adhere to vegetation and typically hatch in 12 to 14 days at adequate water temperatures (Scott and Crossman 1998). Once hatched, alevins remain within the vegetation, feeding on the stored yolk (Scott and Crossman 1998). Northern pike embryos are sensitive to heavy siltation caused by excessive wave action and/or currents (Casselman and Lewis 1996).

Young-of-the-year northern pike grow rapidly and increase in size and activity, therefore their physical habitat needs change, and as they grow their preferred depth range increases (Casselman and Lewis 1996). They are usually found in moderately dense vegetation, and prefer submerged vegetation with some emergent and floating vegetation (Casselman and Lewis 1996). In late summer and early fall, YOY use a wider range of depths (approximately 10 cm in depth for every 10 mm of body length until 150 mm in length; Casselman and Lewis 1996).

Typically, adult northern pike inhabit water shallower than 4 m, are within 300 m of shore, and frequently associate with vegetation (Inskip 1982). They are rarely found at depths greater than 10 m and rarely venture below the thermocline (Inskip 1982). Northern pike populations



typically require a minimum of 30% vegetative cover, and are generally most abundant when vegetation is moderately dense (31 to 70%; Casselman and Lewis 1996). In winter, northern pike will tend to occupy deeper habitats as ice cover and decaying vegetation deplete dissolved oxygen in the nearshore habitat (Casselman and Lewis 1996).

Dissolved oxygen concentrations are usually the most important variable affecting overwintering survival (Inskip 1982). Northern pike are more tolerant of low dissolved oxygen conditions during the winter than are many other species (Inskip 1982). They are able to tolerate concentrations as low as 0.1 to 0.4 mg/L for at least several days, and over longer term periods, concentrations greater than 1.5 mg/L are required for survival (Inskip 1982).

Northern pike are not adapted for strong currents, and therefore, throughout their range occur more frequently in lakes than in rivers (Inskip 1982). In rivers, they will inhabit backwater and pools, and avoid channelized reaches and currents greater than 1.5 m/s (Inskip 1982). Currents stronger than this can block spawning migrations (Inskip 1982).

A1.7 Smallmouth Bass

Originally, smallmouth bass were limited to the Great Lakes-St. Lawrence system in Canada, however, since this species has been widely introduced outside its original range, it now occurs from Nova Scotia to central Saskatchewan (Scott and Crossman 1998, Edwards et al. 1983). It is also found in eastern British Columbia and Vancouver Island as a result of invasion from introductions in Washington State (Scott and Crossman 1998).

Bass are primarily a lake fish, but they can also inhabit rivers. They prefer large, mesotrophic, clean and clear lakes (greater than 40.5 ha) with an average depth of over 9 m with rocky shoals and wide rivers or streams (greater than 10.5 m wide; Edwards et al. 1983). Optimal river habitat includes cool and clear water, with moderate current and composed of greater than 50% pool habitat (Brown et al. 2009b, Edwards et al. 1983). Shade and cover should be abundant with substrate composition comprised of gravel and larger material (Brown et al. 2009b).

In northern areas, smallmouth bass spawn as late as June or July, and the eggs hatch after 4 to 10 days at appropriate temperatures (13 to 25 °C; Edwards et al. 1983, Scott and Crossman 1998). They typically spawn over a period of 6 to 10 days (Scott and Crossman 1998). Nest construction is conducted by the males and nests can be found at 0.61 to 6.1 m, although rarely at depths greater than 3 m. Smallmouth bass spawn on sand, gravel, or rocky bottoms of lakes or rivers, usually near the protection of rocks or large woody debris (Scott and Crossman 1998, Edwards et al. 1983, Brown et al. 2009b). Optimal substrate size is considered to be 30 mm (Clark et al. 1998). Nests can typically be found in protected areas



of lakes, such as coves, bays, and shorelines where water warms the earliest in the spring (Brown et al. 2009b). Optimal spawning temperature ranges from 12.8 to 21 °C (Brown et al. 2009b, Scott and Crossman 1998). The male will guard the nest and the young for approximately two weeks after they hatch and before they disperse (Scott and Crossman 1998, Brown et al. 2009b).

In river habitat, fingerling bass are abundant in isolated pools, sloughs, and shallow still-water areas along banks, whereas juveniles can be found under larger substrate or shallow water (Brown et al. 2009b). In lakes, juveniles spend most of their time in quiet water near cover, such as brush or rocks (Edwards et al. 1983). Young bass have a schooling tendency (Brown et al. 2009b).

Bass seek protection from light at all stages (Edwards et al. 1983) and will seek cover under angular bedrock crevices, or under banks or pools in rivers and deep water in lakes (Brown et al. 2009b). Adult bass will use all forms of submerged cover (e.g., rocks, stumps, root-masses, trees, boulders, and crevices) without any apparent preference (Edwards et al. 1983). In the summer, they will occupy the warm epilimnetic waters of shallow lakes (Brown et al. 2009b). In rivers, bass movements may be more restricted and they appear to respect stream riffles as boundaries (Brown et al. 2009b). When water temperatures dip to 15 to 20 °C in the fall, adults seek deeper water, and when temperatures reach 10 °C they become inactive and cease eating (Scott and Crossman 1998, Edwards et al. 1983). Lakes should be at least 3 to 15 m deep to support over-wintering bass (Brown et al. 2009b).

Optimal dissolved oxygen levels for smallmouth bass vary by life stage. Dissolved oxygen requirements for eggs require levels to be at or greater than 7 mg/L, embryo/larvae development requires greater than 6.5 mg/L and normal activities require greater than 6 mg/L (Brown et al. 2009b, Edwards et al. 1983). Smallmouth bass can tolerate periodic turbidity, however, excessive turbidity and siltation will reduce populations (Edwards et al. 1983).

Water temperature is one of the most important environmental variables to affect smallmouth bass (Edwards et al. 1983). It influences range and distribution, migration, spawning, nest guarding behaviour, success of incubation, growth rate, and winter survival (Brown et al. 2009b, Edwards et al. 1983). Optimal range for adult rearing is 21 to 27 °C, with an upper limit of 32 °C (Brown et al. 2009b). Water temperatures must be sufficient for adequate growth of YOY for winter survival (Brown et al. 2009b). Therefore, the northern distribution of smallmouth bass is limited by temperature, as the size of fish in autumn is correlated with their over-winter survival and length of starvation period (Brown et al. 2009b).



A1.8 Walleye

Walleye are a highly successful species inhabiting a wide range of latitudes and habitat conditions including rivers, lakes, lake-river networks, and reservoirs. Walleye have evolved physiology and behaviour to efficiently utilize low light, turbidity, and nocturnal conditions, allowing them to effectively partition habitat with most other co-occurring species (Kelso 1978). They are most abundant in moderate-to-large mesotrophic lacustrine (greater than 100 ha) or riverine systems, or smaller oligotrophic lacustrine or riverine systems characterized by cool water temperatures, shallow to moderate depths, extensive littoral areas and moderate turbidities (1 to 2 m secchi disc; Scott and Crossman 1998, McMahon et al. 1984).

Spawning occurs in the spring, shortly after ice break-up in a lake, at water temperatures of 6.7 to 8.9°C (Scott and Crossman 1998), with most spawning occurring in the range of 6 to 11°C (McMahon et al. 1984). Spawning grounds are rocky areas in white water, riffles below impassable falls and dams in rivers, or boulder to coarse-gravel shoreline areas or shoals of lakes with good water circulation from currents or wave action (McMahon et al. 1984, Scott and Crossman 1998). Spawning water depth can range from 0.2 to 2 m (Bozek et al. 2011) or greater (up to 6 m; McPhail 2007). In rivers, preferred water velocities typically range from 0.40 to 1.5 m/s (Bozek et al. 2011, McPhail 2007). Walleye can also successfully spawn in lakes, reservoirs, and even wetland-marsh environments to take advantage of local environments with flows observed between 0.0 and 3.0 m/s (Bozek et al. 2011). In lake systems, walleye can spawn along gravel and cobble shorelines, on point bars or reefs or over dense mats of vegetation with adequate water circulation (Bozek et al. 2011, McMahon et al. 1984). Spawning takes place at night with eggs broadcast over substrate (Scott and Crossman 1998). Eggs hatch in 12 to 18 days, the yolk sac is absorbed quickly and young disperse into the upper levels of open water within 10 to 15 days of hatching (Scott and Crossman 1998). In river systems, larvae are passively transported downstream to river mouths and nearshore areas where they begin feeding on zooplankton (Jones et al. 2003).

Young-of-the-year walleye ultimately become demersal and piscivorous and the timing of when this occurs varies by water body (Pratt and Fox 2001). Pratt and Fox (2001) observed YOY walleye were located primarily at heavily vegetated areas 2 to 5 m in depth and were rarely found in habitats that provided little or no cover. As YOY grew, they moved to shallow, low cover habitat where high densities of prey existed, and remained there well into October (Pratt and Fox 2001). Other studies have found YOY at depths of up to 10 m by the fall (Raney and Lachner 1942).



Juvenile and adult walleye often form schools and will remain in deeper or darker water or cover during daytime hours (Bozek et al. 2011). It has been assumed that habitat selection of other environmental features for juvenile walleye probably matches that of adults (Ryder 1977).

Adult movements and habitat use are driven by the fact they are sensitive to light intensities. Lakes with optimum transparencies (1 to 2 m secchi depth) will allow walleye to feed intermittently throughout the day, whereas, in clear lakes, feeding is restricted to twilight or dark periods (McMahon et al. 1984, Scott and Crossman 1998). Walleye will often be associated with sunken trees, boulder shoals, weed beds, or thicker layers of ice to avoid bright light (Scott and Crossman 1998). Optimal vegetation cover was found to be around 25-45% (McMahon et al. 1984). However, other populations do well without any vegetation (Bozek et al. 2011). Larger fish have been associated with greater depths (McMahon et al. 1984).

Optimal dissolved oxygen concentrations for walleye are 5 to 6 mg/L, however they prefer levels above 5 mg/L (Bozek et al. 2011, McMahon et al. 1984). They can survive extended periods at 3 mg/L and can tolerate lower oxygen concentrations for short periods of time (Barton and Taylor 1996, McMahon et al. 1984). Optimal thermal tolerance for walleye range between 20 to 24 °C and the upper lethal limit is 29.7 ° (Barton and Taylor 1996, McMahon et al. 1984).

A1.9 White Sucker

White sucker is a highly adaptable and widely distributed freshwater fish species in Canada; they are found west from Nova Scotia to north-central British Columbia and north into southeastern Yukon and across the Northwest Territories (Scott and Crossman 1998).

White suckers spawn in the spring, usually from early May to early June. Adults usually migrate from lakes into streams when the daily maximum water temperature reaches 10°C (Geen et al. 1966) and continue until temperatures reach approximately 18°C (Olson 1963); white suckers are also known to spawn on lake margins, or quiet areas in the mouths of blocked streams. Spawning occurs in relatively swift, shallow water (15 to 30 cm in depth; Nelson 1968, Fuiman 1978, Curry 1979) with a gravel substrate (Dence 1948). Water velocities reported during spawning range from 0.14 m/s to 0.9 m/s but velocities between 0.3 and 0.6 m/s appear to be preferred (Nelson 1968, Symons 1976, Curry 1979). No nest is built; the fertilized eggs adhere to the gravel in riffles or drift downstream where they adhere to the substrate in slow water areas (Geen et al. 1966).

White sucker embryos hatch in about two weeks. Embryo development is temperature dependent; eggs have been collected in streams with water temperatures ranging from 11



to 16°C. In one study, maximum hatching success occurred at 15°C with lower and upper lethal limits of 6°C and 24°C, respectively (McCormick et al. 1977). Young-of-the-year remain in the gravel for one to two weeks and start to migrate to the lake about a month after spawning begins (Scott and Crossman 1998). High densities of YOY have been reported in streams and in shoreline areas of lakes with sand and sand/gravel substrate combinations. White sucker larvae appear to prefer water temperatures of 23 to 25°C but occur in water temperatures from 13 to 25°C (Marcy 1976). White sucker YOY prefer moderate currents and do not generally occur in rapids or still pools (Stewart 1926).

Adult white suckers prefer warm, shallow lakes or bays, and tributary rivers of larger lakes. In lakes, they are usually taken from the top six to nine meters. In streams, adults primarily inhabit pools which provide cover (Propst 1982) and are common in areas of slow to moderate velocity (approximately 0.4 m/s). White suckers have broad temperature tolerances, but experimental evidence has suggested an optimum summer water temperature of 24°C (Reynolds and Casterlin 1978) with a critical thermal maximum in the range of 31°C (Reutters and Herdendorf 1976). White suckers are moderately active during the daytime, but active feeding is usually restricted to near sunrise and sunset when they move into shallower water. Juvenile and adult white sucker are bottom feeders, however fry feed near the surface on suspended phytoplankton or zooplankton (e.g., copepods, cladocerans; Siefert 1972). After yolk absorption, the mouth moves from a terminal to a ventral position, and there is a shift to bottom feeding (Siefert 1972). The type of invertebrate food consumed shifts with increasing size and season.

White suckers have been found to avoid areas where the dissolved oxygen was 2.4 mg/L or less (Dence 1948); embryo mortality occurred at dissolved oxygen levels of 1.2 mg/L and less and YOY growth was reduced at less than 2.5 mg/L. Dissolved oxygen levels greater than 6.0 mg/L are generally considered optimum (Twomey et al. 1984).

A1.10 Yellow Perch

Yellow perch are very adaptable and able to utilize a wide variety of cool to warm habitats in lakes or quiet rivers (Scott and Crossman 1998). They are most common in clear freshwater but can be found in brackish water at river mouths (Kreiger et al. 1983). Population sizes in freshwater tend to decrease with increasing turbidity or decreasing vegetation (Scott and Crossman 1998). They are typically associated with shallow waters (less than 10 m depth), especially small weedy water bodies with muck, sand, or gravel bottoms (Brown et al. 2009a).

Yellow perch begin spawning migrations from deep water into tributaries, lake shallows, or low velocity areas of rivers from April to June when water temperatures warm to 7 °C



(Krieger et al. 1983, Scott and Crossman 1998). Females release a string of eggs near aquatic or inundated terrestrial vegetation (e.g., plants and woody debris). Cobbles, sand, or gravel may be used if submerged vegetation is not available (Robillard and Marsden 2001; Parker et al. 2009). Yellow perch require low current velocities (i.e., less than 0.05 m/s) for spawning (Krieger et al. 1983). Eggs are broadcast in water depths of 1 to 3.7 m and hatch in approximately 8 to 10 days (Krieger et al. 1983, Scott and Crossman 1998). Soon after hatching, the larvae move into the limnetic zone where they begin feeding (Whiteside et al. 1985). When they reach 25 mm (total length) they return to the littoral zone (Whiteside et al. 1985).

Young-of-the-year and 1+ aged individuals tend to stay in vegetated areas before dispersing to open water habitats (Parker et al. 2009). Juvenile habitat requirements are similar to those of adults with the exception that juveniles tend to inhabit slightly shallower water than adults (Kreiger et al. 1983). Young will often be found in loose aggregations of 50 to 200 individuals segregated by size and often mixed with species of minnow (e.g., spottail shiner; Scott and Crossman 1998).

Adults can be found in moderate currents but prefer sluggish currents or slack water habitat (Krieger et al. 1983). The schools of adult yellow perch are often dense in the summer and more separated in the winter (Scott and Crossman 1998). They are typically inactive at night and rest along the bottom; however they are active throughout the winter under the ice in both shallow and deeper water (Scott and Crossman 1998). Optimal lacustrine habitat is characterized by a littoral area of 20 to 30% of the total lake; 25 to 50% of the littoral area vegetated; warm (20 to 28 °C) surface water temperature in summer; and low to moderate turbidities (Brown et al. 2009a). Temperature preferences during the growing season are between 17.6 to 25 °C (Krieger et al. 1983). Winter dissolved oxygen levels of 0.2 to 1.5 mg/L are considered lethal, and 5 mg/L is considered the lower optimum limit (Kreiger et al 1983, Brown et al. 2009a). Optimal riverine habitat is characterized by deep pools (deeper than average river depth) and slack water areas (25 to 75% of river area) with moderate amounts of vegetation (25 to 50% of pool and backwater area) and low velocities (less than 0.10 m/s; Brown et al. 2009a).



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Table A.1: Summary of Habitat Requirements for Various Life Stages of Fish Found in the Vicinity of the Côté Gold Project

Size	Species	Spawning/Incubation	Juvenile/Rearing	Adult/Foraging	Overwintering
Large-bodied Fish Species	Burbot <i>Lota lota</i>	Spawns midwinter (January - March) under ice cover in <10 m of water depth over cobble, gravel, and sometimes sand. This is usually done in lakes, but the species is known to also move into rivers to spawn.	Young of the year and yearling burbot are frequently found along rocky shores, and sometimes in weedy areas of tributary streams.	Adults reside in deep, hypolimnetic habitat during the summer, but sometimes move into shallower waters when active at night. In southern and central regions, burbot habitat is primarily in lakes while in the north it also includes large, cool rivers.	Acute limit for dissolved oxygen is 2 mg/L. Likely prefer dissolved oxygen concentrations > 6 mg/L.
	Cisco <i>Coregonus artedii</i>	Spawn late fall to early winter prior to complete ice formation in <10 m depth over boulders and cobble along the shorelines of lakes. Spawning may occur over any substrate available.	Larvae utilize surface waters during the day and disperse through the water column at night. Juveniles use nearshore and offshore nursery pelagic habitats depending on food availability and thermal temperatures. Prefer	Adults demonstrate diel migrations throughout the water column and form large schools during the day. Typically reside in the thermocline where temperatures are less than 17 °C. Upper lethal temperature estimated as 20 °C. Most commonly found in large and inland lakes and occasionally large northern rivers.	Well oxygenated areas of the water column > 5 mg/L. Eggs require > 1mg/L overwinter to survive.
	Lake trout <i>Salvelinus namaycush</i>	Fall spawner (September to November) over boulders / rubble in lakes between 1 and 12 m depth. May spawn in rivers or over deep-water reefs.	Young of the year and juvenile lake trout are found in deeper areas of the lake, below adults, over rocky substrate in areas of high oxygenation. Optimal growth when dissolve oxygen concentrations > 7 mg/L.	Adults utilize the entire water column during thermal mixing and are found below the thermocline during stratification. Avoid areas with dissolve oxygen concentrations below 4 mg/L.	Well oxygenated areas of the water column > 5 mg/L.
	Lake whitefish <i>Coregonus clupeaformis</i>	Spawning occurs in the fall (usually November-December) at shallow depths of less than 25 feet (7.6 m) over hard or stony bottom but sometimes over sand.	Young whitefish generally leave the shallow inshore waters by early summer and move into deeper water.	Whitefish are a cool water species that descend into cooler waters of the hypolimnion (below the thermocline) during the summer months. They move from deep to shallow waters in early spring and back to deeper water as warming occurs.	No info. Likely prefer dissolved oxygen concentrations > 6 mg/L.
	Northern pike <i>Esox lucius</i>	Spring spawner during daylight hours on heavily vegetated floodplains of rivers, marshes and bays of larger lakes.	Young remain in shallow spawning areas for several weeks. Generally establish a vague territory where cover and food are adequate.	Inhabit clear, slow, heavily vegetated rivers or warm, weedy bays of lakes. Generally occur in shallower water in spring and fall but move to deeper cooler water at the height of summer temperatures.	Very tolerant of low dissolved oxygen (0.1-0.4 mg/L for several days).
	Smallmouth bass <i>Micropterus dolomieu</i>	Typically spawn in late spring and early summer. Nests are built on sandy, gravelly or rocky bottom of lakes and rivers usually near the protection of rock, logs or more rarely near dense vegetation.	Juveniles can be found in shallow areas with cover.	After spawning adult fish move to moderately shallow areas that are rocky and sandy. They will move to greater depths as the weather gets warmer. In winter they congregate near the bottom and are very inactive.	Prefer dissolved oxygen concentrations above 6 mg/L. Can survive extreme winter condition but do not actively feed at <10°C.
	Walleye <i>Sander vitreus</i>	Spawning occurs in spring shortly after ice-out, either in white water below impassable barriers or coarse, rocky shoals of lakes.	Occupy the shallow edge of rivers close to vegetation or other forms of cover, and inshore areas of lakes less than two meters deep.	Generally found in large, shallow, turbid lakes or streams. Also thrive in clear lakes and rivers, but in such a habitat walleye will only feed at night due to sensitivity to light.	Generally require dissolved oxygen levels > 5 mg/L, but can tolerate low as 2 mg/L for a short time. Adults tend to avoid turbulent areas in the winter.
	White sucker <i>Catostomus commersonii</i>	Typically spawn in the spring from early May to early June. Adults migrate from lakes into streams to spawn in shallow water over gravel. They have also been known to use lake margins.	Young start to migrate to the lake about a month after spawning. Juveniles can be found in association with a variety of other species and are typically found in the same habitat as adults.	Adults usually inhabit warmer shallow lakes or warm, shallow bays, and tributary rivers of larger lakes. They are usually found in the top 20 to 30 feet (6 to 9 m).	Tolerant of low dissolved oxygen and a broad range of environmental conditions. Will avoid dissolved oxygen concentrations lower than 2.4 mg/L.
	Yellow perch <i>Perca flavescens</i>	Yellow perch spawn in the spring usually from April to early May in shallow water of lakes or rivers over rooted vegetation, submerged brush or fallen trees, but at times over sand and gravel.	Juvenile habitat requirements are similar to adults. They school in shallower water and nearer to shore than adults and the schools often contain many individuals of different species of minnow.	Perch are adaptable and able to utilize a wide variety of habitat. Most abundant in the open water of clear lakes with moderate vegetation and bottoms of muck to sand and gravel. In response to seasonal temperature, movements occur out of and in to deeper water.	Tolerant of low dissolved oxygen, 5 mg/L is the lower optimum limit.

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Table A.1: Summary of Habitat Requirements for Various Life Stages of Fish Found in the Vicinity of the Côté Gold Project

Size	Species	Spawning/Incubation	Juvenile/Rearing	Adult/Foraging	Overwintering
Small-bodied Fish Species	Blacknose shiner <i>Notropis heterolepis</i>	Blacknose shiners spawn in spring and summer spawn over sandy bottoms.	Life cycle information is limited for this species.	Prefers clear, vegetated waters in the sandy shallows of lakes.	Adequate water depth. Oxygen thresholds of many freshwater fish as reported from field studies lie between 1.0 and 2.0 ppm with some less tolerant species requiring up to 3.0 ppm or more. Some fish species will use gas bubbles at the ice-water interface (i.e., central mudminnow, fathead minnow, brook stickleback) which will allow for tolerance of low dissolved oxygen (<0.30 mg/L).
	Central mudminnow <i>Umbra limi</i>	Spawns in early spring, either in upstream shallow waters, flooded benches of main channels, or hillside brooks in weedy areas.	The young move away from spawning sites at 30 mm in length.	Preferred habitat is vegetated, cool, quiet waters of lakes and streams.	
	Common shiner <i>Luxilus cornutus</i>	Typically a stream spawning species over gravel beds or other nests but may spawn on gravelly shoals in lakes (May-June).	Juveniles remain in stream habitat and shorelines of clear-water lakes.	Inhabit stream pool and run habitat and shorelines of clear-water lakes.	
	Fathead minnow <i>Pimephales promelas</i>	Prolonged spawning begins in spring and continues until as late as August. Spawning occurs in shallow water on the surface of rocks or vegetation.	No info, likely similar to adults.	In North-Central Ontario, habitat is frequently in clear but stained, acid waters of beaver ponds and small lakes.	
	Finescale dace <i>Chrosomus neogaeus</i>	Spawns in spring in depressions under some form of cover.	In lakes juveniles school with adults and in streams they remain close to vegetated areas.	Preferred habitat is cool water, heavily vegetated, slow-moving water, shallow water of lakes and streams with bottoms of silt and detritus.	
	Golden shiner <i>Notemigonus crysoleucas</i>	Spawning can occur from May to August. Eggs are deposited over filamentous algae where aquatic vegetation is present.	No info, likely similar to adults.	Clear, weedy, quiet waters with extensive shallow areas of lakes. Moves in schools off the bottom over wide areas.	
	Iowa Darter <i>Etheostoma exile</i>	Spawning occurs from spring to as late as May or June in shallow waters of lakes, or pond-like expansions in rivers, on bottom organic debris or on fibrous root beds.	No info, likely similar to adults.	Clear, standing or slowly moving waters of lakes or rivers which have rooted aquatic vegetation as well as a bottom of organic debris, sand, peat, or some combination of the three.	
Small-bodied Fish Species	Johnny darter <i>Etheostoma nigrum</i>	Spawning occurs in the spring, the exact time depending on local conditions but, generally in May but can be as late as June, eggs are deposited on the underside of rocks.	No info, likely similar to adults.	Most common in waters of moderate or no current, over a bottom of sand, sand and gravel, or sand and silt, but do inhabit weedy areas or gravel riffles of streams.	Adequate water depth. Oxygen thresholds of many freshwater fish as reported from field studies lie between 1.0 and 2.0 ppm with some less tolerant species requiring up to 3.0 ppm or more. Some fish species will use gas bubbles at the ice-water interface (i.e., central mudminnow, fathead minnow, brook stickleback) which will allow for tolerance of low dissolved oxygen (<0.30mg/L).
	Longnose dace <i>Rhinichthys cataractae</i>	Spawning begins in May, June or early July. Probably occurs in riffles over a gravel bottom, but on occasion occurs over or near the nest of the river chub resulting in hybrids.	Similar to that of adults, but with less overhead turbulence.	Clean, swiftly flowing, streams bedded by gravel or boulders. Can inhabit very turbulent waters. Also occur in inshore waters of lakes over boulder or gravel bottoms. In warm lakes they may move offshore into deep water during increased summer temperatures.	
	Northern redbelly dace <i>Chrosomus eos</i>	Commences spawning in spring or early summer. Eggs are deposited in masses of filamentous algae.	Similar to that of adults.	Prefers the quiet waters of beaver ponds, bog ponds, small lakes or quiet pool-like expansions of streams, often over a bottom of finely divided brown detritus or silt.	
	Pearl dace <i>Margariscus nachtriebi</i>	Spawns in the spring in clear water 45 – 61 centimetres deep on sand or gravel, in a weak to moderate current.	No info, likely similar to adults.	Typically reside in cool, clear headwater streams in the south and in bog drainage streams, ponds, and small lakes in the north. Also found in stained, peaty waters of beaver ponds.	
	Sculpin sp. <i>Cottus bairdii</i> <i>Cottus cognatus</i>	Spawns in spring under rocks or ledges when water temperatures reach 4 - 5°C.	No info, likely similar to adults.	Cool streams and lakes over a sand bottom.	
	Spottail shiner <i>Notropis hudsonius</i>	Spawns in June or July, over sandy shoals.	Summer habitat is shallow water above sandy bottom or weed beds.	Known to often inhabit relatively large lakes, and large rivers.	
	Trout-perch <i>Percopsis omiscomaycus</i>	Spawns in spring to summer when water temperatures reach 10°C in shallow, rocky streams or the nearshore waters of lakes.	No info, likely similar to adults	Prefers cool waters of lakes, but may occasionally be found in streams. Move inshore in the evenings to feed and offshore in the morning to seek shelter.	

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Table A.2: Rationale for Assigning Numerical Ranking for Habitat Evaluation

Species	Numerical Ranking	Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Over-wintering
Burbot	1.00	Gravel, cobble shoals between 1.5-10 m deep free of silt in lakes or low velocity rivers over find gravel and sand	Rocky, shallow bay with adequate cover and oxygenation in the profundal zone in lakes. In rivers, shallow depths with abundant weed beds, rock and debris for cover	Profundal zone of lakes below the thermocline and below 18.3 °C in well oxygenated waters with an abundance of prey fish	Access to spawning habitat under ice and adequate oxygenation > 6mg/L
	0.75	Abundance of suitable spawning substrate with appropriate depth and water velocity	Abundance of suitable cover in shallow, cool waters	Abundance of habitat with suitable temperature and dissolve oxygen and access to prey	Abundance of foraging and spawning habitat and adequate oxygenation
	0.50	Moderate amount of suitable spawning substrate with appropriate depth water velocity	Moderate amount of suitable cover in shallow, cool waters	Moderate amount of habitat with suitable temperature and dissolve oxygen and access to prey	Moderate amount of foraging and spawning habitat and adequate oxygenation
	0.25	Sparse amount of suitable substrate, sub-optimal water velocity and presence of silt	Sparse amount of cover, and limited access too cool waters	Spare amount of suitable habitat and limited access to prey	Limited access to spawning habitat and poor oxygenation
	0.00	No suitable habitat	No suitable habitat	No suitable habitat	No suitable habitat and dissolved oxygen < 2 mg/L
Northern pike	1.00	Dense optimal vegetation (e.g., sedges or grasses) for spawning, calm shallow water (<2 m), access to seasonally flooded areas	Moderately dense vegetation and prefer submerged vegetation with some emergent and floating vegetation, water depth generally <4 m in lakes and < 1m deep in rivers, depth increases with size	Moderately dense (70%) vegetative cover within 300 m of shore, in lakes usually within 10 m depth (optimal 4 m) and rarely venture below the thermocline, in rivers areas of slow moving water (<0.05 cm/s) and low gradient (<0.5%)	Greater than 2 m water depth, large area where oxic conditions could persist for the entire winter, can tolerate very low dissolved oxygen
	0.75	Moderate to dense inundated vegetation	Moderate vegetation and cover	Habitat less than 10 m and within 300 m of shore, moderate to dense vegetative cover	Greater than 2 m water depth, maximum depth and anoxic conditions considered
	0.50	Moderate inundated vegetation	Sparse to moderate vegetation and cover	Habitat less than 10 m depth and within 300 m of shore, sparse to moderate vegetative cover	A minimum of 2 m water depth, abundance of aquatic vegetation taken into consideration to potentially cause anoxic conditions
	0.25	Sparse inundated vegetation	Sparse vegetation and cover, and/or depths >4 m	Shallow water depth (< 1.5 m), with sparse vegetation cover	Shallow water depth (<1.5 m), abundance of aquatic vegetation that could cause anoxic conditions
	0.00	No suitable habitat	No suitable habitat	No suitable habitat	No suitable habitat, less than 1 m water depth
Yellow perch	1.00	Use moderate to dense aquatic or inundated terrestrial vegetation, rocks, sand or gravel may be used if vegetation is not available, typically <4 m water depth and require low current velocities (<0.05 m/s)	Use moderate vegetated littoral areas before dispersing to open water, shallower water compared to adults, often school with mixed species of minnow	Use the littoral area in schools or near vegetation, prefer moderate vegetation cover (25-50%), in rivers deep pools, slow water currents (< 0.10 m/s) with moderate vegetation (25-50%)	Greater than 2 m water depth, large area where oxic conditions could persist for the entire winter, can tolerate low dissolved oxygen (>1.5 mg/L)
	0.75	Moderate vegetation	Moderate to sparse vegetation and cover	Moderate to sparse vegetation and cover	Greater than 2 m water depth, maximum depth and consideration for anoxic conditions considered
	0.50	Sparse to moderate vegetation, or rock, sand or gravel	Sparse vegetation and cover	Sparse vegetation and cover	A minimum of 2 m water depth, abundance of aquatic vegetation taken into consideration to potentially cause anoxic conditions
	0.25	Sparse vegetation or rock, sand, gravel substrate	Little to sparse vegetation or cover, depths greater than littoral	Little to sparse vegetation or suitable cover	Shallow water depth (<1.5 m), abundance of aquatic vegetation that could cause anoxic conditions
	0.00	No suitable habitat	No suitable habitat	No suitable habitat	No suitable habitat (<1.5 m)
Walleye	1.00	Migrate to tributaries to spawn over rocky areas in white water with boulder to coarse-gravel substrate with 0.3 -1.5 m water depth, boulder to coarse-gravel shoreline areas, between shoals of lakes with good circulation, water velocities can range from 0.4 to 1.5 m/s	In rivers moderate current (0.3-0.6m/s) to transport new hatched fry downstream to heavily vegetated areas in lakes with 2 to 5 m water depth, juveniles will school and use deeper habitat depending on water clarity	Habitat use driven by sensitivity to light, often associated with moderate cover, shoals, weed beds (25-45%), moderate turbidity (1 to 2 m Secchi depth),	Minimum dissolved oxygen of 3 mg/L, water depth >2 m, most abundant in large >100 ha lakes
	0.75	Abundance of suitable spawning substrate with appropriate water velocity	Moderate to dense available habitat	Moderate to dense available habitat with optimal turbidity	Maximum depth of lake >8 m, substantial overwintering area available (>2 m water depth)
	0.50	Moderate amount of suitable spawning substrate with appropriate water velocity	Moderate amount of available habitat	Moderate amount of available habitat with adequate turbidity	Water depth >4 m, total area taken into consideration and potential of dissolved oxygen to remain > 3 mg/L
	0.25	Sparse amount of suitable substrate, sub-optimal water velocity	Sparse amount of suitable habitat	Sparse amount of suitable habitat with suboptimal turbidity	Shallow water depth (<3 or 4 m), high potential for dissolved oxygen to fall below 3 mg/L
	0.00	No suitable habitat	No suitable habitat	No suitable habitat	No suitable habitat (<2 m)
Lake whitefish	1.00	Littoral spawners over gravel, cobble, flat stones or boulder, sometimes over sand, shallow water depths <8 m, in rivers spawning occurs over gravel to cobble or rubble in <1 m	Will remain in spawning areas, can be associated with emergent vegetation within 1 m of shore, shallower water than adults, can tolerate warmer temperatures (15.5 to 19.5°C)	Use the hypolimnion during summer months and the oxic conditions that exist (>5mg/L), no preference for substrate, during spring and fall will use shallower water, temperature preference between 8 to 14°C	Greater than 2 m water depth, well oxygenated (> 5 mg/L)
	0.75	Moderate to dense suitable substrate within adequate depth, and fetch within the lake	Moderate to dense suitable habitat, appropriate temperature range	Moderate to abundant available habitat below the thermocline, oxic conditions taken into consideration during summer months	Maximum depth of lake >8 m, substantial overwintering area available (>2 m water depth)
	0.50	Moderate suitable substrate within adequate depth, and fetch within the lake	Moderate suitable habitat, suboptimal to appropriate temperatures available	Moderate to sparse available habitat below thermocline, oxic conditions taken into consideration during summer months	Water depth >4 m, total area taken into consideration and potential of dissolved oxygen to fall below 5 mg/L
	0.25	Sparse suitable substrate within adequate depth	Sparse suitable habitat, suboptimal temperatures	Sparse available habitat below thermocline, anoxic conditions likely exist, shallow water depth (<2 m) making available habitat not used for much of the year	Shallow water depth (<3 or 4 m), high potential for dissolved oxygen to fall below 5 mg/L
	0.00	No suitable habitat	No suitable habitat	No suitable habitat	No suitable habitat (<2 m)
Smallmouth bass	1.00	Nest construction <3 m water depth, over sandy, gravel, or rocky bottom near protection of rocks or large woody debris, in protected areas of lakes and backwaters of rivers	Use quiet water near cover in littoral, tend to school, in rivers use isolated pools or still-water along banks associated with larger substrate and cover	Use all forms of submerged cover, summer occupy warm epilimnetic water, in rivers movements are typically within riffle boundaries, prefer slower currents	Water depth at least 3 to 15 m, dissolved oxygen >6 mg/L, use deep areas during winter and cease eating once temperatures reach 10°C
	0.75	Moderate abundance of appropriate substrate with nearby protection	Moderate vegetation and cover	Moderate vegetation and cover	Water depth >8 m
	0.50	Sparse to moderate suitable substrate, sparse cover	Sparse to moderate vegetation and cover	Sparse to moderate vegetation and cover	Water depth > 3 m and < 6 m
	0.25	Sparse appropriate substrate within <3 m water depth	Sparse vegetation and cover	Sparse vegetation and cover	Water depth >3 m and < 4
	0.00	No suitable habitat	No suitable habitat	No suitable habitat	No suitable habitat (< 3 m)

APPENDIX B
HABITAT ACCOUNTING

Table B.1: Summary of Lost and Altered Habitat and Created Habitat for Northern Pike in Waterbodies, Côte Gold Project

Location of Impact	Fisheries Act Authorization (FAA) / Schedule 2 / Created Compensation or Alteration of Habitat ^a	Lake Area	Lost Habitat				Habitat Suitability Index				Habitat Units				
			Max Depth (m) ^b	Max Secchi Depth (m)	Depth Range (m)	Area (m ²)	Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Overwintering	Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Overwintering	TOTAL
Habitat Lost / Altered															
Open Pit	FAA	East Clam Lake (south end)	2.4	3.4	0-max	5,961	0.50	0.75	0.25	0.00	2,981	4,471	1,490	0	8,942
	FAA	Clam Lake (east arm)	3.0	3.9	0-2	7,365	0.50	0.50	0.50	0.50	3,683	3,683	3,683	3,683	18,139
					2-max	2,727	0.00	0.25	0.50	0.50	0	682	1,364	1,364	
	FAA	Côté Lake	4.3	2.2	0-2	69,798	0.75	0.75	0.75	0.50	52,349	52,349	52,349	34,899	370,067
					2-max	118,748	0.00	0.25	0.50	0.75	0	29,687	59,374	89,061	
	FAA	Upper Three Duck Lake (western arm)	4.1	2.9	0-2	60,346	0.75	0.75	0.75	0.50	45,260	45,260	45,260	30,173	435,683
					2-max	154,132	0.00	0.25	0.75	0.75	0	38,533	115,599	115,599	
Mine Infrastructure	FAA Habitat Alteration	Upper Three Duck Lake (Discharge Pipe)	6.2	2.9	0-2.3	210	0.25	0.50	0.50	0.50	53	105	105	105	368
		Mesomikenda (Freshwater Intake)	60	2.7	0-3	84	0.00	0.25	0.25	0.50	0	21	21	42	84
Mattagami Lake (off site)	FAA Habitat Alteration	Shoreline / Nearshore	75	2.3	Shoreline ^c	1,520	0.00	0.00	0.00	0.00	0	0	0	0	0
					0-3	1,000	0.00	0.00	0.25	0.00	0	0	250	0	250
							Total FAA Losses				104,324	174,789	279,493	274,925	833,531
							Total Schedule 2 Losses				0	0	0	0	0
TOTAL LOSS											104,324	174,789	279,493	274,925	833,531
Habitat Created															
Oshki Lake	FAA for Côté Lake	Oshki Lake	~6.3	na	0-2	112,757	0.75	0.75	0.50	0.50	84,568	84,568	56,379	56,379	548,636
					2-max	152,425	0.00	0.25	0.50	1.00	0	38,106	76,213	152,425	
Mollie River Watershed	FAA	Extension of Middle Three Duck Lake	5.5	na	0-2	80,476	1.00	0.50	0.50	0.25	80,476	40,238	40,238	20,119	227,772
					2-max	31,134	0.00	0.25	0.50	0.75	0	7,784	15,567	23,351	
Site (within Mollie watershed)	Schedule 2	Weeduck and Upper Three Duck Lake Connection	1.5-2.0	na	0-max	2,100	0.25	0.25	0.00	0.00	525	525	0	0	1,050
Site (within Mollie watershed)	Schedule 2	East Clam Lake and Clam Lake Connection	0.5-1.5	na	0-max	1,700	0.75	0.75	0.75	0.00	1,275	1,275	1,275	0	3,825
Open Pit	FAA for Clam Creek	WRC1 - Extension of Clam Lake	1.0	na	0-max	21,450	1.00	0.50	0.50	0.25	21,450	10,725	10,725	5,363	48,263
Open Pit	FAA for Mollie River	WRC2 - Pool/Wetland	1.84	na	0-max	7,149	1.00	0.75	0.50	0.25	7,149	5,362	3,575	1,787	17,873
Mattagami Lake	FAA	Shoreline / Nearshore	75	2.3	Shoreline ^c	1,520	0.00	0.50	0.25	0.00	0	760	380	0	2,390
					0-3	1,000	0.00	0.50	0.75	0.00	0	500	750	0	
Total FAA Gains											193,643	188,042	203,826	259,423	844,933
Total Schedule 2 Gains											1,800	1,800	1,275	0	4,875
TOTAL GAINS											195,443	189,842	205,101	259,423	849,808
									DIFFERENCE		91,119	15,053	-74,393	-15,502	16,278

Changes for the FAA amendment.

Note: na = Not Available.

^a In the loss table FAA is designated for loss, and FAA Habitat Alteration denotes a temporary alteration. In the gains table FAA denotes the habitat is created to offset FAA loss or alteration.

^b Target depths have been provided for created habitat, depths for pools in the realignment channels are based on bankfull channel.

^c Shoreline in this context implies from the high water mark to a depth of 1.0 m during high water periods of the year (May - January).

Table B.2: Summary of Lost and Altered Habitat and Created Habitat for Yellow Perch in Waterbodies, Côté Gold Project

Location of Impact	Fisheries Act Authorization (FAA) / Schedule 2 / Created Compensation or Alteration of Habitat ^a	Lake Area	Lost Habitat				Habitat Suitability Index				Habitat Units				
			Max Depth (m) ^b	Max Secchi Depth (m)	Depth Range (m)	Area (m ²)	Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Overwintering	Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Overwintering	TOTAL
Habitat Lost / Altered															
Open Pit	FAA	East Clam Lake (south end)	2.4	3.4	0-max	5,961	0.75	0.75	0.50	0.00	4,471	4,471	2,981	0	11,922
	FAA	Clam Lake (east arm)	3.0	3.9	0-2	7,365	0.50	0.50	0.50	0.50	3,683	3,683	3,683	3,683	18,139
					2-max	2,727	0.00	0.25	0.50	0.50	0	682	1,364	1,364	
	FAA	Côté Lake	4.3	2.2	0-2	69,798	0.75	0.75	0.75	0.50	52,349	52,349	52,349	34,899	399,754
					2-max	118,748	0.00	0.25	0.75	0.75	0	29,687	89,061	89,061	
	FAA	Upper Three Duck Lake (western arm)	4.1	2.9	0-2	60,346	0.75	0.75	0.75	0.50	45,260	45,260	45,260	30,173	435,683
					2-max	154,132	0.00	0.25	0.75	0.75	0	38,533	115,599	115,599	
	Mine Infrastructure	FAA Habitat Alteration	Upper Three Duck Lake (Discharge Pipe)	6.2	2.9	0-2.3	210	0.50	0.50	0.50	0.50	105	105	105	105
Mesomikenda (Freshwater Intake)			60	2.7	0-3	84	0.50	0.50	0.50	0.50	42	42	42	42	168
Mattagami Lake (off site)	FAA Habitat Alteration	Shoreline / Nearshore	75	na	Shoreline ^c	1,520	0.00	0.00	0.00	0.00	0	0	0	0	0
					0-3	1,000	0.25	0.25	0.25	0.00	250	250	250	0	750
							Total FAA Losses				106,158	175,060	310,692	274,925	866,835
							Total Schedule 2 Losses				0	0	0	0	0
TOTAL LOSS											106,158	175,060	310,692	274,925	866,835
Habitat Created															
Oshki Lake	FAA for Côté Lake	Oshki Lake	~6.3	na	0-2	112,757	0.75	0.75	0.75	0.50	84,568	84,568	84,568	56,379	576,826
					2-max	152,425	0.00	0.25	0.75	0.75	0	38,106	114,319	114,319	
Site (within Mollie watershed)	FAA	Extension of Middle Three Duck Lake	5.5	na	0-2	80,476	1.00	0.75	0.75	0.25	80,476	60,357	60,357	20,119	283,577
					2-max	31,134	0.00	0.50	0.75	0.75	0	15,567	23,351	23,351	
Site (within Mollie watershed)	Schedule 2	Weeduck and Upper Three Duck Lake Connection	1.5-2.0	na	0-max	2,100	0.25	0.50	0.50	0.00	525	1,050	1,050	0	2,625
Site (within Mollie watershed)	Schedule 2	East Clam Lake and Clam Lake Connection	0.5-1.5	na	0-max	1,700	0.75	0.75	0.75	0.00	1,275	1,275	1,275	0	3,825
Open Pit	FAA for Clam Creek	WRC1 - Extension of Clam Lake	1.0	na	0-max	21,450	1.00	0.75	0.75	0.25	21,450	16,088	16,088	5,363	58,988
Open Pit	FAA for Mollie River	WRC2 - Pool/Wetland	1.84	na	0-max	7,149	1.00	0.75	0.75	0.50	7,149	5,362	5,362	3,575	21,447
Mattagami Lake	FAA	Shoreline / Nearshore	75	na	Shoreline ^c	1,520	0.00	1.00	0.75	0.00	0	1,520	1,140	0	4,410
					0-3	1,000	0.25	0.75	0.75	0.00	250	750	750	0	
Total FAA Gains											193,893	222,317	305,933	223,104	945,247
Total Schedule 2 Gains											1,800	2,325	2,325	0	6,450
TOTAL GAINS											195,693	224,642	308,258	223,104	951,697
									DIFFERENCE	89,535	49,582	-2,433	-51,821	84,862	

Changes for the FAA amendment.

Note: na = Not Available

^a In the loss table FAA is designated for loss, and FAA Habitat Alteration denotes a temporary alteration. In the gains table FAA denotes the habitat is created to offset FAA loss or alteration.

^b Target depths have been provided for created habitat, depths for pools in the realignment channels are based on bankfull channel.

^c Shoreline in this context implies from the high water mark to a depth of 1.0 m during high water periods of the year (May - January).

Table B.3: Summary of Lost and Altered Habitat and Created Habitat for Walleye in Waterbodies, Côté Gold Project

Location of Impact	Fisheries Act Authorization (FAA) / Schedule 2 / Created Compensation or Alteration of Habitat ^a	Lake Area	Lost Habitat				Habitat Suitability Index				Habitat Units					
			Max Depth (m) ^b	Max Secchi Depth (m)	Depth Range (m)	Area (m ²)	Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Overwintering	Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Overwintering	TOTAL	
Habitat Lost / Altered																
Open Pit	FAA	East Clam Lake (south end)	2.4	3.4	0-max	5,961	0.00	0.25	0.00	0.00	0	1,490	0	0	1,490	
	FAA	Clam Lake (east arm)	3.0	3.9	0-2	7,365	0.00	0.25	0.00	0.00	0	1,841	0	0	3,205	
					2-max	2,727	0.00	0.25	0.25	0.00	0	682	682	0		
	FAA	Côté Lake	4.3	2.2	0-2	69,798	0.00	0.50	0.25	0.00	0	34,899	17,450	0	230,471	
					2-max	118,748	0.00	0.50	0.50	0.50	0	59,374	59,374	59,374		
	FAA	Upper Three Duck Lake (western arm)	4.1	2.9	0-2	60,346	0.00	0.50	0.25	0.00	0	30,173	15,087	0	276,458	
					2-max	154,132	0.00	0.50	0.50	0.50	0	77,066	77,066	77,066		
Mine Infrastructure	FAA Habitat Alteration	Upper Three Duck Lake (Discharge Pipe)	6.2	2.9	0-2.3	210	0.00	0.50	0.25	0.00	0	105	53	0	158	
		Mesomikenda (Freshwater Intake)	60	2.7	0-3	84	0.00	0.50	0.25	0.50	0	42	21	42	105	
Mattagami Lake (off site)	FAA Habitat Alteration	Shoreline / Nearshore	75	?	Shoreline ^c	1,520	0.00	0.00	0.00	0.00	0	0	0	0	0	
					0-3	1,000	0.00	0.25	0.25	0.00	0	250	250	0	500	
								Total FAA Losses			0	205,922	169,981	136,482	512,386	
								Total Schedule 2 Losses			0	0	0	0	0	
TOTAL LOSS											0	205,922	169,981	136,482	512,386	
Habitat Created																
Oshki Lake	FAA for Côté Lake	Oshki Lake	~6.3	na	0-2	112,757	0.00	0.50	0.25	0.00	0	56,379	28,189	0	351,312	
					2-max	152,425	0.00	0.50	0.50	0.75	0	76,213	76,213	114,319		
Site (within Mollie watershed)	FAA	Extension of Middle Three Duck Lake	5.5	na	0-2	80,476	0.00	0.25	0.25	0.00	0	20,119	20,119	0	102,506	
					2-max	31,134	0.00	0.50	0.75	0.75	0	15,567	23,351	23,351		
Site (within Mollie)	Schedule 2	Weeduck and Upper Three Duck Lake	1.5-2	na	0-max	2,100	0.00	0.25	0.25	0.00	0	525	525	0	1,050	
Site (within Mollie watershed)	Schedule 2	East Clam Lake and Clam Lake Connection	0.5-1.5	na	0-max	1,700	0.00	0.25	0.00	0.00	0	425	0	0	425	
Clam Creek	FAA for Clam Creek	WRC1 - Extension of Clam Lake	1.0	na	0-max	21,450	0.00	0.25	0.25	0.00	0	5,363	5,363	0	10,725	
Mollie River	FAA for Mollie River	WRC2 - Pool/Wetland	1.84	na	0-max	7,149	0.00	0.25	0.00	0.00	0	1,787	0	0	1,787	
Mattagami Lake	FAA	Shoreline / Nearshore	75	na	Shoreline ^c	1,520	0.00	0.75	0.50	0.00	0	1,140	760	0	3,150	
					0-2.5	1,000	0.00	0.75	0.50	0.00	0	750	500	0		
Total FAA Gains											0	177,317	154,494	137,669	469,480	
Total Schedule 2 Gains											0	950	525	0	1,475	
TOTAL GAINS											0	178,267	155,019	137,669	470,955	
									DIFFERENCE		0	-27,656	-14,963	1,187	-41,431	

Changes for the FAA amendment.

Note: na = Not Available

^a In the loss table FAA is designated for loss, and FAA Habitat Alteration denotes a temporary alteration. In the gains table FAA denotes the habitat is created to offset FAA loss or alteration.

^b Target depths have been provided for created habitat, depths for pools in the realignment channels are based on bankfull channel.

^c Shoreline in this context implies from the high water mark to a depth of 1.0 m during high water periods of the year (May - January).

Table B.4: Summary of Lost and Altered Habitat and Created Habitat for Lake Whitefish in Waterbodies, Côte Gold Project

Location of Impact	Fisheries Act Authorization (FAA) / Schedule 2 / Created Compensation or Alteration of Habitat ^a	Lake Area	Lost Habitat				Habitat Suitability Index				Habitat Units					
			Max Depth (m) ^b	Max Secchi Depth (m)	Depth Range (m)	Area (m ²)	Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Overwintering	Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Overwintering	TOTAL	
Habitat Lost / Altered																
Open Pit	FAA	East Clam Lake (south end)	2.4	3.4	0-max	5,961	0.00	0.00	0.00	0.00	0	0	0	0	0	
	FAA	Clam Lake (east arm)	3.0	3.9	0-2	7,365	0.00	0.25	0.00	0.00	0	1,841	0	0	3,205	
					2-max	2,727	0.00	0.25	0.25	0.00	0	682	682	0		
	FAA	Côté Lake	4.3	2.2	0-2	69,798	0.00	0.25	0.25	0.00	0	17,450	17,450	0	123,960	
					2-max	118,748	0.00	0.25	0.25	0.25	0	29,687	29,687	29,687		
	FAA	Upper Three Duck Lake (western arm)	4.1	2.9	0-2	60,346	0.00	0.25	0.25	0.00	0	15,087	15,087	0	145,772	
					2-max	154,132	0.00	0.25	0.25	0.25	0	38,533	38,533	38,533		
Mine Infrastructure	FAA Habitat Alteration	Upper Three Duck Lake (Discharge Pipe)	6.2	2.9	0-2.3	210	0.00	0.25	0.25	0.00	0	53	53	0	105	
		Mesomikenda (Freshwater Intake)	60	2.7	0-3	84	0.25	0.00	0.00	0.00	21	0	0	0	21	
Mattagami Lake (off site)	FAA Habitat Alteration	Shoreline / Nearshore	75	na	Shoreline ^c	1,520	0.00	0.00	0.00	0.00	0	0	0	0	0	
					0-3	1,000	0.00	0.00	0.00	0.00	0	0	0	0	0	
							Total FAA Losses				21	103,332	101,490	68,220	273,063	
							Total Schedule 2 Losses				0	0	0	0	0	
TOTAL LOSS											21	103,332	101,490	68,220	273,063	
Habitat Created																
Oshki Lake	FAA for Côté Lake	Oshki Lake	~6.3	na	0-2	112,757	0.25	0.25	0.25	0.00	28,189	28,189	28,189	0	351,312	
					2-max	152,425	0.25	0.25	0.50	0.75	38,106	38,106	76,213	114,319		
Site (within Mollie watershed)	FAA	Extension of Middle Three Duck Lake	5.5	na	0-2	80,476	0.00	0.25	0.00	0.00	0	20,119	0	0	20,119	
					2-max	31,134	0.00	0.00	0.00	0.00	0	0	0	0		
Site (within Mollie watershed)	Schedule 2	Weeduck and Upper Three Duck Lake Connection	1.5-2	na	0-max	2,100	0.50	0.50	0.25	0.00	1,050	1,050	525	0	2,625	
Site (within Mollie watershed)	Schedule 2	East Clam Lake and Clam Lake Connection	0.5-1.5	na	0-max	1,700	0.00	0.25	0.25	0.00	0	425	425	0	850	
Clam Creek	FAA for Clam Creek	WRC1 - Extension of Clam Lake	1.0	na	0-max	21,450	0.00	0.25	0.00	0.00	0	5,363	0	0	5,363	
Mollie River	FAA for Mollie River	WRC2 - Pool/Wetland	1.84	na	0-max	7,149	0.00	0.00	0.00	0.00	0	0	0	0	0	
Mattagami Lake	FAA	Shoreline / Nearshore	75	na	Shoreline ^c	1,520	0.00	0.25	0.25	0.00	0	380	380	0	760	
					0-2.5	1,000	0.00	0.00	0.00	0.00	0	0	0	0		
Total FAA Gains											66,296	91,777	104,402	114,319	377,553	
Total Schedule 2 Gains											1,050	1,475	950	0	3,475	
TOTAL GAINS											67,346	93,632	105,732	114,319	381,028	
									DIFFERENCE	67,325	-9,700	4,242	46,099	107,965		

Changes for the FAA amendment.

Note: na = Not Available

^a In the loss table FAA is designated for loss, and FAA Habitat Alteration denotes a temporary alteration. In the gains table FAA denotes the habitat is created to offset FAA loss or alteration.

^b Target depths have been provided for created habitat, depths for pools in the realignment channels are based on bankfull channel.

^c Shoreline in this context implies from the high water mark to a depth of 1.0 m during high water periods of the year (May - January).

Table B.5: Summary of Lost and Altered Habitat and Created Habitat for Smallmouth Bass in Waterbodies, Côté Gold Project

Location of Impact	Fisheries Act Authorization (FAA) / Schedule 2 / Created Compensation or Alteration of Habitat ^a	Lake Area	Lost Habitat				Habitat Suitability Index				Habitat Units						
			Max Depth (m) ^b	Max Secchi Depth (m)	Depth Range (m)	Area (m ²)	Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Overwintering	Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Overwintering	TOTAL		
Habitat Lost / Altered																	
Open Pit	FAA	East Clam Lake (south end)	2.4	3.4	0-max	5,961	0	0.25	0.25	0	0	1,490	1,490	0	2,981		
	FAA	Clam Lake (east arm)	3.0	3.9	0-2	7,365	0	0.25	0.25	0	0	1,841	1,841	0	4,364		
					2-max	2,727	0	0	0.25	0	0	0	682	0			
	FAA	Côté Lake	4.3	2.2	0-2	69,798	0.25	0.25	0.25	0	17,450	17,450	17,450	0	111,723		
					2-max	118,748	0	0	0.25	0.25	0	0	29,687	29,687			
	FAA	Upper Three Duck Lake (western arm)	4.1	2.9	0-2	60,346	0.25	0.5	0.25	0	15,087	30,173	15,087	0	175,945		
					2-max	154,132	0	0	0.5	0.25	0	0	77,066	38,533			
	Mine Infrastructure	FAA Habitat Alteration	Upper Three Duck Lake (Discharge Pipe)	6.2	2.9	0-2.3	210	0.50	0.50	0.50	0.00	105	105	105	0	315	
Mesomikenda (Freshwater Intake)			60	2.7	0-3	84	0.25	0.50	0.50	0.50	21	42	42	42	147		
Mattagami Lake (off site)	FAA Habitat Alteration	Shoreline / Nearshore	75	na	Shoreline ^c	1,520	0.00	0.00	0.00	0.00	0	0	0	0	0		
					0-3	1,000	0.25	0.50	0.75	0.00	250	500	750	0	1,500		
								Total FAA Losses			32,912	51,601	144,199	68,262	296,974		
								Total Schedule 2 Losses			0	0	0	0	0		
											TOTAL LOSS		32,912	51,601	144,199	68,262	296,974
Habitat Created																	
Oshki Lake	FAA for Côté Lake	Oshki Lake	~6.3	na	0-2	112,757	0.25	0.50	0.50	0.00	28,189	56,379	56,379	0	331,478		
					2-max	152,425	0.00	0.00	0.50	0.75	0	0	76,213	114,319			
Site (within Mollie watershed)	FAA	Extension of Middle Three Duck Lake	5.5	na	0-2	80,476	0.75	0.75	0.50	0.00	60,357	60,357	40,238	0	199,870		
					2-max	31,134	0.00	0.00	0.50	0.75	0	0	15,567	23,351			
Site (within Mollie watershed)	Schedule 2	Weeduck and Upper Three Duck Lake Connection	1.5-2	na	0-max	2,100	0.75	0.75	0.50	0.00	1,575	1,575	1,050	0	4,200		
Site (within Mollie watershed)	Schedule 2	East Clam Lake and Clam Lake Connection	0.5-1.5	na	0-max	1,700	0.50	0.50	0.50	0.00	850	850	850	0	2,550		
Clam Creek	FAA for Clam Creek	WRC1 - Extension of Clam Lake	1.0	na	0-max	21,450	0.75	0.75	0.50	0.00	16,088	16,088	10,725	0	42,900		
Mollie River	FAA for Mollie River	WRC2 - Pool/Wetland	1.8	na	0-max	7,149	0.00	0.25	0.25	0.00	0	1,787	1,787	0	3,575		
Mattagami Lake	FAA	Shoreline / Nearshore	75	na	Shoreline ^c	1,520	0.50	1.00	0.75	0.00	760	1,520	1,140	0	5,670		
					0-2.5	1,000	0.75	0.75	0.75	0.00	750	750	750	0			
											Total FAA Gains		106,144	136,880	202,798	137,669	583,492
											Total Schedule 2 Gains		2,425	2,425	1,900	0	6,750
											TOTAL GAINS		108,569	139,305	204,698	137,669	590,242
									DIFFERENCE		75,657	87,704	60,499	69,407	293,267		

Changes for the FAA amendment.

Note: na = Not Available

^a In the loss table FAA is designated for loss, and FAA Habitat Alteration denotes a temporary alteration. In the gains table FAA denotes the habitat is created to offset FAA loss or alteration.

^b Target depths have been provided for created habitat, depths for pools in the realignment channels are based on bankfull channel.

^c Shoreline in this context implies from the high water mark to a depth of 1.0 m during high water periods of the year (May - January).

Table B.6: Summary of Lost and Altered Habitat for Small-bodied Fish Species in Waterbodies, Côté Gold Project

Location of Impact	Fisheries Act Authorization (FAA) / Schedule 2 / Created Compensation or Alteration of Habitat	Lake Area	Habitat				Habitat Suitability Index	Habitat Units	TOTAL
			Max Depth (m) ^a	Max Secchi Depth (m)	Depth Range (m)	Area (m ²)			
Habitat Lost / Altered									
Open Pit	FAA	North Beaver Pond	~0.5	na	0-max	4,076	0.25	1,019	1,019
Constructed Oshki Lake	FAA Habitat Alteration	East Beaver Pond/ Overprinted	<1.0	na	0-max	2,981	0.25	745	745
Mine Rock Area (MRA)	Schedule 2	East Beaver Pond (small arm to east)	<2.0	na	0-max	7,758	0.50	3,879	3,879
Tailings Management Facility (TMF)	Schedule 2	Unnamed Waterbody #1	1.0	na	0-max	4,478	0.25	1,120	8,185
	Schedule 2	Unnamed Waterbody #2	0.6	na	0-max	2,903	0.50	1,452	
	Schedule 2	Unnamed Waterbody #3	1.1	na	0-max	3,036	0.25	759	
		Unnamed Waterbody #4	<1.0	na	0-max	11,574	0.25	2,894	
		Unnamed Waterbody #5	<2.0	na	0-max	642	0.25	161	
		Unnamed Waterbody #6	≤0.5	na	0-max	846	0.25	212	
		West Beaver Pond	<2.0	na	0-max	3,178	0.50	1,589	
	FAA	West Beaver Pond (Under Dam)	3.0	na	0-max	49,265	0.75	36,949	36,949
Total FAA Losses									38,713
Total Schedule 2 Losses									12,064
TOTAL LOSS									50,776

Note: na = Not Available

^a Target depths have been provided for created habitat, depths for pools in the realignment channels are based on bankfull channel.

Table B.7: Summary of Lost and Altered Habitat, Created Habitat, and Habitat Balance for Waterbodies, Côté Gold Project

Species		Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Over- wintering	TOTAL
Habitat Lost/ Altered	Northern pike	104,324	174,789	279,493	274,925	833,531
	Yellow perch	106,158	175,060	310,692	274,925	866,835
	Walleye	0	205,922	169,981	136,482	512,386
	Lake whitefish	21	103,332	101,490	68,220	273,063
	Smallmouth bass	32,912	51,601	144,199	68,262	296,974
	Small-bodied fish	-	-	-	-	50,776
Total Habitat Units Lost/ Altered		243,415	710,704	1,005,856	822,814	2,833,564
Species		Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Over- wintering	TOTAL
Habitat Created	Northern pike	195,443	189,842	205,101	259,423	849,808
	Yellow perch	195,693	224,642	308,258	223,104	951,697
	Walleye	0	178,267	155,019	137,669	470,955
	Lake whitefish	67,346	93,632	105,732	114,319	381,028
	Smallmouth bass	108,569	139,305	204,698	137,669	590,242
	Small-bodied fish	-	-	-	-	0
Total Habitat Units Gained		567,050	825,689	978,808	872,184	3,243,730
Species		Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Over- wintering	TOTAL
Balance	Northern pike	91,119	15,053	-74,393	-15,502	16,278
	Yellow perch	89,535	49,582	-2,433	-51,821	84,862
	Walleye	0	-27,656	-14,963	1,187	-41,431
	Lake whitefish	67,325	-9,700	4,242	46,099	107,965
	Smallmouth bass	75,657	87,704	60,499	69,407	293,267
	Small-bodied fish	-	-	-	-	-50,776
TOTAL		323,635	114,985	-27,048	49,370	410,165

Note: All values represent habitat units.

Table B.8: Summary of Lost and Altered Habitat and Created Habitat for Northern Pike in Streams, Côte Gold Project

Location of Impact	Fisheries Act Authorization (FAA) / Schedule 2 / Created Compensation or Alteration of Habitat ^a	Identification	Habitat Summary					Habitat Suitability Index				Habitat Units				
			Habitat Type ^b	Avg. Channel Width (m)	Avg. Depth (m) ^c	Length (m)	Area (m ²)	Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Over- wintering	Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Over- wintering	TOTAL
Habitat Lost / Altered																
Open Pit	FAA	Mollie River (area lost to pit, alteration of habitat with the construction of Oshki Lake)	High-gradient	15.0	<0.5	472	7,083	0.00	0.00	0.00	0.00	0	0	0	0	113,656
			Low-gradient pool	na	na	66	1,990	0.50	0.75	0.75	0.25	995	1,493	1,493	498	
			Low-gradient	10.6	0.7-3	373	3,952	0.75	0.75	0.75	0.50	2,964	2,964	2,964	1,976	
			High-gradient	19.0	<0.5	55	1,044	0.00	0.00	0.00	0.00	0	0	0	0	
			Low-gradient	14.2	0.7-3	2,518	35,749	0.75	0.75	0.75	0.50	26,812	26,812	26,812	17,874	
	FAA	Clam Creek (from East Clam Lake to the Mollie River)	Low-gradient	2.3	0.1-3.5	491	1,105	0.50	0.25	0.25	0.25	553	276	276	276	1,382
			Intermittent	0.5	<0.4	243	121	0.00	0.00	0.00	0.00	0	0	0	0	
Tailings Management Facility (TMF) and Reclaim Pond	Schedule 2	West Beaver Pond to Bagsverd Lake South Arm	Low-gradient	2.5	0.5	41	104	0.00	0.25	0.00	0.00	0	26	0	0	26
	FAA (TMF Dam)			6.0	0.5-1.2	381	2,286	0.25	0.25	0.00	0.00	572	572	0	0	1,143
	Schedule 2 (between 2 Dams)			6.0	0.5-1.2	107	642	0.25	0.25	0.00	0.00	161	161	0	0	321
	FAA (Dam)			6.0	0.5-1.2	65	390	0.25	0.25	0.00	0.00	98	98	0	0	195
	Schedule 2 (Reclaim Pond)			8.6	0.5-1.2	404	3,474	0.25	0.50	0.25	0.00	869	1,737	869	0	3,474
	FAA (Dam)			12.2	0.5-1.2	73	896	0.25	0.50	0.25	0.25	224	448	224	224	1,121
	Schedule 2 (between 2 Dams)			10.8	0.5-1.2	23	248	0.25	0.50	0.25	0.25	62	124	62	62	309
	FAA (Dam)			11.8	0.5-1.2	25	302	0.25	0.50	0.25	0.25	75	151	75	75	377
Mine Rock Area (MRA)	FAA (Dam)	Tributary of Unnamed Lake #3	Low-gradient	0.5	<0.5	76	38	0.25	0.25	0.00	0.00	10	10	0	0	19
Mollie River	FAA Habitat Alteration	Mollie River (between Middle and Lower Three Duck lakes)	Low-gradient	16.8	2.0	100	700	0.00	0.25	0.25	0.00	0	175	175	0	350
Chester Lake Outlet Culverts	FAA Habitat Alteration	Mollie River	Low-gradient (upstream)	4.4	<0.5	35	152	0.00	0.25	0.00	0.00	0	38	0	0	92
			Culverts (3)	1.8	<0.5	20	108	0.00	0.00	0.00	0.00	0	0	0	0	
			Higher-gradient	10.4	<0.5	10	108	0.25	0.25	0.00	0.00	27	27	0	0	
Total FAA Losses												32,328	33,062	32,019	20,924	118,334
Total Schedule 2 Losses												1,091	2,047	930	62	4,131
TOTAL LOSS												33,419	35,110	32,950	20,986	122,465
Habitat Created																
Open Pit	Schedule 2	WRC1: Clam to Chester Lake	Higher-gradient	2.8 /3.75	0.2/0.5	113	416	0.00	0.00	0.00	0.00	0	0	0	0	6,325
			Alternating Pools	17.0	1.0	250	4,150	0.50	0.75	0.25	0.00	2,075	3,113	1,038	0	
			Low-gradient	4.0	0.5	50	200	0.25	0.25	0.00	0.00	50	50	0	0	
Chester Lake Outlet Culverts	FAA Habitat Alteration	Culvert placement on Mollie River	Haul Road Culverts	3.6	<0.5	39	140	0.00	0.00	0.00	0.00	0	0	0	0	0
			Low-gradient	10.4	<0.5	6.5	68	0.00	0.00	0.00	0.00	0	0	0	0	
			Access Road Culverts	3.6	<0.5	19	68	0.00	0.00	0.00	0.00	0	0	0	0	
Site	Schedule 2	Little Clam Lake to East Clam Lake	Low-gradient	1.5-3.0	<0.5	235	520	0.25	0.50	0.00	0.00	130	260	0	0	390
Mollie River	FAA Habitat Alteration	Mollie River (Middle to Lower Three Duck Lake Outlet)	Low-gradient	16.8	2.0	100	700	0.00	0.25	0.00	0.00	0	175	0	0	175
Open Pit	FAA for Mollie River	WRC2: Oshki Lake to Upper Three Duck Lake	Low-gradient	9.0	0.5/1.0	500	4,500	0.75	0.75	0.50	0.50	3,375	3,375	2,250	2,250	37,839
			Higher-gradient (riffle pool)	5.3 / 7.3	0.42/1.0	52	300	0.25	0.25	0.25	0.00	75	75	75	0	
			Higher-gradient (riffle pool)	6.8 / 10.8	0.55/1.6	188	1,560	0.25	0.25	0.25	0.00	390	390	390	0	
			Low-gradient	11.5	1.0/2.5	507	5,831	0.75	0.75	0.75	0.50	4,373	4,373	4,373	2,916	
			Higher-gradient (riffle pool)	6.4 / 9.5	0.55/1.5	248	2,260	0.25	0.25	0.25	0.00	565	565	565	0	
			Low-gradient	11.5	1.0/2.0	236	2,714	1.00	0.75	0.50	0.50	2,714	2,036	1,357	1,357	
Total FAA Gains												11,492	10,989	9,010	6,523	38,014
Total Schedule 2 Gains												2,255	3,423	1,038	0	6,715
TOTAL GAINS												13,747	14,411	10,048	6,523	44,729
										DIFFERENCE		-19,672	-20,698	-22,902	-14,463	-77,736

Changes for the FAA amendment.

Note: "na" indicates not applicable.

^a In the loss table FAA is designated for loss, and FAA Habitat Alteration denotes a temporary alteration. In the gains table FAA denotes the habitat is created to offset FAA loss or alteration.

^b Intermittent channel was assigned a channel width of 0.5 m.

^c Depth in created habitat based on bankfull channel.

Table B.9: Summary of Lost and Altered Habitat and Created Habitat for Yellow Perch in Streams, Côte Gold Project

Location of Impact	Fisheries Act Authorization (FAA) / Schedule 2 / Created Compensation or Alteration of Habitat ^a	Identification	Habitat Summary					Habitat Suitability Index				Habitat Units				
			Habitat Type ^b	Avg. Channel Width (m)	Avg. Depth (m) ^c	Length (m)	Area (m ²)	Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Over-wintering	Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Over-wintering	TOTAL
Habitat Lost / Altered																
Open Pit	FAA	Mollie River (area lost to pit, alteration of habitat with the construction of Oshki Lake)	High-gradient	15.0	<0.5	472	7,083	0.00	0.00	0.00	0.00	0	0	0	0	104,228
			Low-gradient pool	na	na	66	1,990	0.75	0.75	0.50	0.50	1,493	1,493	995	995	
			Low-gradient	10.6	0.7-3	373	3,952	0.75	0.75	0.50	0.50	2,964	2,964	1,976	1,976	
			High-gradient	19.0	<0.5	55	1,044	0.00	0.00	0.00	0.00	0	0	0	0	
			Low-gradient	14.2	0.7-3	2,518	35,749	0.75	0.75	0.50	0.50	26,812	26,812	17,874	17,874	
	FAA	Clam Creek (from East Clam Lake to the Mollie River)	Low-gradient	2.3	0.1-3.5	491	1,105	0.50	0.50	0.25	0.00	553	553	276	0	1,382
			Intermittent	0.5	<0.4	243	121	0.00	0.00	0.00	0.00	0	0	0	0	
Tailings Management Facility (TMF) and Reclaim Pond	Schedule 2	West Beaver Pond to Bagsverd Lake South Arm	Low-gradient	2.5	0.5	41	104	0.25	0.25	0.00	0.00	26	26	0	0	52
	FAA (TMF Dam)			6.0	0.5-1.2	381	2,286	0.25	0.25	0.00	0.00	572	572	0	0	1,143
	Schedule 2 (between 2 Dams)			6.0	0.5-1.2	107	642	0.25	0.25	0.00	0.00	161	161	0	0	321
	FAA (Dam)			6.0	0.5-1.2	65	390	0.25	0.25	0.00	0.00	98	98	0	0	195
	Schedule 2 (Reclaim Pond)			8.6	0.5-1.2	404	3,474	0.50	0.50	0.25	0.00	1,737	1,737	869	0	4,343
	FAA (Dam)			12.2	0.5-1.2	73	896	0.50	0.50	0.25	0.25	448	448	224	224	1,345
	Schedule 2 (between 2 Dams)			10.8	0.5-1.2	23	248	0.50	0.50	0.25	0.25	124	124	62	62	371
	FAA (Dam)			11.8	0.5-1.2	25	302	0.50	0.50	0.25	0.25	151	151	75	75	452
Mine Rock Area (MRA)	FAA (Dam)	Tributary of Unnamed Lake #3	Low-gradient	0.5	<0.5	76	38	0.25	0.25	0.25	0.00	10	10	10	0	29
Mollie River	FAA Habitat Alteration	Mollie River (between Upper and Middle Three Duck lakes)	Low-gradient	16.8	2.0	100	700	0.00	0.50	0.50	0.00	0	350	350	0	700
Chester Lake Outlet Culvert	FAA (Habitat Alteration, culvert placement)	Mollie River	Low-gradient (upstream)	4.4	<0.5	35	152	0.25	0.25	0.25	0.00	38	38	38	0	114
			Culverts (3)	1.8	<0.5	20	108	0.00	0.00	0.00	0.00	0	0	0	0	0
			Higher-gradient	10.4	<0.5	10	108	0.00	0.00	0.25	0.00	0	0	27	0	27
Total FAA Losses												33,137	33,487	21,846	21,145	109,614
Total Schedule 2 Losses												2,047	2,047	930	62	5,087
TOTAL LOSS												35,184	35,534	22,776	21,207	114,701
Habitat Created																
Open Pit	Schedule 2	WRC1: Clam to Chester Lake	Higher-gradient	2.8 /3.75	0.2/0.5	113	416	0.00	0.00	0.00	0.00	0	0	0	0	6,375
			Alternating Pools	17.0	1.0	250	4,150	0.50	0.75	0.25	0.00	2,075	3,113	1,038	0	
			Low-gradient	4.0	0.5	50	200	0.25	0.25	0.25	0.00	50	50	50	0	
Chester Lake Road Crossing	FAA Habitat Alteration	Culvert placement on Mollie River	Haul Road Culverts	3.6	<0.5	39	140	0.00	0.00	0.00	0.00	0	0	0	0	34
			Low-gradient	10.4	<0.5	6.5	68	0.00	0.25	0.25	0.00	0	17	17	0	
			Access Road Culverts	3.6	<0.5	19	68	0.00	0.00	0.00	0.00	0	0	0	0	
Site	Schedule 2	Little Clam Lake to East Clam Lake	Low-gradient	1.5-3.0	<0.5	235	520	0.50	0.50	0.00	0.00	260	260	0	0	520
Mollie River	FAA Habitat Alteration	Mollie River (Middle to Lower Three Duck Lake Outlet)	Low-gradient	16.8	2.0	100	700	0.00	0.25	0.25	0.00	0	175	175	0	350
Open Pit	FAA for Mollie River	WRC2: Oshki Lake to Upper Three Duck Lake	Low-gradient	9.0	0.5/1.0	500	4,500	1.00	0.75	0.75	0.50	4,500	3,375	3,375	2,250	42,149
			Higher-gradient (riffle pool)	5.3 / 7.3	0.42/1.0	52	300	0.25	0.50	0.50	0.00	75	150	150	0	
			Higher-gradient (riffle pool)	6.8 / 10.8	0.55/1.6	188	1,560	0.25	0.50	0.50	0.00	390	780	780	0	
			Low-gradient	11.5	1.0/2.5	507	5,831	1.00	0.75	0.50	0.50	5,831	4,373	2,916	2,916	
			Higher-gradient (riffle pool)	6.4 / 9.5	0.55/1.5	248	2,260	0.25	0.50	0.50	0.00	565	1,130	1,130	0	
			Low-gradient	11.5	1.0/2.0	236	2,714	1.00	0.75	0.50	0.50	2,714	2,036	1,357	1,357	
Total FAA Gains												14,075	12,036	9,899	6,523	42,533
Total Schedule 2 Gains												2,385	3,423	1,088	0	6,895
TOTAL GAINS												16,460	15,458	10,987	6,523	49,428
DIFFERENCE										-18,724	-20,076	-11,789	-14,684	-65,274		

Changes for the FAA amendment.

Note: "na" indicates not applicable.

^a In the loss table FAA is designated for loss, and FAA Habitat Alteration denotes a temporary alteration. In the gains table FAA denotes the habitat is created to offset FAA loss or alteratio

^b Intermittent channel was assigned a channel width of 0.5 m.

^c Depth in created habitat based on bankfull channel.

Table B.10: Summary of Lost and Altered Habitat and Created Habitat for Walleye in Streams, Côte Gold Project

Location of Impact	Fisheries Act Authorization (FAA) / Schedule 2 / Created Compensation or Alteration of Habitat ^a	Identification	Habitat Summary					Habitat Suitability Index				Habitat Units				
			Habitat Type ^b	Avg. Channel Width (m)	Avg. Depth (m) ^c	Length (m)	Area (m ²)	Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Over-wintering	Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Over-wintering	TOTAL
Habitat Lost / Altered																
Open Pit	FAA	Mollie River (area lost to pit, alteration of habitat with the construction of Oshki Lake)	High-gradient	15.0	<0.5	472	7,083	0.50	0.00	0.00	0.00	3,541	0	0	0	34,834
			Low-gradient pool	na	na	66	1,990	0.00	0.25	0.25	0.00	0	498	498	0	
			Low-gradient	10.6	0.7-3	373	3,952	0.00	0.25	0.25	0.25	0	988	988	988	
			High-gradient	19.0	<0.5	55	1,044	0.50	0.00	0.00	0.00	522	0	0	0	
			Low-gradient	14.2	0.7-3	2,518	35,749	0.00	0.25	0.25	0.25	0	8,937	8,937	8,937	
	FAA	Clam Creek (from East Clam Lake to the Mollie River)	Low-gradient	2.3	0.1-3.5	491	1,105	0.00	0.00	0.00	0.00	0	0	0	0	0
Intermittent			0.5	<0.4	243	121	0.00	0.00	0.00	0.00	0	0	0	0		
Tailings Management Facility (TMF) and Reclaim Pond	Schedule 2	West Beaver Pond to Bagsverd Lake South Arm	Low-gradient	2.5	0.5	41	104	0.00	0.00	0.00	0.00	0	0	0	0	0
	FAA (TMF Dam)			6.0	0.5-1.2	381	2,286	0.00	0.00	0.00	0.00	0	0	0	0	0
	Schedule 2 (between 2 Dams)			6.0	0.5-1.2	107	642	0.00	0.00	0.00	0.00	0	0	0	0	0
	FAA (Dam)			6.0	0.5-1.2	65	390	0.00	0.00	0.00	0.00	0	0	0	0	0
	Schedule 2 (Reclaim Pond)			8.6	0.5-1.2	404	3,474	0.00	0.00	0.00	0.00	0	0	0	0	0
	FAA (Dam)			12.2	0.5-1.2	73	896	0.00	0.00	0.00	0.00	0	0	0	0	0
	Schedule 2 (between 2 Dams)			10.8	0.5-1.2	23	248	0.00	0.00	0.00	0.00	0	0	0	0	0
	FAA (Dam)			11.8	0.5-1.2	25	302	0.00	0.00	0.00	0.00	0	0	0	0	0
Mine Rock Area (MRA)	FAA (Dam)	Tributary of Unnamed Lake #3	Low-gradient	0.5	<0.5	76	38	0.00	0.00	0.00	0.00	0	0	0	0	0
Mollie River	FAA Habitat Alteration	Mollie River (Middle to Lower Three Duck Lake Outlet)	Low-gradient	16.8	2.0	100	700	0.00	0.00	0.25	0.00	0	0	175	0	175
Chester Lake Outlet Culvert	FAA (Habitat Alteration, culvert placement)	Mollie River	Low-gradient (upstream)	4.4	<0.5	35	152	0.00	0.00	0.00	0.00	0	0	0	0	0
			Culverts (3)	1.8	<0.5	20	108	0.00	0.00	0.00	0.00	0	0	0	0	0
			Higher-gradient	10.4	<0.5	10	108	0.50	0.25	0.00	0.00	54	27	0	0	81
Total FAA Losses												4,117	10,450	10,598	9,925	35,090
Total Schedule 2 Losses												0	0	0	0	0
TOTAL LOSS												4,117	10,450	10,598	9,925	35,090
Habitat Created																
Open Pit	Schedule 2	WRC1: Clam to Chester Lake	Higher-gradient	2.8 /3.75	0.2/0.5	113	416	0.00	0.00	0.00	0.00	0	0	0	0	1,088
			Alternating Pools	17.0	1.0	250	4,150	0.00	0.25	0.00	0.00	0	1,038	0	0	
			Low-gradient	4.0	0.5	50	200	0.00	0.25	0.00	0.00	0	50	0	0	
Chester Lake Road Crossing	FAA Habitat Alteration	Culvert placement on Mollie River	Haul Road Culverts	3.6	<0.5	39	140	0.00	0.00	0.00	0.00	0	0	0	0	0
			Low-gradient	10.4	<0.5	6.5	68	0.00	0.00	0.00	0.00	0	0	0	0	
			Access Road Culverts	3.6	<0.5	19	68	0.00	0.00	0.00	0.00	0	0	0	0	
Site	Schedule 2	Little Clam Lake to East Clam Lake	Low-gradient	1.5-3.0	<0.5	235	520	0.00	0.00	0.00	0.00	0	0	0	0	0
Mollie River	FAA Habitat Alteration	Mollie River (between Middle and Lower Three Duck lakes)	Low-gradient	16.8	2.0	100	700	0.75	0.75	0.25	0.00	525	525	175	0	1,225
Open Pit	FAA for Mollie River	WRC2: Oshki Lake to Upper Three Duck Lake	Low-gradient	9.0	0.5/1.0	500	4,500	0.00	0.25	0.00	0.25	0	1,125	0	1,125	16,084
			Higher-gradient (riffle pool)	5.3 / 7.3	0.42/1.0	52	300	0.50	0.25	0.00	0.00	150	75	0	0	
			Higher-gradient (riffle pool)	6.8 / 10.8	0.55/1.6	188	1,560	0.50	0.50	0.00	0.00	780	780	0	0	
			Low-gradient	11.5	1.0/2.5	507	5,831	0.00	0.50	0.25	0.25	0	2,916	1,458	1,458	
			Higher-gradient (riffle pool)	6.4 / 9.5	0.55/1.5	248	2,260	0.75	0.50	0.00	0.00	1,695	1,130	0	0	
			Low-gradient	11.5	1.0/2.0	236	2,714	0.00	0.75	0.25	0.25	0	2,036	679	679	
Total FAA Gains												3,150	8,586	2,311	3,261	17,309
Total Schedule 2 Gains												0	1,088	0	0	1,088
TOTAL GAINS												3,150	9,674	2,311	3,261	18,396
										DIFFERENCE		-967	-776	-8,287	-6,664	-16,694

Changes for the FAA amendment.

Note: "na" indicates not applicable.

^a In the loss table FAA is designated for loss, and FAA Habitat Alteration denotes a temporary alteration. In the gains table FAA denotes the habitat is created to offset FAA loss or alteratio

^b Intermittent channel was assigned a channel width of 0.5 m

^c Depth in created habitat based on bankfull channel.

Table B.11: Summary of Lost and Altered Habitat and Created Habitat for Smallmouth Bass in Streams, Côte Gold Project

Location of Impact	Fisheries Act Authorization (FAA) / Schedule 2 / Created Compensation or Alteration of Habitat ^a	Identification	Habitat Summary					Habitat Suitability Index				Habitat Units				
			Habitat Type ^b	Avg. Channel Width (m)	Avg. Depth (m) ^c	Length (m)	Area (m ²)	Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Over-wintering	Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Over-wintering	TOTAL
Habitat Lost / Altered																
Open Pit	FAA	Mollie River (area lost to pit, alteration of habitat with the construction of Oshki Lake)	High-gradient	15.0	<0.5	472	7,083	0.00	0.00	0.00	0.00	0	0	0	0	31,268
			Low-gradient pool	na	na	66	1,990	0.00	0.25	0.25	0.25	0	498	498	498	
			Low-gradient	10.6	0.7-3	373	3,952	0.00	0.25	0.25	0.25	0	988	988	988	
			High-gradient	19.0	<0.5	55	1,044	0.00	0.00	0.00	0.00	0	0	0	0	
	FAA	Clam Creek (from East Clam Lake to the Mollie River)	Low-gradient	2.3	0.1-3.5	491	1,105	0.00	0.00	0.00	0.00	0	0	0	0	0
			Intermittent	0.5	<0.4	243	121	0.00	0.00	0.00	0.00	0	0	0	0	
Tailings Management Facility (TMF) and Reclaim Pond	Schedule 2	West Beaver Pond to Bagsverd Lake South Arm	Low-gradient	2.5	0.5	41	104	0.00	0.00	0.00	0.00	0	0	0	0	0
	FAA (TMF Dam)			6.0	0.5-1.2	381	2,286	0.00	0.00	0.00	0.00	0	0	0	0	0
	Schedule 2 (between 2 Dams)			6.0	0.5-1.2	107	642	0.00	0.00	0.00	0.00	0	0	0	0	0
	FAA (Dam)			6.0	0.5-1.2	65	390	0.00	0.00	0.00	0.00	0	0	0	0	0
	Schedule 2 (Reclaim Pond)			8.6	0.5-1.2	404	3,474	0.00	0.00	0.00	0.00	0	0	0	0	0
	FAA (Dam)			12.2	0.5-1.2	73	896	0.00	0.25	0.00	0.00	0	224	0	0	224
	Schedule 2 (between 2 Dams)			10.8	0.5-1.2	23	248	0.00	0.25	0.00	0.00	0	62	0	0	62
	FAA (Dam)			11.8	0.5-1.2	25	302	0.00	0.25	0.25	0.00	0	75	75	0	151
Mollie River	FAA Habitat Alteration	Mollie River (Middle to Lower Three Duck Lake Outlet)	Low-gradient	16.8	2	100	700	0.00	0.25	0.25	0.00	0	175	175	0	350
Mine Rock Area (MRA)	FAA (Dam)	Tributary of Unnamed Lake #3	Low-gradient	0.5	<0.5	76	40	0.00	0.00	0.00	0.00	0	0	0	0	0
Chester Lake Outlet Culvert	FAA (Habitat Alteration, culvert placement)	Mollie River	Low-gradient (upstream)	4.4	<0.5	35	152	0.25	0.50	0.25	0.00	38	76	38	0	152
			Culverts (3)	1.8	<0.5	20	108	0.00	0.00	0.00	0.00	0	0	0	0	0
			Higher-gradient	10.4	<0.5	10	108	0.00	0.25	0.25	0.00	0	27	27	0	54
Total FAA Losses												38	11,000	10,738	10,423	32,199
Total Schedule 2 Losses												0	62	0	0	62
TOTAL LOSS												38	11,062	10,738	10,423	32,261
Habitat Created																
Open Pit	Schedule 2	WRC1: Clam to Chester Lake	Higher-gradient	2.8 /3.75	0.2/0.5	113	416	0.00	0.00	0.00	0.00	0	0	0	0	1,088
			Alternating Pools	17.0	1.0	250	4,150	0.00	0.25	0.00	0.00	0	1,038	0	0	
			Low-gradient	4.0	0.5	50	200	0.00	0.25	0.00	0.00	0	50	0	0	
Chester Lake Road Crossing	FAA Habitat Alteration	Culvert placement on Mollie River	Haul Road Culverts	3.6	<0.5	39	140	0.00	0.00	0.00	0.00	0	0	0	0	17
			Low-gradient	10.4	<0.5	6.5	68	0.00	0.25	0.00	0.00	0	17	0	0	
			Access Road Culverts	3.6	<0.5	19	68	0.00	0.00	0.00	0.00	0	0	0	0	
Site	Schedule 2	Little Clam Lake to East Clam Lake	Low-gradient	1.5-3.0	<0.5	235	520	0.00	0.00	0.00	0.00	0	0	0	0	0
Mollie River	FAA Habitat Alteration	Mollie River (between Middle and Lower Three Duck lakes)	Low-gradient	16.8	2.0	100	700	0.00	0.00	0.25	0.00	0	0	175	0	175
Open Pit	FAA for Mollie River	WRC2: Oshki Lake to Upper Three Duck Lake	Low-gradient	9.0	0.5/1.0	500	4,500	0.25	0.50	0.50	0.25	1,125	2,250	2,250	1,125	20,170
			Higher-gradient (riffle pool)	5.3 / 7.3	0.42/1.0	52	300	0.00	0.25	0.25	0.00	0	75	75	0	
			Higher-gradient (riffle pool)	6.8 / 10.8	0.55/1.6	188	1,560	0.00	0.25	0.25	0.00	0	390	390	0	
			Low-gradient	11.5	1.0/2.5	507	5,831	0.25	0.50	0.25	0.25	1,458	2,916	1,458	1,458	
			Higher-gradient (riffle pool)	6.4 / 9.5	0.55/1.5	248	2,260	0.00	0.25	0.25	0.00	0	565	565	0	
			Low-gradient	11.5	1.0/2.0	236	2,714	0.25	0.50	0.50	0.25	679	1,357	1,357	679	
Total FAA Gains												3,261	7,569	6,270	3,261	20,362
Total Schedule 2 Gains												0	1,088	0	0	1,088
TOTAL GAINS												3,261	8,657	6,270	3,261	21,449
DIFFERENCE										3,223	-2,405	-4,468	-7,162	-10,812		

Changes for the FAA amendment.

Note: "na" indicates not applicable.

^a In the loss table FAA is designated for loss, and FAA Habitat Alteration denotes a temporary alteration. In the gains table FAA denotes the habitat is created to offset FAA loss or alteration.

^b Intermittent channel was assigned a channel width of 0.5 m.

^c Depth in created habitat based on bankfull channel.

Table B.12: Summary of Lost and Altered Habitat and Created Habitat for Small-bodied Fish in Streams, Côté Gold Project

Location of Impact	Fisheries Act Authorization (FAA) / Schedule 2 / Created Compensation or Alteration of Habitat ^a	Identification	Habitat Summary					Habitat Suitability Index	Habitat Units	
			Habitat Type ^b	Avg. Channel Width (m)	Avg. Depth (m) ^c	Length (m)	Area (m ²)		Habitat Units	TOTAL
Habitat Lost / Altered										
Open Pit	FAA Habitat Alteration	Unnamed stream between Unnamed Pond and Mollie River	Intermittent	0.5	<0.5	276	138	0.25	35	455
		Unnamed stream from Unnamed Pond to Mollie River	Low-gradient	1.8	<0.5	468	842	0.50	421	
Oshki Lake	FAA Habitat Alteration	Unnamed stream outlet from East Beaver Pond	Intermittent	0.5	<0.3	139	70	0.25	17	17
		Unnamed stream between East Beaver Ponds	Intermittent	0.5	<0.3	113	57	0.25	14	14
Tailings Management Facility (TMF) and Reclaim Pond	Schedule 2	Unnamed Waterbody #2 Main Inlet	Low-gradient	1.5	0.4	267	400	0.25	100	272
		Unnamed Waterbody #2 Small Inlets	Low-gradient	0.45	0.35	244	110	0.25	27	
		Unnamed Waterbody #2 Outlet	Low-gradient	1.8	<0.5	161	290	0.50	145	
Road Crossing (SR6)	FAA	Unnamed Tributary between Bagsverd Pond and Bagsverd Lake	Low-gradient	2.5	<0.3	18.5	46	0.25	12	12
Mine Rock Area (MRA)	Schedule 2	Tributary of Unnamed Lake #3	Low-gradient	0.5	<0.3	217	109	0.25	27	63
			Intermittent	0.5	<0.3	104	52	0.25	13	
			Low-gradient	0.5	<0.3	22	11	0.25	3	
			Low-gradient	0.5	0.3<1	162	81	0.25	20	
Total FAA Losses										499
Total Schedule 2 Losses										335
TOTAL										834
Habitat Created										
Open Pit	FAA	Unnamed Pond to Oshki Lake	Intermittent	1.5	0.3	409	614	0.50	307	307
Road Crossing (SR6)	FAA Habitat Alteration	Unnamed Tributary between Bagsverd Pond and Bagsverd Lake	Low-gradient	0.9 x 3	<0.3	21.1	57	0.25	14	14
Total FAA Gains										321
Total Schedule 2 Gains										0
TOTAL GAINS										321
								DIFFERENCE	-513	

Changes for the FAA amendment.

^a In the loss table FAA is designated for loss, and FAA Habitat Alteration denotes a temporary alteration. In the gains table FAA denotes the habitat is created to offset FAA loss or alteration.

^b Intermittent channel was assigned a channel width of 0.5 m.

^c Depth in created habitat based on bankfull channel.

Table B.13: Summary of Lost and Altered Habitat, Created Habitat, and Habitat Balance for Streams, Côté Gold Project

Species		Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Over- wintering	TOTAL
Habitat Lost/ Altered	Northern pike	33,419	35,110	32,950	20,986	122,465
	Yellow perch	35,184	35,534	22,776	21,207	114,701
	Walleye	4,117	10,450	10,598	9,925	35,090
	Smallmouth bass	38	11,062	10,738	10,423	32,261
	Small-bodied fish	-	-	-	-	834
Total Habitat Units Lost/ Altered		72,758	92,155	77,062	62,541	305,350
Species		Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Over- wintering	TOTAL
Habitat Created	Northern pike	13,747	14,411	10,048	6,523	44,729
	Yellow perch	16,460	15,458	10,987	6,523	49,428
	Walleye	3,150	9,674	2,311	3,261	18,396
	Smallmouth bass	3,261	8,657	6,270	3,261	21,449
	Small-bodied fish	-	-	-	-	321
	Connectivity Weeduck Lake ^a	-	-	-	-	47,665
	Connectivity Little and East Clam ^a	-	-	-	-	41,789
Total Habitat Units Gained		36,619	48,200	29,616	19,568	223,777
Species		Spawning/ Incubation	Juvenile Rearing	Adult Foraging	Over- wintering	TOTAL
Balance	Northern pike	-19,672	-20,698	-22,902	-14,463	-77,736
	Yellow perch	-18,724	-20,076	-11,789	-14,684	-65,274
	Walleye	-967	-776	-8,287	-6,664	-16,694
	Smallmouth bass	3,223	-2,405	-4,468	-7,162	-10,812
	Small-bodied fish	-	-	-	-	-513
TOTAL		-36,140	-43,955	-47,446	-42,973	-81,573

Note: All values represent habitat units. - indicates no habitat units (HU) lost or gained.

^a Connectivity was determined by calculating 10% of the total area gained for access to habitat (e.g., 10% of total surface area for Upper Three Duck Lake and Clam Lake) by the suitability of the habitat gained (i.e., Upper Three Duck was assigned an HSI of 0.75, Clam Lake 0.5 as fish from Little Clam and East Clam had partial access to this area).

APPENDIX C
DESIGN BRIEF AND DRAWINGS

DRAFT



GeoProcess
RESEARCH ASSOCIATES

Knowledge
Research
Consulting

April 25, 2022

Dave Brown
Manager, Environment and Community Relations
IAMGOLD Corporation
401 Bay Street, Suite 3200
Toronto, Ontario, M5H 2Y4

**Re: Offsetting Habitat Design Brief
Côté Gold Project**

Dear Mr. Brown:

GeoProcess Research Associates Inc. (GRA) is pleased to submit this design brief to IAMGOLD outlining the plans for seven small watercourse/water body improvements, forming part of the overall proposed offsetting habitat proposal in support of the Côté Gold Project. This document outlines the design criteria and approach for the watercourse enhancements and is intended to accompany the fisheries offsetting plan completed by Minnow Environmental.

Version History

Version	Date	Description	Author	Approved
1	2019-08-25	Issued to Client (superseded)	JPH	CWM
2	2021-12-23	Issued to Client (Revised) [draft]	CWM	JPH
3	2022-02-23	Issued to Client (Revised per Minnow Comments) [draft]	JPH	BDP
4	2022-04-25	Issued to Client (Revised per Minnow Comments) [draft]	MVI	BDP

OUR PROJECT NO. P2017-288

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1. Location Overview

The offsetting habitat areas include seven sites, as shown below:

Site #1: East Clam Lake Connection:

Design Elements: *Crossing removal*

This site is located at the culvert/access road separating East Clam Lake and Clam Lake. To improve the fish passage and habitat connectivity, the removal of the access road and the corresponding culvert is proposed.

Site #2: Little Clam Lake Connection:

Design Elements: *Natural channel design*

This site is located at an overland flow area where water flows from Little Clam Lake to East Clam Lake. This area consists of an approximately 1-1.5 m drop at the edge of Little Clam Lake, which is a fish migration barrier. To improve the fish passage and habitat connectivity, the flow path will be enhanced by the construction of a step-pool channel to connect the two lakes.



Site #3: Weeduck Lake Connection:

Design Elements: *Crossing removal*

This site is located at the culvert/access road separating Weeduck Lake and Upper Three Duck Lake. To improve the fish passage and habitat connectivity, the removal of the access road and the corresponding culvert is proposed. Since there are two crossings, two connections will be made to improve the habitat connectivity.

Site #4: Unnamed Pond Connection:

Design Elements: *Natural channel design*

This site is located immediately south of the open pit and connects the Unnamed Pond to the future New Lake. As Unnamed Pond currently has no defined flow path outlet, a channel connection to New Lake is proposed to provide fish passage and habitat connectivity.



Site #5: Aggregate Pit #3 Restoration:

Design Elements: *Habitat creation*

This site is located west of Middle Three Duck Lake and will span an existing aggregate pit (Aggregate Pit #3) and a converted portion of the temporary WRC2 by-pass channel. Once the WRC2 corridor is commissioned, the temporary by-pass will not be required and, along with its dry floodplain, will be converted into new open-water lentic habitat connected to Middle Three Duck Lake. Habitat features will be included in the new basin and connector channels to increase habitat diversity. This site will have two broad connections to Middle Three Duck Lake.

Site #6: Middle to Lower Three Duck Walleye Spawning Habitat:

Design Elements: *Habitat complexity*

This site is located within the channel connecting Middle Three Duck Lake and Lower Three Duck Lake. The proposed improvements include the creation of roundstone shoals along the channel margins to augment walleye habitat.



Site #7: Mattagami Lake Shoreline Restoration and Walleye Spawning Habitat:

Design Elements: *Habitat complexity, shoreline restoration and erosion mitigation*

This site is located within the Mattagami community and along the Mattagami Lake shoreline. The proposed work includes erosion stabilization at critical areas along the community's shoreline as well as the placement of walleye spawning shoals within Mattagami Lake.

Three habitat enhancement locations are planned for the Mattagami Lake shoreline in the Mattagami community, with each coinciding with erosion repair sites that will integrate new habitat structures as part of the repair work.

2. Design Objectives

The key objectives used to guide the design process for the offsetting habitat sites are as follows:

Barrier Removal: To improve the quality of existing fish habitats, such as lake and channel connections, the removal of barriers to fish passage is proposed to increase habitat connectivity. To achieve this, legacy (and now unused) road crossings will be removed, and poorly-defined channel connections will be improved to provide a more concentrated flow path to improve fish passage. Barrier removal also includes the connection of existing or proposed habitats that are not (or would not) be connected naturally.

Habitat Conversion/Creation: To provide an overall habitat benefit, areas that provide either low habitat value or those that have been altered due to temporary mine works will be restored to improve the habitat. This will involve creating or enhancing areas to provide high-quality fish and amphibian habitat.

Habitat Complexity: The offsetting habitat designs include features to improve habitat complexity. Some examples include large woody debris, turtle spawning areas, and placed boulders and shoals. These can increase the general habitat diversity within the restoration areas or may be focused on specific benefits for target species (ie. Walleye spawning shoals). To further increase the habitat quality, native plant species will be used to improve both the terrestrial and aquatic systems.

Natural Channel Design: The proposed stream corridor and lakeshore enhancements forming the offsetting habitats follow the principles of natural channel design. The objective is to design habitat that fits within the site constraints and mimics natural processes. This involves selecting appropriate channel morphologies and features that mitigate the risk of instability or the development of fish migration barriers. Since the proposed channels are fed by lakes and streams having limited sediment supply, the channels have generally been designed to accommodate minimal sediment mobility.

Shoreline Restoration and Erosion Mitigation: The offsetting habitat designs include the restoration of sections of the Mattagami Lake shoreline. Due to the impacts of erosion occurring along Mattagami Lake, the objectives of these restoration efforts are to; a) stabilize the shoreline to mitigate erosion and b) augment near-shore habitat. The erosion mitigation will reduce sand deposition within the littoral zone and encourage vegetation growth.

The objectives listed above apply to the specific offsetting habitat settings as follows:

- **Site #1:** Barrier Removal
- **Site #2:** Barrier Removal, Natural Channel Design
- **Site #3:** Barrier Removal
- **Site #4:** Barrier Removal, Habitat Complexity, Natural Channel Design
- **Site #5:** Habitat Conversion/Creation, Habitat Complexity
- **Site #6:** Habitat Complexity
- **Site #7:** Habitat Complexity, Shoreline Restoration and Erosion Mitigation

As a part of the natural channel design process, different channel morphologies are proposed based on the natural conditions and design constraints. These channel morphologies are outlined below:

Low Gradient Sinuous (LG): This morphology type emulates the existing conditions of nearby natural channel systems. The hydraulic conditions here are influenced by the downstream lake level, with backwater and very low velocities dominating the hydraulic regime. Here, bed and bank stability will be primarily achieved by riparian vegetation. The meander geometry for these reaches is based on the existing meander patterns of nearby natural channels, and also on the existing geometry of the proposed project site. These zones typically have a wide valley to allow for natural processes and adjustments. These low gradient channels create excellent opportunities for northern pike spawning habitat, juvenile walleye rearing habitat, or adult white sucker foraging habitat. The inclusion of boulders and large quantities of large woody debris (LWD) creates conditions for small-bodied fish refugia and, consequently, smallmouth bass foraging habitat. **Sites having this morphology:** Site #2, Site #4.

Riffle-Pool (RP): These reaches are in areas with a moderate gradient (0.5-2%) used to make up grade differences for channels connecting existing water body features. Here, a series of riffles, steps, and pools have been designed to promote areas of higher velocity and more hydrodynamic variability. Due to a lack of upstream sediment resupply, the design has adopted a threshold-based approach for sediment stability. These zones are sufficiently connected to the floodplains to promote energy dissipation of flood flows exceeding the bankfull channel. The features will also provide spawning habitat for species preferring swift water and coarse substrates, such as walleye. The pool sizes were varied to add complexity to the system, with larger pools providing a staging area for spawning fish where they can find refuge from high flows.

Sites having this morphology: Site #4.

Step-Pool (SP): These reaches are used to cover large drops in elevation over a shorter distance to limit cut/fill and to try and provide fish passage to poorly accessible areas. The step-pool sequences have been designed to provide manageable drop heights between steps to avoid excessively large scour pools and to provide the ability for fish to navigate the steps. Additionally, the pools have been designed to provide energy dissipation and refuge for fish trying to navigate these steeper reaches. Again, due to the lack of upstream sediment resupply, the design has adopted a threshold-based approach for sediment stability. To achieve this, large boulders were used in the design to line the steps and designed to remain stable at high flows. **Sites having this morphology:** Site #2.

3. Design Criteria

Design criteria were established by hydrologic and hydraulic analysis. Parameters that were assessed include:

- Bankfull discharge: the discharge that coincides with water beginning to spill out of the channel into the floodplain;
- Channel sizing and planform: the cross-sectional channel size and planform used to create the channel morphology;
- Channel substrates and bank materials: the size and mix of the channel substrate and composition of bank stabilizing materials; and

- Habitat features: the restoration and revegetation strategies for improving and enhancing the proposed habitats.

3.1. Design Discharge

To properly size the channels for Site #2 and Site #4, a design discharge was established for each. The hydrology for each site was assessed for its return period flows. Due to the small size of the catchments, and the resulting low discharge regime, the 1:2 year return period storm event was chosen as a surrogate for the design discharge for all offsetting habitat sites. The 1:2 year magnitude storm is within the range of naturally occurring bankfull (and channel-forming) discharge rates observed in many natural stream systems. Although there is high variability of bankfull return intervals found in nature, for the Cote offsetting channels the flows that are geomorphically significant (e.g. those maintaining sediment transport continuity) are not key drivers of long-term stability due to lake-controlling effects.

The hydrology of many of the small sites was assessed by scaling the results of the Little Clam Lake Hydrological Assessment. For these cases, the sites were compared to both the Little Clam Lake and Bagsverd Creek drainage areas and the more conservative (higher flow) values were used. The results of this analysis are shown below.

Table 1: Drainage estimates for fish habitat design criteria

Site	Drainage Area [km ²]	Design Discharge [m ³ /s] (2-year return period)	100-year Discharge [m ³ /s]
Site#2: Little Clam Lake Connection	0.541	0.180	0.998
Site#4: Unnamed Pond Connection	0.027	0.008	0.050

These flows were used to estimate the flow regime for use as fish habitat design criteria and were not considered for any flood conveyance/containment analyses (which was beyond the scope of the habitat designs). The flood hazard assessment, within the context of the broader site-wide implications and risks, should be evaluated by the appropriate professionals and integrated with the overall project's planning process. This may require additional hydrologic analyses.

3.2. Channel Sizing and Planform

The approach for determining the channel sizing and planform differed between morphology types, as follows:

3.2.1. Low Gradient Sinuous and Riffle-Pool Channels

For these morphologies, the design approach was iterative. The planform was based on the channel size and that of other local river reaches (and studies of morphological parameters). The channel size was based on the design discharge and channel slope, which is impacted by the channel planform. By estimating an initial channel size, a channel planform was designed, after which both the planform and channel dimensions were iterated until they reached an appropriate balance that was suitable for the respective site. The channel sizing was based on calculations using an at-a-station hydraulic model.

3.2.2. Step-Pool

Since the planform for this morphology is typically straighter than the low gradient and riffle-pool channels, it was based, primarily, on the most efficient flow path through the existing topography. Then, based on the planform and the resulting channel slope, the channel dimensions were determined using Manning's equation.

3.2.3. Results

The resulting channel design dimensions are shown in Table 2:

Table 2: Channel design dimensions

Site	Sub Reach	Design Discharge (m ³ /s)	Reach Slope (%)	Riffle/Run Slope (%)	Top Width (m)	Bottom Width	Depth
Site#2: Little Clam Lake Connection	SP	0.18	3.9	N/A	1.5	0.3	0.3
	LG		0%	0%	1.5	0.3	0.3
Site#4: Unnamed Pond Connection	LG	0.008	0%	0%	1.1	0.3	0.2
	RP		0.7%	1.0-2.0%	1.1	0.3	0.2

3.3. Substrates

Given the limited sediment input into the sites and the overall limited mobility of the channel beds (especially for coarse substrate), a threshold-based approach was used to size substrate to remain immobile under all flows up to the peak design flow. This approach minimizes the risk of erosion and mimics the system's natural sediment regime. By matching the existing sediment regime, the designs should not deliver additional sediment to downstream lakes, meeting the present-day conditions.

Stone has been specified for the grade control features at each of the low flow channel reaches (ie. riffles, crossovers, and step crests). Rounded stone, as opposed to riprap, is required because it is more representative of natural watercourse sediment and is favoured by fish and benthos (and is typically a DFO permitting requirement).

The stone sizes were determined using a threshold (tractive force) based approach for predicting the threshold particle size for the maximum predicted shear stress. This approach relies on the determination of the critical shear stress to calculate the stable particle size. The Shields parameter (τ_*) is used to define the ratio of shear force to the weight of a stone under channelized flow. The critical value of Shields (τ_{*c}) defines the particle size corresponding to the beginning of particle mobility. Solving for the diameter of the particle size d_s , the stable particle is determined as follows:

$$d_s = \frac{\tau}{(\rho_s - \rho)g\tau_{*c}}$$

Where: d_s = threshold diameter of particle at incipient motion (m)
 τ = bed shear stress (N/m²) for the peak discharge available
 ρ_s = density of sediment (2650 kg/m³)
 ρ = density of water (1000 kg/m³)
 g = gravitational acceleration (9.81 m/s²)
 τ_{*C} = Critical Shield's parameter for coarse particles (Julien, 2002).

Bed shear stress is dependent on the local channel geometry and hydraulics. Therefore, threshold stone sizes will vary throughout a system. At-a-station hydraulic analysis using the Manning's equation was undertaken for each site. Since some sites contained two sub-reaches, the sub-reach that would produce a more conservative (larger) stone sizing was used for the analysis (to maximize stability). Accordingly, the threshold stone size was set for a representative flood event (100-yr) for each reach. A safety factor was also applied to increase the stone sizes for long-term stability and to account for uncertainty. A summary of the channel shear stresses and threshold stone sizes for each reach is provided in Table 3.

Table 3: Summary of channel shear and threshold stone size for each reach.

Reach Used		Channel Shear Stress (Pa)	Threshold Stone Sizing (mm)
Site #2: Little Clam Lake Connection	SP	143	197
Site #4: Unnamed Pond Connection	RP	15	20

Using the threshold stone sizes, substrate gradations were developed. A gradation applies volumetric proportions to produce a range of stone sizes for implementation. The stone mixture facilitates the construction of features that are more representative of natural channels, and that include larger boulders (or keystones) sized to remain stable under all floods and smaller stones that fill voids and promote aquatic habitat. The keystone boulders (placed at the feature crests) were sized to be twice as large as the maximum stone in the mix. Clay or approved material has also been specified for the stone gradation to add cohesion to the bed material and to fill voids. Due to the narrow range of stone sizes across sites, a unique gradation was not required for every site or sub-reach. Accordingly, two different stone gradations were established to satisfy the shear thresholds in each of the sites. The stone gradations are listed in Table 4.

Table 4: Roundstone gradations.

Site #2	Site #4
10% - clay1*	10% - clay1
20% - 25 to 100 mm Ø	20% - 25 to 50 mm Ø
20% - 100 to 200 mm Ø	20% - 50 to 75 mm Ø
30% - 200 to 300 mm Ø	30% - 75 to 125 mm Ø
20% - 300 to 400 mm Ø	20% - 125 to 200 mm Ø
Keystone – 500 mm Ø	

*Clay or Approved Equivalent

3.4. Habitat Features

The key objective for all offsetting habitat sites is to enhance the natural habitat. Since the goals are not the same for each site, the table below outlines the site-specific approaches used in this design to enhance the natural habitats.

Target Habitat	Description	Sites
Lake Habitat Connection	To enhance existing lake systems access roads and bridges that currently divide lakes will be removed. This enhances habitat by increasing the connectivity within the lake systems and increases available area for fish and aquatic habitat to access.	#1, #3
Stream Habitat	The creation of new stream systems provides different habitat improvement opportunities. While the proposed streams provide aquatic habitat within the new channel, the proposed designs have morphologies that also provide fish passage and connectivity between other aquatic features, including lakes, ponds, and wetlands.	#2, #4
Water Body Creation	At the aggregate pit, the creation of aquatic habitat is proposed to convert these areas into high-value habitat features. These aquatic features will resemble a lake and wetland, providing areas for fish and other aquatic species. Additionally, these features will provide diverse habitat, including areas aimed not only at aquatic species, but also terrestrial species such as birds, reptiles, and amphibians.	#5
Aquatic Habitat Features	To enhance the overall habitat within these projects, aquatic features, such as shoals for Walleye spawning, are included where technically feasible. To ensure the functionality of these features, the designs have incorporated literature-based values for key parameters. An example of this is the "Fish Habitat Toolkit" prepared by Watersheds Canada (2015) that was referenced for the design of the Walleye spawning habitat at Site #6.	#5, #6, #7
Terrestrial and Riparian Habitat Features	To provide the greatest overall habitat enhancement, terrestrial habitat features are also proposed. These features include large woody debris (i.e. fallen trees and standing snags) and boulders. Additionally, shoreline areas are proposed to include features such as turtle spawning areas and native aquatic plantings to provide habitat for amphibians and reptiles.	#4, #5, #7
Restoration and Revegetation	Disturbed areas will be restored and enhanced using revegetation plans that incorporate site-appropriate, native species.	#2, #4, #5, #7

3.4.1. Walleye Spawning Habitat (Site #6)

The walleye spawning benches were designed to add hydrodynamic variability within the channel connecting Middle Three Duck and Lower Three Duck. Alternating shoals are proposed to add sinuosity within the current, relatively straight channel. The shoals have a bench depth designed to be between 0.25 – 0.75 m below the average water surface, consistent with typical spawning depth ranges of 0.30 – 3 m, reported in Watersheds Canada (2015). The benches will slope gently down to the streambed, providing areas of increased depth ranging between 0.25 - ~2 m. Velocities during average freshet conditions are expected to range between 0.15-0.3 m/s, however, given the influence of lake levels on the hydraulics within this connection channel, velocities are expected to vary beyond this range during higher and lower flow periods.

The velocity within this connector channel is a function of the magnitude of the freshet. This channel is a natural constriction between two lakes and as the spring flows drain from the lake system, the velocity will peak in this channel with the height of the freshet and diminish to the summer low flow condition. Given the uncertainty of velocity estimates in this short reach, and its dependence on complex, watershed-level dynamics, it is proposed that the spring 2022 flow conditions be measured in the field to confirm the in situ velocities, for use as a baseline for testing the design assumptions before implementation.

4. Constructability, Staging, and Erosion & Sediment Control

4.1. Site #1:

The removal of the bridge and access road between East Clam Lake and Clam Lake will be undertaken from the existing road. The working area will be isolated with a turbidity curtain (OPSD 219.260) placed on both sides of the removal. The exact limits of grading will be confirmed on-site by the construction administrator, and all accumulated sediment is to be removed from the working area (with a vac truck or similar) before the removal of the turbidity curtain.

For further details on construction staging and ESC of Site #1 see GRA Drawing #03 – Clam Lake Connections: Revegetation and Erosion and Sediment Control.

This site has completed construction in Spring 2021, with plantings being finalized in Fall 2021.

4.2. Site #2

Little Clam Lake construction area will be isolated from Little Clam Lake by a temporary berm, and from East Clam Lake by a turbidity curtain (OPSD 219.260), a temporary rock flow check dam (OPSD 219.211), and a temporary seepage and sedimentation pond (OPSD 219.220). Since the limits of Little Clam Lake and East Clam Lake have not been confirmed, and due to the variability in lake levels, the upstream and downstream limits of the connection channel are to be confirmed in the field by the owner's representative. The channel will be constructed from downstream to upstream, with the removal of the upstream berm and the downstream turbidity curtain and seepage pond to be completed once the low flow channel and banks are stabilized.

For further details on construction staging and ESC of Site #2 see GRA Drawing #03 – Clam Lake Connections: Revegetation and Erosion and Sediment Control.

This site is nearing completion and is expected to be completed in Spring 2022.

4.3. Site #3

The removal of the bridge and a road between Weeduck Lake and Upper Three Duck Lake will be undertaken from the existing road. The working area will be isolated with a turbidity curtain (OPSD 219.260) placed on both sides of the removal. The exact limits of grading will be confirmed on-site by the construction administrator, and all accumulated sediment is to be removed from the working area with a vac truck (or similar) before the removal of the turbidity curtain.

For further details on construction staging and ESC of Site #3 see GRA Drawing #04 – Weeduck Lake Connection.

Construction of this site was completed in Spring 2021, with plantings being finalized in Fall 2021.

4.4. Site #4

The construction area of the Unnamed Pond connection will be isolated using a temporary berm at the upstream end, a temporary seepage and sedimentation pond (OPSD 219.220), a temporary rock flow check dam (OPSD 219.211), and a turbidity curtain (OPSD 219.260) at the downstream end. The channel will be constructed from the downstream end to the upstream. Upon the inspection by the owner's representative, all temporary materials and works are to be removed.

For further details on construction staging and ESC of Site #8 see GRA Drawing #08 – Unnamed Pond Connection Channel: Erosion and Sediment Control and Revegetation Plan.

This site is planned to be constructed in the first quarter of 2022.

4.5. Site #5

The working area will be isolated with a turbidity curtain (OPSD 219.260) placed at both locations where the habitat enhancement area is adjacent to Middle Three Duck Lake. The grading will be completed working away from the shorelines, with an earthen berm maintained at the shoreline location. Upon completion of planting and restoration, and the inspection by the owner's representative, all temporary materials may be removed from the site. Once all work has been completed and stabilized to the satisfaction of the owner's representative, a small section of each earthen berm is to be removed to allow for a slow filling of the habitat enhancement area. Once the water level has stabilized, the remaining portions of the berms are to be removed and the areas stabilized to the satisfaction of the owner's representative.

For further details on construction staging of Site #5, see GRA Drawing #13 – Aggregate Pit #3: Erosion and Sediment Control and Revegetation Plan.

4.6. Site #6

Three options are proposed for the construction of the walleye spawning habitat between Middle and Lower Three Duck Lakes.

The first involves accessing the connector channel from the east by constructing an access road, while minimizing the disturbance to natural areas. The stone would then be placed from the channel bank. This approach would require the watercourse to be isolated from the access road using silt fencing. It is recommended that this installation method is completed in the summer or fall to target a window with lower water levels.

The second option involves using a barge to transport and place the shoal stone. This would require the least disturbance to the surrounding habitat and would require few ESC measures. However, this method will need to be assessed by the contractor to ensure that access to the project site is feasible due to surrounding water depths. The timing of this installation will require water levels to allow for barge access.

The last option involves placing the shoal material during the winter to allow for placement on the ice and allowing the shoals to sink into place in the spring. This method is dependant on machine access across the ice, but involves no ESC measures will be required.

For further details on construction staging and ESC of the walleye spawning habitat installation see GRA Drawing #15 – Middle to Lower Three Duck Walleye Spawning Habitat.

4.7. Site #7

The Mattagami Lake shoreline restoration and walleye spawning habitat are currently only completed at the conceptual design stage. All details relating to the constructability, staging, and ESC will be determined at the detailed design stage.

5. Revegetation Plan

The revegetation plan has taken a simple approach to re-establishing disturbed vegetated areas. The number of different species has been minimized because the planting plan uses anchor species around which natural revegetation from the surrounding areas will provide the seed and rhizome stock, towards a long-term diverse vegetation community. The planting plan intends to quickly establish a rooting zone, shade the creek, and provide trees for long-term forest growth. To achieve these goals efficiently, plantings were divided into three zones. These zones are explained below and are shown in the accompanying drawing package.

Zone 1 is located in areas of anticipated shallow water within the aggregate pit features. The plantings here will provide the genesis for the development of diverse and densely-vegetated wetland areas. While the density of new plantings is less than is found in natural areas, the plan aims to reduce the time it takes for these vegetation communities to establish.

Zone 2 will provide fast growth immediately adjacent to the shorelines and channels. It employs a mix of deciduous shrub species. The apex forest in this region is conifer-dominated by white and black spruce, which may take decades to establish. The deciduous species selected for this zone are pioneer species that can establish quickly and will grow at a faster rate than the conifer species. Zone 1 is located immediately adjacent to creeks and in shoreline and low-lying areas. As the riparian forest matures, the conifer species will become dominant as the deciduous shrubs are replaced through succession. Zone 2 plantings are the only plantings for the riparian corridors and shorelines for Sites #1-4.

Zone 3 plantings are in the aggregate pit areas that are expected to be dry, away from riparian and shoreline areas. This zone consists of only conifer species, reflecting the ultimate forest community that will be established. White and black spruce and jack pine are the dominant species, with a lesser percentage of tamarack and balsam fir.

	Common Name	Scientific Name	% Mix
Zone 1	Broad-Leaved Arrowhead	Sagittaria latifolia	25
	Pickeral Weed	Pontederia cordata	25
	Softstem Bulrush	Scirpus Validus	25
	Common Cattail	Typha latifolia	25
Zone 2	Green Alder	Alnus crispa	20
	Speckled Alder	Alnus rugosa	50
	Red-Osier Dogwood	Cornus stolonifera	30
Zone 3	Black Spruce	Picea mariana	30
	Balsam Fir	Abies balsamea	10
	White Spruce	Picea glauca	20
	Tamarack	Larix laricina	10
	Jack Pine	Pinus banksiana	30

6. Post-Construction Monitoring

The offsetting habitat areas will be monitored using the same methods and timelines as the Watercourse Realignment Channels. See Table 5.1 of the Offsetting Monitoring Program for the details related to this monitoring program.

Regards,

GEOPROCESS RESEARCH ASSOCIATES INC



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Principal

Côté Gold Offsetting Habitat Features: Natural Channel Design

Prepared for IAMGOLD Corporation

April 25, 2022

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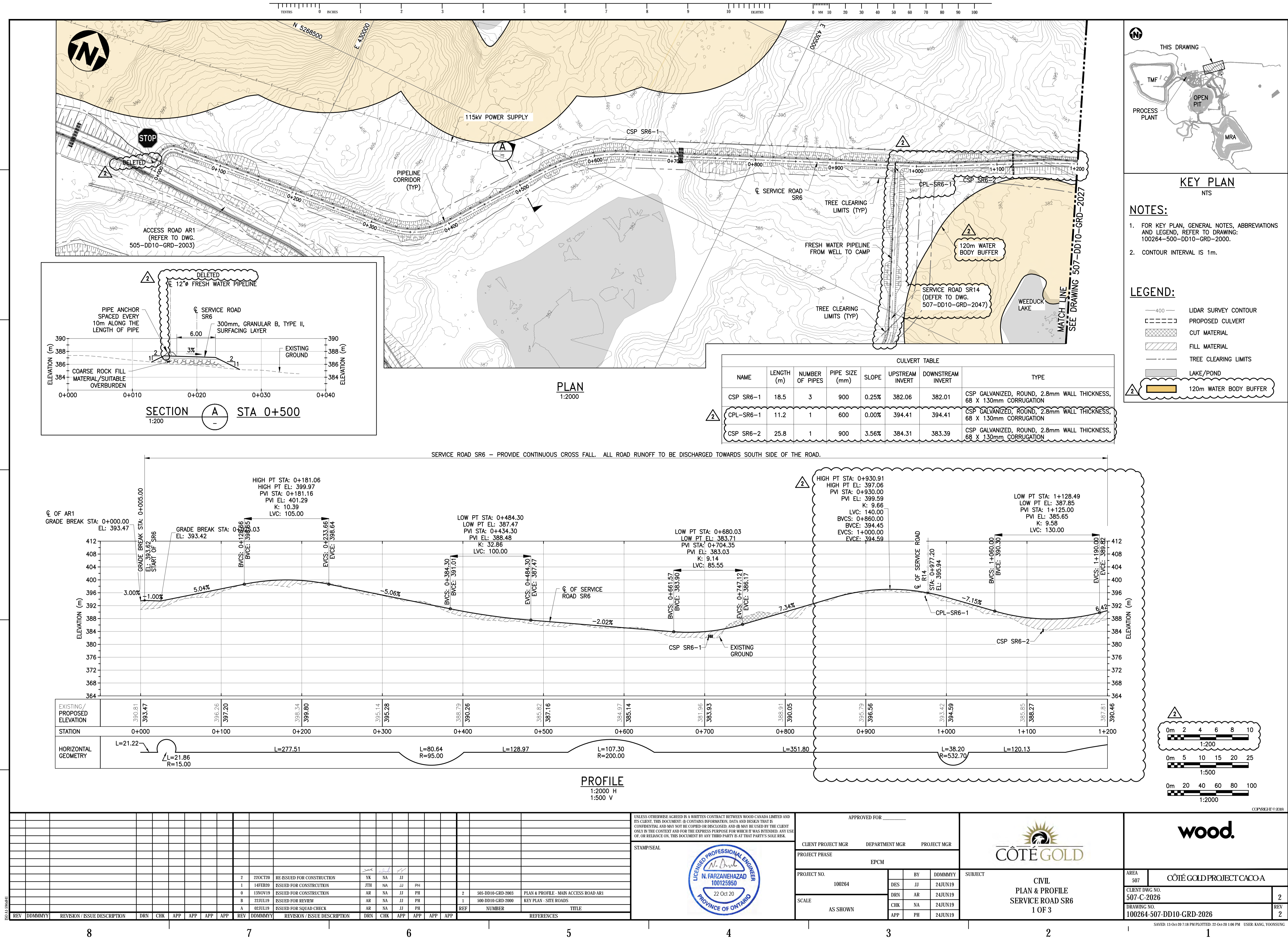
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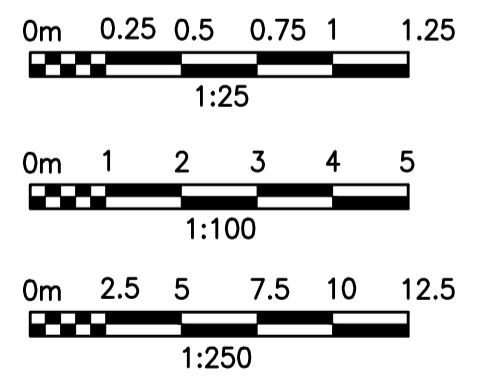
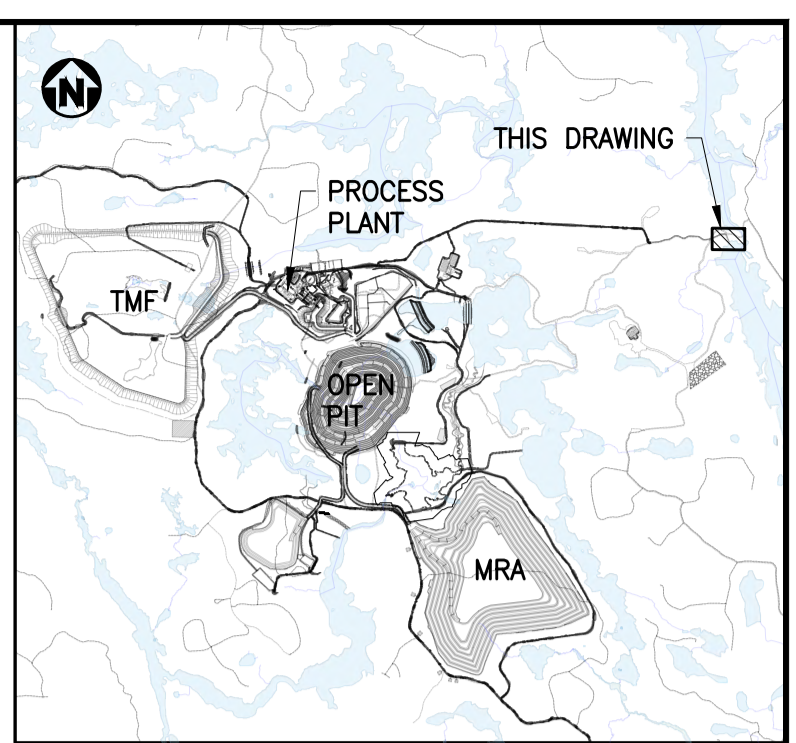


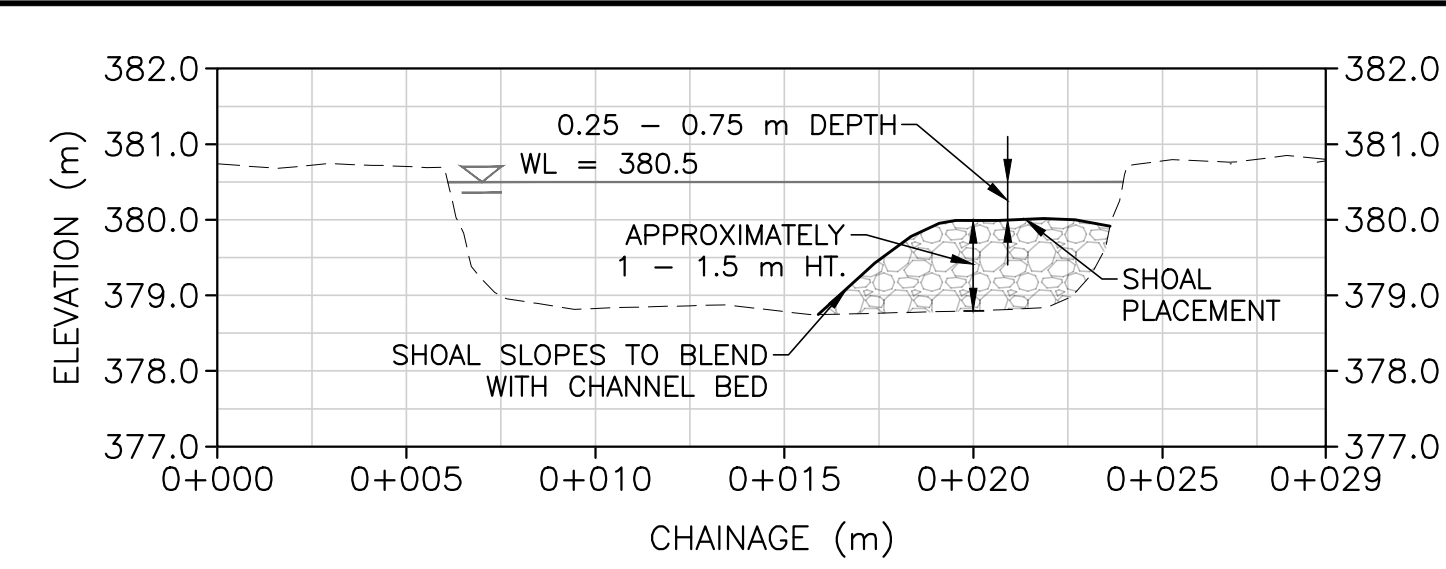
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EROSION AND SEDIMENT CONTROL NOTES:

GENERAL:

- EROSION AND SEDIMENT CONTROL (ESC) MEASURES TO BE IMPLEMENTED PRIOR TO AND MAINTAINED DURING CONSTRUCTION, TO PREVENT SEDIMENT FROM ENTERING THE WATERBODY. ALL DAMAGED EROSION AND SEDIMENT CONTROL MEASURES SHOULD BE REPAIRED AND/OR REPLACED WITHIN 48 HOURS OF THE INSPECTION.
- THE EXTENT OF DISTURBED AREA IS BE MINIMIZED WHERE POSSIBLE. EXISTING GROUND AND WOODY VEGETATION COVER SHALL BE RETAINED AND PROTECTED WHEREVER FEASIBLE.
- IN-WATER WORKS WILL INCLUDE ONLY THE PLACEMENT OF STONE. THE REWORKING OF STONE ONCE PLACED IN THE WATER IS TO BE MINIMIZED.
- STOCKPILED MATERIAL SHOULD BE ISOLATED FROM THE WATERBODIES. TO PROTECT NATURAL AREAS NO LARGE QUANTITIES OF STONE MATERIAL ARE TO BE STOCKPILED ADJACENT TO THE WATERCOURSE. ALL STONE SHALL BE PLACED UPON DELIVERY TO THE PROJECT LOCATION.
- EROSION AND SEDIMENT CONTROLS TO REMAIN IN PLACE UNTIL THE WORK AREA HAS BEEN STABILIZED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
- IN ADDITION TO THE DETAILS LISTED ON THIS PLAN, THE CONTRACTOR RECOGNIZES THE IMPORTANCE OF WATER AND SEDIMENT HANDLING. THE CONTRACTOR AGREES TO FOLLOW BEST MANAGEMENT PRACTICES AND ADHERE TO APPLICABLE ENVIRONMENTAL LEGISLATION GOVERNING WORK-AROUND-WATER AND PREVENTION OF EROSION AND SEDIMENT DISCHARGE.
- THE EROSION AND SEDIMENT CONTROL STRATEGIES OUTLINED ON THE PLANS ARE NOT STATIC AND MAY NEED TO BE UPGRADED/AMENDED AS SITE CONDITIONS CHANGE TO MINIMIZE SEDIMENT LADEN RUNOFF FROM LEAVING THE WORK AREAS.

SPILLS CONTROL NOTES:

- ALL MAINTENANCE ACTIVITY PROCEDURES TO BE CONTROLLED TO PREVENT THE ENTRY OF PETROLEUM PRODUCTS, DEBRIS, RUBBLE, CONCRETE OR OTHER DELETERIOUS SUBSTANCES INTO THE WATER. VEHICULAR REFUELING AND MAINTENANCE TO BE CONDUCTED A MINIMUM OF 30 M FROM THE WATER.
- THE CONTRACTOR MUST IMPLEMENT ALL NECESSARY MEASURES IN ORDER TO PREVENT LEAKS, DISCHARGES OR SPILLS OF POLLUTANTS, DELETERIOUS MATERIALS, OR OTHER SUCH MATERIALS OR SUBSTANCES WHICH WOULD OR COULD CAUSE AN ADVERSE IMPACT TO THE NATURAL ENVIRONMENT. A SPILL KIT SHALL BE KEPT ON SITE.
- IN THE EVENT OF A LEAK, DISCHARGE OR SPILL OF A POLLUTANT TO THE ENVIRONMENT, THE CONTRACTOR SHALL:
 - IMMEDIATELY REPORT SPILL TO THE OWNER AND THE APPROPRIATE GOVERNMENT AUTHORITY IN ACCORDANCE WITH ALL LAWS, LEGISLATION, ACTS, BY-LAWS, PERMITS, APPROVALS, ETC.
 - TAKE IMMEDIATE MEASURES TO CONTAIN THE MATERIAL OR SUBSTANCE TO MITIGATE AGAINST ANY ADVERSE IMPACTS TO THE NATURAL ENVIRONMENT.
 - THE CONTRACTOR SHALL RESTORE THE AFFECTED AREA TO ORIGINAL CONDITION OR BETTER, TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AND APPLICABLE AUTHORITIES.

CONTINGENCY FOR STORM EVENT:

- IN THE EVENT OF AN UNANTICIPATED LARGE STORM EVENT, THE CONTRACTOR SHALL STABILIZE ALL EXPOSED SOILS AND VISUALLY CONFIRM THAT ALL EROSION AND SEDIMENT CONTROL MEASURES ARE FULLY FUNCTIONING. THE CONTRACTOR SHALL REMOVE ALL MACHINERY AND HAZARDOUS MATERIAL FROM STREAM SIDE AREAS.

SHOAL ROUNDSTONE GRADATION

- 50% 4-8" Ø ROUNDSTONE
- 50% 8-12" Ø ROUNDSTONE

SEQUENCING NOTES:

- THREE OPTIONS FOR CONSTRUCTION HAVE BEEN IDENTIFIED WITH EACH TO BE ASSESSED BY THE CONTRACTOR TO DETERMINE THE FEASIBILITY. THE SELECTED APPROACH SHALL BE CONFIRMED WITH THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCING THE WORK.

OPTION 1 - LAND ACCESS

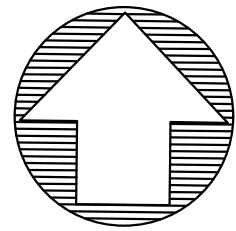
- CONSTRUCT THE ACCESS ROAD IN A MANNER THAT MINIMIZES IMPACTS TO THE WOODLOT AND OTHER VEGETATION. ROOT PROTECTION, SUCH AS MUD MATS, ARE TO BE INSTALLED TO REDUCE DAMAGE TO ADJACENT TREES. SMALLER, MANEUVERABLE MACHINERY SHOULD BE USED FOR THIS WORK AND THE ACCESS ROAD SHOULD BE BUILT NO WIDER THAN REQUIRED TO ACCOMMODATE THIS MACHINERY.
- INSTALL ESC MEASURES.
- PLACE SHOAL STONE IN THE LOCATIONS AND DEPTHS SHOWN ON THE PLAN. STONE SHALL BE PLACED AS IT IS DELIVERED TO SITE. SHOALS ARE TO BE LOOSE PILES OF ROUNDED ROCK, AS PER THE SHOAL ROUNDSTONE GRADATION SPECIFICATION AND PLACED TO THE SPECIFIED DEPTH UNDER THE WATER.
- SHOAL PLACEMENT SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO THE REMOVAL OF ANY ESC MEASURES OR DEMOBILIZATION FROM THE PROJECT SITE.
- REMOVE ALL ESC MEASURES
- DECOMMISSION ACCESS ROAD AND RESTORE DISTURBED AREAS USING NATIVE SEED AND EROSION CONTROL BLANKETS AT THE DIRECTION OF THE OWNER'S REPRESENTATIVE.

OPTION 2 - WATER ACCESS

- FOR THIS ALTERNATIVE, THE ESC MEASURES ALONG THE SHORELINE AND THE ACCESS ROAD ARE NOT REQUIRED.
- THE WORK AREA IS TO BE ACCESSED USING A BARGE EITHER FROM MIDDLE THREE DUCK LAKE OR LOWER THREE DUCK LAKE.
- THE SHOALS SHALL BE PLACED STARTING FURTHEST FROM THE SIDE OF ACCESS TO AVOID IMPEDING BARGE ACCESS.
- AS STONE IS PLACED, MEASUREMENTS SHALL BE TAKEN TO VERIFY THAT WATER DEPTH OVER THE SHOALS MEETS THE SPECIFIED TARGETS. THE FINAL SHOAL PLACEMENT SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE.

OPTION 2 - ICE ACCESS

- FOR THIS ALTERNATIVE, THE ESC MEASURES ALONG THE SHORELINE AND THE ACCESS ROAD ARE NOT REQUIRED.
- THE WORK AREA IS TO BE ACCESSED DURING THE WINTER OVER THE ICE. AN ACCESS POINT TO THE ICE SURFACE IS TO BE DETERMINED BASED ON LIMITING THE IMPACT TO TREES AND OTHER VEGETATION, WHILE ENSURING SAFETY DURING ACCESS TO THE PROJECT LOCATION.
- WATER DEPTH MEASUREMENTS SHALL BE TAKE THROUGH THE ICE TO CONFIRM STONE DEPTH REQUIRED FOR SHOAL PLACEMENT
- THE SHOALS SHALL BE PLACED ON THE ICE IN AN ARRANGEMENT THAT WILL ENCOURAGE THE MATERIAL TO SETTLE INTO APPROPRIATE LOCATIONS. PLACEMENT OF MATERIAL ON THE ICE SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE.



APPROXIMATE LIMIT OF GRADING DEPENDENT ON BORROW SOURCE EXCAVATION AND GENERAL SITE CONDITIONS, WITH FINAL SLOPE CONFIGURATION SUBJECT TO APPROVAL BY THE OWNER'S REPRESENTATIVE

MIDDLE THREE DUCK LAKE
WATER LEVEL = 380.7

MAINTAIN EXISTING SHORELINE VEGETATION
BUFFER BEYOND GRADING LIMITS

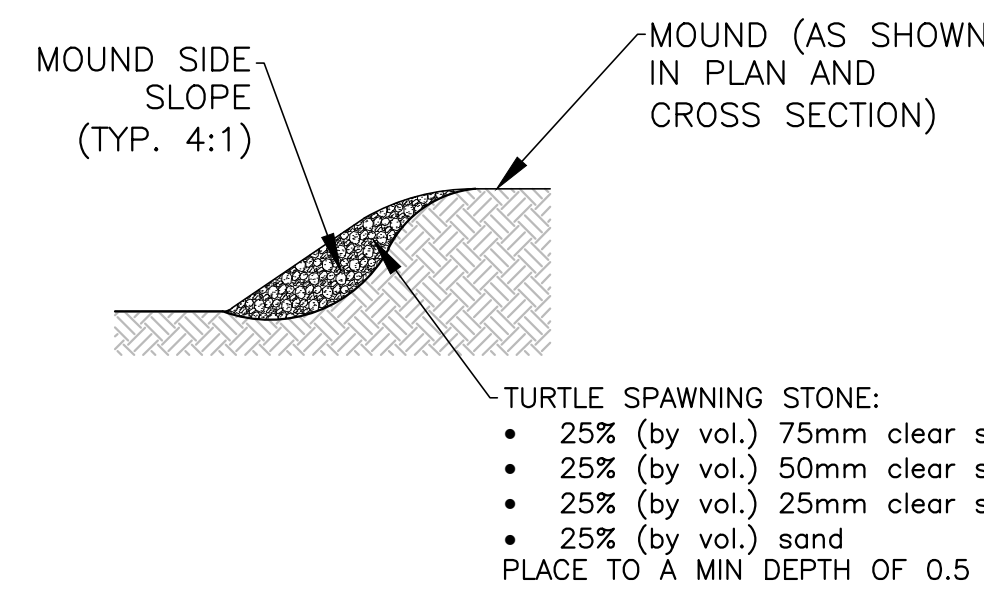
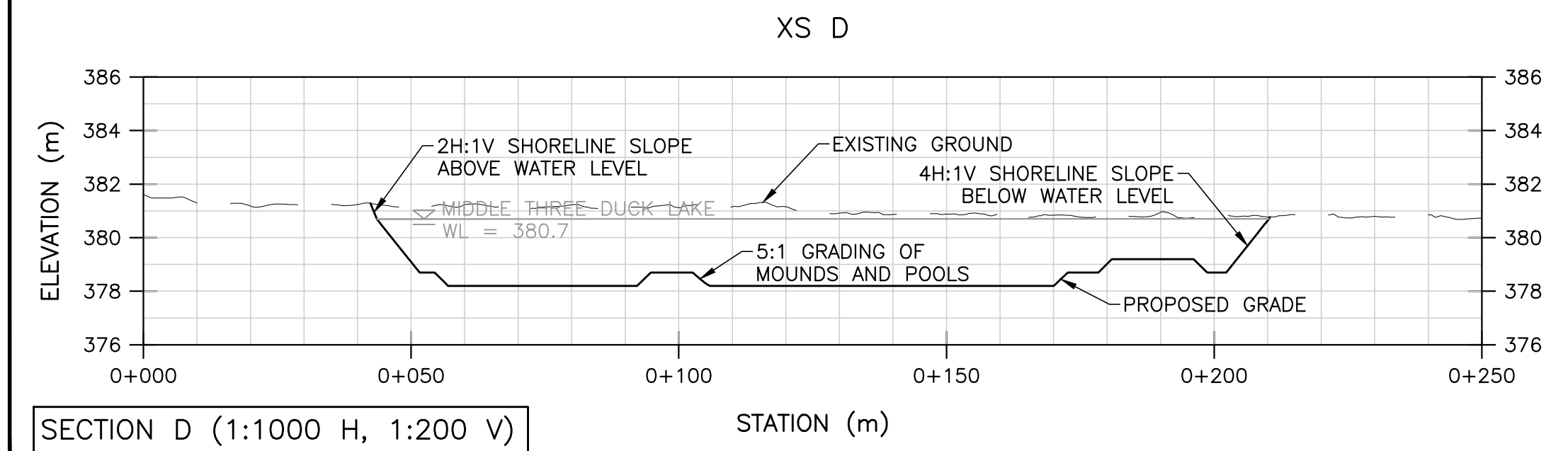
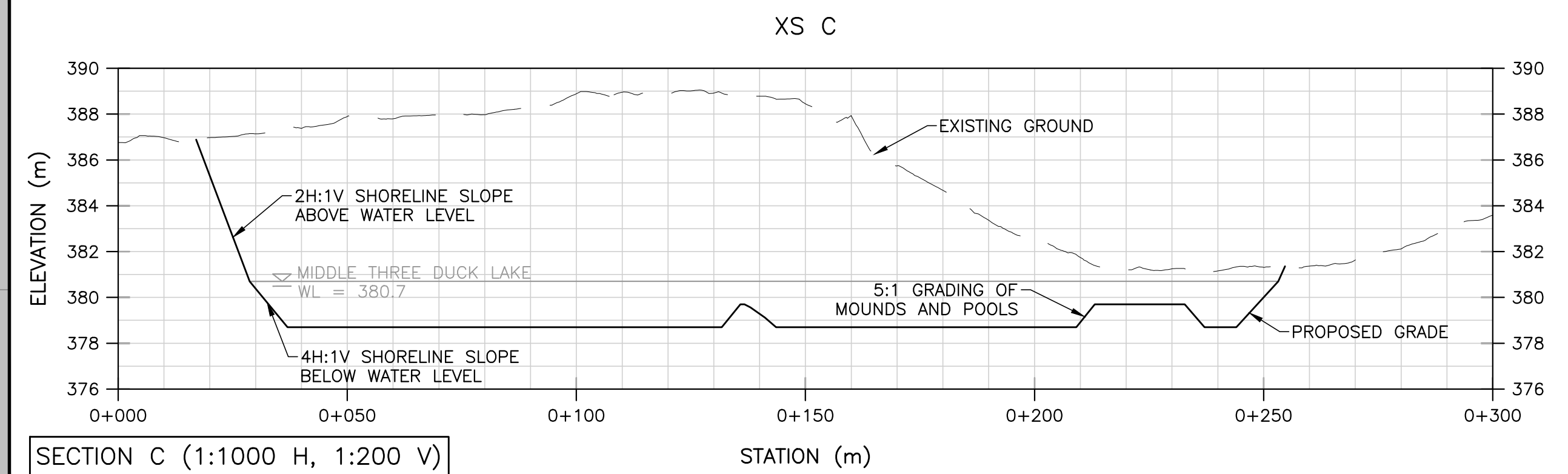
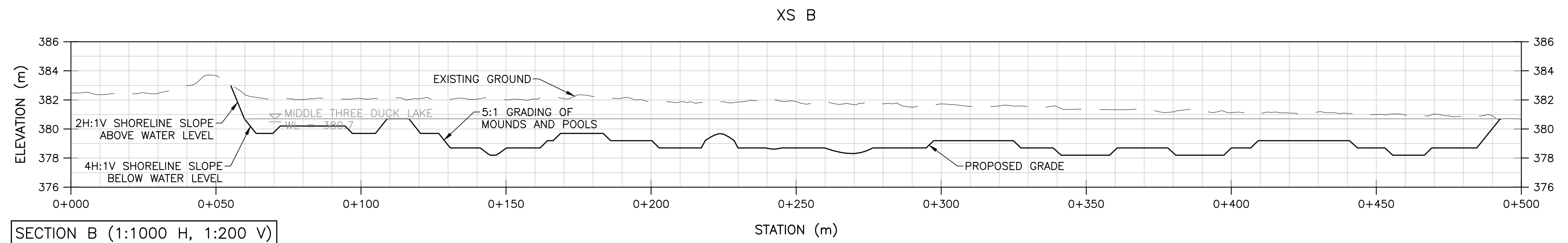
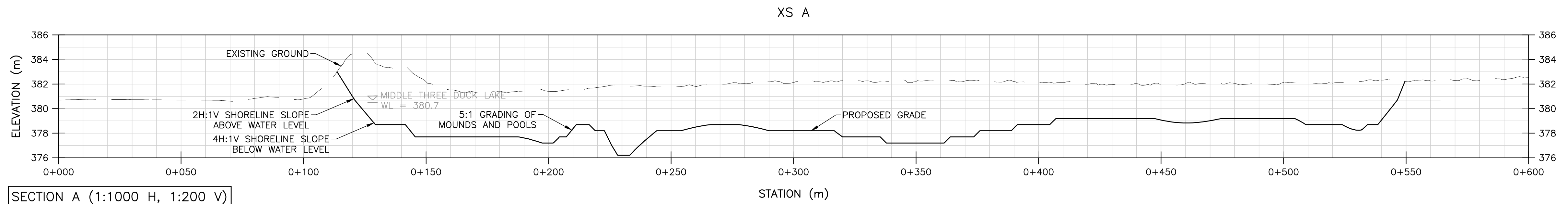
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OF GRADING

LIMITS OF GRADING

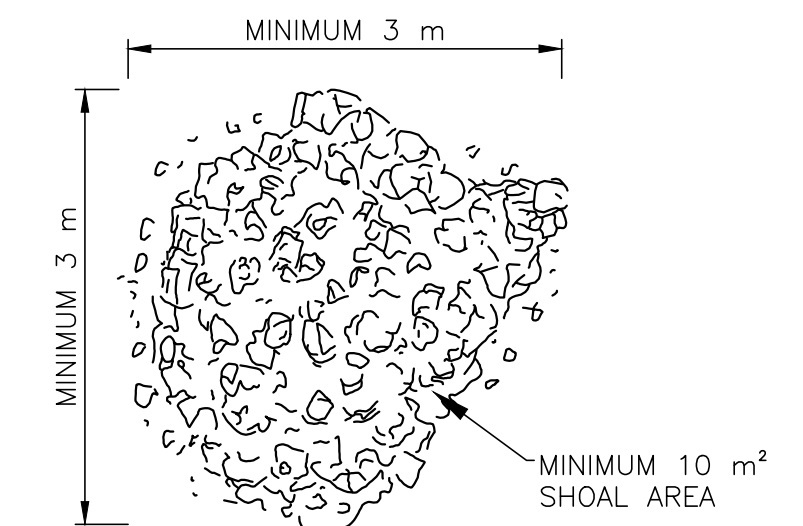
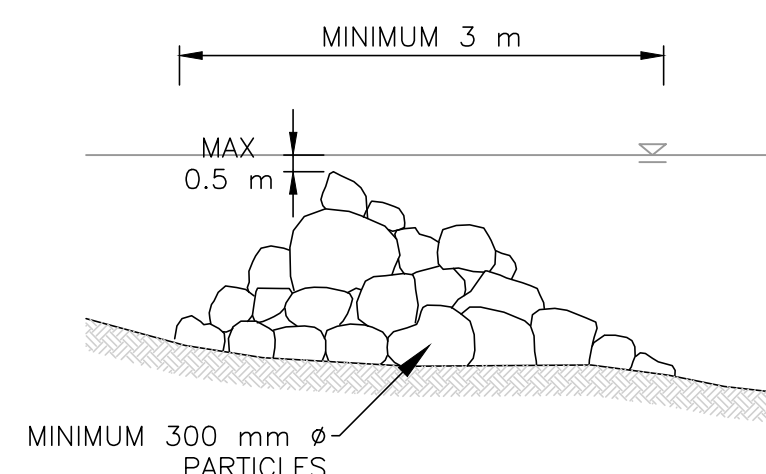
VEGETATED MOUND

WRC2 BYPASS CHANNEL
(TO BE DECOMMISSIONED)

PLAN (1:2000)



TYPICAL DETAIL: TURTLE SPAWNING FEATURE



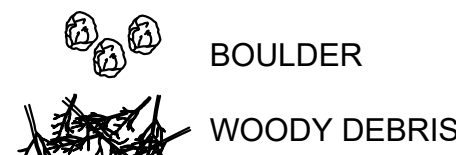
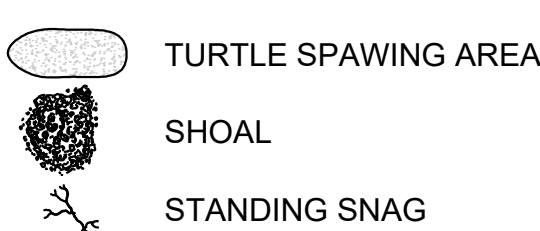
TYPICAL DETAIL: SHOAL



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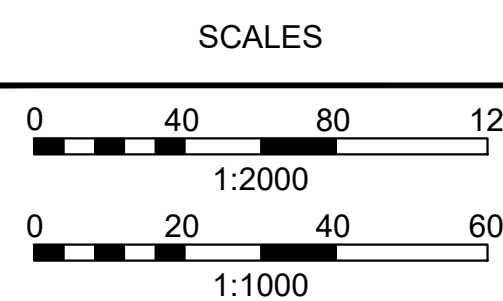
LEGEND



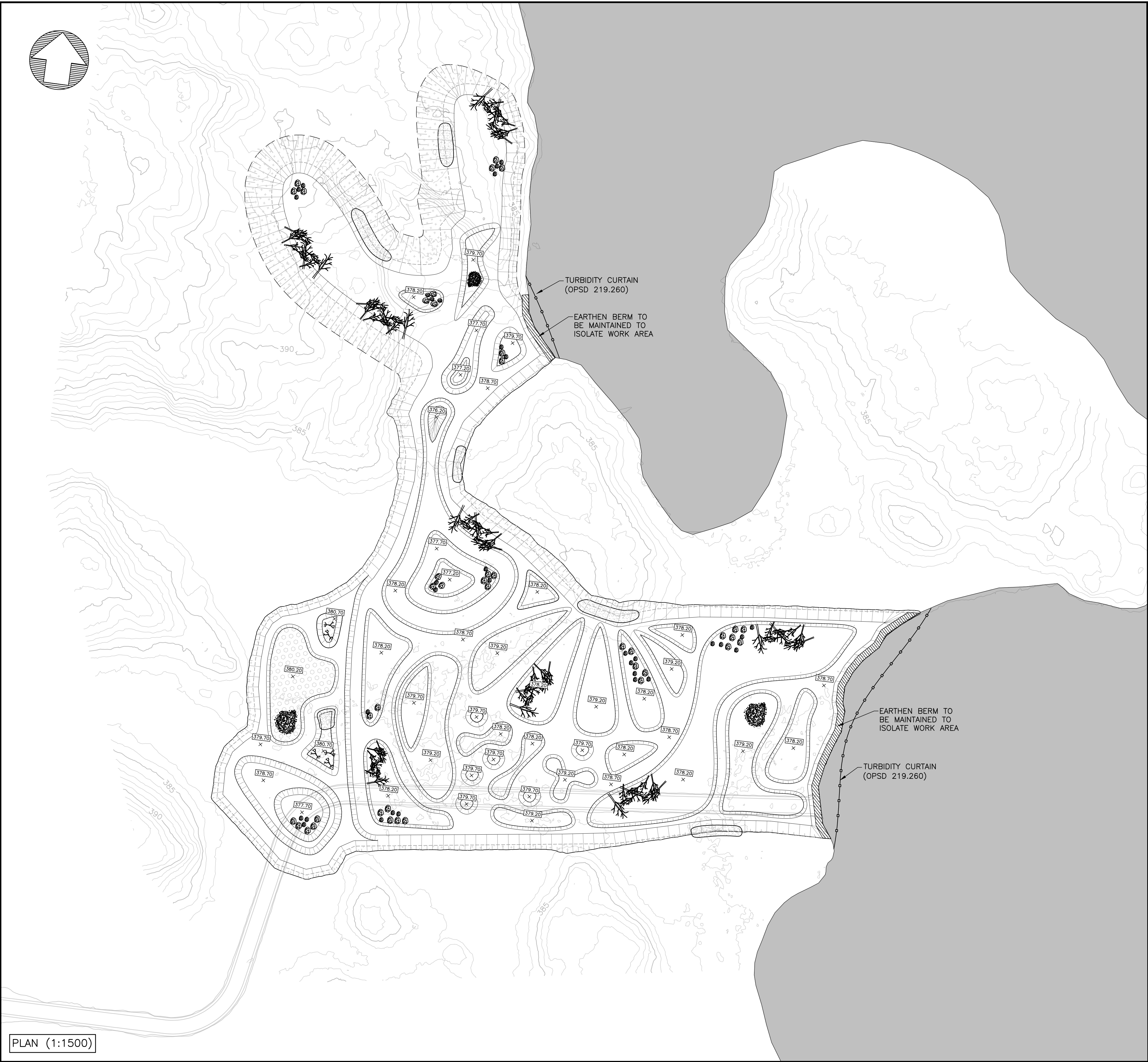
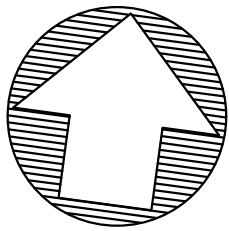
NOT FOR CONSTRUCTION

SURFACE DATA:
LIDAR FROM IAMGOLD
RECEIVED FEB 2, 2018

HORIZONTAL DATUM:
NAD83 (CSRS)
VERTICAL DATUM:
CGVD28:78



No.	REVISIONS	DATE	INITIAL	IAMGOLD COTE MINE - HABITAT COMPENSATION AGGREGATE PIT #3 - PIT GRADING		
B	Issued for Review	2020-02-14	JPH	Wood Dwg. No.: 100264-846-DW00-PLN-2060	Client Dwg. No.: 846-C-2060	
C	Issued for Review	2020-05-21	JPH	Scale: AS SHOWN	Drawn By: CWM / MVI	Drawing No. HC-12
D	Issued for Review (Revised)	2022-01-27	JPH	Date Issued: MAR 25, 2022	Checked By: BDP	
E	Issued for Review (Revised)	2022-03-25	JPH			



EROSION AND SEDIMENT CONTROL NOTES:

- ALL EROSION AND SEDIMENT CONTROL (ESC) AND WATER MANAGEMENT SHOULD FOLLOW WOOD'S WATER MANAGEMENT PLAN (WMP). THE DETAILS PROVIDED IN THIS PLAN ARE INTENDED TO SUPPLEMENT THE WMP, AND ANY DETAILS WITHIN THE WMP TAKES PRECEDENCE.
- ESC MEASURES TO BE IMPLEMENTED PRIOR TO, AND MAINTAINED DURING CONSTRUCTION, TO PREVENT SEDIMENT FROM ENTERING THE WATERBODY. ALL DAMAGED EROSION AND SEDIMENT CONTROL MEASURES SHOULD BE REPAIRED AND/OR REPLACED WITHIN 48 HOURS OF THE INSPECTION.
- ALL CONSTRUCTION ACTIVITIES SHALL MINIMIZE AREAS OF EXPOSED BARE SOIL AT ANY ONE TIME. THE EXTENT OF DISTURBED AREAS IS TO BE MINIMIZED WHERE POSSIBLE, EXISTING GROUND COVER SHALL BE RETAINED WHEREVER FEASIBLE, FOR AS LONG AS POSSIBLE.
- STOCKPILED MATERIAL SHOULD BE ISOLATED FROM THE WATERCOURSE AND LAKE, CONTAINED TO STAGING/STOCKPILE LOCATIONS SURROUNDED WITH SEDIMENT CONTROLS. ALL TOPSOIL STOCKPILE MATERIALS SHALL BE LOCATED A MINIMUM OF 5 m AWAY FROM THE TOP OF BANK. THE MAXIMUM SIDE-SLOPES SHALL BE 2:1.
- EROSION AND SEDIMENT CONTROLS TO REMAIN IN PLACE UNTIL THE WORKING AREA HAS BEEN STABILIZED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
- IN ADDITION TO THE DETAILS LISTED ON THIS PLAN, THE CONTRACTOR RECOGNIZES THE IMPORTANCE OF WATER AND SEDIMENT HANDLING. THE CONTRACTOR AGREES TO FOLLOW BEST MANAGEMENT PRACTICES AND ADHERE TO APPLICABLE ENVIRONMENTAL LEGISLATION GOVERNING WORK-AROUND-WATER AND PREVENTION OF EROSION AND SEDIMENT DISCHARGE.
- THE EROSION AND SEDIMENT CONTROL STRATEGIES OUTLINES ON THE PLANS ARE NOT STATIC AND MAY NEED TO BE UPGRADED/AMENDED AS SITE CONDITIONS CHANGE TO MINIMIZE SEDIMENT LADEN RUNOFF FROM LEAVING THE WORK AREAS.

DE-WATERING:

- DEWATERING IS NOT ANTICIPATED, AS THE PIT IS EXPECTED TO BE DRY DURING CONSTRUCTION. PROVISIONS FOR DEWATERING ARE TO BE AVAILABLE ONSITE AT ALL TIMES SHOULD CONDITIONS CHANGE.
- SEDIMENT LADEN WATER SHALL NOT DISCHARGE DIRECTLY TO ANY WATERBODY. DEWATERING SHOULD BE UNDERTAKEN UTILIZING A FILTER BAG OR SEDIMENT TRAP IN THE FLOODPLAIN.
- IN THE EVENT OF RAINFALL OR SEEPAGE ENTERING THE WORK SITE, ADDITIONAL DEWATERING (BEYOND THAT RECOMMENDED IN THE PLANS) MAY BE REQUIRED.

GENERAL PLANTING NOTES:

- PLANTING IS TO FOLLOW THE FINAL CONSTRUCTION PHASE, ONCE HEAVY MACHINERY HAS BEEN REMOVED FROM THE PLANTING ZONE.
- THERE ARE TWO PLANTING ZONES WITH THEIR OWN RESPECTIVE SPECIES PRESCRIPTION; ZONES 1 AND 2.
- IN ADDITION TO THE SHRUB PLANTINGS IN ZONE 2 (SHORELINE PLANTINGS), THIS AREA IS TO ALSO BE SEEDED USING NATIVE SEED. THE PROPOSED NATIVE SEED MIX FOR THE SHORELINE AREAS IS ONTARIO SEED COMPANY'S (OSC) SHORELINE NATIVE SEED MIXTURE 8250 WITH AN OAT SEED OR RYEGRASS COVER CROP. ALTERNATIVES TO THESE SEED MIXTURES ARE ACCEPTABLE SUBJECT TO APPROVAL BY THE OWNER'S REPRESENTATIVE.
- PLANTINGS ARE TO OCCUR IN ALL PRESCRIBED AREAS, AS WELL AS ALL DISTURBED AREAS THAT CONTAIN A SUITABLE SUBSTRATE AT THE DIRECTION OF THE OWNER'S REPRESENTATIVE.
- THE PLANTING PLAN IS SUBJECT TO CHANGE UNDER THE DIRECTION OF THE CONTRACT ADMINISTRATOR BASED ON WATER LEVEL WITHIN THE RESTORED PIT FEATURE.
- PLANTING IS TO OCCUR BETWEEN MAY 1 AND OCTOBER 15.
- PLANTING DENSITY IS PRESCRIBED AS 1800 STEMS/HA WITH AN AVERAGE SPACING OF 2.5 m BETWEEN AND SHRUBS.
- THE PLACEMENT ON THE DRAWINGS OF HABITAT FEATURES (IE. FALLEN TREES, BOULDERS, STANDING SNAGS, AND SHOALS) IS A GUIDELINE AND REPRESENTS A MINIMUM CONDITION. THE PLACEMENT AND QUANTITY OF THESE FEATURES IS MEANT TO BE AN ORGANIC PROCESS, AND ADDING ADDITIONAL FEATURES TO THE RESTORED PIT FEATURE SPORADICALLY IS SEEN AS A BENEFIT.

SPILLS CONTROL NOTES:

- ALL MAINTENANCE ACTIVITY PROCEDURES TO BE CONTROLLED TO PREVENT THE ENTRY OF PETROLEUM PRODUCTS, DEBRIS, RUBBLE, CONCRETE OR OTHER DELETERIOUS SUBSTANCES INTO THE WATER. VEHICULAR REFUELING AND MAINTENANCE TO BE CONDUCTED A MINIMUM OF 30 m FROM THE WATER.
- THE CONTRACTOR MUST IMPLEMENT ALL NECESSARY MEASURES IN ORDER TO PREVENT LEAKS, DISCHARGES OR SPILLS OF POLLUTANTS, DELETERIOUS MATERIALS, OR OTHER SUCH MATERIALS OR SUBSTANCES WHICH WOULD OR COULD CAUSE AN ADVERSE IMPACT TO THE NATURAL ENVIRONMENT. A SPILL KIT SHALL BE KEPT ON SITE.

CONTINGENCY FOR STORM EVENT:

- IN THE EVENT OF AN UNANTICIPATED LARGE STORM EVENT, THE CONTRACTOR SHALL STABILIZE ALL EXPOSED SOILS AND VISUALLY CONFIRM THAT ALL EROSION AND SEDIMENT CONTROL MEASURES ARE FULLY FUNCTIONING. THE CONTRACTOR SHALL REMOVE ALL MACHINERY AND HAZARDOUS MATERIAL FROM THE LAKE.
- STAGING NOTES:**
- INSTALL TURBIDITY CURTAINS AT THE PROPOSED CONNECTIONS TO MIDDLE THREE DUCK LAKE
 - COMPLETE GRADING AND INSTALL HABITAT FEATURES WHILE MAINTAINING BERMS TO MAINTAIN SEPARATION FROM MIDDLE THREE DUCK LAKE.
 - ONCE THE WORK HAS BEEN COMPLETED AND STABILIZED, REMOVE SMALL SECTION OF BERM TO SLOWLY ALLOW THE FEATURE TO FILL WITH WATER.
 - ONCE THE WATER LEVEL HAS STABILIZED, REMOVE BERMS AND STABILIZE BERM AREA.
 - ONCE ALL WORK IS COMPLETE, REMOVE TURBIDITY CURTAINS AND ALL OTHER ESC MEASURES.

Zone 1: Emergent Vegetation (0.30 ha, 1800 stems/ha)				
Common Name	Latin Name	Percentage	Quantity	Stock
Broad-Leaved Arrowhead	Sagittaria latifolia	25	135	Seedling Plugs
Pickeral Weed	Pontederia cordata	25	135	Seedling Plugs
Softstem Bulrush	Scirpus validus	25	135	Seedling Plugs
Common Cattail	Typha latifolia	25	135	Seedling Plugs
Total		100	540	

Zone 2: Shoreline Plantings (1.58 ha, 1800 stems/ha)				
Common Name	Latin Name	Percentage	Quantity	Stock
Shrubs				
Green Alder	Alnus crispa	20	569	Bare root
Speckled Alder	Alnus rugosa	50	1422	Bare root
Red-Osier Dogwood	Cornus stolonifera	30	853	Bare root
Total		100	2844	

PLAN (1:1500)



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LEGEND

- PLANTING ZONE 1
- PLANTING ZONE 2

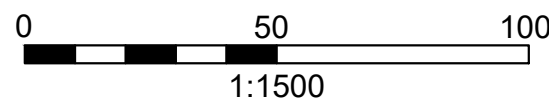
- TURTLE SPAWING AREA
- SHOAL
- STANDING SNAG

- BOULDER PLACEMENT
- WOODY DEBRIS

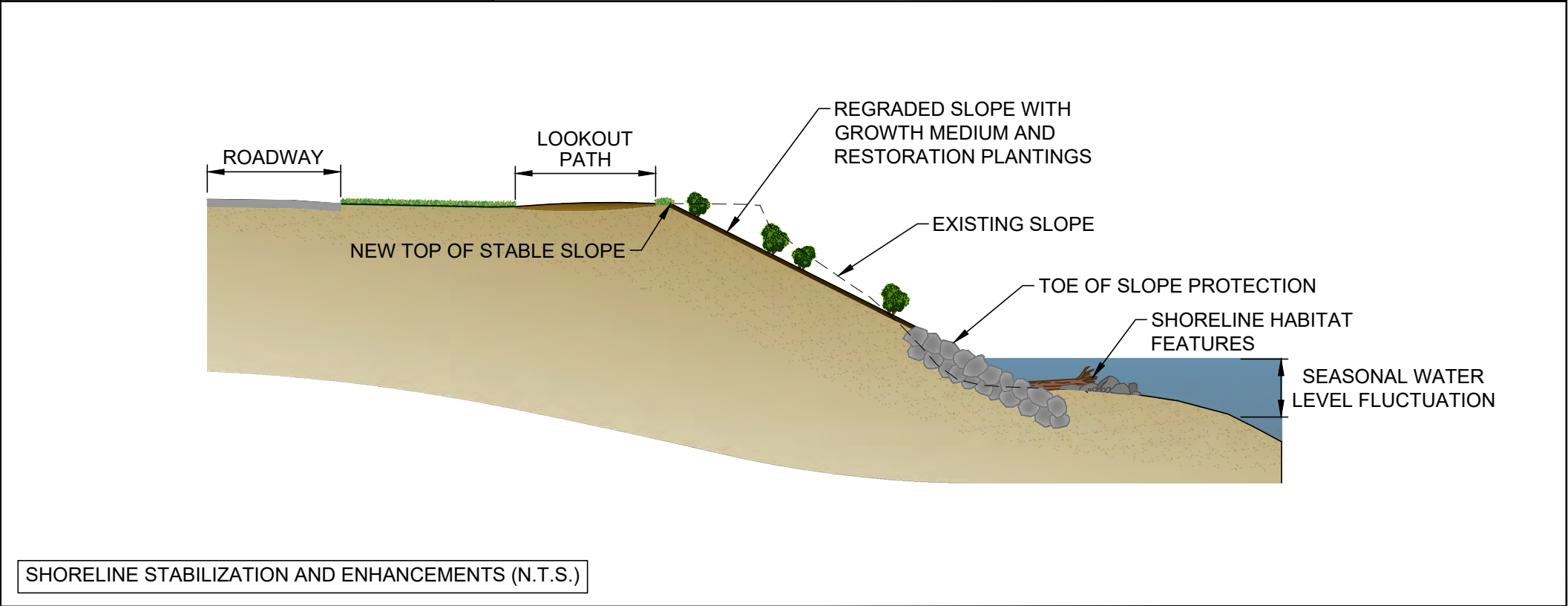
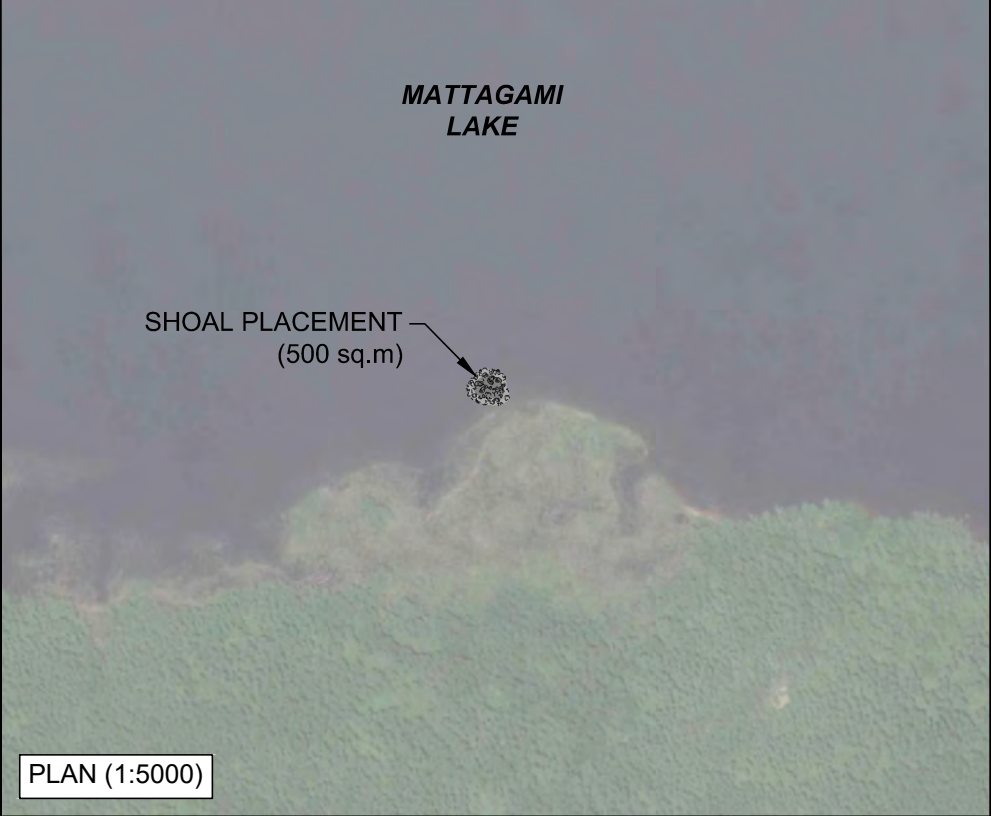
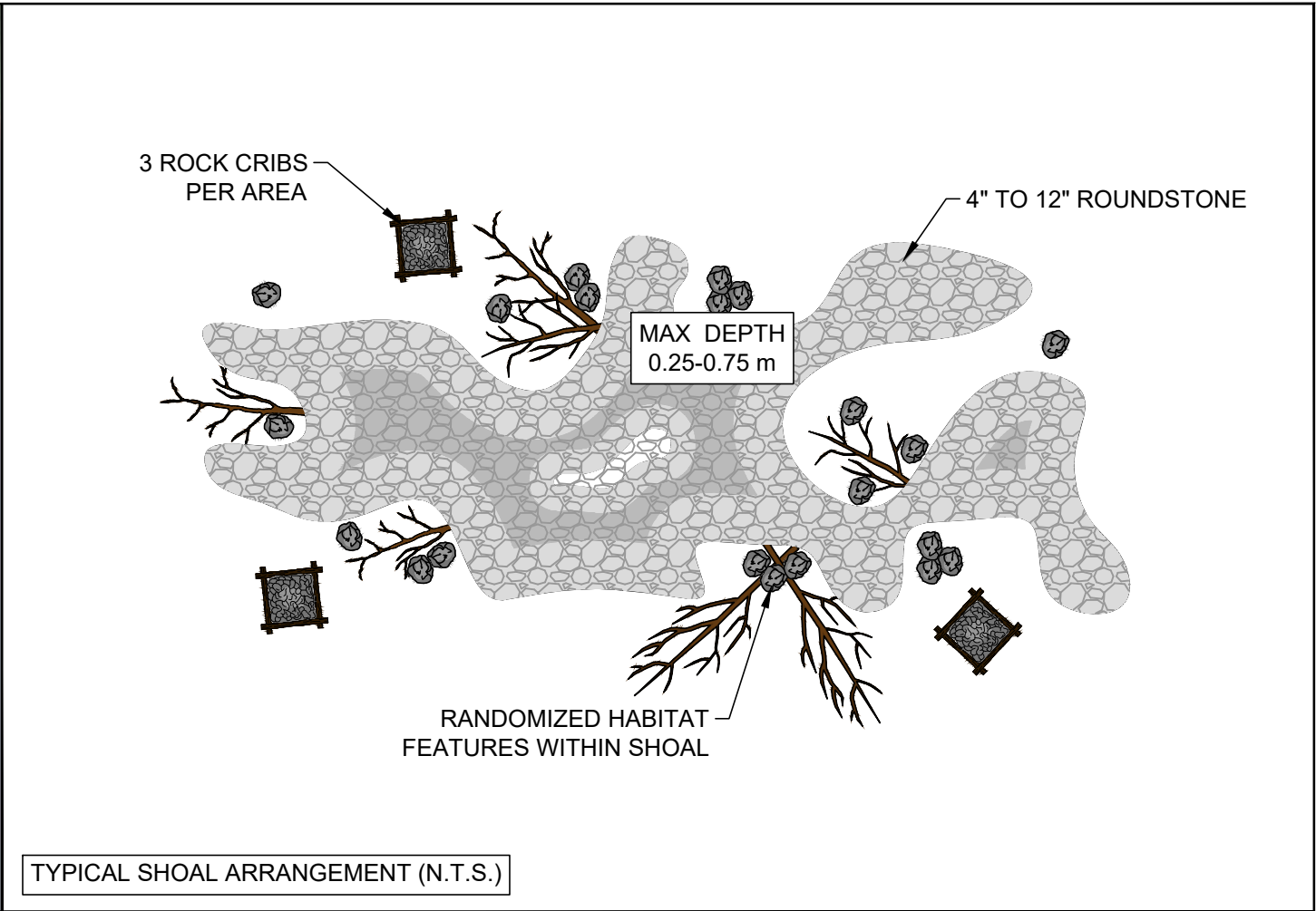
SURFACE DATA:
LIDAR FROM IAMGOLD
RECEIVED FEB 2, 2018

HORIZONTAL DATUM:
NAD83 (CSRS)
VERTICAL DATUM:
CGVD28:78

SCALES



No.	REVISIONS	DATE	INITIAL	IAMGOLD COTE MINE - HABITAT COMPENSATION AGGREGATE PIT #3 - REVEGETATION AND ESC		
B	Issued for Review	2020-02-14	JPH	Wood Dwg. No.: 100264-846-DW00-PLN-2060 Client Dwg. No.: 846-C-2060		
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E	Issued for Review (Revised)	2022-03-25	JPH	Date Issued: MAR 25, 2022	Checked By: BDP	



APPENDIX D
MESOMIKENDA HABITAT
DOCUMENTATION



Photo D.1: Mesomikenda Lake Shoreline Conditions Surrounding the Water Intake



Photo D.2: Grubbed/Cleared Area from the Mine Road Access Point to Mesomikenda Lake



Photo D.3: Mesomikenda Lake Littoral Substrate Conditions at the Water Intake Location

**Lake / Pond Habitat
(Front)**



2 Lamb Street
Georgetown, Ontario L7G 3M9

**Minnow Aquatic
Environmental Services**

Telephone: (905) 873 - 3371
Facsimile: (905) 873 - 6370

Client Name: IAM GOLD
Date (dd-MMM-yy): 30-Jul-21
Time (24hrs): 1200
Waterbody: Mesomikenda Lake
Lat / Easting: 434069.8
Long / Northing: 5268518.8

Project Number: 217202.003
Project Name: Cote Gold Fish Salvage
Field Crew: Phil Anderson, Sam McEachern
Ref / Exp: _____
Weather: Clear, breezy

GENERAL CHARACTERISTICS (at/near sample station)

Size of Area Assessed (map below): _____

Shoreline (% areal coverage):

% Bedrock	<u>0</u>	% Boulder	<u>20</u>	% Cobble	<u>70</u>
% Gravel	<u>0</u>	% Sand & finer	<u>5</u>	Organic debris	<u>5</u>

Littoral Substrate (% areal coverage):

% Bedrock	<u>0</u>	% Boulder	<u>10</u>	% Cobble	<u>70</u>
% Gravel	<u>10</u>	% Sand & finer	<u>5</u>	Organic debris	<u>5</u>

Aquatic Vegetation (dominant species and relative abundance):

Emergent:	% area	<u>0</u>	species	<u>N/A</u>
Submergent:	% area	<u>5</u>	species	<u>Grasses, Bladder Wort</u>
Floating:	% area	<u>0</u>	species	<u>N/A</u>
Attached Algae:	% area	<u>0</u>	species	<u>N/A</u>

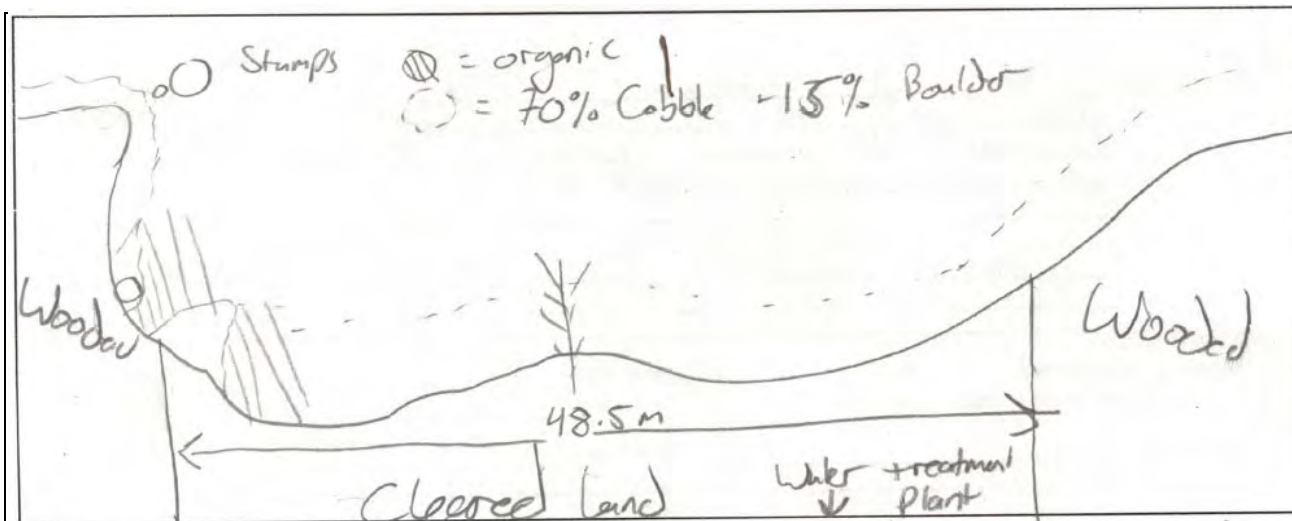
Riparian Vegetation Types (list in approximate order of descending dominance): Cedar, Sweet Gale, Spruce

Surrounding Land Use: Cleared/Grubbed land, Water treatment plant and Cote Gold Mine

Evidence of anthropogenic disturbances or any factors that may affect physical or chemical quality (specify)?

Directly downslope from water treatment plant

DIAGRAM (ensure station locations shown here or on accompanying map)



Additional Notes:

2-3 m of shallow (<0.75 m) shelf then drops off to deeper water. Clean cobbles and minimal organic material or vegetation along shore

PHOTOGRAPHS (List photo number and description)

Completed By: Phil Anderson

APPENDIX E
ENGAGEMENT AND
CONSULTATION DOCUMENTS

Request to Amend the *Fisheries Act* Authorization for the Côte Gold Project

Summary of Consultation

March 10, 2022



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Appendices

Appendix 1: Letters of support for the amendment

Appendix 2: Records of engagement related to this application

- Indigenous
- Gogama
- Government

Appendix 3: Plain language summary and presentation materials

Appendix 4: Copies of correspondence

Appendix 5: Meeting notes

Executive Summary

This report provides a summary of consultation and engagement IAMGOLD undertook in support of the request to amend the Habitat Compensation Plan under the *Fisheries Act* Authorization (FAA) for the Côté Gold Project. Consultation and information sharing activities occurred over the fall and winter of 2021 and focused on sharing information and gathering feedback from Indigenous communities (Mattagami First Nation, Flying Post First Nation, Brunswick House First Nation and Métis Nation of Ontario, Region 3) and Gogama. Regulatory agency consultation and engagement is also described within this report.

Indigenous rights are guaranteed under Section 35(1) of the *Constitution Act*, 1982. The duty to consult is triggered where action on the part of the Crown has the potential to impact established or asserted Indigenous rights recognized by Section 35, including treaty rights. In support of the Federal Crown's duty to consult, IAMGOLD undertook engagement and consultation activities with the intent to inform this application and identify any concerns or issues and address questions raised by Indigenous groups. IAMGOLD engaged the four Indigenous communities identified in the Federal Environmental Assessment (EA) Decision in which four indigenous communities were screened in based on potential impact of Project activities on Aboriginal rights.

The degree of consultation and engagement activities undertaken as described herein was informed by the credible assertions of rights, understanding that the Project is located in Treaty 9 territory, on the traditional lands of Mattagami First Nation and Flying Post First Nation and is within the traditional harvesting territory of the Métis Nation of Ontario, as represented by the Region 3 Consultation Committee. Accommodations for Project impacts and benefits sharing arrangements are in place with Mattagami First Nation, Flying Post First Nation and Métis Nation of Ontario, Region 3 through established IBAs. Consultation undertaken with these communities and Brunswick House First Nation were done so at the direction of the communities and in consideration of their preferences for information sharing and engagement.

Engagement activities with Indigenous groups did not yield any substantive comments, questions or concerns and thus, no additional mitigation or enhancement measures beyond those proposed in the amendment request. There are no concerns or questions raised related to the FAA that are unresolved. Letters of support were provided by Mattagami First Nation, Flying Post First Nation and Métis Nation of Ontario, Region 3 following consultation on the proposed amendment. Brunswick House First Nation provided a letter of support in 2019 for the approved Fisheries Offsetting Plan under the FAA and has not provided a letter in support of this amendment. IAMGOLD continues to remain open, as we have always been, to engaging with the community leadership on its priorities, including with respect to an updated assertion of its traditional territory if the community leadership wishes to make one.

Residents of Gogama, a small community located approximately 20 kilometres northeast of the Project, were engaged through a community open house held in-person. No concerns were raised about the

proposed ameliorations of the approved Fisheries Offsetting Plan identified in this application to amend the Project's approved FAA.

IAMGOLD engaged Fisheries and Oceans Canada (DFO) and the Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry throughout the planning and preparation of this amendment request. Discussions focused on gathering input on the elements proposed in the amendment request, including the Mattagami Lake Fisheries Plan. Representatives of DFO participated in each of the sessions held with the Indigenous communities identified previously and Gogama. Participation in these sessions allowed DFO to hear first-hand the questions, comments or concerns raised by event participants and address any questions participants may have had related to DFO's role in the process.

IAMGOLD's approach to consultation and engagement is best described as consistent and principled to with respect to potentially impacted Indigenous communities, other stakeholders and communities of interest. As such, IAMGOLD is open to the inclusion of a post-approval consultation mechanism in an approval of this amendment to provide assurance to DFO that IAMGOLD would continue to engage with any Indigenous community that DFO identifies as having Aboriginal or treaty rights potentially impacted by the proposed changes to the Fisheries Offsetting Plan under the FAA.

Introduction

This report provides a summary of consultation and engagement IAMGOLD undertook in support of the request to amend the *Fisheries Act* Authorization (FAA) and Fisheries Offsetting Plan for the Côté Gold Project. Consultation and information sharing activities occurred over the fall and winter of 2021 and focused on sharing information and gathering feedback from Indigenous communities (Mattagami First Nation, Flying Post First Nation, Brunswick House First Nation and Métis Nation of Ontario (MNO), Region 3) and Gogama. Regulatory agency consultation and engagement is also described within this report.

IAMGOLD's Approach to Consultation

IAMGOLD's approach to consultation focuses on building and preserving relationships with affected communities and interested stakeholders. Consultation with Indigenous groups (First Nations and Métis) and stakeholders began in the spring of 2012, informed the Federal and Provincial environmental assessments (EAs), and has continued since Federal and Provincial EA approval. An Indigenous Consultation Plan guides how IAMGOLD engages with Indigenous communities throughout all phases of the Project. It was developed with input from communities and is available at: www.iamgold.com/cotegold-community-engagement.

Indigenous Groups, Communities and Other Stakeholders

Stakeholders, Indigenous groups and government agencies who were anticipated to have an interest in the Project were identified during early Project consultation efforts. The list has evolved over time. Table 1 provides an overview of how each of these groups is categorized.

Table 1: Stakeholders, Indigenous Groups and Government Agencies

Type	Description
Indigenous Groups	<ul style="list-style-type: none"> Indigenous communities Indigenous leadership Tribal Councils
Stakeholders	<ul style="list-style-type: none"> Local businesses / business organizations Community organizations Non-governmental organizations Environmental non-governmental organizations Local educational / service institutes

Type	Description
Government Agencies	<ul style="list-style-type: none"> • Municipal governments and representatives • Provincial (Ontario) governments and representatives • Federal government and representatives

The Federal and Provincial conditions of EA approval for the Côté Gold Project each included a list of Indigenous communities to be considered, where relevant to the regulatory process, for the purpose of fulfilling specific conditions. Note, the Provincial list includes all Indigenous communities and/or groups that IAMGOLD communicated with during the EA. IAMGOLD engages the identified communities through information sharing (e.g., newsletters, notices, invitations to open houses, various permit applications), with greater emphasis placed on engagement with affected communities, namely, Mattagami First Nation, Flying Post First Nation and Métis Nation of Ontario, Region 3.

Table 2: Federal and Provincial Identification of Indigenous Communities for Consultation

Federal	Provincial
<ul style="list-style-type: none"> • Mattagami First Nation • Flying Post First Nation • Brunswick House First Nation • Métis represented by the Métis Nation of Ontario Region 3 Consultation Committee 	<ul style="list-style-type: none"> • Aundeck Omni Kaning First Nation • Beaverhouse First Nation • Brunswick House First Nation • Chapleau Ojibwe First Nation • Conseil de la Première Nation Abitibiwinini • Flying Post First Nation (represented by Wabun Tribal Council) • Matachewan First Nation • Mattagami First Nation (represented by Wabun Tribal Council) • Missanabie Cree First Nation • M'Chigeeng First Nation • Serpent River First Nation • Taykwa Tagamou Nation

Federal	Provincial
	<ul style="list-style-type: none"> • Wahgoshig First Nation¹ • Métis Nation of Ontario – Region 3 (which represents Northern Lights and Temiskaming Métis Councils)

Information Sharing with Indigenous Communities

In 2019 IAMGOLD established a series of SharePoint sites to facilitate sharing information with federally and provincially identified Indigenous communities. These sites are community-specific and facilitate information sharing in alignment with Federal and Provincial requirements related to permit applications, permit approvals, environmental management plans and follow-up programs. When new information is posted to a community site, IAMGOLD sends a notification email to each community using the community contacts identified by each community.

Impact Benefit Agreements

IAMGOLD signed Impact Benefit Agreements (IBAs) with Mattagami First Nation and Flying Post First Nation in April 2019 and the Métis Nation of Ontario (Region 3) in June 2021. These agreements contain provisions for ongoing consultation and engagement inclusive of a variety of Project activities such as permitting. These provisions were respected in carrying out consultation with these communities related to this amendment.

Consultation Specific to this Application

Consultation and information sharing activities related to this application focussed on sharing information and gathering feedback from:

- Indigenous communities: Mattagami First Nation, Flying Post First Nation, Brunswick House First Nation and Métis Nation of Ontario (MNO), Region 3

¹ Wahgoshig First Nation requested to be removed from the Project mailing list in November 2020. The Province accepted this request and accordingly, IAMGOLD no longer provides information about the Project to the community.

- Gogama
- Government: Fisheries and Oceans Canada (DFO) and the Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry.

A summary of consultation and engagement for each of these groups is presented below.

For consultation sessions held with Indigenous communities and the residents of Gogama, a plain language summary of the proposed amendment was shared with participants in each session and provided electronically to the communities so that they could distribute it more broadly within their communities (see Appendix 3).

During each consultation session, IAMGOLD presented an update on the Project including key Project milestones, construction workforce highlights, operations workforce planning, COVID-19 testing protocols, and communication and consultation. Following the Project update presentation, Minnow Environmental presented an update on the FAA and proposed amendment. The presentation contained an update on the status of implementation of approved offsetting measures and overview of the approved offsetting areas. It was explained that since construction began, improvements to Project design resulted in changes that will require an amendment to the Fisheries Offsetting Plan approved under the existing FAA. Three proposed alternate offsetting measures were presented and time was allotted for questions and input from all participants.

Detailed records of consultation are located in appendices as follows:

- Appendix 1: Letters of support for the amendment
- Appendix 2: Records of engagement related to this application
 - 2a Indigenous
 - 2b Gogama
 - 2c Government
- Appendix 3: Plain language summary and presentation materials
- Appendix 4: Copies of correspondence
- Appendix 5: Meeting notes

Note: this report includes consultation related specifically to this application. A complete record of engagement for each community can be provided upon request.

For information about consultation conducted on the approved Côté Gold Project Fisheries Offsetting Plan please visit: https://s2.q4cdn.com/610165863/files/doc_downloads/2020/07/18-15-Côté-Offsetting-Plan-May-7-2020.pdf.

Indigenous Consultation

Indigenous community consultation during the development of this request to amend the FAA focused on the four Indigenous communities identified by the Federal Government in the EA Conditions of Approval. It was informed by the consultation undertaken during the Environmental Assessment, Environmental Effects Review and preparation of the initial FAA.

Flying Post First Nation and Mattagami First Nation

Planning for consultation sessions with Mattagami First Nation and Flying Post First Nation began early in 2021 as part of the bi-weekly Environmental Management Committee meetings. The Environmental Management Committee, comprised of representatives from Flying Post First Nation, Mattagami First Nation and IAMGOLD, meet regularly (bi-weekly) to review the status of permit approvals, share Project and community updates and discuss any environmental matters as required. This Committee was established in 2018, prior to IBA signing. It is the primary forum for discussing environment-related updates, questions, concerns or comments.

Discussions about the need to request an amendment to the Fisheries Offsetting Plan for the FAA has been discussed with community representatives since early 2021 and has remained a standing item on the bi-weekly meetings since. Both Flying Post and Mattagami requested in-person consultation sessions on the proposed amendment in conjunction with a general Project update. A summary of consultation activities specific to each community and this application is presented below.

The Chiefs of Mattagami First Nation and Flying Post First Nation provided letters of support for this application (see Appendix 1).

Mattagami First Nation

A site visit to Mattagami Lake was conducted on March 22, 2021 to view the shoreline erosion under spring conditions. A representative from GeoProcess accompanied Côté Gold's Manager of Environment and Community Relations to meet with the community's Chief and Lands and Resources Coordinator.

An in-person community open house was held on Wednesday, October 6, 2021 at the Mattagami First Nation Community Hall. Information about the event was communicated to the community's Lands and Resources Coordinator who shared the invitation with the community. A meal was served at 5:30, followed by a Project update presentation and an overview of the proposed amendment. Eight members of Mattagami First Nation attended the session and representatives (4) from DFO participated virtually in the session. Draft meeting notes and a copy of the presentations were provided to the Chief as well as members of the Environmental Management Committee on October 18, 2021. No changes to the notes were proposed and the final version are included in Appendix 5.

Comments and questions received from Mattagami First Nation related to this application are included in Table 3 as well as IAMGOLD's responses.

Table 3: Mattagami First Nation Comments Related to this Application

Comment / Questions	IAMGOLD Response
<ul style="list-style-type: none"> When you create a new lake, do you have to keep testing it? 	<ul style="list-style-type: none"> The lake will be monitored to ensure it is performing as it is supposed to and meeting the commitments of the offsetting plan. Aquatic plants and benthic invertebrates are transplanted to provide cover and food for fish. Fish, benthic invertebrates and water will be monitored. The monitoring will occur for approximately 10 years.
<ul style="list-style-type: none"> Will you be hiring from the community for the fish work? 	<ul style="list-style-type: none"> Yes, Minnow hired two local people, one from Mattagami and one from Gogama, to work on the fish salvage work done already and plans to reach out to the community again to hire for the work to come. Next year's work will include planting the shoreline and planting aquatic plants in the new lake.
<ul style="list-style-type: none"> When do you plan on hiring for the next round of working with the fish habitat? 	<ul style="list-style-type: none"> We will be looking to hire again in spring 2022.
<ul style="list-style-type: none"> Will there be work opportunities for people who are just interested in doing the planting in and around the new lake? 	<ul style="list-style-type: none"> Yes. The planting work will begin as early as possible in spring 2022 once the freshet stops.
<ul style="list-style-type: none"> Where will the fish for the new lake come from? 	<ul style="list-style-type: none"> The fish that will be used to repopulate the new lake will be relocated from the arm of Upper Three Duck Lake that will be fished-out in 2022.

Flying Post First Nation

IAMGOLD presented information about the Project and the proposed FAA amendment to the Chief, Council and Lands and Resources Coordinator for Flying Post First Nation during an in-person session on November 16, 2021. Representatives (3) from DFO participated virtually in the session. Draft meeting

notes were provided to the Chief and the community's Lands and Resources Coordinator / member of the Environmental Management Committee on December 10, 2021. No changes to the notes were proposed and the final version are included in Appendix 5.

Comments and questions received from Mattagami First Nation related to this application are included in Table 3 as well as IAMGOLD's responses.

Table 4: Flying Post First Nation Comments Related to this Application

Comment / Questions	IAMGOLD Response
<ul style="list-style-type: none"> Will you be working with Mattagami First Nation Fish Hatchery? 	<ul style="list-style-type: none"> Yes, the Mattagami Lake Fisheries Plan will be developed with input from the community.
<ul style="list-style-type: none"> How successful are constructed spawning areas? 	<ul style="list-style-type: none"> They can be very successful. Minnow previously completed a project in Kapuskasing where a new lake was created and all the fish were relocated from the lake being lost due to an open pit. The community composition of the lake and the population size remained the same post construction and all monitoring since has shown that the new lake is thriving. For example, there are juvenile fish and lots of macrophytes which have taken over.
<ul style="list-style-type: none"> Concern that moving fish from their natural habitat may result in mortality. 	<ul style="list-style-type: none"> Great care is given to preserve the life of fish to minimize impacts to mortality. Relocation of fish is prioritized on the shortest distance to similar habitat and available habitat. Fish will be moved after the lake is created once plants and some insects are anticipated to be present. To date minimal mortality has been observed during relocation (<3%).

Métis Nation of Ontario (MNO), Region 3

The IBA with the Métis Nation of Ontario contains provisions for consultation-related matters to be addressed through the IBA Implementation Committee. The newly formed Implementation Committee met for the first time on November 9, 2021 at the Côté Gold site. Representatives (2) of the MNO

Region 3 Consultation Committee and MNO staff (2) joined virtually for a Project update and discussions related to the FAA amendment. Representatives (2) from DFO participated virtually in the session.

The Regional Councillor and Chair for Region 3 of the Métis Nation of Ontario provided a letter of support for this application, dated December 10, 2021 (see Appendix 1).

Table 5: MNO Comments Related to this Application

Comment / Question	IAMGOLD Response
<ul style="list-style-type: none"> How large of an area is aggregate pit #3? 	<ul style="list-style-type: none"> Approximate 700 cubic metres of material will be excavated. GeoProcess will work through the details with respect to the areas in which it is effective to remove overburden.

Brunswick House First Nation

During the consultation period for the initial FAA, information was shared with Brunswick House First Nation and the Chief provided a letter of support (dated October 28, 2019) for the application on behalf of the community. In October 2021, IAMGOLD contacted Brunswick House to inform the community's leadership that an amendment to the FAA was being prepared and inquired about the community's interest in meeting to discuss the proposed amendment. An online meeting was held on October 28, 2021, during which IAMGOLD provided a Project update and shared information about the FAA amendment. The draft meeting notes were shared with Brunswick House First Nation on December 10, 2021. A list of comments and/or questions received from Brunswick House participants in the October 28 session are noted in table 6, including the Project's response.

Table 6: Brunswick House First Nation Comments Related to this Application

Comment / Question	IAMGOLD Response
<ul style="list-style-type: none"> Does the fisheries plan monitor the health of the fish? 	<ul style="list-style-type: none"> Typically you have to monitor the habitat after these types of modifications and there may be components to monitor fish health. If we develop an adaptive plan this can be included to ensure the overall health of the new habitat which can include monitoring the health of the fish.

Comment / Question	IAMGOLD Response
<ul style="list-style-type: none"> Will the lakes remain navigable within the Project site? 	<ul style="list-style-type: none"> We have committed to maintaining navigability on the site; even culvert designs are made to consider canoeists. The 4M canoe route has been accommodated. We request users contact IAMGOLD prior to any canoe trips to ensure safety.

IAMGOLD received correspondence from the community's Lands and Resources Coordinator in December noting that they were not consulted on the amendment and wish to have a community consultation information session and requested the contact information for DFO. This individual also noted information that is contrary to previous information, stating that the Project impacts their Aboriginal and Treaty Rights. IAMGOLD subsequently provided the contact information (email addresses) of the four DFO participants from the October 28 information session and extended an offer to present information about the FAA to the community in-person or virtually should it be the wish of Chief and Council. As of the date of this submission, Brunswick House has not confirmed their interest in a follow-up consultation session.

Public Consultation – Gogama

IAMGOLD hosted a community Open House on November 8, 2021 at the Côté Gold training centre in Gogama from 6:30 – 8:30 pm. The purpose of this session was to provide a general Project update and to consult with the community on the amendment to the FAA. There were 8 community members in attendance. Representatives (4) from DFO participated virtually in the session.

A list of comments and/or questions received from Gogama participants during the November 8 Open House are noted in table 7, including the Project's response.

Table 7: Gogama Comments Related to this Application

Comment / Question	Response
<ul style="list-style-type: none"> There was access to these lakes and areas on the mine property before, but during the mine operations people can't access these places. It will be a long time before people can access these places, including New Lake. Also, are you creating 	<ul style="list-style-type: none"> The 4M canoe route is still open but there is no overnight camping within the Project boundaries. There are overnight camping sites just north of the Project at Bagsverd and further along the

Comment / Question	Response
<p>alternative camping sites along the 4M canoe route since there are two within the property boundary that have been removed?</p>	<p>route. IAMGOLD is committed to allowing safe passage for anyone using the route.</p>
<ul style="list-style-type: none"> What does Mattagami Lake have to do with the mine? 	<ul style="list-style-type: none"> With regards to habitat improvements / fish improvements, we offset the general loss of habitat in the area. IAMGOLD has provided support to the fish hatchery in Mattagami and the Mattagami Lake Fisheries Plan may improve understanding of how the fish hatchery efforts are impacting the fishery in the lake. Fisheries and Oceans Canada also noted that although Mattagami Lake is not within the site footprint, it is near the site. It is DFO's preference that habitat is offset within the immediate vicinity; however, in areas like this one sometimes it is challenging to create all offsets within the immediate footprint and therefore options can be explored further from site. It should be noted that the offsetting habitat is largely being compensated in the immediate vicinity of the site and that the Mattagami Lake Fisheries Plan is a small component of the overall Offsetting Plan.
<ul style="list-style-type: none"> Is IAMGOLD working with Hydro One regarding shoreline erosion? Gogama is also losing its beach the same way that Mattagami is. 	<ul style="list-style-type: none"> It is IAMGOLD's understanding that Mattagami First Nation is working with Hydro One to understand baseline shoreline erosion.
<ul style="list-style-type: none"> Is there a way to include Minisinakwa Lake and Mesomikenda Lake as part of the plan? 	<ul style="list-style-type: none"> Improvements and/or monitoring in Mattagami Lake should have net positive impacts on other lakes within the same watershed (i.e., lakes around Gogama).

Government Agency Consultation

The habitats affected by the Côté Gold Project (Project) are described in a Fisheries Offsetting Plan prepared for the Project (Minnow 2020). The commencement of construction and updating of on-site conditions has resulted in optimizations to the Project that are not reflected in the current FAA (20-HCAA-00766) and necessitates an amendment. Fisheries and Oceans Canada (DFO) were notified of these changes in a conference call on November 23, 2020. The FAA amendment is underway and will incorporate a Fisheries Plan for Mattagami Lake as a complementary measure. The objective of this memo is to provide a summary of the discussions between DFO, Ontario Ministry of Northern Development, Mines, Natural Resources, and Forestry (NDMNRF), and Minnow regarding the complementary measure.

Minnow reached out to DFO in May to initiate a discussion on the inclusion of a complementary measure (the Mattagami Lake Fisheries Plan) as part of the amended Fisheries Offsetting Plan. A meeting was held on May 26, 2021, where Minnow presented the rationale for the plan, its relevance as an offsetting approach, and how the plan would complement and align with provincial fisheries management planning. As fisheries management plans fall under the jurisdiction of the province, DFO contacted NDMNRF following the May meeting to determine whether the province would support the Fisheries Plan as a component of the Fisheries Offsetting Plan.

DFO followed up after consulting with the province with information provided to support the development of a Fisheries Plan for Mattagami Lake on August 3, 2021. Following the receipt of the information from the province, DFO requested a joint meeting with NDMNRF and IAMGOLD's consultants to go over the elements of the proposed Fisheries Plan for Mattagami Lake. On November 17, 2021, Minnow presented a draft Table of Contents (TOC) to DFO and NDMNRF and provided an overview of the plan, potential objectives, and content, and how it will be implemented. Representatives from DFO's Fisheries Protection Program (FPP) and NDMNRF's Regional Operations Division and Science and Research Branch attended the meeting.

DFO and NDMNRF were satisfied with the approach to develop the Fisheries Plan as well as the proposed content.

Table 8: Summary of Government Agency Comments Related to Application

Comment	Response
<ul style="list-style-type: none"> The proposed plan for Mattagami Lake should not include "management" or "enhancement" in the title. 	<ul style="list-style-type: none"> Following the community open house in Mattagami First Nation, the proposed plan was renamed. The Mattagami Lake Fisheries Plan (MLFP).

Comment	Response
<ul style="list-style-type: none"> NDMNRF Region Aquatic Ecosystem Science Specialist is willing to participate in future discussion with DFO, IAMGOLD's consultants, and District staff on the plan. 	<ul style="list-style-type: none"> The conceptual MLFP indicates that goals, objectives and actions will be identified in consultation with Mattagami Lake First Nation, DFO, and the province.
<ul style="list-style-type: none"> Planning for Fisheries Management Zone (FMZ) 8 has not occurred and is not scheduled for at least three years. However, a Mattagami Lake Fisheries Plan would likely complement a future FMZ 8 Plan (rather than conflict it or be a duplication of efforts); the FMZ 8 plan would recognize the Fisheries Enhancement Plan for Mattagami Lake, should it exist. At the onset of FMZ planning, there is an effort to amass all existing background information. 	<ul style="list-style-type: none"> The Project will consider the overarching principles of provincial fisheries zone planning into the structure of the MLFP to ensure it is as compatible as possible with future FMZ documents.
<ul style="list-style-type: none"> Through the Browscale Monitoring Program, Mattagami Lake was surveyed in 2017. It is also possible that Mattagami Lake will be selected through the random lake selection process to be surveyed again in the cycle 4 (2024-2028). This will not be confirmed until next year at the earliest. FWIN is a provincial standard monitoring program and may suit the needs of the MLFP better than BsM. 	<ul style="list-style-type: none"> The Project will consider the principles and practices of FWIN into the monitoring component of the MLFP.
<ul style="list-style-type: none"> A FWIN study was completed for Mattagami Lake in 2013. 	<ul style="list-style-type: none"> These results will be included and analyzed as part of the background characterization of Mattagami.
<ul style="list-style-type: none"> NDMNRF did FWIN studies on nearby Minisnakwa Lake in 2015 and 2019 (monitoring after a train derailment); these studies may have some relevance to Mattagami Lake. 	<ul style="list-style-type: none"> These results may be included and analyzed as part of the background characterization of Mattagami.

Comment	Response
<ul style="list-style-type: none"> Research and work to create juvenile walleye habitat could contribute to the success of the hatchery and stocking program on Mattagami Lake. 	<ul style="list-style-type: none"> Two in-water rearing habitat structures are proposed to be placed near the hatchery and site of juvenile release as part of the Fisheries Offsetting Plan amendment. The success of these structures will be monitored as part of FAA compliance monitoring and during monitoring associated with the MLFP.
<ul style="list-style-type: none"> Align the plan goals and objectives with direction from the Provincial Fish Strategy – Fish for the Future (OMNRF 2015). 	<ul style="list-style-type: none"> The proposed fisheries plan will consider the principles and practices of FWIN into the monitoring component of the MLFP.
<ul style="list-style-type: none"> Monitor baseline habitat conditions in Mattagami Lake. 	<ul style="list-style-type: none"> A baseline habitat survey will be considered to help characterize habitat available in Mattagami Lake. A focus will be placed on identifying walleye spawning habitat.
<ul style="list-style-type: none"> Evaluate the potential for habitat creation/enhancement to support walleye spawning. 	<ul style="list-style-type: none"> Based on initial habitat characterization, the MLFP will identify opportunities to improve fisheries productivity and habitat enhancements.
<ul style="list-style-type: none"> Work with the Mattagami First Nation to review and optimize their walleye hatchery practices and develop community-based monitoring methods. 	<ul style="list-style-type: none"> A major objective of the MLFP will be to provide options to evaluate the current hatchery practices to improve and enhance walleye returns.
<ul style="list-style-type: none"> Undertake a fish monitoring program using standardized provincial methods (i.e., Fall Walleye Index Netting, FWIN) incorporating Mattagami First Nation community members. 	<ul style="list-style-type: none"> Work with Mattagami Lake First Nation to explore options for developing capacity to lead the fisheries monitoring programs will be completed.

Ongoing and Future Consultation

IAMGOLD will continue to respond to any questions or concerns raised by Indigenous groups or other stakeholders, including government agencies, regarding the Project, its plans and programs. The Indigenous Consultation Plan outlines IAMGOLD's approach to engaging Indigenous communities

related to permit applications and programs related to specific Federal and Provincial conditions of Project approval.

The Impact Benefit Agreements (IBA) in place with Mattagami First Nation and Flying Post First Nation (signed April 30, 2019) as well as the Métis Nation of Ontario, Region 3 (signed May 31, 2021) contain provisions related to ongoing consultation on various aspects of the Project, including permit applications.

IAMGOLD recognizes that Brunswick House First Nation may wish to have additional dialogue about this or other Project applications. To date, offers to hold an additional community information session have not been responded to by the community. It is IAMGOLD's understanding that Brunswick House First Nation is re-evaluating their territory and IAMGOLD remains open to continuing conversations with BHFN about the re-evaluation of their traditional territory recognizing that the community is engaging with the Provincial government to update the mapping.

Appendices

- Appendix 1: Letters of support for the amendment
- Appendix 2: Records of engagement related to this application
 - Indigenous
 - Gogama
 - Government
- Appendix 3: Plain language summary and presentation materials
- Appendix 4: Copies of correspondence
- Appendix 5: Meeting notes

Appendix 1: Letters of support for the amendment



MATTAGAMI FIRST NATION

75 Helen Street
P.O. Box 99
Gogama, Ontario
P0M 1W0



December 10, 2021

Fisheries and Oceans Canada
1028 Parsons Rd. SW
Edmonton, AB
T6X 0J4

Subject: Proposed Amendment to the *Fisheries Act* Authorization

Mattagami First Nation would like to inform Fisheries and Oceans Canada that we have engaged and consulted with IAMGOLD in a respectful and meaningful dialogue about their upcoming application for an amendment to the *Fisheries Act* Authorization (FAA). On October 6, 2021 IAMGOLD held an open house in our community to present on the amendment to the FAA which outlined the modifications to the Project design which occurred as the Project is optimized for construction and requires an amendment to the Offsetting Plan.

We understand the changes to Côté Gold site which triggered the amendment and the offsetting options presented to us, including walleye spawning habitat in the Mollie River, the modification of an aggregate pit off Middle Three Duck Lake and the development of Mattagami Lake Fisheries Plan to support the walleye population in Mattagami Lake.

The Impact Benefit Agreement between IAMGOLD and Mattagami First Nation outlines commitments related to consultation and community engagement on Project activities as well as the coordination of discussion on topics of mutual concern through the Environmental Management Committee. All questions and concerns the Committee had were addressed by IAMGOLD.

The First Nation acknowledges IAMGOLD's efforts in addressing concerns that have arisen and have confidence that the communication and consultation processes outlined in the Impact Benefit Agreement will ensure continued engagement with the Côté Gold Project. IAMGOLD has meaningfully consulted with Mattagami First Nation on the impacts of the Project on our Traditional Lands.

If you have any questions please contact Jennifer Constant, Land and Resources Coordinator at 705-894-2072 or jenniferconstant@mattagami.com.

Respectfully,

Chief Chad Boissoneau
Mattagami First Nation



Flying Post First Nation

Administrative Office
P.O. Box 1027
Nipigon, ON, P0T 2J0
Phone: 807-887-3071
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Main Office
General Delivery
Timmins, ON, P4N 7C

December 10, 2021

Fisheries and Oceans Canada
1028 Parsons Rd. SW
Edmonton, AB
T6X 0J4

Subject: Proposed Amendment to the *Fisheries Act* Authorization

Flying Post First Nation would like to inform Fisheries and Oceans Canada that we have engaged and consulted with IAMGOLD in a respectful and meaningful dialogue about their upcoming application for an amendment to the *Fisheries Act* Authorization (FAA). On November 16, 2021 IAMGOLD met with our Chief and Council. IAMGOLD presented an update to the FAA which outlined the modifications to the Project design which occurred as the Project is optimized for construction and requires an amendment to the Offsetting Plan.

We understand the changes to Côté Gold site which triggered the amendment and the offsetting options presented to us, including walleye spawning habitat in the Mollie River, the modification of an aggregate pit off Middle Three Duck Lake and the development of Mattagami Lake Fisheries Plan to support the walleye population in Mattagami Lake.

The Impact Benefit Agreement between IAMGOLD and Flying Post First Nation outline commitments related to consultation and community engagement on Project activities as well as the coordination of discussion on topics of mutual concern through the Environmental Management Committee. All questions and concerns the Committee had were addressed by IAMGOLD.

The First Nation acknowledges IAMGOLD's efforts in addressing concerns that have arisen and have confidence that the communication and consultation processes outlined in the Impact Benefit Agreement will ensure continued engagement with the Côté Gold Project. IAMGOLD has meaningfully consulted with Flying Post First Nation on the impacts of the Project on our Traditional Lands.

If you have any questions please contact Jeff Berube – IBA Coordinator for Flying Post First Nation at jiberube21@gmail.com or 807-887-3071.

Respectfully,


Chief Murray Ray
Flying Post First Nation



Métis Nation of Ontario
Lands, Resources and Consultations

December 10, 2021

Fisheries and Oceans Canada
1028 Parsons Rd. SW
Edmonton, AB
T6X 0J4

VIA ELECTRONIC MAIL

RE: Support for Proposed Amendment to the *Fisheries Act* Authorization

The Métis Nation of Ontario (MNO) would like to inform Fisheries and Oceans Canada that we have engaged and consulted with IAMGOLD in a respectful and meaningful dialogue about their upcoming application for an amendment to the *Fisheries Act* Authorization (FAA). On November 9, 2021 we met with IAMGOLD to receive a presentation and discuss the amendment to the FAA which outlined the modifications to the Project design which occurred as the Project is optimized for construction and requires an amendment to the Offsetting Plan.

We understand that the changes to the Côté Gold site triggered the amendment. We support the proposed offsetting options presented to us including creation of walleye spawning habitat in the Mollie River, the modification of an aggregate pit off Middle Three Duck Lake and the development of a Mattagami Lake Fisheries Plan to support the walleye population in Mattagami Lake.

Agreements in place between IAMGOLD and the MNO outline commitments related to consultation and community engagement on Project activities as well as the coordination of discussion on topics of mutual concern through an IBA Implementation Committee. All questions and concerns the committee had were addressed by IAMGOLD.

The Métis Nation of Ontario acknowledges IAMGOLD's efforts in addressing concerns that have arisen and have confidence that the communication and consultation processes outlined in the Impact Benefit Agreement will ensure continued engagement with the Côté Gold Project. IAMGOLD has meaningfully consulted with MNO on the impacts of the Project within the Traditional Territory of the MNO Citizens of Region 3.

If you have any questions please contact Jacques Picotte, Métis Nation of Ontario, Regional Councillor and Chair for Region 3 at JacquesP@metisnation.org or Vanessa Potvin, Métis Nation of Ontario, Mineral Development Advisor – Northeast Region at VanessaP@metisnation.org.

Sincerely,

Jacques Picotte
Regional Councillor and Chair, Métis Nation of Ontario, Region 3



BRUNSWICK HOUSE FIRST NATION

**P.O. BOX 1178
HWY, 101 EAST
CHAPLEAU, ON
P0M 1K0**

October 28, 2019

Fisheries and Oceans Canada
1028 Parsons Road SW
Edmonton, AB T6X 0J4

Environment and Climate Change Canada
351 St. Joseph boul, 11th floor
Gatineau, Que K1A 0H3

SUBJECT: Fisheries Act Authorization – Côté Gold Project Offsetting Plan

Brunswick House First Nation would like to inform the Department of Fisheries and Oceans and Environment and Climate Change Canada that we are in support of IAMGOLD's upcoming application for *Fisheries Act* (the "Act") Authorization pursuant to Section 36 of the Act and in accordance with the Metal and Diamond Mining Effluent Regulation.

IAMGOLD has shared the Draft Fisheries Act Authorization Application, the Offsetting Plan and the Assessment of Alternatives on April 16, 2019. We understand that the Project will result in the loss of Côté Lake, Mollie River, portions of Clam Lake and other small bodies of water including West Beaver pond and associated tributaries and will also result in the realignment of Mollie River. We have been informed of the mitigation efforts and Closure Plan requirements for this component of the Project as well.

If you have any questions, please contact Councillor Kevin Tangie at chimokoman@hotmail.com or 705-465-0114 and Bruce Golden – Lands and Resources Coordinator at bhfn.landsandresources@gmail.com or 705-864-0174 ext. 225.

Respectfully,

Chief Cheryl St. Denis
Brunswick House First Nation

Appendix 2: Records of engagement related to this application

- Indigenous
- Gogama
- Government

TITLE: Indigenous Records of Engagement re: Amendment to *Fisheries Act* Authorization

DATE: March 2, 2022

PROJECT: Côté Gold Project

ROC	Event Type	Date	Event Summary	Participants	Team
3,306	EMC Meeting	02/24/2021	IAMGOLD met with representatives from Mattagami First Nation and Flying Post First Nation for a bi-weekly Environmental Management Committee meeting. Topics discussed included the Phase 3 Forestry Resource Licence, the Environmental Compliance Approval (ECA) for Industrial Sewage Works for Operations Phase, the Notices of Work for Non-Scheduled Waters under Canadian Navigable Waters Act (Major Works application for Plant Site Pond #1 Pipeline to Upper Three Duck Lakes and Diffuser), the Permit to Take Water application for Open Pit Dewatering (Operations Phase), the ECA amendment request for Domestic Sewage (Construction Phase), the Permit to Take Water (PTTW) amendment for Mollie River Realignment Water Takings, expansion of the Neville Landfill, an amendment to the Habitat Offsetting Plan, an amendment to the PTTW for Open Pit Area Fish Salvage and Bypass Pumping, the Transmission Line Alignment (off-property and on-property portion of TL from site to Shining Tree Distribution Station) on-site activities and community updates.	Tim Harvey (Mattagami First Nation), Jeff Berube (Flying Post First Nation), James Ray (Flying Post First Nation)	David Brown (IAMGOLD Corporation), Debbie Dyck (Wood E&IS), Zahir Jina (SLR Consulting (Canada) Ltd.), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
1,284	Phone Call	03/10/2021	<p>IAMGOLD phoned the Métis Nation of Ontario (MNO) on 2021-03-09 and left a voice mail. MNO returned the call on 2021-03-10. IAMGOLD asked if MNO required any support due to COVID-19 and MNO indicated they are doing well and not in need of assistance. IAMGOLD inquired if MNO received job postings for the Project and MNO confirmed these were received and noted that there would be a new Mineral Development Advisor starting and new contact information would be provided. MNO indicated that there was a Council meeting to review the Impact Benefit Agreement (IBA) and the IBA is now with their lawyers for review. MNO also indicated that they will be receiving a presentation from their consultants on permitting support information and MNO would reach out if further discussion is needed. IAMGOLD noted that consultation may be required in order to amend the Fisheries Act Authorization as there are changes to the original plan to rehabilitate the aggregate pit for fish habitat and an additional area will be needed. IAMGOLD inquired if MNO had suggestions for suitable fish habitat in the Project area.</p>	Andy Lefebvre (Métis Nation of Ontario)	David Brown (IAMGOLD Corporation)
2,889	Phone Call	03/19/2021	<p>IAMGOLD and Mattagami First Nation discussed a date for a community visit with GeoProcess as part of the consultation required for the Fisheries Act Authorization to determine new habitat for Fish Habitat Offsetting.</p>	Chief Chad Boissoneau (Mattagami First Nation)	David Brown (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
2,953	Email	03/22/2021	IAMGOLD followed up with Mattagami First Nation (MFN) regarding fish habitat offsetting options for the Mattagami Lake Shoreline. IAMGOLD inquired if there were preferences as to type of habitat, suggestions from MFN on how to support the fish communities in the lake and if there was a preferred species of fish to target.	Tim Harvey (Mattagami First Nation), Andrea Naveau (Mattagami First Nation)	David Brown (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
3,399	Email	03/26/2021	On 2021-03-22 IAMGOLD followed up with Mattagami First Nation (MFN) regarding fish habitat offset options for the Mattagami Lake shoreline and to ask for more details from the community on preference of type of habitat and fish species as well as suggestions on support for the fish communities in the lake. On 2021-03-26 MFN responded that their preference would be habitat to support Walleye such as spawning beds, rock/gravel as the species to target would be Walleye which is the species they promote with their hatchery. IAMGOLD thanked MFN for their response and indicated that updates would be provided through the Environmental Management Committee.	Tim Harvey (Mattagami First Nation), Andrea Naveau (Mattagami First Nation)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
3,388	EMC Meeting	04/07/2021	IAMGOLD met with representatives from Mattagami First Nation and Flying Post First Nation for a bi-weekly Environmental Management Committee meeting. Topics discussed included Environmental Compliance Application (ECA) for Industrial Sewage Works (Operations), a request to amend the ECA for Domestic Sewage (6493-BXGLVZ) a request to amend the Permit to Take Water (PTTW) for the Realignment Channels (0472-BVBMPD), the PTTW application for Overburden Stockpile North and South Dam Construction, the PTTW application for Open Pit Dewatering (Operations Phase), the request to amend the PTTW for Fish Salvage (7160-BVUK63), a potential future application for a Project landfill, an amendment to the Habitat Offsetting Plan under the Fisheries Act, Notice of Material Change (Closure Plan), on-site activity and community updates. Draft meeting notes were provided to all participants on 2021-04-12.	Jennifer Constant (Mattagami First Nation), Jeff Berube (Flying Post First Nation)	Zahir Jina (SLR Consulting (Canada) Ltd.), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
3,470	Email	04/08/2021	Following a meeting the same day, IAMGOLD asked for Mattagami First Nation's input to help address information gaps to support the development of proposed fish habitat offsetting options for Mattagami Lake. IAMGOLD requested the community identify if there are any high boat traffic areas or areas the community they would like the offsetting plan to avoid. IAMGOLD requested the community provide this information by the end of April to assist GeoProcess with their habitat offset planning.	Jennifer Constant (Mattagami First Nation), Andrea Naveau (Mattagami First Nation)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
3,528	EMC Meeting	04/21/2021	IAMGOLD met with representatives from Mattagami First Nation and Flying Post First Nation for a bi-weekly Environmental Management Committee meeting. Topics discussed included received permit approvals, pending applications for approval, upcoming applications (including the amendment to the Fisheries Act Authorization Habitat Offsetting Plan), on-site activity and community updates. Draft meeting notes were provided to all participants on 2021-04-22.	Jennifer Constant (Mattagami First Nation), Jeff Berube (Flying Post First Nation), James Ray (Flying Post First Nation), Andrea Naveau (Mattagami First Nation)	David Brown (IAMGOLD Corporation), Zahir Jina (SLR Consulting (Canada) Ltd.), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
3,844	Email	07/13/2021	IAMGOLD provided the June 2021 Côté Community Newsletter to Brunswick House First Nation. The newsletter contained information on the installation of a land acknowledgement sign at the Project site, the development of haul roads, nest monitoring, fish relocation program, careers, a permitting update and construction progress.	Kevin Tangie (Brunswick House First Nation), Cheryl St. Denis (Brunswick House First Nation), Brunswick House First Nation Reception (Brunswick House First Nation)	Côté Gold Community Affairs (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
3,846	Email	07/13/2021	IAMGOLD provided the June 2021 Côté Community Newsletter to all Indigenous communities on the Project mailing list. The newsletter contained information on the installation of a land acknowledgement sign at the Project site, the development of haul roads, nest monitoring, fish relocation program, careers, a permitting update and construction progress.	Alex "Sonny" Batisse (Matachewan First Nation), Anita Stephens (Chapleau Ojibwe First Nation), Cathy Yandea (Matachewan First Nation), Patsy Corbiere (Aundeck Omni Kaning First Nation), Linda Debassige (M'Chigeeng First Nation), Jason Gauthier (Missanabie Cree First Nation), Kayla Schram (Matachewan First Nation), Shereena Campbell (Missanabie Cree First Nation), Wayne Wabie (Beaverhouse First Nation), Daisy Hayward (M'Chigeeng First Nation), Jaime Hennessey (Beaverhouse First Nation), Cheryl St. Denis (Brunswick House First Nation), Taylor Commanda (Serpent River First Nation), Brent Bissaillon (Serpent River First Nation), Monik Kistabish (Conseil de la Première Nation Abitibiwinini), Peter Nahwegahbow (Aundeck Omni Kaning First Nation)	Côté Gold Community Affairs (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
3,848	Email	07/13/2021	IAMGOLD provided the June 2021 Côté Community Newsletter to the Métis Nation of Ontario. The newsletter contained information on the installation of a land acknowledgement sign at the Project site, the development of haul roads, nest monitoring, fish relocation program, careers, a permitting update and construction progress.	Andy Lefebvre (Métis Nation of Ontario), Marcel Lafrance (Métis Nation of Ontario), Urgel Courville (Northern Lights Métis Council), Jacques Picotte (Métis Nation of Ontario), Angele Ratte (Métis Nation of Ontario), Lorette McKnight (Temiskaming Métis Council)	Côté Gold Community Affairs (IAMGOLD Corporation)
3,849	Email	07/13/2021	IAMGOLD provided the June 2021 Côté Community Newsletter to Mattagami First Nation and Flying Post First Nation. The newsletter contained information on the installation of a land acknowledgement sign at the Project site, the development of haul roads, nest monitoring, fish relocation program, careers, a permitting update and construction progress.	Chief Murray Ray (Flying Post First Nation), Tim Harvey (Mattagami First Nation), Chief Chad Boissoneau (Mattagami First Nation), Jeff Berube (Flying Post First Nation)	Côté Gold Community Affairs (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,158	EMC Meeting	09/08/2021	IAMGOLD met with representatives from Mattagami First Nation and Flying Post First Nation for a bi-weekly Environmental Management Committee meeting. Topics discussed included Environmental Compliance Approval (ECA) – Industrial Sewage Works for Operations Phase, Permit to Take Water for Open Pit Dewatering (Operations Phase), Transmission Line Request for Approvals, an amendment to Fisheries Act Authorization / Habitat Offsetting Plan, amendment to ECA (Construction Phase), Notice of Material Change (NOMC) – Closure Plan, an amendment to Canadian Navigable Waters Act application, public notification of a potential interference to a non-navigable waterway, radio communication towers, updates on site activity and updates from the communities. Draft meeting notes were provided to all participants on 2021-09-22.	Jennifer Constant (Mattagami First Nation), Jeff Berube (Flying Post First Nation), James Ray (Flying Post First Nation), Andrea Naveau (Mattagami First Nation)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
4,121	Email	09/15/2021	IAMGOLD and Mattagami First Nation (MFN) discussed plans for an Open House to provide a Project update and consult on the Fisheries Act Authorization amendment. MFN informed that due to a positive COVID case in the community the event may need to be postponed.	Juanita Luke (Mattagami First Nation)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
4,191	Email	09/20/2021	IAMGOLD confirmed the rescheduled date for a community information session and consultation on the proposed Fisheries Act Authorization and inquired who would be responsible for posting the. A contact person was confirmed for posting the information.	Juanita Luke (Mattagami First Nation)	David Brown (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,306	EMC Meeting	09/22/2021	IAMGOLD met with representatives from Mattagami First Nation and Flying Post First Nation for a bi-weekly Environmental Management Committee meeting. Topics discussed the Environmental Compliance Approval (ECA) for Operations Phase, Permit to Take Water for Open Pit Dewatering (Operations Phase), Transmission Line Request for Approvals, the amendment to the Fisheries Act Authorization / Habitat Offsetting Plan, an amendment to the ECA for Construction Phase, Notice of Material Change for the Closure Plan, an amendment to the Canadian Navigable Waters Act application, public notification of a potential interference to a non-navigable waterway, radio communication towers, a site update and an update from the communities. Draft meeting notes were provided to all participants on 2021-10-05.	Jennifer Constant (Mattagami First Nation), Jeff Berube (Flying Post First Nation), James Ray (Flying Post First Nation), Andrea Naveau (Mattagami First Nation)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
4,157	Email	09/23/2021	IAMGOLD provided a flyer for the Project Open House scheduled for 2021-10-06 in Mattagami First Nation and requested it be shared and posted within the community. The flyer noted that the open house would provide a Project update and present information about the proposed amendment to the Fisheries Act Authorization.	Juanita Luke (Mattagami First Nation)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
4,321	Email	10/04/2021	IAMGOLD requested confirmation of plans and community COVID protocols for an open house in Mattagami First Nation to provide a Project update and consult on the proposed amendment to the Fisheries Act Authorization.	Juanita Luke (Mattagami First Nation)	Christian Naponse (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,231	Open House	10/06/2021	IAMGOLD hosted a community information session in Mattagami First Nation to provide a Project update and consult on the proposed amendment to the Fisheries Act Authorization amendment. Minnow Environmental presented an update on the Fisheries Act Authorization (FAA) and proposed amendment. The presentation contained an update on the status of implementation of approved offsetting measures and overview of the approved offsetting areas. Minnow Environmental explained how since construction began, improvements to Project design resulted in changes that will require an amendment to the Offsetting Plan approved under the existing Fisheries Act Authorization. Three proposed alternate offsetting measures were presented and next steps discussed.	Jennifer Constant (Mattagami First Nation), Juanita Luke (Mattagami First Nation), Tim Harvey (Mattagami First Nation), Joyce Constant (Mattagami First Nation), Chief Chad Boissoneau (Mattagami First Nation), Andrea Naveau (Mattagami First Nation), Samantha McKenzie (Mattagami First Nation), Doreen Luke (Mattagami First Nation)	David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation), Kyle Conway (IAMGOLD Corporation), Geoffrey Lake (IAMGOLD Corporation)
4,243	Email	10/14/2021	IAMGOLD inquired if the Métis Nation of Ontario (MNO) had determined a date for a first meeting of the Impact Benefit Agreement Implementation Committee. IAMGOLD also indicated that the Environmental Compliance Approval for Operations was submitted to the Ministry of Environment, Conservation and Parks and provided a summary of the application and the link to the document in the Project permitting SharePoint site. IAMGOLD also informed MNO that the Fisheries Act Authorization amendment was being prepared for submission, provided a summary of the proposed amendment and requested an opportunity to meet to discuss the amendment.	Victoria Stinson (Métis Nation of Ontario (MNO)), Vanessa Potvin (Métis Nation of Ontario)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,259	Email	10/18/2021	IAMGOLD provided a report from the Community Open House held in Mattagami First Nation on 2021-10-06 to provide a Project update and consult on the proposed amendment to the Fisheries Act Authorization. IAMGOLD also provided a copy of the presentations from the event.	Jennifer Constant (Mattagami First Nation), Chief Chad Boissoneau (Mattagami First Nation), Andrea Naveau (Mattagami First Nation)	David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Krista Maydew (IAMGOLD Corporation), Kyle Conway (IAMGOLD Corporation), Geoffrey Lake (IAMGOLD Corporation), Mike Garbutt (IAMGOLD Corporation)
4,265	Email	10/19/2021	IAMGOLD provided the September 2021 Côté Community Newsletter. Information in the newsletter included the completion of the Côté Lake fish relocation, Project updates, a site tour for Flying Post First Nation and Mattagami First Nation, the Métis Nation of Ontario IBA Virtual Signing Ceremony, two scholarships awarded through the Young Mining Professionals, career opportunities and an update on permitting and construction activities.	Andy Lefebvre (Métis Nation of Ontario), David Hamilton (Chapleau Métis Council), Urgel Courville (Northern Lights Métis Council), Jacques Picotte (Métis Nation of Ontario), Lorette McKnight (Temiskaming Métis Council), Pierre Lefebvre (Métis Nation of Ontario), Consultation Department (Métis Nation of Ontario)	Côté Gold Community Affairs (IAMGOLD Corporation)
4,267	Email	10/19/2021	IAMGOLD provided the September 2021 Côté Community Newsletter. Information in the newsletter included the completion of the Côté Lake fish relocation, Project updates, a site tour for Flying Post First Nation and Mattagami First Nation, the Métis Nation of Ontario IBA Virtual Signing Ceremony, two scholarships awarded through the Young Mining Professionals, career opportunities and an update on permitting and construction activities.	Kevin Tangie (Brunswick House First Nation), Lisa VanBuskirk (Brunswick House First Nation), Brunswick House First Nation Reception (Brunswick House First Nation)	Côté Gold Community Affairs (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,269	Email	10/19/2021	IAMGOLD provided the September 2021 Côté Community Newsletter. Information in the newsletter included the completion of the Côté Lake fish relocation, Project updates, a site tour for Flying Post First Nation and Mattagami First Nation, the Métis Nation of Ontario IBA Virtual Signing Ceremony, two scholarships awarded through the Young Mining Professionals, career opportunities and an update on permitting and construction activities.	Chief Murray Ray (Flying Post First Nation), Chief Chad Boissoneau (Mattagami First Nation)	Côté Gold Community Affairs (IAMGOLD Corporation)
4,292	Email	10/19/2021	IAMGOLD contacted the Chief of Brunswick House First Nation (BHFN) to inform that an amendment to the Fisheries Act Authorization (FAA) is being prepared and indicated there had been a previous meeting with the former Chief regarding the FAA at which time a letter of support had been provided. IAMGOLD inquired if BHFN would like to meet to review the proposed amendment. IAMGOLD provided a summary of the proposed amendment and a copy of the previously provided support letter. The Chief responded indicating their interest in an opportunity to review the proposed amendment and provided dates for a meeting.	Kevin Tangie (Brunswick House First Nation), Lisa VanBuskirk (Brunswick House First Nation), Brunswick House First Nation Reception (Brunswick House First Nation)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
4,262	Email	10/20/2021	IAMGOLD and Flying Post First Nation discussed potential dates for a Community Information Session in Nipigon to provide a Project update and consult on the proposed amendment to the Fisheries Act Authorization.	Chief Murray Ray (Flying Post First Nation), Jeff Berube (Flying Post First Nation), James Ray (Flying Post First Nation)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
4,287	Email	10/21/2021	IAMGOLD confirmed the date and discussed details for a Community Information Session with Flying Post First Nation to provide a Project Update and consult on the Fisheries Act Authorization amendment.	Chief Murray Ray (Flying Post First Nation), Jeff Berube (Flying Post First Nation)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,289	Email	10/21/2021	IAMGOLD provided a meeting invite for a Project update and consultation on the amendment to the Fisheries Act Authorization and asked that it be forwarded to anyone not on the list who may want to attend. Brunswick House First Nation indicated they added one individual to the invitation.	Kevin Tangie (Brunswick House First Nation), Lisa VanBuskirk (Brunswick House First Nation), Cody VanBuskirk (Brunswick House First Nation), Renae VanBuskirk (Brunswick House First Nation)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation), Mike Garbutt (IAMGOLD Corporation)
4,290	Email	10/21/2021	On 2021-10-14 IAMGOLD followed up with the Métis Nation of Ontario (MNO) regarding who their Impact Benefit Agreement Implementation Committee members would be to set a meeting to discuss and consult on the Environmental Compliance Approval for Industrial Sewage for Operations and the Fisheries Act Authorization amendment. IAMGOLD also provided a summary of the proposed amendment and indicated a planned submission date of mid-November. On 2021-10-19 MNO indicated they had yet to determine a member to sit on the committee. On 2021-10-21 MNO informed who the two members of the IBA Implementation Committee would be.	Victoria Stinson (Métis Nation of Ontario (MNO)), Vanessa Potvin (Métis Nation of Ontario), Russell Ott (Métis Nation of Ontario)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
4,291	Email	10/21/2021	IAMGOLD and Flying Post First Nation discussed plans for an open house regarding a Project update and consultation on the Fisheries Act Authorization amendment.	Chief Murray Ray (Flying Post First Nation), Jeff Berube (Flying Post First Nation)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
4,271	Phone Call	10/26/2021	IAMGOLD and Mattagami First Nation discussed name options for one of the proposed alternate offsetting measures for the amendment to the Fisheries Act Authorization. The name preferred by Mattagami is Mattagami Lake Fisheries Plan.	Chief Chad Boissoneau (Mattagami First Nation)	David Brown (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,296	Open House	10/28/2021	IAMGOLD hosted a virtual Open House with Brunswick House First Nation to provide a Project update and to consult on the Fisheries Act Authorization amendment. Information provided in the Project update included key Project milestones, construction workforce highlights, operations workforce planning and training strategy, COVID-19 testing protocols, and communication and consultation. Minnow Aquatic Environmental Services presented an update on the Fisheries Act Authorization (FAA) and proposed amendment. The presentation contained an update on the status of implementation of approved offsetting measures and overview of the approved offsetting areas. Minnow explained how since construction began, improvements to Project design resulted in changes that will require an amendment to the Offsetting Plan approved under the existing FAA. Three proposed alternate offsetting measures were presented and next steps.	Kevin Tangie (Brunswick House First Nation), Lisa VanBuskirk (Brunswick House First Nation), Brandi Mogge (Fisheries and Oceans Canada), Clayton James (Fisheries and Oceans Canada), Melanie Campbell (Fisheries and Oceans Canada), Cody VanBuskirk (Brunswick House First Nation), Terina Hancock (Fisheries and Oceans Canada)	David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation), Stephen Crozier (IAMGOLD Corporation), Mike Garbutt (IAMGOLD Corporation)
4,338	Email	10/29/2021	On 2021-10-26 the Métis Nation of Ontario proposed dates and times for a meeting to review the Environmental Compliance Approvals for Industrial Sewage for Operations and the Fisheries Act Authorization amendment with the IBA Implementation Committee. IAMGOLD responded on 2021-10-29 with an invitation to a site tour which would be followed by a meeting. MNO indicated they were still working on options internally for the site tour.	Victoria Stinson (Métis Nation of Ontario (MNO)), Vanessa Potvin (Métis Nation of Ontario), Russell Ott (Métis Nation of Ontario)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,368	Email	11/05/2021	IAMGOLD and the Métis Nation of Ontario discussed meeting logistics for a site tour and meeting to discuss the Fisheries Act Authorization amendment and Environmental Compliance Approval for Operations, planned for 2021-11-09 including participants, travel details and COVID protocols for entering site.	David Hamilton (Chapleau Métis Council), Jacques Picotte (Métis Nation of Ontario), Victoria Stinson (Métis Nation of Ontario (MNO)), Vanessa Potvin (Métis Nation of Ontario), Russell Ott (Métis Nation of Ontario)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,345	Open House	11/09/2021	<p>IAMGOLD met with the Métis Nation of Ontario (MNO) for the first Impact Benefit Agreement Implementation meeting and to consult on the proposed amendment to the Fisheries Act Authorization amendment and the Environmental Compliance Approval (ECA) for Operations. Minnow Environmental presented an update on the Fisheries Act Authorization (FAA) and proposed amendment. The presentation contained an update on the status of implementation of approved offsetting measures and overview of the approved offsetting areas. Minnow Environmental explained how since construction began, improvements to Project design resulted in changes that will require an amendment to the Offsetting Plan approved under the existing Fisheries Act Authorization. Three proposed alternate offsetting measures were presented, and next steps were discussed. Wood provided a presentation on the ECA for Operations which outlines changes which include complex monitoring, quarterly sampling, the installation of 65-70 groundwater wells and hydrometric monitoring. MNO indicated they would need to bring the information regarding the FAA and the ECA back to the Region 3 Consultation Committee for review and that the Project support letter previously provided covers these things. IAMGOLD informed that it would be preferable to have a support letter specific to the FAA and ECA for the regulator's records.</p>	<p>David Hamilton (Chapleau Métis Council), Jacques Picotte (Métis Nation of Ontario), Brandi Mogge (Fisheries and Oceans Canada), Vanessa Potvin (Métis Nation of Ontario), Russell Ott (Métis Nation of Ontario), Terina Hancock (Fisheries and Oceans Canada)</p>	<p>David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)</p>

ROC	Event Type	Date	Event Summary	Participants	Team
4,370	Email	11/12/2021	As requested during a meeting on 2021-11-09 with the Métis Nation of Ontario, IAMGOLD provided copies of the presentations given on the Fisheries Act Authorization (FAA) amendment and the Environmental Compliance Approval for Operations Phase as well as a summary on the FAA amendment and updated list on the status of Project permitting.	Andy Lefebvre (Métis Nation of Ontario), David Hamilton (Chapleau Métis Council), Urgel Courville (Northern Lights Métis Council), Jacques Picotte (Métis Nation of Ontario), Lorette McKnight (Temiskaming Métis Council), Pierre Lefebvre (Métis Nation of Ontario), Consultation Department (Métis Nation of Ontario), Vanessa Potvin (Métis Nation of Ontario)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
4,363	Meeting	11/16/2021	IAMGOLD met with Flying Post First Nation's Chief and Council and the Lands and Resources Coordinator in Nipigon to provide a Project update and consult on the proposed amendment to the Fisheries Act Authorization amendment. Minnow Environmental presented an update on the Fisheries Act Authorization (FAA) and proposed amendment. The presentation contained an update on the status of implementation of approved offsetting measures and overview of the approved offsetting areas. Minnow Environmental explained how since construction began, improvements to Project design resulted in changes that will require an amendment to the Offsetting Plan approved under the existing Fisheries Act Authorization. Three proposed alternate offsetting measures were presented, and next steps discussed.	Chief Murray Ray (Flying Post First Nation), Robert (Bob) McLeod (Flying Post First Nation), Lynn Ray (Flying Post First Nation), Susan Baril (Flying Post First Nation), Jaime Keay (Individual - Nipigon), Jeff Berube (Flying Post First Nation), Clayton James (Fisheries and Oceans Canada), Melanie Campbell (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation), Mike Garbutt (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,480	Email	11/16/2021	Brunswick House First Nation inquired who the contact for consultation is at Fisheries and Oceans Canada in order to begin consultations about water. They also stated they were following up regarding the community's Data Sharing Agreement They'd previously provided to IAMGOLD. IAMGOLD responded noting that the agreement provided had been reviewed and proposed that a provision be added to allow information sharing with Mattagami First Nation, Flying Post First Nation and Wabun Tribal Council if any of the community's cultural values are found to overlap with the Project site. IAMGOLD noted that if this provision is added they are willing to sign the agreement.	Kevin Tangie (Brunswick House First Nation), Lisa VanBuskirk (Brunswick House First Nation), Cody VanBuskirk (Brunswick House First Nation), Renae VanBuskirk (Brunswick House First Nation)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation), Mike Garbutt (IAMGOLD Corporation)
4,672	Email	11/30/2021	On 2021-11-29 IAMGOLD requested the meeting notes from the 2021-11-09 meeting with the Métis Nation of Ontario (MNO) regarding consultation on the Fisheries Act Authorization amendment. MNO provided the requested meeting notes.	Jacques Picotte (Métis Nation of Ontario), Vanessa Potvin (Métis Nation of Ontario), Russell Ott (Métis Nation of Ontario)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,512	Email	12/02/2021	On 2021-11-30 IAMGOLD contacted the Métis Nation of Ontario (MNO) following a missed call on 2021-11-26 to discuss comments made during a meeting on 2021-11-23 regarding the Fisheries Act Authorization amendment. In the email, IAMGOLD outlined the items they wished to discuss with MNO, specifically related to MNO's comment about consultation related to the proposed amendment to the Fisheries Act Authorization. IAMGOLD also informed that a request for donation had been received from MNO Timmins and inquired if this could be discussed further to determine how donation requests by one council within the Region should be handled. IAMGOLD also requested follow-up on the issue of education bursaries for which information had been previously provided. On 2021-12-02 IAMGOLD followed up to inquire if the correct email address was being used as there were two on file.	Jacques Picotte (Métis Nation of Ontario)	David Brown (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
4,514	Email	12/09/2021	The Métis Nation of Ontario responded to IAMGOLD email from 2021-11-30 and indicated there would be a Region 3 Consultation Committee meeting next week during which they would discuss the Fisheries Act Authorization amendment and educational bursaries previously discussed during the Impact Benefit Agreement Implementation Committee meeting on 2021-11-09. IAMGOLD thanked MNO for their response.	Jacques Picotte (Métis Nation of Ontario)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,673	Email	12/09/2021	On 2021-11-30 IAMGOLD reached out to the Metis Nation of Ontario to discuss the role of the IBA Implementation Committee with regards to consultation, the finalization of the Fisheries Act Authorization amendment and confirmation that the Region 3 Consultation Committee (R3CC) had no concerns or comments on the FAA, a request for donations and educational bursaries. On 2021-12-09 MNO confirmed a meeting of the R3CC was forthcoming and the items would be discussed at that time.	Jacques Picotte (Métis Nation of Ontario), Russell Ott (Métis Nation of Ontario)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
4,513	Email	12/10/2021	On 2021-12-09 IAMGOLD contacted the Métis Nation of Ontario (MNO) to request assistance in obtaining a response to an email sent on 2021-11-20, noting the email contained several time sensitive items. IAMGOLD also inquired who would be the appropriate contact to receive a draft letter of support for the Fisheries Act Authorization (FAA) amendment. On 2021-12-09 MNO indicated they resent the previous email to the contact and would follow-up regarding the next steps for consultation regarding the FAA amendment and educational scholarships. IAMGOLD informed the contact had replied and a draft letter of support would be sent and requested confirmation on who to send it to. MNO confirmed the appropriate contacts.	Russell Ott (Métis Nation of Ontario)	David Brown (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,585	Email	12/10/2021	IAMGOLD provided a draft letter of support regarding the Fisheries Act Authorization amendment to the Métis Nation of Ontario (MNO) for consideration. MNO requested a Word version of the document which IAMGOLD provided.	Jacques Picotte (Métis Nation of Ontario), Vanessa Potvin (Métis Nation of Ontario), Russell Ott (Métis Nation of Ontario)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
4,609	Email	12/10/2021	IAMGOLD provided a draft letter of support regarding an amendment to the Fisheries Act Authorization (FAA) for review and authorization. IAMGOLD also provided the draft report from the 2021-11-16 Open House consultation session on the FAA.	Chief Murray Ray (Flying Post First Nation), Jeff Berube (Flying Post First Nation)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
4,610	Email	12/10/2021	IAMGOLD provided a draft letter of support regarding an amendment to the Fisheries Act Authorization (FAA) for review and authorization. IAMGOLD also provided the draft report from the 2021-10-06 Open House consultation session on the FAA.	Jennifer Constant (Mattagami First Nation), Tim Harvey (Mattagami First Nation), Chief Chad Boissoneau (Mattagami First Nation), Andrea Naveau (Mattagami First Nation)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
4,611	Email	12/10/2021	IAMGOLD provided a draft letter of support regarding an amendment to the Fisheries Act Authorization (FAA) for review and authorization. IAMGOLD also provided the draft report from the 2021-10-28 meeting regarding consultation session on the FAA. Brunswick House First Nation responded stating that a letter of support would not be provided as their members were not consulted on the amendment and they didn't have the capacity to conduct a community consultation information session. They also stated that the Project impacted their Aboriginal and Treaty rights and arrangements would have to be made to apply the duty to consult with the community.	Kevin Tangie (Brunswick House First Nation), Lisa VanBuskirk (Brunswick House First Nation), Cody VanBuskirk (Brunswick House First Nation), Renae VanBuskirk (Brunswick House First Nation)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,867	Letter	12/10/2021	IAMGOLD received a letter of support for the application for an amendment to the Fisheries Act Authorization from Mattagami First Nation.	Chief Chad Boissoneau (Mattagami First Nation)	David Brown (IAMGOLD Corporation)
4,617	Letter	12/15/2021	IAMGOLD received a letter of support from Flying Post First Nation regarding the application for an amendment to the Fisheries Act Authorization.	Chief Murray Ray (Flying Post First Nation), Cathy Ray (Flying Post First Nation), Jeff Berube (Flying Post First Nation)	Christian Naponse (IAMGOLD Corporation)
4,666	Email	01/04/2022	IAMGOLD provided the December 2021 newsletter to Mattagami First Nation and Flying Post First Nation. Information in the newsletter included an update on construction, recognition of Orange Shirt Day, community site visits, participation in the Jill of all Trades event, Gogama community investment, career opportunities, the proposed amendment to the Fisheries Act authorization and a permitting update.	Jennifer Constant (Mattagami First Nation), Tim Harvey (Mattagami First Nation), Jeff Berube (Flying Post First Nation)	Côté Gold Community Affairs (IAMGOLD Corporation)
4,667	Email	01/04/2022	IAMGOLD provided the December 2021 newsletter to Métis Nation of Ontario. Information in the newsletter included an update on construction, recognition of Orange Shirt Day, community site visits, participation in the Jill of all Trades event, Gogama community investment, career opportunities, the proposed amendment to the Fisheries Act authorization and a permitting update.	Andy Lefebvre (Métis Nation of Ontario), Marcel Lafrance (Métis Nation of Ontario), David Hamilton (Chapleau Métis Council), Urgel Courville (Northern Lights Métis Council), Jacques Picotte (Métis Nation of Ontario), Lorette McKnight (Temiskaming Métis Council), Pierre Lefebvre (Métis Nation of Ontario), Consultation Department (Métis Nation of Ontario)	Côté Gold Community Affairs (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,686	Email	01/06/2022	IAMGOLD contacted the Chief and a Councillor of Brunswick House First Nation (BHFN) to confirm if they are interested in holding a general community meeting or have further discussions related to the proposed amendment to the Fisheries Act Authorization, offering to meet in-person or virtually. IAMGOLD also provided the contact information for Fisheries and Oceans Canada representatives who attended the virtual consultation session on 2021-10-28 as requested by BHFN's Lands and Resources Coordinator.	Kevin Tangie (Brunswick House First Nation), Renae VanBuskirk (Brunswick House First Nation)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
4,674	Email	01/10/2022	On 2022-01-05 IAMGOLD inquired if the Region 3 Consultation Committee (RCC) had met to discuss the Fisheries Act Authorization (FAA) amendment and the educational bursary. On 2022-01-10 the Métis Nation of Ontario (MNO) confirmed they had met to discuss these items and the RCC had no issues or concerns with the FAA amendment. IAMGOLD thanked MNO for following up and outlined IAMGOLD's understanding of the parameters of consultation as per the Impact Benefit Agreement. IAMGOLD committed to provide information in advance of meetings where possible and practical to support any pre-meeting discussions by the RCC prior to a meeting between MNO and IAMGOLD.	Jacques Picotte (Métis Nation of Ontario)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,841	EMC Meeting	01/12/2022	The Environmental Management Committee met to discuss: Transmission Line Request for Approvals, a request to amend Permit to Take Water for Construction, an amendment to the Environmental Compliance Approval for Operations, Closure Plan filing, an amendment to the Habitat Offsetting Plan, a Notice of Material Change, Environmental Monitors, site updates and community updates. Draft meeting notes were provided to all participants on 2022-02-04.	Jennifer Constant (Mattagami First Nation), Jeff Berube (Flying Post First Nation)	David Brown (IAMGOLD Corporation), Zahir Jina (SLR Consulting (Canada) Ltd.), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation), Mike Garbutt (IAMGOLD Corporation)
4,612	Letter	01/18/2022	On 2022-01-17 IAMGOLD followed up with the Métis Nation of Ontario (MNO) regarding a request for a letter of support for the proposed amendment to the Fisheries Act Authorization. MNO indicated the letter had been finalized and was awaiting signature. MNO provided the support letter on 2022-01-18. IAMGOLD thanked them for their support.	Jacques Picotte (Métis Nation of Ontario), Vanessa Potvin (Métis Nation of Ontario), Russell Ott (Métis Nation of Ontario)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
4,775	Email	02/03/2022	IAMGOLD followed-up on a previous email from 2022-01-06 to Brunswick House First Nation (BHFN) Chief and Councillor regarding communication with the Lands and Resources Coordinator. IAMGOLD welcomed a call from the Chief of Councillor to discuss whether they would like to hold a general community meeting or further discussions related to the amendment to the Fisheries Act Authorization.	Kevin Tangie (Brunswick House First Nation), Renae VanBuskirk (Brunswick House First Nation)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,816	Letter	02/24/2022	IAMGOLD emailed a letter to the Chief and a Councillor of Brunswick House First Nation outlining the history of consultation and engagement related to the Project. IAMGOLD expressed concern about recent statements made by the community's Lands and Resources Coordinator to IAMGOLD representatives as well as federal and provincial regulators that the community was not consulted on the Project. IAMGOLD requested a formal response from the community leadership whether it intends to pursue a formal assertion of its traditional territory and confirmation of the acceptability of the proposed revision to the Data Sharing Agreement. A record of engagement with the community from 2012 to February 2022 was provided as an attachment to the letter.	Kevin Tangie (Brunswick House First Nation), Renae VanBuskirk (Brunswick House First Nation)	David Brown (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation), Stephen Crozier (IAMGOLD Corporation)

TITLE: Public Records of Engagement re: Amendment to *Fisheries Act* Authorization

DATE: March 2, 2022

PROJECT: Côté Gold Project

ROC	Event Type	Date	Event Summary	Participants	Team
3,600	Conference Call	05/25/2021	IAMGOLD met with a representative from the Gogama Chamber of Commerce to discuss the current Project COVID-19 pandemic protocols and the move of all off-site workers to on-site Project accommodations. IAMGOLD agreed to follow-up with a contractor and two local business owners to discuss this further. It was agreed that a general Project update for the residents of Gogama could be included in the future Fisheries Act Authorization consultation planned for June or July, 2021.	Gerry Talbot (Gogama Chamber of Commerce)	David Brown (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
3,842	Email	07/13/2021	IAMGOLD provided the June 2021 Côté Community Newsletter to all on the Project mailing list. The newsletter contained information on the installation of a land acknowledgement sign at the Project site, the development of haul roads, nest monitoring, fish relocation program, careers, a permitting update and construction progress.	Côté Gold Project Mailing List (Individual)	Côté Gold Community Affairs (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,028	Email	08/17/2021	On 2021-08-09 Gogama Local Services Board (GLSB) informed IAMGOLD that the board would be meeting the next evening and would discuss the issue of hall rentals for an Open House. IAMGOLD indicated there was no specific date in mind but due to COVID restrictions being lifted IAMGOLD anticipated having an Open House to update the community on the Project as well as provide consultation on the proposed amendment to the Project's Fisheries Act Authorization. On 2021-08-17 GLSB confirmed the Board's decision to open up the option of hall rental and indicated some dates will not be available due to the upcoming Federal election and provided the rental rates. IAMGOLD indicated that no date had been discussed but they would reach out with potential dates soon.	Daniel Mantha (Gogama Chamber of Commerce), Christine Bedard (Gogama Local Services Board), Gerry Talbot (Gogama Chamber of Commerce), Paul Veronneau (Gogama Local Roads Board)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
4,288	Email	10/21/2021	IAMGOLD informed Gogama representatives that an amendment to the Fisheries Act Authorization is being prepared which would require consultation with the community and inquired about the availability of the community centre to hold the meeting. Gogama provided potential available dates. IAMGOLD confirmed the date to be 2021-11-08 and inquired about details and logistics. IAMGOLD also suggested a potential meeting of the Socio-economic Management and Monitoring committee on the same day. IAMGOLD offered to provide a flyer for distribution to the community regarding the Open House.	Christine Bedard (Gogama Local Services Board), Gerry Talbot (Gogama Chamber of Commerce)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,286	Email	10/25/2021	IAMGOLD and a representative of the Gogama Local Services Board (GLSB) discussed the date for a Community Information Session to provide the community with a Project Update and consult on the Fisheries Act Authorization amendment. GLSB provided the hall rental agreement and necessary COVID restriction details and contact tracing forms. IAMGOLD indicated they would provide a flyer for distribution to the community to inform them of the Community Information Session.	Christine Bedard (Gogama Local Services Board), Gerry Talbot (Gogama Chamber of Commerce)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
4,351	Email	10/29/2021	IAMGOLD provided Gogama with a flyer to advertise the 2021-11-08 Open House to consult on the Fisheries Act Authorization amendment.	Daniel Mantha (Gogama Chamber of Commerce), Christine Bedard (Gogama Local Services Board), Gerry Talbot (Gogama Chamber of Commerce), Paul Veronneau (Gogama Local Roads Board)	David Brown (IAMGOLD Corporation), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,330	Open House	11/08/2021	IAMGOLD hosted an Open House in Gogama to provide a Project update and consult on the proposed amendment to the Fisheries Act Authorization (FAA). Information provided in the Project update included key Project milestones, construction workforce highlights, operations workforce planning and training strategy, COVID-19 testing protocols, and communication and consultation. Minnow Environmental presented an update on the FAA and proposed amendment. The presentation contained an update on the status of implementation of approved offsetting measures and overview of the approved offsetting areas. Minnow explained how since construction began, improvements to Project design resulted in changes that will require an amendment to the Offsetting Plan approved under the existing FAA. Three proposed alternate offsetting measures were presented and next steps.	Claude Secord (Gogama Roads Board), Daniel Mantha (Gogama Chamber of Commerce), Francine Mathieu (Individual - Timmins), Monique Veronneau (Individual - Gogama), Brandi Mogge (Fisheries and Oceans Canada), Shona Derlukewich (Fisheries and Oceans Canada (DFO)), James Ray (Flying Post First Nation), Gerry Talbot (Gogama Chamber of Commerce), Carole Beaton (Individual - Gogama), Lilianne Unknown (Individual - Gogama)	David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation), Kyle Conway (IAMGOLD Corporation), Geoffrey Lake (IAMGOLD Corporation)
4,664	Email	01/04/2022	IAMGOLD provided the December 2021 newsletter to the Project distribution list. Information in the newsletter included an update on construction, recognition of Orange Shirt Day, community site visits, participation in the Jill of all Trades event, Gogama community investment, career opportunities, the proposed amendment to the Fisheries Act authorization and a permitting update.	Côte Gold Project Mailing List (Individual)	Côte Gold Community Affairs (IAMGOLD Corporation)

TITLE: Government Records of Engagement re: Amendment to *Fisheries Act* Authorization

DATE: March 2, 2022

PROJECT: Côté Gold Project

ROC	Event Type	Date	Event Summary	Participants	Team
3,082	Email	01/10/2021	Following correspondence on 2020-11-27, Minnow Environmental informed Fisheries and Oceans Canada (DFO) that they are drafting the amendment of the Offsetting Plan as suggested by DFO. Minnow requested that DFO provide a list of Indigenous communities that need to be consulted on the amendment. The Project team can then identify w which meetings it may be beneficial to have DFO attend.	Laura Phalen (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	Stephen Crozier (IAMGOLD Corporation), David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Rebecca Dolson (Minnow Environmental Inc.)
3,083	Email	01/13/2021	Fisheries and Oceans Canada (DFO) acknowledged a request from Minnow Environmental for a list of Indigenous communities that require consultation regarding amendments to the Project's Offsetting Plan. DFO noted that they forwarded the request to their Indigenous Relations Unit.	Laura Phalen (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	Stephen Crozier (IAMGOLD Corporation), David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Rebecca Dolson (Minnow Environmental Inc.)
3,111	Email	01/21/2021	Minnow Environmental requested a meeting with Fisheries and Oceans Canada to discuss the progress of the proposed amendment to the Offsetting Plan.	Laura Phalen (Fisheries and Oceans Canada), Clayton James (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	Stephen Crozier (IAMGOLD Corporation), David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Rebecca Dolson (Minnow Environmental Inc.)
3,150	Conference Call	01/27/2021	IAMGOLD provided Fisheries and Oceans Canada (DFO) with an update regarding the Fisheries Authorization Amendment (FAA) activities currently underway at the Project site. IAMGOLD and DFO discussed how DFO would like to proceed with additional reviews of the FAA and provide their guidance.	Clayton James (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Rebecca Dolson (Minnow Environmental Inc.), Samantha Burke (Minnow Environmental Inc.)

ROC	Event Type	Date	Event Summary	Participants	Team
3,151	Email	02/01/2021	Minnow Environmental provided Fisheries and Oceans Canada (DFO) with the meeting notes and a copy of the presentation from the meeting held on 2021-01-27 during which IAMGOLD and DFO discussed the status of the Fisheries Authorization Amendment (FAA) in progress and how DFO would prefer to proceed with additional reviews of the FAA. Minnow Environmental also provided DFO with a short memo, dated 2021-02-01, summarizing the information DFO had requested to support the FAA process moving forward. Attached to this summary, was the email dated 2020-11-26 that provided notes of the discussion on this matter that took place 2020-11-23.	Clayton James (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Rebecca Dolson (Minnow Environmental Inc.), Samantha Burke (Minnow Environmental Inc.)

ROC	Event Type	Date	Event Summary	Participants	Team
3,325	Phone Call	03/08/2021	Minnow Environmental had a discussion with Fisheries and Oceans Canada (DFO) regarding total suspended sediment concentrations observed onsite. DFO requested a memo summarizing this and the mitigation plans to address this moving forward. DFO will forward the memo to the same team that evaluated the incident with North Beaver Pond. With respect to the proposed amendment to the Fisheries Act Authorization (FAA), the DFO representative noted they have not received a recommendation for consultation from their Indigenous Relations Group and recommended IAMGOLD consult the same communities engaged in the original Fisheries Act Authorization and Offsetting Plan. DFO confirmed interest in being involved in the meetings with the communities planned for the summer, particularly with respect to changes in the FAA and offsetting options. Minnow provided a brief update on the FAA amendment and expected submission date of August 2021. Minnow inquired if DFO would like regular updates over the 2021 ice-free season. DFO to consider and both parties agreed to discuss options during the call scheduled for 2021-03-17.	Terina Hancock (Fisheries and Oceans Canada)	Kim Connors (Minnow Environmental Inc.)
3,540	Conference Call	04/27/2021	IAMGOLD met with the Ministry of Natural Resources and Forestry to discuss a fish habitat offset opportunity that IAMGOLD might be able to contribute to and to inquire if there are any Ministry priorities to reinforce or create fish habitat.	Adam Bloskie (Ministry of Natural Resources and Forestry)	Mackenzie Taylor (Cumberland Strategies), Giancarlo Drennan (Cumberland Strategies), Stephen Crozier (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
3,457	Conference Call	04/28/2021	IAMGOLD met with representatives from the Minister's office of the Ministry of Natural Resources and Forestry (MNRF) to discuss the potential for fish habitat compensation options within the Gogama area. MNRF recommended IAMGOLD continue with its assessment and engage closely with the communities on defining options. They noted that this area of the Province is not one the MNRF has prioritized in terms of fisheries management. MNRF committed to contact IAMGOLD if they are able to identify someone from MNRF to assist with the identification of compensation options.	Adam Boskie (Ministry of Natural Resources and Forestry), Kyle Nietvelt (Ministry of Natural Resources and Forestry)	Stephen Crozier (IAMGOLD Corporation), Mackenzie Taylor (Cumberland Strategies), Giancarlo Drennan (Cumberland Strategies)
3,632	Email	05/21/2021	Minnow Environmental, on behalf of IAMGOLD, corresponded with Fisheries and Oceans Canada to arrange a meeting to discuss the progress on the Fisheries Authorization Act Amendment.	Brandi Mogge (Fisheries and Oceans Canada), Clayton James (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	Kim Connors (Minnow Environmental Inc.)
4,687	Conference Call	05/26/2021	Minnow Environmental met with Fisheries and Oceans Canada to discuss the proposed amendment to the Fisheries Act Authorization and potential options for habitat offsetting components.	Brandi Mogge (Fisheries and Oceans Canada), Clayton James (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	Kim Connors (Minnow Environmental Inc.), Samantha Burke (Minnow Environmental Inc.)
3,659	Email	06/07/2021	Minnow Environmental inquired about the status of Fisheries and Oceans Canada (DFO) determination regarding the possible inclusion of the Fisheries Enhancement Plan within the Fisheries Authorization Act amendment currently in development by IAMGOLD. IAMGOLD stated that the outcome of the DFO decision on this matter would have a timeline implication for IAMGOLD to complete the amendment request.	Brandi Mogge (Fisheries and Oceans Canada), Clayton James (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	Kim Connors (Minnow Environmental Inc.), Samantha Burke (Minnow Environmental Inc.)

ROC	Event Type	Date	Event Summary	Participants	Team
3,697	Email	06/07/2021	Fisheries and Oceans Canada (DFO) provided an update on the status of DFO's determination to include the Fisheries Enhancement Plan within the Fisheries Authorization Act amendment. DFO stated the ministry had internally discussed the proposed ideas about the possible offsetting within Mattagami Lake that would include an enhancement plan. DFO noted there is general agreement that this could fit within the current DFO offsetting policy, however DFO would like to see high level accounting of this issue as discussed with IAMGOLD. Additionally, DFO stated they will contact the Province to determine what level of involvement they may request.	Brandi Mogge (Fisheries and Oceans Canada), Clayton James (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	Kim Connors (Minnow Environmental Inc.), Samantha Burke (Minnow Environmental Inc.)
3,756	Email	06/25/2021	On 2021-06-21 Minnow Environmental inquired if Fisheries and Oceans Canada (DFO) planned on following up at the provincial level regarding the Mattagami Lake Fisheries concept noting that IAMGOLD want to ensure they reach out to the same individuals and groups as DFO so that these groups would be informed and have opportunity to contribute or contact IAMGOLD further on this concept. DFO confirmed on 2021-06-24 that a conversation was being arranged with the Ministry Northern Development, Mines, Natural Resources and Forestry on this matter. Minnow Environmental responded on 2021-06-25, thanking DFO for the update.	Brandi Mogge (Fisheries and Oceans Canada), Clayton James (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	Kim Connors (Minnow Environmental Inc.)

ROC	Event Type	Date	Event Summary	Participants	Team
4,067	Site Visit	07/27/2021	IAMGOLD held a site tour for the Ministry of Environment, Conservation and Parks, the Ministry of Northern Development, Mines, Natural Resources and Forestry and Fisheries and Oceans Canada.	Steven Momy (Ministry of the Environment, Conservation and Parks), Emmanuel Ogunjobi (Ministry of Northern Development, Mines, Natural Resources and Forestry), Chris McAuley (Ministry of Northern Development, Mines, Natural Resources and Forestry), Matthew Lapointe (Ministry of Northern Development, Mines, Natural Resources and Forestry), Terina Hancock (Fisheries and Oceans Canada)	David Brown (IAMGOLD Corporation)
3,983	Email	08/03/2021	Fisheries and Oceans Canada (DFO) provided Minnow Environmental, on behalf of IAMGOLD, with an update on the discussions held between DFO and the Ministry of Northern Development, Mines and Natural Resources and Forestry regarding the Fisheries Enhancement Plan for Mattagami Lake. DFO provided Minnow Environmental with the email summary notes from the inter-ministerial discussion held 2021-07-20 and follow up email 2021-07-23. Minnow Environmental responded the same day to state a meeting would be arranged with the ministries to discuss next steps.	Clayton James (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Samantha Burke (Minnow Environmental Inc.), Stephen Crozier (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,185	Email	09/16/2021	Minnow Environmental informed Fisheries and Oceans Canada (DFO) that the consultation meeting with Mattagami First Nation would occur 2021-09-23. Minnow Environmental also stated that the community had a confirmed case of COVID and the meeting may be postponed. Minnow Environmental asked if there are any specific regulatory requirements that IAMGOLD should be aware of. Logistics related to in person attendance by DFO were also addressed in the email. DFO responded the same day noting they would participate in the meeting virtually and confirmed there are no specific regulatory requirements, only requests made by communities.	Terina Hancock (Fisheries and Oceans Canada)	David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Krista Maydew (IAMGOLD Corporation)
4,165	Email	09/20/2021	Minnow Environmental requested an update on the review of the clearance package for Mollie River. Minnow Environmental stated it was the last body of water to be fished until 2022, and that the working crew cleaned up the area and are awaiting an update from Fisheries and Oceans Canada (DFO) before departing. Minnow Environmental also noted that the consultation meeting scheduled in Mattagami First Nation related to the proposed amendment to the Fisheries Act Authorization is postponed until 2021-10-06 and inquired if DFO would be attending.	Terina Hancock (Fisheries and Oceans Canada)	Kim Connors (Minnow Environmental Inc.)

ROC	Event Type	Date	Event Summary	Participants	Team
4,210	Email	09/28/2021	<p>On 2021-09-27, Fisheries and Oceans Canada (DFO) informed Minnow Environmental that due to continued Ministry travel restrictions, DFO was requesting to take part in the Mattagami First Nation (MFN) consultation meeting virtually on 2021-10-06. DFO also inquired about the progress in the planning of the Mattagami Lake Offsetting Plan. Minnow responded on 2021-09-28 stating they would inform IAMGOLD of the virtual meeting participation request and noted they are developing an outline for the Mattagami Lake Offsetting Plan and completing the calculations of the offsets with the development of the designs that will be included in the amendment. Minnow Environmental stated that a meeting would be scheduled in a few weeks, after receiving input from the communities, with both DFO and the Ministry of Northern Development, Mines Natural Resources and Forestry for an opportunity to provide feedback and comment on what will be proposed for the fisheries management plan. IAMGOLD followed up the same day with details for DFO to 'listen in' for the consultation meeting with MFN on 2021-10-06 via Teams. IAMGOLD stated the meeting would be held in the community hall, and if DFO could not hear all the meeting details due to acoustics, DFO may participate in a future bi-weekly Environmental Management Committee meeting that IAMGOLD has scheduled with MFN and Flying Post First Nation following the 2021-10-06 community consultation session.</p>	Clayton James (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Krista Maydew (IAMGOLD Corporation), Stephen Crozier (IAMGOLD Corporation), Kathryn Kuchapski (Minnow Environmental Inc.)

ROC	Event Type	Date	Event Summary	Participants	Team
4,546	Email	10/05/2021	IAMGOLD provided Fisheries and Oceans Canada (DFO) with a link to join the Open House with Mattagami First Nation scheduled for 2021-10-06. DFO acknowledged receipt of the invitation and indicated it was forwarded to the senior biologists working on the file. IAMGOLD indicated that the Open House will be the first hosted since the start of the COVID-19 pandemic and that an election scheduled for later that week in the First Nation may impact participation.	Terina Hancock (Fisheries and Oceans Canada)	David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
4,530	Email	10/21/2021	Minnow Environmental informed Fisheries and Oceans Canada (DFO) that IAMGOLD is continuing consultation with First Nations regarding the Fisheries Act Authorization (FAA) Amendment and noted that a meeting with Brunswick House First Nation is scheduled for 2021-10-28 and inquired if DFO would like to attend. Minnow indicated that further meetings will be scheduled with other communities including Gogama in the coming weeks and inquired if DFO would like to participate.	Brandi Mogge (Fisheries and Oceans Canada), Clayton James (Fisheries and Oceans Canada), Melanie Campbell (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	Kim Connors (Minnow Environmental Inc.)
4,531	Email	10/22/2021	Fisheries and Oceans Canada (DFO) informed Minnow Environmental they would like to participate in the meeting with Brunswick House First Nation (BHFN) scheduled for 2021-11-04 regarding the Fisheries Act Authorization Amendment. DFO indicated that they would like to participate in the meetings with the other communities as well. Minnow indicated that they would forward the meeting invite for the meeting with BHFN.	Brandi Mogge (Fisheries and Oceans Canada), Clayton James (Fisheries and Oceans Canada), Melanie Campbell (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	Kim Connors (Minnow Environmental Inc.)

ROC	Event Type	Date	Event Summary	Participants	Team
4,632	Email	10/26/2021	Following comments received on 2021-08-03, Minnow Environmental requested a meeting with Fisheries and Oceans Canada (DFO) and the Ministry of Northern Development, Mines, Natural Resources and Forestry to discuss the proposed plan for Mattagami Lake and next steps. Minnow Environmental requested that DFO confirm the attendees.	Clayton James (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	Kim Connors (Minnow Environmental Inc.), Kathryn Kuchapski (Minnow Environmental Inc.)
4,296	Open House	10/28/2021	IAMGOLD hosted a virtual Open House with Brunswick House First Nation to provide a Project update and to consult on the Fisheries Act Authorization amendment. Information provided in the Project update included key Project milestones, construction workforce highlights, operations workforce planning and training strategy, COVID-19 testing protocols, and communication and consultation. Minnow Aquatic Environmental Services presented an update on the Fisheries Act Authorization (FAA) and proposed amendment. The presentation contained an update on the status of implementation of approved offsetting measures and overview of the approved offsetting areas. Minnow explained how since construction began, improvements to Project design resulted in changes that will require an amendment to the Offsetting Plan approved under the existing FAA. Three proposed alternate offsetting measures were presented and next steps.	Kevin Tangie (Brunswick House First Nation), Lisa VanBuskirk (Brunswick House First Nation), Brandi Mogge (Fisheries and Oceans Canada), Clayton James (Fisheries and Oceans Canada), Melanie Campbell (Fisheries and Oceans Canada), Cody VanBuskirk (Brunswick House First Nation), Terina Hancock (Fisheries and Oceans Canada)	David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation), Stephen Crozier (IAMGOLD Corporation), Mike Garbutt (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,633	Email	10/28/2021	Following comments received on 2021-08-03 and a request for discussion on 2021-10-26, Fisheries and Oceans Canada (DFO) informed Minnow Environmental they are available to meet to discuss the Fisheries Enhancement Plan for Mattagami Lake and next steps after 2021-11-15. DFO also confirmed contacts from the Ministry of Northern Development, Mines and Natural Resources who should be involved in the discussion.	Brandi Mogge (Fisheries and Oceans Canada), Shona Derlukewich (Fisheries and Oceans Canada (DFO)), Clayton James (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	Kim Connors (Minnow Environmental Inc.), Kathryn Kuchapski (Minnow Environmental Inc.)
4,634	Email	11/02/2021	Minnow Environmental informed Fisheries and Oceans Canada (DFO) of the consultation meeting with Flying Post First Nation scheduled for 2021-11-16. Minnow and DFO also corresponded about proposed dates for a meeting with the Ministry of Northern Development, Mines and Natural Resources and Forestry related to the Mattagami Lake Fisheries Plan.	Brandi Mogge (Fisheries and Oceans Canada), Shona Derlukewich (Fisheries and Oceans Canada (DFO)), Clayton James (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	Kim Connors (Minnow Environmental Inc.), Kathryn Kuchapski (Minnow Environmental Inc.)
4,635	Email	11/04/2021	Fisheries and Oceans Canada (DFO) confirmed they will organize a meeting with the Ministry of Northern Development, Mines and Natural Resources and Forestry and Minnow to discuss the Mattagami Lake Fisheries Plan.	Brandi Mogge (Fisheries and Oceans Canada), Shona Derlukewich (Fisheries and Oceans Canada (DFO)), Clayton James (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	Kim Connors (Minnow Environmental Inc.), Kathryn Kuchapski (Minnow Environmental Inc.)

ROC	Event Type	Date	Event Summary	Participants	Team
4,330	Open House	11/08/2021	IAMGOLD hosted an Open House in Gogama to provide a Project update and consult on the proposed amendment to the Fisheries Act Authorization (FAA). Information provided in the Project update included key Project milestones, construction workforce highlights, operations workforce planning and training strategy, COVID-19 testing protocols, and communication and consultation. Minnow Environmental presented an update on the FAA and proposed amendment. The presentation contained an update on the status of implementation of approved offsetting measures and overview of the approved offsetting areas. Minnow explained how since construction began, improvements to Project design resulted in changes that will require an amendment to the Offsetting Plan approved under the existing FAA. Three proposed alternate offsetting measures were presented and next steps.	Claude Secord (Gogama Roads Board), Daniel Mantha (Gogama Chamber of Commerce), Francine Mathieu (Individual - Timmins), Monique Veronneau (Individual - Gogama), Brandi Mogge (Fisheries and Oceans Canada), Shona Derlukewich (Fisheries and Oceans Canada (DFO)), James Ray (Flying Post First Nation), Gerry Talbot (Gogama Chamber of Commerce), Carole Beaton (Individual - Gogama), Lilianne Unknown (Individual - Gogama)	David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation), Kyle Conway (IAMGOLD Corporation), Geoffrey Lake (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,345	Open House	11/09/2021	<p>IAMGOLD met with the Métis Nation of Ontario (MNO) for the first Impact Benefit Agreement Implementation meeting and to consult on the proposed amendment to the Fisheries Act Authorization amendment and the Environmental Compliance Approval (ECA) for Operations. Minnow Environmental presented an update on the Fisheries Act Authorization (FAA) and proposed amendment. The presentation contained an update on the status of implementation of approved offsetting measures and overview of the approved offsetting areas. Minnow Environmental explained how since construction began, improvements to Project design resulted in changes that will require an amendment to the Offsetting Plan approved under the existing Fisheries Act Authorization. Three proposed alternate offsetting measures were presented, and next steps were discussed. Wood provided a presentation on the ECA for Operations which outlines changes which include complex monitoring, quarterly sampling, the installation of 65-70 groundwater wells and hydrometric monitoring. MNO indicated they would need to bring the information regarding the FAA and the ECA back to the Region 3 Consultation Committee for review and that the Project support letter previously provided covers these things. IAMGOLD informed that it would be preferable to have a support letter specific to the FAA and ECA for the regulator's records.</p>	<p>David Hamilton (Chapleau Métis Council), Jacques Picotte (Métis Nation of Ontario), Brandi Mogge (Fisheries and Oceans Canada), Vanessa Potvin (Métis Nation of Ontario), Russell Ott (Métis Nation of Ontario), Terina Hancock (Fisheries and Oceans Canada)</p>	<p>David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)</p>

ROC	Event Type	Date	Event Summary	Participants	Team
4,488	Email	11/10/2021	IAMGOLD provided Fisheries and Oceans Canada with contact information for the Indigenous communities consulted on the proposed amendment to the Fisheries Act Authorization and a brief overview of Indigenous consultation that occurred on the initial application for a Fisheries Act Authorization.	Brandi Mogge (Fisheries and Oceans Canada), Shona Derlukewich (Fisheries and Oceans Canada (DFO)), Clayton James (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
4,489	Email	11/12/2021	Fisheries and Oceans Canada acknowledged receipt of the information and clarification provided by IAMGOLD on 2021-11-19 regarding Indigenous consultation and community contact information.	Brandi Mogge (Fisheries and Oceans Canada), Clayton James (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation)
4,363	Meeting	11/16/2021	IAMGOLD met with Flying Post First Nation's Chief and Council and the Lands and Resources Coordinator in Nipigon to provide a Project update and consult on the proposed amendment to the Fisheries Act Authorization amendment. Minnow Environmental presented an update on the Fisheries Act Authorization (FAA) and proposed amendment. The presentation contained an update on the status of implementation of approved offsetting measures and overview of the approved offsetting areas. Minnow Environmental explained how since construction began, improvements to Project design resulted in changes that will require an amendment to the Offsetting Plan approved under the existing Fisheries Act Authorization. Three proposed alternate offsetting measures were presented, and next steps discussed.	Chief Murray Ray (Flying Post First Nation), Robert (Bob) McLeod (Flying Post First Nation), Lynn Ray (Flying Post First Nation), Susan Baril (Flying Post First Nation), Jaime Keay (Individual - Nipigon), Jeff Berube (Flying Post First Nation), Clayton James (Fisheries and Oceans Canada), Melanie Campbell (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Christian Naponse (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation), Mike Garbutt (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,526	Meeting	11/17/2021	Fisheries and Oceans Canada, the Ministry of Northern Development, Mines, Natural Resources and Forestry and Minnow Environmental met to discuss the Fisheries Act Authorization Application Amendment. Topics discussed include the original Fisheries Offsetting Plan submitted in 2019, changes to site design and need to offset based on these changes, the Mattagami Lake Fisheries Plan as a potential complementary measure, the Offsetting Plan amendment, regulatory requirements for the Amendment, the Mattagami Lake fish hatchery, and recreational land use.	Clayton James (Fisheries and Oceans Canada), Melanie Campbell (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada), Jason Greer (Ministry of Northern Development, Mines, Natural Resources and Forestry), Jeff Amos (Ministry of Northern Development, Mines, Natural Resources and Forestry), Jennifer Rosko (Ministry of Northern Development, Mines, Natural Resources and Forestry)	Kim Connors (Minnow Environmental Inc.), Rebecca Dolson (Minnow Environmental Inc.), Kathryn Kuchapski (Minnow Environmental Inc.)
4,646	Conference Call	01/19/2022	IAMGOLD met with a Fisheries Population Specialist from the Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF) to learn about their experiences developing a community-based environmental monitoring program with Weenusk First Nation. The example was proposed as a potential model for incorporating community-based monitoring into a Fisheries Plan for Mattagami Lake. NDMNRF stressed the importance of having a community champion, data sovereignty / sharing agreements, training and alignment with Ministry sampling protocols.	Preston Lennox (Ministry of Northern Development, Mines, Natural Resources and Forestry)	David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Krista Maydew (IAMGOLD Corporation), Rebecca Dolson (Minnow Environmental Inc.), Kathryn Kuchapski (Minnow Environmental Inc.)

ROC	Event Type	Date	Event Summary	Participants	Team
4,805	Email	02/09/2022	Minnow Environmental asked Fisheries and Oceans (DFO) when they would be available for a discussion regarding the progress of a Fisheries Act Authorization (FAA) amendment for the Project. DFO responded that they are available to discuss the FAA on 2022-02-16.	Shona Derlukewich (Fisheries and Oceans Canada (DFO)), Melanie Campbell (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Krista Maydew (IAMGOLD Corporation), Rebecca Dolson (Minnow Environmental Inc.), Stephen Crozier (IAMGOLD Corporation)
4,869	Conference Call	02/16/2022	IAMGOLD and Minnow Environmental met with Fisheries and Oceans Canada (DFO) to provide an update on consultation related to the proposed amendment to the Fisheries Act Authorization (FAA), including correspondence with Brunswick House First Nation following the FAA consultation session. DFO shared information about their consultation process and noted that consultation is scoped such that it is specific to the components that are being addressed in the amendment.	Clayton James (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Krista Maydew (IAMGOLD Corporation), Stephen Crozier (IAMGOLD Corporation)
4,872	Email	02/17/2022	On 2022-02-16 Fisheries and Oceans Canada (DFO) requested Minnow Environmental provide a high level description of the changes that will be included in the amendment for the Fisheries Act Authorization (FAA) that DFO may include in the consultation letters. Minnow responded on 2022-02-17 confirming that a summary would be provided to DFO and stated that IAMGOLD will be sending the letters of support received from Mattagami First Nation, Flying Post First Nation and the Métis Nation of Ontario, Region 3 as well as the wording for the special provision that was used by the province in the Environmental Compliance Approval.	Clayton James (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	David Brown (IAMGOLD Corporation), Krista Maydew (IAMGOLD Corporation), Rebecca Dolson (Minnow Environmental Inc.), Stephen Crozier (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,876	Email	02/17/2022	As a follow-up to the meeting held on 2022-02-16, IAMGOLD informed Fisheries and Oceans Canada (DFO) of their willingness to commit funds immediately to ensure Brunswick House First Nation (BHFN) has resources to support their review of the amendment, provided the review is focused and subject to specific time limits. IAMGOLD provided DFO with a copy of the support letter from BHFN on the initial FAA dated 2019-10-28. IAMGOLD welcomed DFO's feedback on this approach. IAMGOLD also provided the wording from some of the Project's provincial approvals related to a post-approval consultation mechanism, which may be worth considering in this particular context. Letters of support for the FAA amendment from Flying Post First Nation and the Métis Nation of Ontario were also provided. On 2022-02-22 IAMGOLD provided a copy of the support letter from Mattagami First Nation.	Clayton James (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Krista Maydew (IAMGOLD Corporation), Stephen Crozier (IAMGOLD Corporation)
4,873	Email	02/18/2022	Minnow Environmental provided Fisheries and Oceans Canada with a summary of changes that are the subject of the amendment to the Fisheries Act Authorization.	Clayton James (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Krista Maydew (IAMGOLD Corporation), Rebecca Dolson (Minnow Environmental Inc.), Stephen Crozier (IAMGOLD Corporation)

ROC	Event Type	Date	Event Summary	Participants	Team
4,874	Email	03/01/2022	Fisheries and Oceans Canada asked Minnow to provide the footprint area for each of the additional four adverse effects locations noted for the amendment for the Fisheries Act Authorization (FAA). The four locations for the FAA are: Three Duck Lake, Mollie River, Mesomikenda Lake and a small unnamed tributary road crossing. Minnow responded the same day with the area size information for each location.	Clayton James (Fisheries and Oceans Canada), Terina Hancock (Fisheries and Oceans Canada)	David Brown (IAMGOLD Corporation), Kim Connors (Minnow Environmental Inc.), Krista Maydew (IAMGOLD Corporation), Rebecca Dolson (Minnow Environmental Inc.), Stephen Crozier (IAMGOLD Corporation)

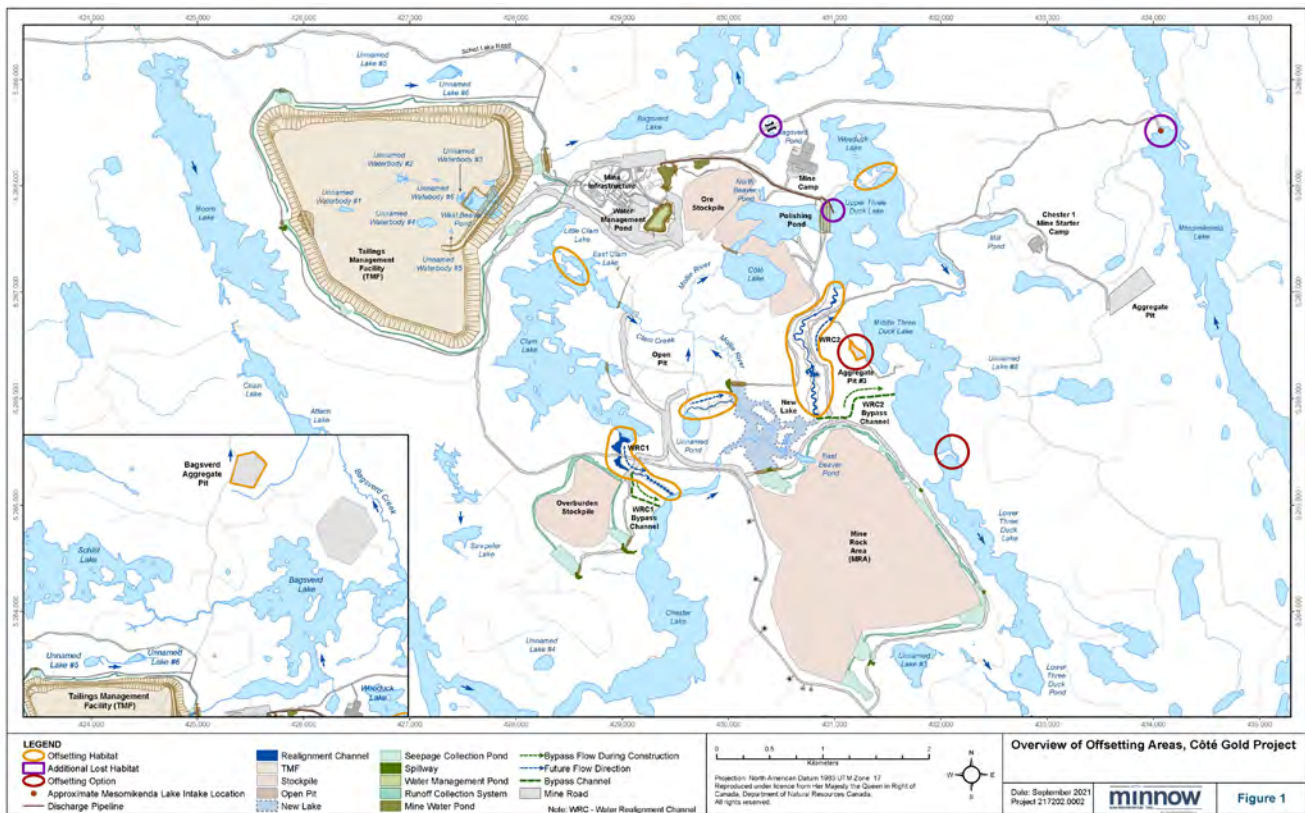
Appendix 3: Plain language summary and presentation materials

Fisheries Act Authorization – update and proposed amendment

IAMGOLD is building the Côte Gold Project, a new open pit mine. The Project is located off of Highway 144, about 20 kilometres southwest of Gogama and 40 kilometres southwest of Mattagami First Nation. Construction will result in some loss of fish habitat. IAMGOLD has a plan (Offsetting Plan) to offset, or compensate, for this loss of fish habitat. This plan was shared with communities for their input. Fisheries and Oceans Canada granted a *Fisheries Act* Authorization in 2020 which allows the Project to remove fish habitat and requires new habitat be constructed to offset the losses. The plan includes the construction of:

- Streams to maintain flow out of Clam Lake, Unnamed Pond, and in the Mollie River (*status: nearly complete; vegetation will be planted in 2022*).
- A New Lake on the Mollie River (*status: will be complete in 2022*).
- Connecting previously isolated lakes – Little Clam and East Clam to Clam Lake, and Weeduck Lake to Upper Three Duck Lake. This allows the fish access to more habitats (*status: completed in fall of 2020*).
- Creating fish habitat to support small-bodied fish (minnows) communities within two aggregate pits (*status: not started*).

Figure 1



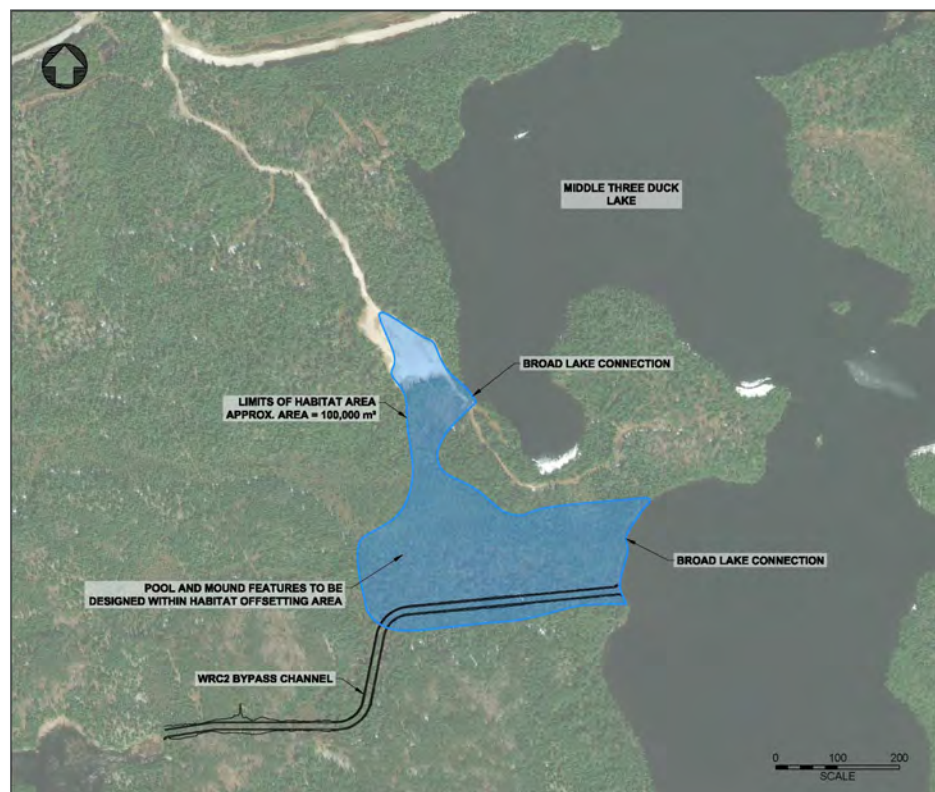
As we build the Project, we expect to identify improvements to Project design. Since construction started, the team identified changes that will require an amendment to the Offsetting Plan approved under the existing *Fisheries Act* Authorization. These changes include (Figure 1):

- The Bagsverd Aggregate Pit is no longer needed. This means there is no longer an opportunity to create habitat in this location.
- Aggregate Pit #3 needs changes to the design. This means that the habitat built there will be different to what was originally proposed and approved.
- Other small changes to the Project design include:
 - a culvert installation at a road crossing;
 - temporary placement of the construction discharge pipe into Upper Three Duck Lake; and
 - installing a freshwater intake pipe to Mesomikenda Lake.

Options for Habitat Replacement

After studying a variety of options, three modifications are proposed as amendments to the *Fisheries Act* Authorization for the Project. These modifications will offset the changes required to construct the Project and will still meet the goals of the original Offsetting Plan.

Modification 1: modify and extend the size of Aggregate Pit #3 connected to Middle Three Duck Lake



Modification 2: create walleye spawning habitat in the Mollie River between Middle Three Duck Lake and Lower Three Duck Lake



Modification 3: develop an adaptive Mattagami Lake Fisheries Plan in partnership with Mattagami First Nation to support the walleye population in Mattagami Lake

This plan will be developed in coordination with Mattagami First Nation, Fisheries and Oceans Canada, the Ministry of Northern Development, Mines, Natural Resources and Forestry and in consultation with other Indigenous and local communities. Ideally the plan will outline:

- the fisheries management planning process;
- current knowledge of the fisheries and fish habitat;
- how the plan will work and support the walleye population; and
- the process for reporting, and reviewing and updating the plan as new information is obtained.

The plan will take an adaptive approach to identify changes and implement solutions to support the walleye population. Key items in the plan could include shoreline improvements to reduce erosion and constructing juvenile walleye habitat.

Next Steps

1. Continue community consultations on the proposed changes (October / November 2021).
2. Formalize the scope and content of the Mattagami Lake Fisheries Plan (ongoing).
3. Complete the designs for walleye spawning habitat in the Mollie River, modifications to Aggregate Pit #3, shoreline improvements and juvenile rearing habitat in Mattagami Lake (ongoing).
4. Submit the request to amend the *Fisheries Act* Authorization for the Project to Fisheries and Oceans Canada (November 2021).

If you would like more information about this or other aspects of the Côté Gold Project, or have a question or comment to share, please contact:

Dave Brown
Manager of Environment and Community Relations
David_Brown@iamgold.com

Join our Project mailing list to be kept informed about the Project and any upcoming events by sending an email to:
cotegold@iamgold.com

Proposed Amendment to the *Fisheries Act* Authorization

Kim Connors (Minnow Aquatic Environmental Services)



SUSTAINABILITY

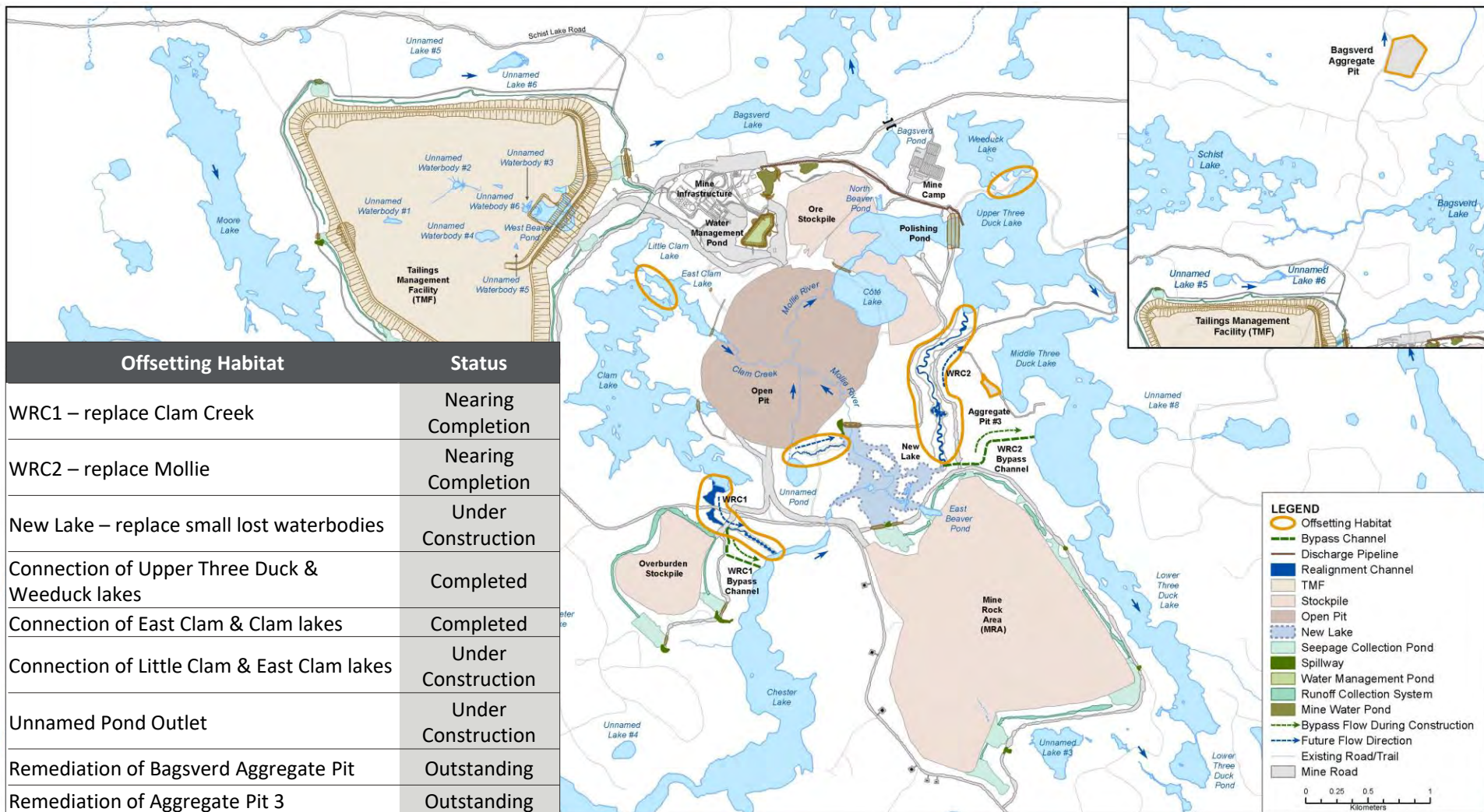
The Fisheries Act Authorization (FAA)



Fisheries Act Authorization (FAA) Update

- IAMGOLD Côte Gold Project currently has a FAA (20-HCAA-00766)
- Modifications to the Project design have occurred as the project is optimized for construction.
- Therefore, the current FAA requires an amendment to the Offsetting Plan.
- DFO was informed of the required changes for the amendment on November 23, 2020.
- The FAA amendment is an ongoing process, and this presentation summarizes the proposed changes.

Current Status of Offsetting Measures



Watercourse Realignment Channel (WRC1)

Expansion of Clam Lake



Low Gradient channel



WRC2 – Mollie River



Completed Lake Connections

East Clam and Clam Lake



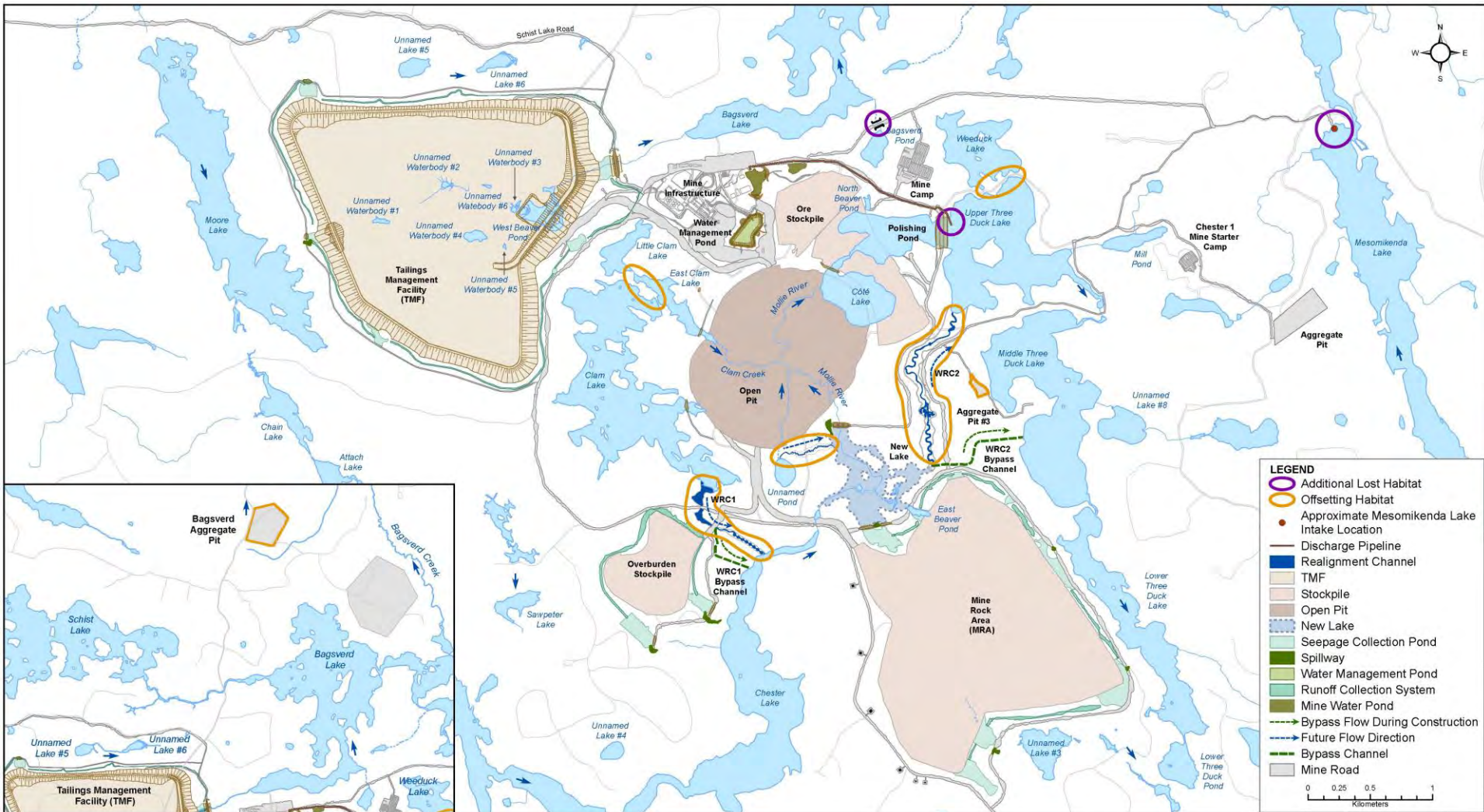
Weeduck and Upper Three Duck Lake



Changes to Site and Offsetting Plan

- Plan for Aggregate Pits remediation changed:
 - Bagsverd Aggregate Pit – will not be constructed
 - Aggregate Pit #3 – remediation required modification
- Therefore, these habitats can not be used as originally intended in the FAA and **additional offsetting habitat is required**.
- In addition, two modifications were required in early 2021:
 - A culvert installation for road construction
 - Placement of a discharge pipe to Upper Three Duck Lake
- One other modification is still outstanding
 - Freshwater intake in Mesomikenda Lake

Changes to the Plan



Proposed Alternative Offsetting Measures

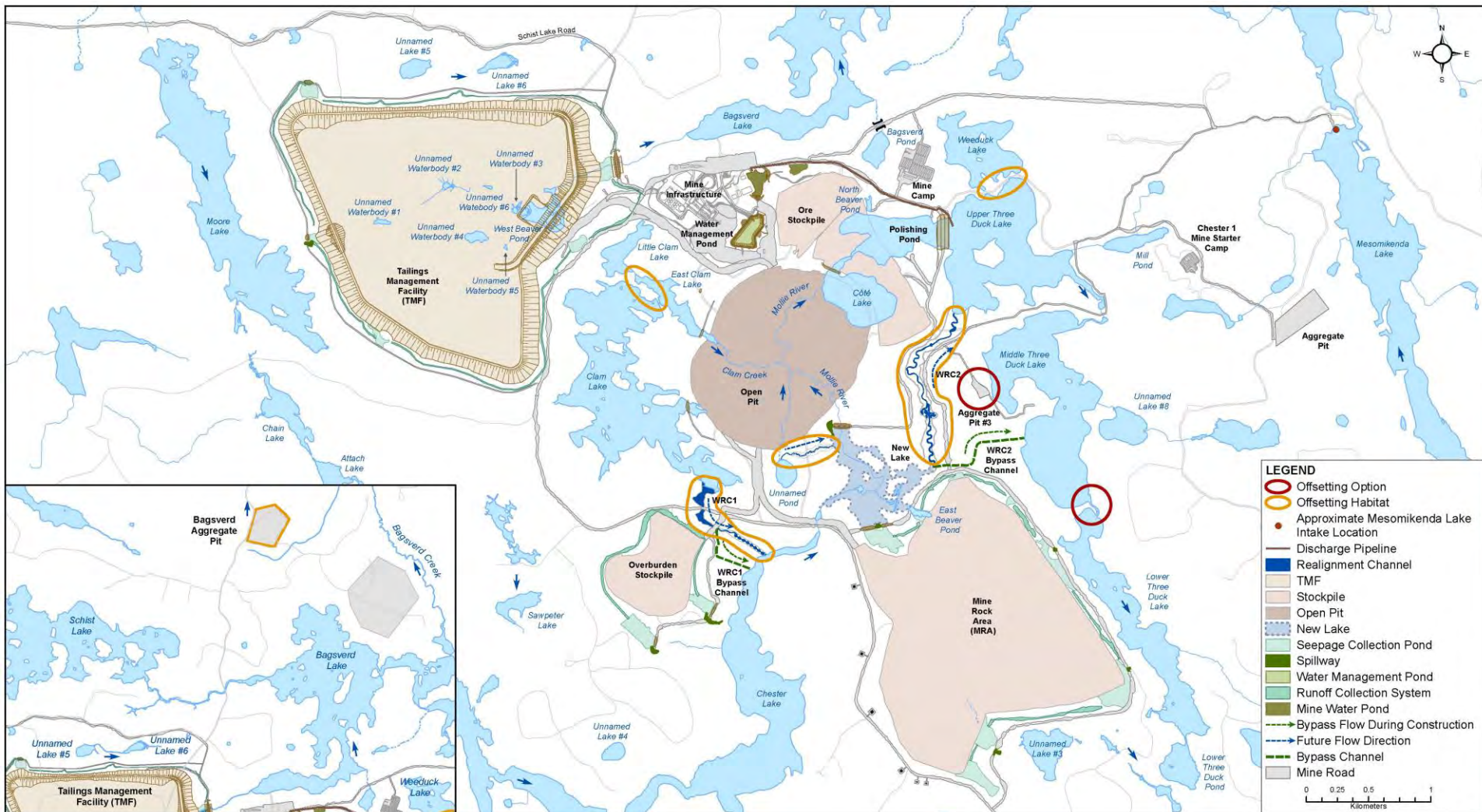


Proposed Alternate Offsetting Measures

- Walleye Spawning Habitat in the Mollie River between Middle and Lower Three Duck lakes
- Modification to Aggregate Pit #3 off Middle Three Duck Lake
- Mattagami Lake Fisheries Plan
 - The development of an adaptive management plan to support the walleye population
 - Shoreline erosion control
 - Potential installation of juvenile walleye habitat



Offsetting Options to the Plan



Mollie River – Offsetting Option

Addition of walleye spawning substrate In the Mollie River between Middle and Lower Three Duck lakes

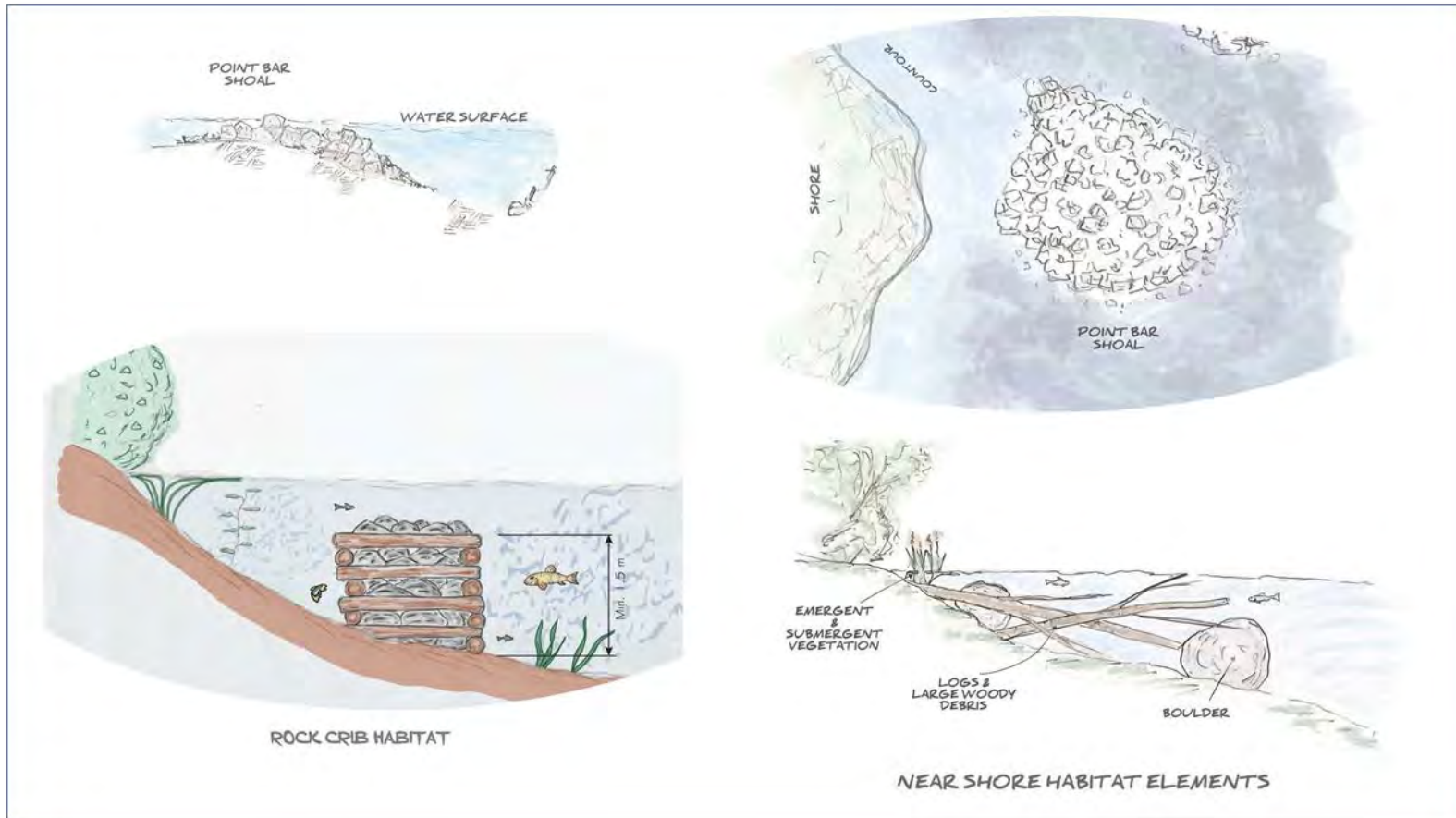


Mattagami Lake Fisheries Plan

- IAMGOLD has proposed to support development of a Fisheries Plan for Mattagami Lake as a component to the offsetting plan amendment.
- The strategy is to create an adaptive management plan to support the walleye population in the lake.
- Ideally the plan will:
 - Outline the fisheries plan
 - Determine baseline/current state of knowledge for fisheries and fish habitat
 - Propose strategies for fish and fish habitat management and ways to execute and monitor them
 - Include Indigenous, Public, and Regulatory engagement and participation
 - Propose a process for updating the plan over time

Mattagami Lake Offsetting Concept Options

Potential concepts to reduce shoreline erosion and increase juvenile walleye habitat



Next Steps



Next Steps

- Agreement on Mattagami Lake Fisheries Plan to support offsetting requirement. DFO and MNDMNRF agree in principle, but we will need to formalize scope and content.
- Complete offsetting designs and submit FAA Amendment.
- Consultation is expected to continue throughout October/November, and it is anticipated that the submission of the amendment will occur in November 2021.

Questions?



Thank You

Côté Gold

9-2140 Regent Street, Sudbury, ON P3E 5S8
cotegold@iamgold.com

cotegold.ca

Appendix 4: Copies of correspondence

- Indigenous
- Gogama
- Government

From: Krista Maydew
Sent: March 26, 2021 3:48 PM
To: Tim Harvey <tim.harvey@mattagami.com>
Cc: Cote Gold Projet Siims <Siims@iamgold.com>; Christian Naponse <christian_naponse@iamgold.com>; David Brown <David_Brown@iamgold.com>; ange_naveau14@hotmail.ca
Subject: RE: Fisheries Act Authorization

Good afternoon Tim,

Thank you for providing this information to inform the work to identify fish habitat offsets. As planning progresses, we will continue to provide updates through the Environmental Management Committee and will look forward to sharing more information as it is available.

Have a good weekend!

Krista

From: Tim Harvey [<mailto:tim.harvey@mattagami.com>]
Sent: March 26, 2021 3:40 PM
To: Krista Maydew <Krista_Maydew@iamgold.com>
Cc: Cote Gold Projet Siims <Siims@iamgold.com>; Christian Naponse <christian_naponse@iamgold.com>; David Brown <David_Brown@iamgold.com>; ange_naveau14@hotmail.ca
Subject: RE: Fisheries Act Authorization

Hi Krista,

1. Does the community have any preferences as to what type of habitat to put along the shoreline? – **habitat to support Walleye**
2. What would the community suggest to support the fish communities in the lake?
-**spawning beds, rock/gravel**
3. Is there a preference for fish species to target? Minnow noted that they can also target habitat that supports all fish or perhaps forage fish to support large-bodied fish for food and tourism. **Walleye – this is the heaviest targeted fish species in the lake. we operate a hatchery to increase the population**

cheers,

Tim Harvey
President/CEO
Mattagami AKI General Partner
w) 705/894-2072 EXT:225
c) 705/845-8760
f) 705/894-2887



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From: Krista Maydew [mailto:Krista_Maydew@iamgold.com]
Sent: March 22, 2021 9:24 AM
To: Tim Harvey <tim.harvey@mattagami.com>
Cc: Cote Gold Projet Siims <Siims@iamgold.com>; Christian Naponse <christian_naponse@iamgold.com>; David Brown <David_Brown@iamgold.com>; ange_naveau14@hotmail.ca
Subject: Fisheries Act Authorization

Good morning Tim,

As a follow-up to the last Environmental Management Committee meeting and the discussion about fish habitat offset options for Mattagami Lake shoreline, below are a few questions that Minnow Resources had noted would be helpful to answer to assist with planning.

1. Does the community have any preferences as to what type of habitat to put along the shoreline?
2. What would the community suggest to support the fish communities in the lake?
3. Is there a preference for fish species to target? Minnow noted that they can also target habitat that supports all fish or perhaps forage fish to support large-bodied fish for food and tourism.

I understand that Dave and GeoProcess will be in the community today for the site visit. Looks like a great day to be outside!

Thanks,
Krista

Krista Maydew

Director, Community Relations

IAMGOLD Corporation

3200-401 Bay Street, PO Box 153,
Toronto, Ontario, Canada M5H 2Y4
Phone: 416.475.7755

www.iamgold.com

[LinkedIn profile](#)



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From: Krista Maydew

Sent: April 8, 2021 1:26 PM

To: Jen Constant <jenniferconstant@mattagami.com>; ange_naveau14@hotmail.ca

Cc: David Brown <David_Brown@iamgold.com>; Christian Naponse <christian_naponse@iamgold.com>; Cote Gold Projet Siims <Siims@iamgold.com>

Subject: Offsetting options in Mattagami Lake

Hi Jen and Andrea –

Thanks again for taking the time to meet with us this morning! As mentioned in the meeting, there are some information gaps that, if addressed, would help the development of the offsetting options for Mattagami Lake.

It is proposed that the offsetting options would involve putting rock cribs and cobble/gravel shoals in the lake. In order to inform this plan, can you please confirm:

1. where the high boat traffic areas are? We would prefer not to install these structures in places where boat traffic is high or in areas that are heavily used for other activities like swimming.
2. If there are any “no go” areas the community could identify for us or areas Mattagami would like us to avoid?

If it is possible to provide this information by the end of April, this would help GeoProcess with their planning.

Please let me know if you have any questions.

Thanks,

Krista

Krista Maydew

Director, Community Relations

IAMGOLD Corporation

3200-401 Bay Street, PO Box 153,
Toronto, Ontario, Canada M5H 2Y4

Phone: 416.475.7755

www.iamgold.com



From: Christian Naponse
Sent: September 23, 2021 10:40 AM
To: Juanita Luke <juanitaluke@mattagami.com>
Cc: Cote Gold Projet Siims <Siims@iamgold.com>; David Brown <David_Brown@iamgold.com>;
Krista Maydew <Krista_Maydew@iamgold.com>
Subject: Flyer for October 6th Community Info Session

Hi Juanita,

Thanks for your help with this, attached is the flyer for the October 6th Project update/FAA consultation community information session.

If there are any issues with the file or you have any questions, let me know.

Christian Naponse

Community Affairs Coordinator

m. 705.207.1232

christian_naponse@iamgold.com

9-2140 Regent Street

Sudbury, ON P3E 5S8, Canada

cotegold.ca

Côté Gold



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IAMGOLD would like to invite you to a Project update and consultation session on the amendment to the *Fisheries Act* Authorization

Please join us on **October 6, 2021 @5pm** for dinner in the Community Hall.

Members of the IAMGOLD Côté Gold team will be on hand to share Project updates and answer questions. Minnow Environmental and GeoProcess will share an update on the fish relocation activities and fish habitat improvements being made at site. They will also give a presentation on amendments being proposed to the fish habitat offsetting plan. Your input on these proposed amendments is welcome and appreciated!

For more information, please contact: cotegold@iamgold.com or Christian Naponse at 705-207-1232

Please follow your community's social distancing protocols

From: Krista Maydew

Sent: October 14, 2021 8:54 AM

To: Victoria Stinson <victorias@metisnation.org>; vanessaP@metisnation.org

Cc: Cote Gold Projet Siims <Siims@iamgold.com>; Christian Naponse <christian_naponse@iamgold.com>; David Brown <David_Brown@iamgold.com>

Subject: IAMGOLD Côte Gold Project permit application updates

Good morning Victoria and Vanessa,

I'm writing to follow-up to see if there has been any advancement in selecting a potential date for the first Implementation Committee meeting for the Côte Gold Project? We look forward to initiating this aspect of the relationship between IAMGOLD and MNO Region 3.

We have two permit applications that are designated as Category 2 Authorizations in Appendix B of the IBA – one was submitted yesterday and one will be submitted within the next few weeks. As such, we would be happy to meet with the Implementation Committee to review and discuss these applications, assuming that is the preferred vehicle for such reviews and discussions. I've noted the two applications below. Please let us know how you wish to proceed with any consultation or discussions related to these applications.

1. Environmental Compliance Approval (ECA) for Industrial Sewage for the Operations phase - we submitted this application to the Ministry of the Environment, Conservation and Parks today. A brief summary is attached to this email and the documents are located on the SharePoint site in the **Permit Applications (Final)** folder in a sub-folder titled **ECA – Industrial Sewage Works – Operations**: https://iamgold.sharepoint.com/:f/s/cg/ps/EophR_BoelJFifrGTlxIma0BXaz9MWkyllsn0xCAZxV_lw?e=StCPRo

2. *Fisheries Act* Authorization (FAA) Amendment – IAMGOLD is preparing an amendment to the FAA as noted in Appendix B of the IBA. Attached to this email is a summary of the proposed amendment. We welcome the opportunity to meet with the Implementation Committee to review this as we prepare the amendment request which will be submitted to Fisheries and Oceans Canada by mid-November.

Please let me know if you have any preferred dates for a meeting (in-person or virtually) of the Implementation Committee. Don't hesitate to reach out if you have any questions.

Thanks,
Krista

From: [Christian Naponse](#)
To: [Jennifer Constant](#); [Andrea Naveau](#); [Chief Boissoneau](#); [Krista Maydew](#); [David Brown](#); [Mike Garbutt](#); [Kim Connors](#); [Geoffrey Lake](#); [Kyle Conway](#)
Cc: [Cote Gold Project Siims](#)
Subject: RE: Community Information Session - Mattagami First Nation October 6, 2021_draft report
Date: October 18, 2021 1:48:42 PM
Attachments: [MFN community information session 2021-10-06 Report_DRAFT.pdf](#)
[Cote Gold Project Update_Mattagami_Oct.6.2021_final.pdf](#)
[21-02 FAA Amendment Summary Presentation MFN_OCT06_FINAL.PDF](#)

Good afternoon,

Please disregard my previous email with the draft report from the Community Information Session, I sent the wrong version of the report.

Attached is the updated draft Report on the Community Information Session held on October 6, 2021. I have also included the presentations given that evening in the event that anyone who could not attend would like to see the information that was discussed.

If you have any comments or questions please let me know.

Thanks,

Christian Naponse

Community Affairs Coordinator

m. 705.207.1232

christian_naponse@iamgold.com

9-2140 Regent Street

Sudbury, ON P3E 5S8, Canada

cotegold.ca

Côté Gold



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From: Christian Naponse

Sent: October 18, 2021 10:35 AM

To: Jennifer Constant <jenniferconstant@mattagami.com>; Andrea Naveau <ange_naveau14@hotmail.ca>; Chief Boissoneau <c.boissoneau@mattagami.com>; Krista Maydew

From: Krista Maydew

Sent: October 20, 2021 1:41 PM

To: Jeff Berube <jjberube21@gmail.com>; Christian Naponse <christian_naponse@iamgold.com>

Cc: James Ray <Jamesisadoreray@gmail.com>; CHUM RAY <murrayray@hotmail.com>; David Brown <David_Brown@iamgold.com>; Cote Gold Project Siims <Siims@iamgold.com>

Subject: RE: Community consultation session for the proposed FAA amendment

Thank you Jeff! We will review those dates with Minnow and get back to you relatively quickly so that we can book the date.

Thanks,
Krista

From: Jeff Berube [<mailto:jjberube21@gmail.com>]

Sent: October 20, 2021 1:17 PM

To: Christian Naponse <christian_naponse@iamgold.com>

Cc: James Ray <Jamesisadoreray@gmail.com>; CHUM RAY <murrayray@hotmail.com>; David Brown <David_Brown@iamgold.com>; Krista Maydew <Krista_Maydew@iamgold.com>; Cote Gold Project Siims <Siims@iamgold.com>

Subject: Re: Community consultation session for the proposed FAA amendment

Good Afternoon All,

Speaking with Chief Ray, His next 3 weeks are pretty busy with travel and his earliest possible dates available would be Nov. 16th, 17th or 18th.

Jeff

On Oct 19, 2021, at 9:40 AM, Jeff Berube <jjberube21@gmail.com> wrote:

Good morning Christian,

Just spoke with Chief Ray and November 23rd seems to be ideal but we can be flexible if that date doesn't work.

Jeff

On Tue., Oct. 19, 2021, 9:20 a.m. Christian Naponse, <christian_naponse@iamgold.com> wrote:

Hi Jeff,

During our last Environmental Management Committee meeting we discussed the *Fisheries Act* Authorization amendment (FAA) that IAMGOLD is currently preparing for submission to

Fisheries and Oceans Canada (DFO) and having a community information session in order to provide a general Project update and to consult with the community on the FAA amendment. You mentioned that you would speak with Chief Ray to determine a date for this once he had returned from hunting.

We had our first community consultation session for the proposed FAA amendment at Mattagami First Nation earlier this month (October 6). This included an overall Project update presentation and a presentation from Minnow Aquatic Environmental Services on the changes identified by the Project team which require an amendment to the Fish Habitat Offsetting Plan approved under the existing FAA. The modifications are outlined in the attached summary of the proposed amendment. The application is being prepared for submission in mid-November.

We look forward to the opportunity to meet with Flying Post members to provide a Project update and consult on the FAA amendment, perhaps at your new band office? Once you've had an opportunity to discuss this with Chief Ray please let me know so we can begin to plan accordingly.

Christian Naponse

Community Affairs Coordinator

m. 705.207.1232

christian_naponse@iamgold.com

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From: Lands and Resources [<mailto:landsandresources@Bhfn.ca>]
Sent: October 21, 2021 12:08 PM
To: Christian Naponse <christian_naponse@iamgold.com>; Kevin Tangie <Councillorlands@Bhfn.ca>; Chief <Chief@Bhfn.ca>; Krista Maydew <Krista_Maydew@iamgold.com>; David Brown <David_Brown@iamgold.com>
Cc: Mike Garbutt <Mike_Garbutt@iamgold.com>; Stephen Crozier <Stephen_Crozier@iamgold.com>; Cody Vanbuskirk <cody.vanbuskirk@Bhfn.ca>
Subject: RE: Côte Gold - Project Update and Fisheries Act Authorization Amendment

Yes, sorry Land Code Assistant needs to be removed and Cody Vanbuskirk added which I have completed above.

Thanks

Lisa

-----Original Appointment-----

From: Christian Naponse <christian_naponse@iamgold.com>
Sent: October 21, 2021 11:31 AM
To: Kevin Tangie; Land Code Assistant; Chief; Kevin Tangie ; Lands and Resources; Krista Maydew; David Brown
Cc: Mike Garbutt; Stephen Crozier
Subject: Côte Gold - Project Update and Fisheries Act Authorization Amendment
When: October 28, 2021 10:00 AM-11:30 AM (UTC-05:00) Eastern Time (US & Canada).
Where: Microsoft Teams Meeting

IAMGOLD will provide a Project update and consult on an amendment to the *Fisheries Act* Authorization.

If there is anyone else that should be invited to this meeting please let me know as I have only added those included on the Chief's email from October 20.

Microsoft Teams meeting

Join on your computer or mobile app

[Click here to join the meeting](#)

Join with a video conferencing device

iamgoldcorp@m.webex.com

Video Conference ID: 116 654 565 4

[Alternate VTC instructions](#)

Or call in (audio only)

[+1 437-703-5248,951736395#](tel:+1437-703-5248,951736395#) Canada, Toronto

From: [Chief](#)
To: [Christian Naponse](#)
Cc: [Lands and Resources](#); [Kevin Tangie](#); chimokoman@hotmail.com; [David Brown](#); [Krista Maydew](#); [Land Code Assistant](#)
Subject: RE: Côté Gold Project - Fisheries Act Authorization Amendment
Date: October 20, 2021 3:29:47 PM

You don't often get email from chief@bhfn.ca. [Learn why this is important](#)

Good afternoon Christian,

Thank you for contacting me in regard to the Fisheries Act Authorization (FFA) for the Cote Gold Project. I see that the previous chief has presented Cote Mine with a support letter for your application. Our main priority is to ensure our traditional values are protected. We are interested and would appreciate the opportunity to review the proposed modifications to the FFA approved Fish Habitat Offsetting Plan.

We are available next week Tuesday, October 26, 28, or 29 at 10:00am virtually. Let me know if these dates and times work for you.

From: Christian Naponse <christian_naponse@iamgold.com>
Sent: October 19, 2021 9:10 AM
To: BHFN Reception <bhfn.reception@hotmail.com>; Lands and Resources <landsandresources@Bhfn.ca>; Kevin Tangie <chimokoman@hotmail.com>
Cc: Cote Gold Project Siims <Siims@iamgold.com>; Krista Maydew <Krista_Maydew@iamgold.com>; David Brown <David_Brown@iamgold.com>
Subject: Côté Gold Project - Fisheries Act Authorization Amendment

Dear Chief Van Buskirk,

IAMGOLD is preparing an amendment to the *Fisheries Act* Authorization (FAA) for the Côté Gold Project. Since construction of the Project started in 2020, the Project team identified changes that will require an amendment to the Fish Habitat Offsetting Plan approved under the existing FAA. We are proposing three modifications to the original plan which are described in the attached summary of the proposed amendment.

We previously met with Chief St. Denis to discuss the original *Fisheries Act* Authorization / Fish Habitat Offsetting Plan in October 2019. At that time, Chief St. Denis provided a letter of support for the application (see attached).

We welcome the opportunity to meet with you to review the proposed modifications to the FAA approved Fish Habitat Offsetting Plan this as we prepare the amendment request which will be submitted to Fisheries and Oceans Canada in mid-November.

Please let us know if you are interested in meeting to review the proposed changes. We welcome the opportunity to meet with you in-person or virtually.

Thank you,

Christian Naponse

Community Affairs Coordinator

m. 705.207.1232

christian_naponse@iamgold.com

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Côté Gold



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From: David Brown

Sent: November 16, 2021 6:53 PM

To: Lands and Resources <landsandresources@Bhfn.ca>; Kevin Tangie <chimokoman@hotmail.com>; Cody Vanbuskirk <cody.vanbuskirk@Bhfn.ca>; chief@bhfn.ca

Cc: Mike Garbutt <Mike_Garbutt@iamgold.com>; Krista Maydew <Krista_Maydew@iamgold.com>; Christian Naponse <christian_naponse@iamgold.com>; Cote Gold Project Siims <Siims@iamgold.com>

Subject: RE: Cote Gold Project- Introduction Brunswick House First Nation new Council

Hi Kevin, Lisa and Cody,

We reviewed the Intellectual Property & Data Sharing Agreement provided and would like to propose a minor change, specifically related to the sharing of information. Respectfully, if any of the community's cultural values overlap with the Côté Gold Project site, we will need to be able to share such information with our IBA partners (Mattagami and Flying Post) as well as Wabun Tribal Council. If you could add this provision to the agreement, we will be able to sign and return it to you.

Also, I assume signing reference for Chief Cheryl St.Denis will now need to be revised to Chief Renae Vanbuskirk.

If you have any comments please feel free to reach out directly to me at anytime.

Dave Brown

Manager of Environment and Community Relations

Mobile: + 1-705-923-3369

Email: David_Brown@iamgold.com

9-2140 Regent Street

Sudbury, ON P3E 5S8, Canada

cotegold.ca

Côté Gold



From: Lands and Resources [<mailto:landsandresources@Bhfn.ca>]

Sent: November 15, 2021 3:38 PM

To: David Brown <David_Brown@iamgold.com>; Kevin Tangie <chimokoman@hotmail.com>; Cody Vanbuskirk <cody.vanbuskirk@Bhfn.ca>

Cc: Mike Garbutt <Mike_Garbutt@iamgold.com>; Krista Maydew <Krista_Maydew@iamgold.com>; Christian Naponse <christian_naponse@iamgold.com>; Cote Gold Project Siims <Siims@iamgold.com>

Subject: RE: Cote Gold Project- Introduction Brunswick House First Nation new Council

Hi I am just following up on your email below regarding BHFN's Data Sharing Agreement.

In order to begin consultations around water with DFO whom would be the best contact for this.

Thanks

Lisa

From: [Christian Naponse](#)
To: [Vanessa Potvin](#)
Cc: [Russell Ott](#); [Jacques Picotte](#); [Cote Gold Projet Siims](#); [David Brown](#); [Krista Maydew](#)
Subject: Re: FAA application - draft letter of support
Date: December 10, 2021 2:10:54 PM

Sorry about that! I meant to send it in word :)

Christian Naponse
Community Affairs Coordinator
Côte Gold Project - IAMGOLD Corporation
705-207-1232

On Dec 10, 2021, at 1:32 PM, Vanessa Potvin <VanessaP@metisnation.org> wrote:

Good afternoon Christian,

Is it possible to get a version of the letter sent in a Word Document? I just have to make one very minor change, and also attach our MNO letter head.

Thanks!
Vanessa

From: Christian Naponse [mailto:christian_naponse@iamgold.com]
Sent: December 10, 2021 10:42 AM
To: Vanessa Potvin <VanessaP@metisnation.org>; Russell Ott <RussellO@metisnation.org>; Jacques Picotte <JacquesP@metisnation.org>
Cc: Cote Gold Projet Siims <Siims@iamgold.com>; David Brown <David_Brown@iamgold.com>; Krista Maydew <Krista_Maydew@iamgold.com>
Subject: FAA application - draft letter of support

Good morning,

As discussed during our meeting on November 9, IAMGOLD is applying for an amendment to the *Fisheries Act* Authorization. As part of our application submission we would like to include a letter of support from the Métis Nation of Ontario. We are providing a draft letter of support to the MNO for their review and consideration if they have no further questions or comments for us about the upcoming request to amend the FAA.

Please let me know if you have any questions.

From: [Christian Naponse](#)
To: [Jeff Berube](#); [Chief Ray](#)
Cc: [Cote Gold Projet Siims](#); [David Brown](#); [Krista Maydew](#)
Subject: FAA Amendment - draft support letter
Date: December 10, 2021 2:59:51 PM
Attachments: [Flying Post Open House 2021-11-16 Report_DRAFT.pdf](#)
[Draft Support Letter re FAA amendment FPFN.docx](#)

Good afternoon,

As discussed during our meeting on November 16th, IAMGOLD is applying for an amendment to the *Fisheries Act* Authorization. As part of our application submission we would like to include a letter of support from Flying Post First Nation. We are providing a draft letter of support to you for review and consideration, if you have no further questions or comments for us about the upcoming request to amend the FAA.

I have also attached the draft meeting notes from our meeting for your review. Please let me know if you would like to see any changes or additions.

Christian Naponse

Community Affairs Coordinator

m. 705.207.1232

christian_naponse@iamgold.com

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From: [Christian Naponse](#)
To: [Jennifer Constant](#); [Chief Boissoneau](#); [Tim Harvey](#); [Andrea Naveau](#)
Cc: [Cote Gold Projet Siims](#); [David Brown](#); [Krista Maydew](#)
Subject: FAA Amendment - draft letter of support
Date: December 10, 2021 3:03:24 PM
Attachments: [MFN community information session 2021-10-06 Report_DRAFT.pdf](#)
[Draft Support Letter re FAA amendment MFN.docx](#)

Good afternoon,

As discussed during the open house on October 6th, IAMGOLD is applying for an amendment to the *Fisheries Act* Authorization. As part of our application submission we would like to include a letter of support from Mattagami First Nation. We are providing a draft letter of support to you for review and consideration, if you have no further questions or comments for us about the upcoming request to amend the FAA.

I have also attached the draft meeting notes from our meeting for your review. Please let me know if you would like to see any changes or additions.

Thanks,

Christian Naponse

Community Affairs Coordinator

m. 705.207.1232

christian_naponse@iamgold.com

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From: [Christian Naponse](#)
To: Chief; [Lisa VanBuskirk](#); [Kevin Tangie](#); cody.vanbuskirk@Bhfn.ca
Cc: [Cote Gold Projet Siims](#); [David Brown](#); [Krista Maydew](#)
Subject: FAA amendment - draft letter of support
Date: December 10, 2021 2:54:38 PM
Attachments: [Draft Support Letter re FAA amendment_BHFN.docx](#)
[BHFN open house 2021-10-28 Report_DRAFT.pdf](#)

Good afternoon,

As discussed during our meeting on October 28th, IAMGOLD is applying for an amendment to the *Fisheries Act* Authorization. As part of our application submission we would like to include a letter of support from Brunswick House First Nation. We are providing a draft letter of support to you for review and consideration, if you have no further questions or comments for us about the upcoming request to amend the FAA.

I have also attached the draft meeting notes from our meeting for your review. Please let me know if you would like to see any changes or additions.

Respectfully,

Christian Naponse

Community Affairs Coordinator

m. 705.207.1232

christian_naponse@iamgold.com

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Sent: December 9, 2021 10:40 AM

To: Jacques Picotte <JacquesP@metisnation.org>

Cc: David Brown <David_Brown@iamgold.com>; Christian Naponse <christian_NAPONSE@iamgold.com>

Subject: RE: Follow-up to Côté Gold site tour - your input requested by EOD Wednesday, December 1

Fantastic. Thanks Jacques! I appreciate the email – I realize it can be a hectic time of year but was concerned as we hadn't heard back from you. I hope all is well and we look forward to hearing back from you after your meeting with the RCC. Please let us know if you need any further info from us to support your discussions.

Thanks,
Krista

From: Jacques Picotte [<mailto:JacquesP@metisnation.org>]

Sent: December 9, 2021 10:38 AM

To: Krista Maydew <Krista_Maydew@iamgold.com>

Subject: RE: Follow-up to Côté Gold site tour - your input requested by EOD Wednesday, December 1

Good morning

The RCC will be meeting next week and I will bring up the points at that time.

From: Krista Maydew [mailto:Krista_Maydew@iamgold.com]

Sent: December 9, 2021 10:33 AM

To: Russell Ott <RussellO@metisnation.org>

Cc: Jacques Picotte <JacquesP@metisnation.org>; JacquesPicotte <jpicotte@live.com>; David Brown <David_Brown@iamgold.com>; Christian Naponse <christian_naponse@iamgold.com>; Cote Gold Projet Siims <Siims@iamgold.com>

Subject: FW: Follow-up to Côté Gold site tour - your input requested by EOD Wednesday, December 1

Importance: High

Good morning Russell,

We've been trying to reach Jacques via email but have had no response and are hopeful all is well. There are a few time sensitive items in the email below for decision and/or further discussion that I'm hoping you may be able to help us move forward with.

Please let me know how we can collaborate to close out the items below in a mutually agreeable manner.

Thanks,

Krista

From: Krista Maydew

Sent: December 2, 2021 9:48 AM

To: Jacques Picotte <jp Picotte@live.com>; JacquesP@metisnation.org

Cc: David Brown <David_Brown@iamgold.com>

Subject: RE: Follow-up to Côté Gold site tour - your input requested by EOD Wednesday, December 1

Importance: High

Hi Jacques,

We just realized this morning that we have two email addresses for you and I may have inadvertently sent the meeting invite and the email below to the incorrect address. Please let me know if you receive this email and if you have time to discuss today.

Thanks,
Krista

From: Krista Maydew

Sent: November 30, 2021 10:00 AM

To: Jacques Picotte <jp Picotte@live.com>

Cc: David Brown <David_Brown@iamgold.com>

Subject: Follow-up to Côté Gold site tour - your input requested by EOD Wednesday, December 1

Good morning Jacques,

Unfortunately it seems we were unable to connect on Friday morning. I hope all is well and we would be happy to try to schedule another time to follow-up with you by phone. In the meantime, I'll outline the items below we'd hoped to discuss. Also, in keeping with the communication protocols established during the Implementation Committee meeting, we would like to distribute this email to the wider group, subject to your input. Please let me know if you have any comments or questions about the email contents (below) by end of day Wednesday, December 1 after which time I will circulate to the wider group to support mutually agreeable closure on the topics below.

During the IBA Implementation Committee meeting on November 9 you noted that the meeting did not constitute consultation and you would need to share the information with the rest of the Region 3 Consultation Committee (R3CC) for their review and comment. The information was shared by email to the R3CC on November 12. We are finalizing our application and would like to confirm if the R3CC members have any comments or questions for our consideration.

Related to this point, we believe some confusion may exist regarding the role of the Implementation Committee and consultation. As noted in the IBA (Schedule 3, Section 2(a)), "consultation through the Implementation Committee members, whether as part of a regular meeting or outside of a regular meeting of the Implementation Committee and any regional environment committee that

MNO may participate in, satisfies IAMGOLD's consultation obligations". We were admittedly a bit concerned with how Environment and Climate Change Canada may have perceived the comment related to consultation as they are not privy to the contents of the IBA. We are hopeful that this statement can be clarified by the MNO in the letter of support for the amendment application that we discussed during the meeting.

We noted that the meeting notes from the November 9 meeting which Vanessa circulated this morning will also require an edit to the initial comment which notes that the meeting was not considered consultation as this statement is contradictory to the terms of the IBA.

Let me know if we are able to close out any of these by email. We can certainly make ourselves available by phone at a mutually agreeable time.

Best regards,
Krista

Krista Maydew

Director, Community Relations

IAMGOLD Corporation

401 Bay Street, Suite 3200, Toronto, ON, Canada M5H 2Y4

M: 416 475 7755

www.iamgold.com



From: [Krista Maydew](#)
To: [Christian Naponse](#)
Subject: FW: Follow-up to Côté Gold site tour - your input requested by EOD Wednesday, December 1 - for SIIMS
Date: January 10, 2022 4:59:54 PM
Attachments: [image003.png](#)

From: Krista Maydew
Sent: January 10, 2022 4:59 PM
To: 'Jacques Picotte' <JacquesP@metisnation.org>
Cc: David Brown <David_Brown@iamgold.com>; Christian Naponse <christian_NAPONSE@iamgold.com>
Subject: RE: Follow-up to Côté Gold site tour - your input requested by EOD Wednesday, December 1

Good afternoon Jacques,

Thank you for the follow-up. Please let me know once you've heard back from the MNO regarding Indspire and we can work together to establish the parameters for the bursary.

In terms of the request to amend the *Fisheries Act* Authorization, we appreciate your confirmation that the RCC has no issues or concerns with it. Christian and Vanessa previously corresponded about a support letter for the application and Christian will follow-up with Vanessa on the status of the letter this week.

I appreciate your comments about consultation and we will certainly endeavour to provide information in advance of meetings when possible and practical. We also appreciate and understand the need for engagement of the broader RCC related to permitting and some implementation activities. We recognize that consultation is not a "one and done" activity and that to achieve a sense of "completeness" of consultation on a particular permit application or amendment may require multiple interactions or could include processes internal to MNO. The engagement through the IBA Implementation Committee is a key element of that consultation, as identified in the IBA. If there are permit applications that you feel are better discussed in the context of an RCC meeting, we would be happy to present information to that group as well when requested. I believe this understanding aligns with the spirit and intent of the IBA language (IBA (Schedule 3, Section 2(a)), "consultation through the Implementation Committee members, whether as part of a regular meeting or outside of a regular meeting of the Implementation Committee and any regional environment committee that MNO may participate in, satisfies IAMGOLD's consultation obligations".) We consider engagement with the RCC (through the Implementation Committee meetings or in parallel) also part of consultation. We anticipate that in most instances, consultation will be considered complete barring no any material comments from either the Implementation Committee or RCC; however, we acknowledge additional consultation may be required where requested.

We look forward to the year ahead continuing to strengthen the foundations of our relationship with the MNO. As always, if you have any questions, please feel free to reach out to Dave, Christian or myself.

Thanks,
Krista

From: Jacques Picotte [<mailto:JacquesP@metisnation.org>]
Sent: January 10, 2022 12:43 PM
To: Krista Maydew <Krista_Maydew@iamgold.com>
Cc: David Brown <David_Brown@iamgold.com>; Christian Naponse <christian_naponse@iamgold.com>
Subject: RE: Follow-up to Côté Gold site tour - your input requested by EOD Wednesday, December 1

Good afternoon

Sorry for the late response. I have had the meeting with the RCC and they do like the Indspire ideal, I am just waiting for a response from the MNO to make sure this vehicle works for them. As for the **Fisheries Act Authorization amendment** . The RCC has no issues or concern with it. As for the comment of Consultation yes it does fill your obligation it does not fill mine. Meaning I cannot make a decision at the moment I will always bring it back to the RCC to make sure they are good with it that all.. Sorry if it came across the wrong way. If I have a chance to bring them what are to be discussed at our meeting before hand than I could make a decision at the meetings.

Thank you
Jacques Picotte.

From: Krista Maydew [mailto:Krista_Maydew@iamgold.com]
Sent: January 5, 2022 11:48 AM
To: Jacques Picotte <JacquesP@metisnation.org>
Cc: David Brown <David_Brown@iamgold.com>; Christian Naponse <christian_naponse@iamgold.com>
Subject: RE: Follow-up to Côté Gold site tour - your input requested by EOD Wednesday, December 1

Good morning Jacques and Happy New Year! I hope this email finds you well, rested and healthy. We are looking forward to working with you this coming year on the implementation of the IBA.

In your last email, you'd mentioned that the RCC was meeting in December and would be discussing the educational bursary, requests for donations and the *Fisheries Act* Authorization amendment. Are you able to provide us with any update on these items?

Kind regards,
Krista

From: Krista Maydew

From: [Krista Maydew](#)
To: [Christian Naponse](#)
Subject: FW: FAA amendment - draft letter of support - SIIMS
Date: February 4, 2022 1:12:58 PM

From: David Brown
Sent: February 3, 2022 11:50 AM
To: Chief <Chief@Bhfn.ca>; Kevin Tangie <kevintangie@Bhfn.ca>
Cc: Cote Gold Projet Siims <Siims@iamgold.com>; Krista Maydew <Krista_Maydew@iamgold.com>; Christian Naponse <christian_naponse@iamgold.com>
Subject: RE: FAA amendment - draft letter of support

Dear Chief VanBuskirk and Councillor Tangie,

I hope all is well.

I am just following up on the email chain below please feel free to call me at anytime to discuss.

Regards,

Dave Brown
Manager of Environment and Community Relations
Mobile: + 1-705-923-3369
Email: David_Brown@iamgold.com

9-2140 Regent Street
Sudbury, ON P3E 5S8, Canada

cotegold.ca

Côte Gold



From: David Brown
Sent: January 6, 2022 4:06 PM
To: Chief <Chief@Bhfn.ca>; Kevin Tangie <kevintangie@Bhfn.ca>
Cc: Cote Gold Projet Siims <Siims@iamgold.com>; Krista Maydew <Krista_Maydew@iamgold.com>;

Christian Naponse <christian_NAPONSE@iamgold.com>

Subject: RE: FAA amendment - draft letter of support

Dear Chief VanBuskirk and Councillor Tangie,

I hope all is well and that everyone had a great holiday.

We received the below email from the Lands and Resources Coordinator on December 10 and would like to confirm with you if Brunswick House is interested in holding a general community meeting or further discussions related to the proposed amendment outlining proposed improvements to our approved *Fisheries Act* Authorization for the Côté Gold Project. If this is the wish of Chief and Council, we would be happy to present the information to the community in-person or virtually due to current COVID restrictions.

With respect to further consultation with Fisheries and Oceans Canada (DFO) related to the request to amend the Fish Habitat Offsetting Plan as part of the Project's *Fisheries Act* Authorization, it is our understanding that DFO will directly follow-up with the community. Their contact information was included in the meeting invite from our October 28 meeting and is also listed below:

Brandi Mogge Brandi.Mogge@dfo-mpo.gc.ca

Clayton James Clayton.James@dfo-mpo.gc.ca

Terina Hancock terina.hancock@dfo-mpo.gc.ca

Melanie Campbell Melanie.Campbell@dfo-mpo.gc.ca

Please feel free to coordinate with myself or Christian Naponse.

Dave Brown

Manager of Environment and Community Relations

Mobile: + 1-705-923-3369

Email: David_Brown@iamgold.com

9-2140 Regent Street

Sudbury, ON P3E 5S8, Canada

cotegold.ca

Côté Gold



From: Lands and Resources [<mailto:landsandresources@Bhfn.ca>]
Sent: December 10, 2021 3:45 PM
To: Christian Naponse <christian_naponse@iamgold.com>; Chief <Chief@Bhfn.ca>; Kevin Tangie <kevintangie@Bhfn.ca>; Cody Vanbuskirk <cody.vanbuskirk@Bhfn.ca>
Cc: Cote Gold Projet Siims <Siims@iamgold.com>; David Brown <David_Brown@iamgold.com>; Krista Maydew <Krista_Maydew@iamgold.com>
Subject: RE: FAA amendment - draft letter of support

At this time it is my recommendation from the Lands Department that BHFN should not produce a letter of support, our members were not consulted on this Amendment and we do not hold the capacity nor expertise to conduct a community consultation information session, this project does impact our Aboriginal & Treaty Rights and thus arrangements will have to be made to apply the Duty to Consult with BHFN community.

If you would like to begin community consultation around the amendment to the Fisheries Act Authorization please contact Brunswick House First Nation to discuss further as we have asked for the DFO contact information on November 15, 2021 and have not received any info.

We look forward in hearing from you.

Lisa

From: Christian Naponse <christian_naponse@iamgold.com>
Sent: Friday, December 10, 2021 2:55 PM
To: Chief <Chief@Bhfn.ca>; Lands and Resources <landsandresources@Bhfn.ca>; Kevin Tangie <chimokoman@hotmail.com>; Cody Vanbuskirk <cody.vanbuskirk@Bhfn.ca>
Cc: Cote Gold Projet Siims <Siims@iamgold.com>; David Brown <David_Brown@iamgold.com>; Krista Maydew <Krista_Maydew@iamgold.com>
Subject: FAA amendment - draft letter of support

Good afternoon,

As discussed during our meeting on October 28th, IAMGOLD is applying for an amendment to the *Fisheries Act* Authorization. As part of our application submission we would like to include a letter of support from Brunswick House First Nation. We are providing a draft letter of support to you for review and consideration, if you have no further questions or comments for us about the upcoming request to amend the FAA.

I have also attached the draft meeting notes from our meeting for your review. Please let me know if you would like to see any changes or additions.

Respectfully,

Christian Naponse

Community Affairs Coordinator

m. 705.207.1232

christian_naponse@iamgold.com

9-2140 Regent Street

Sudbury, ON P3E 5S8, Canada

cotegold.ca



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February 24, 2022

Chief Renae Vanbuskirk
Brunswick House First Nation
P.O Box 1178, Kanata Street
Chapleau, ON P0M 1K0

Attention Chief Vanbuskirk

I am writing to you in connection with the Côté Gold Project. As you are aware, IAMGOLD has been actively engaged with Brunswick House First Nation since 2012 regarding the proposed Project when it was first acquired by the Company. Consultation with the community has at all times been conducted in a manner consistent with input from community representatives regarding that engagement. At present, all outreach with the community is conducted in accordance with the Indigenous Consultation Plan (ICP) (a copy of which can be accessed here: https://s2.q4cdn.com/610165863/files/doc_downloads/operations/2022/02/Cote-Gold-Indigenous-Consultation-Plan-2022-01-21-Rev-4.pdf).

The ICP was developed as a condition of the Environmental Assessment (EA) completed by the province and the federal government, and on which Brunswick House First Nation was extensively consulted. IAMGOLD also consulted Brunswick House First Nation and other communities on the development of the ICP, with requests made for confirmation of continued interest, including an explicit request of whether the Project is located within the community's traditional territory in September 2018. This request contained a map showing the Project location and included a complete record of engagement between IAMGOLD and the community up to that point. A response from Brunswick House First Nation was not received despite IAMGOLD's efforts to follow-up by phone, however, in a few different meetings over the past several years community representatives have indicated that they did not at that time believe the Project was located on their traditional territory. A draft ICP was shared with the community in November 2018, with the final version shared in December 2019, again in March 2020 and the most current version is available on the IAMGOLD website. A complete copy of the Record of Engagement between IAMGOLD and the community is attached for your reference.

IAMGOLD established a SharePoint site for sharing permit applications and other Project information with the community. Since the site's inception in April 2019, each time the community is notified of a permit application submission or IAMGOLD's receipt of a permit approval, an email is issued to the community representatives containing a link to the full documentation. For notifications and information shared with Brunswick House First Nation since 2019, these representatives include the Chief, Councillor Tangie, the Lands and Resources Coordinator and as of July 2021, the Mining and Mapping Student. In early November we notified community representatives that the site was upgraded and provided login information (user name and password). We can confirm that since November 2021, there has been no login activity for Brunswick House First Nation despite repeated attempts by IAMGOLD to encourage community representatives to access to the site (as other communities do on a regular basis).

Over the past several months, the Lands and Resources Coordinator for Brunswick House FN, Lisa Vanbuskirk, has made several statements to IAMGOLD representatives as well as federal and provincial regulators that the community was never consulted on the Project. This is demonstrably and provably false. Her statements also contradict the statement she herself made during our meeting on October 28, 2021 regarding the Fisheries Act Authorization amendment, at which time she expressed that the community did have all of the information that IAMGOLD had been sharing and that Côté had been consulting with Brunswick House First Nation. For clarity, that statement was made in the presence of IAMGOLD representatives and four representatives of the Department of Fisheries and Oceans (Canada), all of whom participated in that earlier meeting. The Lands and Resources Coordinator seems intent to ignore that statement as well as the well-documented history of our engagement with the community since 2012.

In mid-November 2021, IAMGOLD informed the community that the Data Sharing Agreement proposed by Brunswick House First Nation had been reviewed by the Company and that we had proposed a provision be added to allow information sharing with Mattagami First Nation, Flying Post First Nation and Wabun Tribal Council if any of the community's updated cultural values are found to overlap with the Project site. IAMGOLD indicated that we would be happy to sign that agreement if this provision could be added. To date, despite many months of follow up, we have received no response to that proposal.

In light of the comments from the Lands and Resources Coordinator, IAMGOLD has separately reached out several times to the community leadership over the past few months to confirm whether, in fact, the community is making an updated assertion based on a revised traditional territory claim. All of those communications have gone unanswered. We remain open, as we have always been, to engaging with the community leadership on its priorities, including with respect to an updated assertion of its traditional territory if the community wishes to make one. Such an assertion must, however, come directly from the community leadership. In the absence of clear and formal direction from the community leadership, assertions from the community's Lands and Resources Coordinator are not accepted by IAMGOLD as representing the interests of the community in that capacity.

We would greatly appreciate receiving a formal response from the community leadership whether it intends to pursue a formal assertion at this stage. We would also appreciate confirmation as to whether the proposed revision to the Data Sharing Agreement is acceptable to Brunswick House First Nation as soon as possible.

Regards,

A handwritten signature in blue ink, appearing to read 'S. Crozier', with a stylized flourish at the end.

Stephen Crozier
VP, Corporate Affairs
IAMGOLD Corporation

Attachment: Brunswick House First Nation Records of Engagement, 2012 to 2022

cc: David Brown
Krista Maydew

-----Original Message-----

From: Christian Naponse

Sent: October 21, 2021 2:08 PM

To: Gogama Local Services Board <glsb10@ontera.net>; Gerry Talbot <tally@bell.net>

Cc: Cote Gold Projet Siims <Siims@iamgold.com>; Krista Maydew <Krista_Maydew@iamgold.com>; David Brown <David_Brown@iamgold.com>

Subject: RE: Community Information Session and SEMMP meeting

Hi Christine and Gerry,

I would like to confirm the date for a community information session, could we book the hall for November 8 please? We anticipate the information session to take place in the evening so we can accommodate people who are working, could you suggest a start time that you feel is best for the community? As well, I'm not sure if current Covid restrictions locally allow for it, but in the past we have had refreshments available, would you be able to coordinate this?

We would also like to confirm this date for our next quarterly SEMMP meeting as well, Gerry could you check with the group to see if a 3pm meeting on November 8 would work?

I will prepare a flyer / poster to advertise the community information session which I will be sure to have to you no later than Tuesday.

If you have any questions let me know!

Christian Naponse
Community Affairs Coordinator
m. 705.207.1232
christian_naponse@iamgold.com
9-2140 Regent Street
Sudbury, ON P3E 5S8, Canada
cotegold.ca

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-----Original Message-----

From: Gogama Local Services Board [<mailto:glsb10@ontera.net>]

Sent: October 19, 2021 1:14 PM

To: Christian Naponse <christian_naponse@iamgold.com>; Gerry Talbot <tally@bell.net>

Cc: Cote Gold Projet Siims <Siims@iamgold.com>; Krista Maydew <Krista_Maydew@iamgold.com>; David Brown <David_Brown@iamgold.com>

Subject: Re: Community Information Session and SEMMP meeting

Hi Christian,

The following are the available dates for the hall at the community centre;

October 25, 26, 27
November 8, 11, 12

If you prefer a weekend, we can arrange that as well.

Please advise.

Regards

Christine Bedard, Secretary
15 Low Avenue
P.O.Box 190
Gogama, ON P0M 1W0
Tel/Fax: (705)894-2555
Email: glsb10@ontera.net

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On 2021-10-19 9:46 a.m., Christian Naponse wrote:

> Hello

>

> IAMGOLD is preparing an amendment to the /Fisheries Act/ Authorization
> (FAA) for the Côté Gold Project which will include three modifications
> to the original plan and we are required to consult with local
> communities on the changes. It would also be a good time to provide
> the community with an overall Project update as it has been quite some
> time since we have done so and we anticipate the community is eager to
> learn what has been going on with the Project. We would like to plan a
> Community Information Session before the submission of the amendment
> which is anticipated for mid-November.

>

> The time has also come for us to plan our third quarterly SEMMP
> meeting, could the committee provide some dates for consideration in
> the last week of October and / or the second week in November? If the
> committee is agreeable to the idea, we could have the SEMMP meeting on
> the same day as the community information session on the FAA.

>

> Thanks!

>

>

>

>

>

> *Christian Naponse*
> Community Affairs Coordinator
> *m.* 705.207.1232
> *christian_naponse@iamgold.com*

>

> 9-2140 Regent Street
> Sudbury, ON P3E 5S8, Canada

From: [Christian Naponse](#)
To: [Gerry Talbot](#)
Cc: [Krista Maydew](#); [David Brown](#); [Cote Gold Projet Siims](#); ["Paul Veronneau "](#); ["Dan Mantha"](#); glsb10@ontera.net; ["Christine Bedard"](#)
Subject: RE: SEMMP meeting
Date: October 29, 2021 9:30:19 AM
Attachments: [Gogama Flyer re community info session.pdf](#)

Hi Gerry,

I provided the wrong notice in my previous email. Please use the revised one attached.

If you have any questions, let me know.

Christian Naponse

Community Affairs Coordinator

m. 705.207.1232

christian_naponse@iamgold.com

9-2140 Regent Street

Sudbury, ON P3E 5S8, Canada

cotegold.ca

Côte Gold



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From: Christian Naponse
Sent: October 29, 2021 9:18 AM
To: Gerry Talbot <tally@bell.net>
Cc: Krista Maydew <Krista_Maydew@iamgold.com>; David Brown <David_Brown@iamgold.com>; Cote Gold Projet Siims <Siims@iamgold.com>; 'Paul Veronneau ' <bbrver@hotmail.com>; 'Dan Mantha' <dmantha@outlook.com>; glsb10@ontera.net; 'Christine Bedard' <christinebedard2004@yahoo.ca>
Subject: RE: SEMMP meeting

Hi Gerry,

Attached is the poster for the community information session, is this something I should send to Eldon to post online as well?

There is a possibility that we will be in the area on November 23rd which is one of the proposed dates you mentioned for our next SEMMP meeting. Would the committee be agreeable to a meeting in person if those plans pan out?

Thanks,

Christian Naponse

Community Affairs Coordinator

m. 705.207.1232

christian_naponse@iamgold.com

9-2140 Regent Street

Sudbury, ON P3E 5S8, Canada

cotegold.ca

Côté Gold



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[Redacted signature block]



IAMGOLD would like to invite you to a Project update and consultation session on the amendment to the *Fisheries Act* Authorization

Please join us on **November 8, 2021 @6:30pm** at the Community Centre.

Members of the IAMGOLD Côté Gold team will be on hand to share Project updates and answer questions. Minnow Aquatic Environmental Services will share an update on the fish relocation activities and fish habitat improvements being made at site. They will also give a presentation on amendments being proposed to the fish habitat offsetting plan. Your input on these proposed amendments is welcome and appreciated!

For more information, please contact: cotegold@iamgold.com or Christian Naponse at 705-207-1232

Please follow your community's social distancing protocols

From: Kim Connors [mailto:KConnors@mirrow.co]

Kim Connors, M.Sc., R.P. Bio.

Fish and Fish Habitat Protection Program (FFHPP) | Programme de protection du poisson et de son habitat (PPPH)
Fisheries and Oceans Canada | Pêches et Océans Canada
Ontario and Prairie Region | Région de l'Ontario et des Prairies
1028 Parsons Rd SW
Edmonton, Alberta T6X 0J4
Mobile: 587-341-4792
Email/Courriel: Terina.Hancock@dfo-mpo.gc.ca



Fisheries and Oceans
Canada

Pêches et Océans
Canada



NOTE: Due to the Covid-19 mitigation measures, all DFO staff are required to work remotely; however, DFO is engaged in daily operations. I will be teleworking for the foreseeable future, and I anticipate intermittent access to e-mail during this time, but will endeavour to respond to every message.

From: Kim Connors <KConnors@minnow.ca>
Sent: Thursday, November 26, 2020 2:43 PM
To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>
Cc: Phalen, Laura <Laura.Phalen@dfo-mpo.gc.ca>; Mogge, Brandi <Brandi.Mogge@dfo-mpo.gc.ca>; siims@iamgold.com; Dave Brown - IAMGOLD Côté Gold Project (David_Brown@iamgold.com) <David_Brown@iamgold.com>; Stephen Crozier <Stephen_Crozier@iamgold.com>; Rebecca Dolson <Rebecca.Dolson@minnow.ca>
Subject: November 23 Discussion - Côté Gold Project

Hi Terina,

Thanks for taking some time on Monday to start the discussion on the changes to the Côté Gold Project which will ultimately lead to changes in the current FAA. I have put together some notes on the discussion that was held. Minnow (Kim Connors, Rebecca Dolson), IAMGOLD (Dave Brown), and yourself were in attendance for the conference call.

Minnow presented three changes that will need to be addressed in the current Offsetting Plan and FAA for the Côté Gold Project.

1. Discharge Pipe to Upper Three Duck Lake – Two pipes will run from a mine water collection pond (this will be surface runoff collection water not process water) to Upper Three Duck Lake. MECP has already approved the Environmental Compliance Approval for this discharge location. IAMGOLD has put in the proposal for the LRIA permit to construct the discharge pipe. The pipes are scheduled for installation in February 2021. The temporary alteration of this habitat will need to be accounted for in the offsetting plan.
2. Bagsverd Aggregate Pit and Aggregate Pit #3 – Both aggregate pits are within the offsetting plan were to be remediated into fish habitat and connected to the associated watershed. Further exploration into the construction of these aggregate pits have determined this will not be possible. Bagsverd Aggregate Pit is situated within a sensitive bog area and MNRF will not issue a permit to construct an aggregate pit within the area. In anticipation of the upcoming remediation of the pit, further boreholes were completed and it was determined that the subsurface geology is largely bedrock. Therefore, it is not conducive to constructing productive fish habitat. The loss of these offsetting habitats within the current plan will need to be replaced with alternative offsetting habitat for the project.
3. Reclaim Pond – Through further development of the mine planning it has been determined that the reclaim pond is no longer required. Therefore, the habitat accounted for as a loss within the offsetting plan will no

longer be completely lost. This change in infrastructure to the mine site will need to be accounted for the in the offsetting plan.

IAMGOLD has already commenced the process to determine further areas to offset fish habitat. A number of locations were evaluated surrounding the site to see if improvements could be made to fish habitat where peat has been harvested. In addition, IAMGOLD has engaged Mattagami First Nations for suggestions. They have identified some problematic areas on Lake Mattagami. The lake is dam controlled where water levels fluctuate of 10' seasonally and has caused erosion over the years along the shorelines within the community. It would be our hope that this would be a favourable contribution to the offsetting plan.

It is understood that the habitat accounting will need to be updated to account for any habitat that will be destroyed or not destroyed for the Project and that you mentioned that these changes would require an amendment with an application.

Action Item – Terina to follow up with recommendations on how to best proceed to document these changes to the offsetting plan and associated FAA.

Please review the above notes and let me know if there are any misunderstandings / omissions or if corrections / updates are needed required.

Thanks,
Kim

Kim Connors, M.Sc., R.P.Bio
Senior Fisheries Biologist/Managing Principal



minnow environmental inc. (A Trinity Consultants Company)
21 Lewis Street | Guelph, ON N1H 1E9
Phone: (905) 873-3371 x: 228
Cell: (519) 716-3549

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Creighton, Stephanie

From: Krista Maydew <Krista_Maydew@iamgold.com>
Sent: Thursday, January 14, 2021 9:09 AM
To: IMGsiims
Subject: FW: November 23 Discussion - Côté Gold Project

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From: Hancock, Terina [mailto:Terina.Hancock@dfo-mpo.gc.ca]
Sent: January 13, 2021 6:09 PM
To: Kim Connors <KConnors@minnow.ca>
Cc: Phalen, Laura <Laura.Phalen@dfo-mpo.gc.ca>; Cote Gold Projet Siims <Siims@iamgold.com>; David Brown <David_Brown@iamgold.com>; Stephen Crozier <Stephen_Crozier@iamgold.com>; Rebecca Dolson <Rebecca.Dolson@minnow.ca>
Subject: RE: November 23 Discussion - Côté Gold Project

Hello Kim,

Thank you for the update and for the opportunity for including DFO in the Cote consultation meetings. I have forwarded a request to our Indigenous Relations Unit for the community list to ensure there have been no changes since the consultations for Authorization.

Thanks

Terina Hancock, B.Sc., P.Biol.
Fish and Fish Habitat Protection Biologist
Mining , Oil & Gas – South

Fish and Fish Habitat Protection Program (FFHPP) | Programme de protection du poisson et de son habitat (PPPH)
Fisheries and Oceans Canada | Pêches et Océans Canada
Ontario and Prairie Region | Région de l'Ontario et des Prairies
1028 Parsons Rd SW
Edmonton, Alberta T6X 0J4
Mobile: 587-341-4792
Email/Courriel: Terina.Hancock@dfo-mpo.gc.ca



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canada

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From: Kim Connors <KConnors@minnow.ca>
Sent: Sunday, January 10, 2021 6:26 AM



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From: Kim Connors <KConnors@minnow.ca>

Sent: Thursday, November 26, 2020 2:43 PM

To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>

Cc: Phalen, Laura <Laura.Phalen@dfo-mpo.gc.ca>; Mogge, Brandi <Brandi.Mogge@dfo-mpo.gc.ca>; siims@iamgold.com; Dave Brown - IAMGOLD Côté Gold Project (David_Brown@iamgold.com) <David_Brown@iamgold.com>; Stephen Crozier <Stephen_Crozier@iamgold.com>; Rebecca Dolson <Rebecca.Dolson@minnow.ca>

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Please review the above notes and let me know if there are any misunderstandings / omissions or if corrections / updates are needed required.

Thanks,
Kim

Kim Connors, M.Sc., R.P.Bio
Senior Fisheries Biologist/Managing Principal



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21 Lewis Street | Guelph, ON N1H 1E9
Phone: (905) 873-3371 x: 228
Cell: (519) 716-3549

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Maher, Trina

From: Krista Maydew <Krista_Maydew@iamgold.com>
Sent: Wednesday, February 3, 2021 8:13 PM
To: IMGsiims
Subject: FW: Côté Gold Project - January 27 Discussion
Attachments: 21-02 Memo Information Request for DFO Feb 2021.pdf; November 23 Discussion - Côté Gold Project.pdf; 21-02 DFO Côté Gold Project Jan 27 2021.pdf

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From: Kim Connors [mailto:KConnors@minnow.ca]
Sent: February 1, 2021 4:42 PM
To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>; James, Clayton <Clayton.James@dfo-mpo.gc.ca>
Cc: David Brown <David_Brown@iamgold.com>; Samantha Burke <samantha.burke@minnow.ca>; Rebecca Dolson <Rebecca.Dolson@minnow.ca>; Cote Gold Project Siims <Siims@iamgold.com>
Subject: Côté Gold Project - January 27 Discussion

Hello Terina and Clayton,

Thank you for taking the time Wednesday to discuss the changes to the Côté Gold Project (Project). We have put together some notes on the discussion that was held and attached the presentation that was provided during the call. Minnow (Kim Connors, Rebecca Dolson, Samantha Burke), IAMGOLD (Dave Brown), and DFO (Terina Hancock, Clayton James) were in attendance for the conference call.

Agenda

1. IAMGOLD Côté Gold Project Overview and January 2021 Status – Dave Brown
2. Fisheries Authorization Amendment Update – Kim Connors
3. Discussion of path forward for reviews/amendment(s) – All

Fisheries Authorization Amendment Update Summary

- >348,000 small-bodied fish salvaged in the fall of 2020 from the TMF area to support construction
- Modifications to the site layout have occurred to optimize construction which have resulted in a number of changes as discussed in the November 23rd conference call (summary attached for your reference). Two construction requirements require immediate attention:
 - culvert installation for a road crossing the unnamed tributary that flows from Bagsverd Pond to Bagsverd Lake (South Arm); and
 - the placement of a discharge pipe in Upper Three Duck Lake.
- Habitat description for each location was provided along with design drawings. Both the unnamed tributary and lake are fish bearing waters.
- All necessary provincial permits/authorizations have been acquired or are forthcoming.
- The area impacted at both locations is very small (unnamed tributary = 48.1 m² and Upper Three Duck Lake = 209 m²)
- Planned installation for culverts is February.
- Planned installation for the discharge pipe is mid-February to early March.

Discussion

What is the preferred method of review/authorization from DFO's perspective with respect to FAA changes? Options discussed:

- submit a memo outlining changes for immediate requirements (culvert and discharge pipe) stating habitat area impacted, habitat quality, habitat units lost, and amount of existing habitat offsetting units in approved FAA, full details and approval would be requested in forthcoming FAA Amendment request;
- submit a review or request for authorization separately; or
- construct a winter road (ice or snow) for temporary road crossing until authorization is acquired through DFO review or the full FAA Amendment.

DFO's Response to question regarding process and options:

- The process will require at the very least a review, if not an authorization for the 3 culverts to be installed at the unnamed tributary road crossing.
- DFO does not generally make multiple legislative decisions related to one FAA Amendment and it would be easier if all the pieces came as one document (Terina to follow up with Laura Phalen).
- DFO cannot begin discussing the culvert review or authorization until a request has been submitted. Legislative timelines for an amendment are the same as for a full authorization but are usually quicker due to pre-planned and available material.
- Reviews do not have mandated timelines and can be faster, but are not guaranteed.
- DFO cannot confirm at this time that the culvert placement in the unnamed tributary will not require an authorization (if not submitted as part of the a larger FAA Amendment) because it must be considered in terms of cumulative effects of the entire mine site.
- DFO cannot guarantee any review or authorization would be granted before requested construction timelines.

DFO request from Minnow:

- Provide the following information to support a decision if a review or authorization is the best path forward:
 1. Habitat quantity and quality of the habitat lost in each area;
 2. Calculated habitat units lost to the additional areas lost (these calculations will be based on the method from the original FAA);
 3. Total habitat units gained from the existing FAA to compare to the habitat units lost due to the above construction;
 4. Any other supporting information to aid in the decision process (maps, construction timelines).

Minnow's Responses:

- IAMGOLD could pursue the development of a temporary winter (ice/snow) road at the unnamed tributary with notification to DFO while continuing the process to obtain the appropriate authorization to install the culverts. However, this is not ideal as the culvert construction would occur closer to or during a time where fish could occupying the channel versus in the winter when due to the shallow water depth and no flow (frozen conditions) there would be minimal fish and fish habitat and disturbance.
- Since the Project no longer plans to remediate the aggregate pits proposed in the original Offsetting Plan (as covered in the November 23 discussion; see attached summary), the Project does not have all the required design drawings for the newly proposed offsetting habitat to complete the FAA Amendment application in time for the preferred installation dates of the culverts or the discharge pipeline. Minnow would like clarity on what path DFO would prefer to obtain the appropriate authorizations required for the culvert and pipeline installations – multiple amendments, separate reviews, or perhaps permission to work under the existing FAA with the understanding that further offsetting habitat is being proposed, or separate authorizations.

As requested yesterday, I have attached a short memo summarizing the information DFO requested to support the decision on a path moving forward. If you have any questions or concerns with the memo provided, or have noted something we have forgot to include in the summary provided, please contact me and I will provide any further information or update the summary accordingly. Thanks again for your time and attention to the Project.

Sincerely,
Kim

Kim Connors, M.Sc., R.P.Bio
Senior Fisheries Biologist/Managing Principal



21 Lewis Street | Guelph, ON N1H 1E9
Office: (905) 873-3371 x: 228
Cell: (519) 716-3549
www.minnow.ca

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From: Krista Maydew <Krista_Maydew@iamgold.com>
Sent: Monday, June 7, 2021 8:49 AM
To: IMGsiims
Subject: FW: Côté Gold - Follow up for FAA Amendment

CAUTION: External email. Please do not click on links/attachments unless you know the content is genuine and safe.

From: Kim Connors [mailto:KConnors@minnow.ca]
Sent: June 7, 2021 6:15 AM
To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>; Mogge, Brandi <Brandi.Mogge@dfo-mpo.gc.ca>
Cc: James, Clayton <Clayton.James@dfo-mpo.gc.ca>; Samantha Burke <samantha.burke@minnow.ca>; Cote Gold Project Siims <Siims@iamgold.com>
Subject: Côté Gold - Follow up for FAA Amendment

Good Morning,

I was wondering if any progress had been made on determining a process for a path forward with the Côté FAA Amendment by including a "Fisheries Enhancement Plan"?

We are eager to hear the outcome as it will have implications on timing for completion of the amendment and determining what has to be resolved for offsetting habitat losses.

Thanks,
Kim

Kim Connors, M.Sc., R.P.Bio
Senior Fisheries Biologist/Managing Principal



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From: Krista Maydew <Krista_Maydew@iamgold.com>
Sent: Monday, June 7, 2021 5:17 PM
To: IMGsiims
Subject: FW: Côte Gold - Follow up for FAA Amendment

CAUTION: External email. Please do not click on links/attachments unless you know the content is genuine and safe.

From: Hancock, Terina [mailto:Terina.Hancock@dfo-mpo.gc.ca]
Sent: June 7, 2021 5:07 PM
To: Kim Connors <KConnors@minnow.ca>; Mogge, Brandi <Brandi.Mogge@dfo-mpo.gc.ca>
Cc: James, Clayton <Clayton.James@dfo-mpo.gc.ca>; Samantha Burke <samantha.burke@minnow.ca>; Cote Gold Projet Siims <Siims@iamgold.com>
Subject: RE: Côte Gold - Follow up for FAA Amendment

Hello Kim,

We have discussed the proposed ideas with management for possible offsetting within Mattagmi Lake that would include an enhancement plan. There is general agreement that this could fit within DFO's offsetting policy, but we'd like to see high level accounting we discussed at our last meeting. As discussed, we'll need to reach out to the province to see what level of involvement they'd like to have, too.

Thanks

Terina Hancock, B.Sc., P.Biol.
Fish and Fish Habitat Protection Biologist
Mining, Oil & Gas – South

Fish and Fish Habitat Protection Program (FFHPP) | Programme de protection du poisson et de son habitat (PPPH)
Fisheries and Oceans Canada | Pêches et Océans Canada
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Mobile: 587-341-4792
Email/Courriel: Terina.Hancock@dfo-mpo.gc.ca



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canada

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From: Kim Connors <KConnors@minnow.ca>
Sent: Monday, June 7, 2021 4:15 AM
To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>; Mogge, Brandi <Brandi.Mogge@dfo-mpo.gc.ca>
Cc: James, Clayton <Clayton.James@dfo-mpo.gc.ca>; Samantha Burke <samantha.burke@minnow.ca>; Cote Gold Projet

Siims <Siims@iamgold.com>

Subject: Côté Gold - Follow up for FAA Amendment

Good Morning,

I was wondering if any progress had been made on determining a process for a path forward with the Côté FAA Amendment by including a "Fisheries Enhancement Plan"?

We are eager to hear the outcome as it will have implications on timing for completion of the amendment and determining what has to be resolved for offsetting habitat losses.

Thanks,
Kim

Kim Connors, M.Sc., R.P.Bio
Senior Fisheries Biologist/Managing Principal



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Cell: (519) 716-3549
www.minnow.ca

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From: Krista Maydew <Krista_Maydew@iamgold.com>
Sent: Friday, June 25, 2021 10:19 AM
To: IMGsiims
Subject: FW: Mattagami Lake Fisheries Plan

CAUTION: External email. Please do not click on links/attachments unless you know the content is genuine and safe.

From: Kim Connors [mailto:KConnors@minnow.ca]
Sent: June 25, 2021 5:52 AM
To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>
Cc: Mogge, Brandi <Brandi.Mogge@dfo-mpo.gc.ca>; James, Clayton <Clayton.James@dfo-mpo.gc.ca>; Cote Gold Project Siims <Siims@iamgold.com>
Subject: RE: Mattagami Lake Fisheries Plan

Thanks for following up Terina.

Kim

[illegible]

From: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>
Sent: Thursday, June 24, 2021 5:07 PM
To: Kim Connors <KConnors@minnow.ca>
Cc: Mogge, Brandi <Brandi.Mogge@dfo-mpo.gc.ca>; James, Clayton <Clayton.James@dfo-mpo.gc.ca>; Cote Gold Project Siims <Siims@iamgold.com>
Subject: RE: Mattagami Lake Fisheries Plan

Hello Kim,

We are in the process of setting up conversations with Emmanuel Ogunjobi at MNRF with regards to the proposed revised offsetting of Mattagami Lake Fisheries concept.

Thanks

Terina Hancock, B.Sc., P.Biol.
Fish and Fish Habitat Protection Biologist
Mining, Oil & Gas – South

Fish and Fish Habitat Protection Program (FFHPP) | Programme de protection du poisson et de son habitat (PPPH)
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1028 Parsons Rd SW
Edmonton, Alberta T6X 0J4
Mobile: 587-341-4792
Email/Courriel: Terina.Hancock@dfo-mpo.gc.ca



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From: Kim Connors <KConnors@minnow.ca>

Sent: Monday, June 21, 2021 9:41 AM

To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>

Cc: Mogge, Brandi <Brandi.Mogge@dfo-mpo.gc.ca>; James, Clayton <Clayton.James@dfo-mpo.gc.ca>; Cote Gold Project Siims <Siims@iamgold.com>

Subject: Mattagami Lake Fisheries Plan

Hello Terina,

I wanted to follow up and ask if DFO has reached out or plans to reach out to any individual(s) at the provincial level about the Mattagami Lake Fisheries concept? IAMGOLD wants to make sure they have reached out to the same individuals/group so they know what we are planning and have opportunity to contribute/reach out.

Thanks,
Kim

Kim Connors, M.Sc., R.P.Bio

Senior Fisheries Biologist/Managing Principal



21 Lewis Street | Guelph, ON N1H 1E9

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Cell: (519) 716-3549

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Edmonton, Alberta T6X 0J4

Mobile: 587-341-4792

Email/Courriel: Terina.Hancock@dfo-mpo.gc.ca



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From: Ellis Nsiah, Andrea (MNRF) <Andrea.EllisNsiah@ontario.ca>
Sent: Friday, July 23, 2021 2:45 PM
To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>
Cc: Ogunjobi, Emmanuel (MNRF) <Emmanuel.Ogunjobi@ontario.ca>; Haapakoski, Tuovi (MNRF) <tuovi.haapakoski@ontario.ca>; Rosko, Jennifer (MNRF) <jennifer.rosko@ontario.ca>; Mogge, Brandi <Brandi.Mogge@dfo-mpo.gc.ca>; James, Clayton <Clayton.James@dfo-mpo.gc.ca>
Subject: RE: Cote Project - Discussion Potential New Component to Offsetting

Hi Terina,

I spoke with Jeff Amos, Regional Aquatic Ecosystem Science Specialist about the FMZ. Jeff Amos is willing to participate in future discussions with DFO, IMG's consultants and District staff on the Fisheries Enhancement Plan for Mattagami Lake. I can include him in future meetings as needed.

Here is the information I committed to following up on:

- Planning for FMZ 8 has not started and it is unclear when planning would start. It would take at least three years to develop the FMZ plan once planning is initiated.
- Jeff felt a Fisheries Enhancement Plan for Mattagami Lake would likely complement a future FMZ 8 Plan (rather than conflict it or be a duplication of efforts).
- The FMZ 8 plan would recognize the Fisheries Enhancement Plan for Mattagami Lake, should it exist. At the onset of FMZ planning, there is an effort

to amass all existing background information.

- It is worth noting that Jeff felt research and work to create juvenile walleye habitat could contribute to the success of the hatchery and stocking program on Mattagami Lake.
- I was able to clarify with the BROADSCALE Monitoring Program that Mattagami Lake was surveyed in 2017. It is also possible that Mattagami Lake will be selected through the random lake selection process to be surveyed again in the cycle 4 (2024-2028). This will not be confirmed until next year at the earliest.
- Jeff Amos suggested monitoring efforts as part of a Fisheries Enhancement Plan for Mattagami Lake, should employ the provincial BROADSCALE Monitoring Protocol. That way the data could be easily compared to existing or future data on the lake, or other lakes on the landscape.
- I found records of the FWIN study on Mattagami Lake in 2013, in our District files. Mattagami First Nation would also have the study results.
- The District did FWIN studies on nearby Minisinakwa Lake in 2015 and 2019 (monitoring after a train derailment). These studies may have some relevance to Mattagami Lake.
- There may be an old MNR District Fisheries Management Plan that I can try to locate, if requested. It would be over 15 years old, but there may be some relevant aspects for Mattagami Lake.

I hope this information is useful to you. Please contact me if DFO wants to engage with NDMNRF on this matter in the future.

Sincerely,
Andrea

Andrea Ellis Nsiah

District Planner
Timmins District
Regional Operations Division
Ministry of Northern Development, Mines, Natural Resources & Forestry
Ontario Government Complex
5520 Hwy 101 E, PO Bag 3090
South Porcupine, ON P0N 1H0

Email: Andrea.EllisNsiah@ontario.ca

Work Cellular: (705) 465-6254

Currently Working Remotely

Please Note: As part of providing accessible customer service, please let me know if you have any accommodation needs or require communication supports or alternate formats.

From: Ellis Nsiah, Andrea (MNRF)

Sent: July 20, 2021 5:13 PM

To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>; Mogge, Brandi <Brandi.Mogge@dfo-mpo.gc.ca>; James, Clayton <Clayton.James@dfo-mpo.gc.ca>

Cc: Ogunjobi, Emmanuel (MNRF) <Emmanuel.Ogunjobi@ontario.ca>; Haapakoski, Tuovi (MNRF) <tuovi.haapakoski@ontario.ca>; Rosko, Jennifer (MNRF) <jennifer.rosko@ontario.ca>

Subject: RE: Cote Project - Discussion Potential New Component to Offsetting

Hello and thanks for meeting with us today.

We understand IMG is looking for another offset option as they will not be pursuing the aggregate permit, which they originally planned to rehabilitate as new fish habitat.

DFO explained that IMG is considering creating Fisheries Enhancement Plan for Mattagami Lake. This is being contemplated in consultation with Mattagami First Nation. The details were unclear but it could involve:

- research that would improve the fisheries in the lake (what might be limiting in the lake?)
- research to help understand the impact of the stocking of the lake, and the success of the hatchery
- restoration or creation of fish habitat in the lake

No change in fishing regulations are being contemplated.

Mattagami Lake is in Fisheries Management Zone 8 (FMZ 8) ([Fisheries Management Zone 8 \(FMZ 8\) | Ontario.ca](#))

This FMZ has no Fisheries Management plan in place and no monitoring reports. The webpage states that : “Fisheries management planning is not currently underway for this zone.”

I am seeking a contact at our regional office who can clarify:

- when planning for FMZ 8 might start
- what exactly is the Fisheries Management Plan
 - could a Fisheries Enhancement Plan for Mattagami Lake possibly conflict with or complement the FMZ plan?
 - could an Enhancement Plan for Mattagami Lake be a duplication of efforts?

I am also seeking a contact from our Broadscale Monitoring Program to clarify:

- If Mattagami Lake is on the monitoring schedule.
- If so, what data will be collected?

In 2012 Timmins District worked with Mattagami First Nation to hire a consultant to do a Fall Walleye Index Study (FWIN) to determine the health of walleye in the lake. This was related to the hatchery which was starting that year. This study could serve as a baseline for future work. Mattagami First Nation should have this study. I will try to locate it in our records, as well.

Water Management Plan

I did a cursory review of Mattagami River Water Management Plan to see if there were outstanding data gaps identified for Mattagami Lake. The only item I found was pertaining to walleye spawning below the Mattagami Lake Dam (i.e. just beyond the boundary of the lake so not relevant).

Other considerations:

- Depending on the research proposed, a Scientific Collector's Permit may be required from Timmins District NDMNRF
- Habitat restoration or creation work may require a work permit from Timmins District, NDMNRF

My office intends to backfill Emmanuel's Management Biologist position, as soon as possible. I will remain the Timmins District NDMNRF contact for this offsetting proposal for the time being. I will reach out to other staff, or bring them into discussion with DFO, as needed.

I will follow-up on my highlighted Action Items above within the next week or so.

Sincerely,
Andrea

Andrea Ellis Nsiah

District Planner
Timmins District
Regional Operations Division
Ministry of Northern Development, Mines, Natural Resources & Forestry
Ontario Government Complex
5520 Hwy 101 E, PO Bag 3090
South Porcupine, ON P0N 1H0

Email: Andrea.EllisNsiah@ontario.ca

Work Cellular: (705) 465-6254

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-----Original Appointment-----

From: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>

Sent: July 15, 2021 3:12 PM

From: [Krista Maydew](#)
To: [IMGsiims](#)
Subject: FW: Next Week's Consultation Meeting for Cote
Date: Tuesday, September 28, 2021 11:24:57 AM
Attachments: [image003.png](#)
[image004.png](#)
[image005.jpg](#)
[image006.png](#)

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From: Hancock, Terina [mailto:Terina.Hancock@dfo-mpo.gc.ca]
Sent: September 16, 2021 12:18 PM
To: Kim Connors <KConnors@minnow.ca>
Cc: Krista Maydew <Krista_Maydew@iamgold.com>; David Brown <David_Brown@iamgold.com>; Cote Gold Projet Siims <Siims@iamgold.com>
Subject: RE: Next Week's Consultation Meeting for Cote

Hello Kim,

Unfortunately, with the short notice and the Covid situation here in Alberta I will not be able to attend in person. If you are able to set something up virtually please include me.

There are no specific regulatory requirements, only requests made by communities.

Thanks

Terina Hancock, B.Sc., P.Biol.

*Fish and Fish Habitat Protection Biologist
Mining , Oil & Gas – South*

Fish and Fish Habitat Protection Program (FFHPP) | Programme de protection du poisson et de son habitat (PPPH)

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1028 Parsons Rd SW
Edmonton, Alberta T6X 0J4

Mobile: 587-341-4792

Email/Courriel: Terina.Hancock@dfo-mpo.gc.ca





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From: Kim Connors <KConnors@minnow.ca>
Sent: Thursday, September 16, 2021 3:49 AM
To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>
Cc: Krista Maydew <Krista_Maydew@iamgold.com>; Dave Brown - IAMGOLD Côté Gold Project (David_Brown@iamgold.com) <david_brown@iamgold.com>; Cote Gold Projet Siims <Siims@iamgold.com>
Subject: Next Week's Consultation Meeting for Cote

Morning Terina,

The consultation meeting has been confirmed for September 23 to start at 5 pm. However, Mattagami just had a case of COVID (yesterday) and the meeting may be postponed.

Are there any specific regulatory requirements that we should be aware of? Krista (IAMGOLD Director of Community Relations) reminded me that we had to have materials translated at the last consultation meeting DFO attended. She also reminded me that no one from the community took the French version of the plain language handouts.

IAMGOLD will let the community know that DFO is planning to attend. It will likely be asked if you can complete a COVID screening at site prior to the meeting. I believe you completed the process during your last site visit.

We will keep you posted as to whether the meeting will be postponed or not, or whether there will be virtual components.

Kim

Kim Connors, M.Sc., R.P.Bio
Senior Fisheries Biologist/Managing Principal

Minnow_TrinityCo logo_CO



21 Lewis Street | Guelph, ON N1H 1E9
Office: (905) 873-3371 x: 228
Cell: (519) 716-3549

From: Krista Maydew <Krista_Maydew@iamgold.com>
Sent: Tuesday, September 28, 2021 4:02 PM
To: IMGsiims
Subject: FW: Consultation for Côté.

CAUTION: External email. Please do not click on links/attachments unless you know the content is genuine and safe.

-----Original Message-----

From: Hancock, Terina [mailto:Terina.Hancock@dfo-mpo.gc.ca]
Sent: September 28, 2021 12:06 PM
To: Krista Maydew <Krista_Maydew@iamgold.com>; Kim Connors <KConnors@minnow.ca>
Cc: James, Clayton <Clayton.James@dfo-mpo.gc.ca>; Kathryn Kuchapski <Kathryn.Kuchapski@minnow.ca>; Cote Gold
Projet Siims <Siims@iamgold.com>; David Brown <David_Brown@iamgold.com>; Stephen Crozier
<Stephen_Crozier@iamgold.com>
Subject: RE: Consultation for Côté.

Thanks Krista

Cheers

Terina Hancock, B.Sc., P.Biol.
Fish and Fish Habitat Protection Biologist Mining , Oil & Gas – South

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1028 Parsons Rd SW
Edmonton, Alberta T6X 0J4
Mobile: 587-341-4792
Email/Courriel: Terina.Hancock@dfo-mpo.gc.ca

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-----Original Message-----

From: Krista Maydew <Krista_Maydew@iamgold.com>
Sent: Tuesday, September 28, 2021 9:15 AM
To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>; Kim Connors <KConnors@minnow.ca>
Cc: James, Clayton <Clayton.James@dfo-mpo.gc.ca>; Kathryn Kuchapski <Kathryn.Kuchapski@minnow.ca>; Cote Gold
Projet Siims <Siims@iamgold.com>; David Brown <David_Brown@iamgold.com>; Stephen Crozier
<Stephen_Crozier@iamgold.com>
Subject: RE: Consultation for Côté.

Good morning Terina,

Further to Kim's email, we are working with Mattagami to plan next week's meeting and will hopefully have a Teams link that we can send out to you in advance of the meeting so that you can listen in. The meeting will be held in the community gymnasium which has poor acoustics and it's currently unknown what sort of distancing protocols the community will put in place for the meeting (e.g., spacing out tables or restricting the number of people per table). If for some reason the technology does not work well in this setting, we can certainly invite you to participate in one of the bi-weekly Environmental Management Committee meetings that we have with Mattagami and Flying Post following the October 6 community consultation session.

Thanks,
Krista

-----Original Message-----

From: Hancock, Terina [mailto:Terina.Hancock@dfo-mpo.gc.ca]

Sent: September 28, 2021 10:58 AM

To: Kim Connors <KConnors@minnow.ca>

Cc: James, Clayton <Clayton.James@dfo-mpo.gc.ca>; Kathryn Kuchapski <Kathryn.Kuchapski@minnow.ca>; Cote Gold
Projet Siims <Siims@iamgold.com>; David Brown <David_Brown@iamgold.com>; Krista Maydew
<Krista_Maydew@iamgold.com>; Stephen Crozier <Stephen_Crozier@iamgold.com>

Subject: RE: Consultation for Côté.

Kim,

Sounds, thanks for the date

Cheers

Terina Hancock, B.Sc., P.Biol.

Fish and Fish Habitat Protection Biologist Mining , Oil & Gas – South

Fish and Fish Habitat Protection Program (FFHPP) | Programme de protection du poisson et de son habitat (PPPH)
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Mobile: 587-341-4792
Email/Courriel: Terina.Hancock@dfo-mpo.gc.ca

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-----Original Message-----

From: Kim Connors <KConnors@minnow.ca>

Sent: Tuesday, September 28, 2021 7:56 AM

To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>

Cc: James, Clayton <Clayton.James@dfo-mpo.gc.ca>; Kathryn Kuchapski <Kathryn.Kuchapski@minnow.ca>; Cote Gold
Projet Siims <Siims@iamgold.com>; Dave Brown - IAMGOLD Côté Gold Project (David_Brown@iamgold.com)
<david_brown@iamgold.com>; Krista Maydew <Krista_Maydew@iamgold.com>; Stephen Crozier
<Stephen_Crozier@iamgold.com>
Subject: RE: Consultation for Côté.

Morning Terina,

Thanks for the update on traveling for the consultation meeting. I will let IAMGOLD know and we will keep you in the loop to as whether there will be a virtual component to the meeting on October 6th.

For the progress on the planning of the Mattagami Lake Fisheries Plan. We are currently pulling together an outline for the plan and completing the calculations of the offsets with the development of the designs that will be included in the amendment. We are hoping in a couple of weeks to have a meeting (after we have some input from the communities) with DFO and MNRF for an opportunity to provide feedback and comment on what will be proposed for the fisheries management plan.

Cheers,
Kim

><>><>><>><>><>><>><>

Kim Connors, M.Sc., R.P. Bio.

-----Original Message-----

From: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>
Sent: Monday, September 27, 2021 2:52 PM
To: Kim Connors <KConnors@minnow.ca>
Cc: James, Clayton <Clayton.James@dfo-mpo.gc.ca>
Subject: RE: Consultation for Côté.

Hello Kim,

So far, we are still playing on the caution of not traveling east at this time. Hopefully, it is possible to set up a virtual connection. I will keep you informed if the approvals change.

What is the progress in the planning of the Mattagami Lake offsetting plan?

Thanks

Terina Hancock, B.Sc., P.Biol.
Fish and Fish Habitat Protection Biologist Mining , Oil & Gas – South

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1028 Parsons Rd SW
Edmonton, Alberta T6X 0J4
Mobile: 587-341-4792
Email/Courriel: Terina.Hancock@dfo-mpo.gc.ca

NOTE: Due to the Covid-19 mitigation measures, all DFO staff are required to work remotely; however, DFO is engaged in daily operations. I will be teleworking for the foreseeable future, and I anticipate intermittent access to e-mail during this time, but will endeavour to respond to every message.

-----Original Message-----

From: Kim Connors <KConnors@minnow.ca>
Sent: Monday, September 13, 2021 2:09 PM
To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>
Subject: Consultation for Côté.

Hi Terina.

I just spoke with iamgold and I believe they are changing the date of the meeting to the 23 rd. I'll confirm with you tomorrow when they have everything booked.

Hope you had a good day!
Kim

Sent from my iPhone

Creighton, Stephanie

From: Krista Maydew <Krista_Maydew@iamgold.com>
Sent: Monday, October 25, 2021 11:05 AM
To: IMGsiims
Subject: FW: Further Consultation for Cote Gold Project

CAUTION: External email. Please do not click on links/attachments unless you know the content is genuine and safe.

From: Kim Connors [mailto:KConnors@minnow.ca]
Sent: October 21, 2021 1:52 PM
To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>
Cc: Mogge, Brandi <Brandi.Mogge@dfo-mpo.gc.ca>; James, Clayton <Clayton.James@dfo-mpo.gc.ca>; Campbell, Melanie <Melanie.Campbell@dfo-mpo.gc.ca>; Cote Gold Project Siims <Siims@iamgold.com>
Subject: Further Consultation for Cote Gold Project

Hello Terina,

IAMGOLD is continuing to complete the consultation with the FN communities for the FAA Amendment as well as provide the communities with an update on the Project. We have another scheduled virtually for next Thursday at 10 AM EST to 11:30 with Brunswick House First Nation.

Does DFO want to participate in this virtual meeting?

Additional consultations with a few other communities (e.g., Gogama) are being organized and are hoping to occur within the next couple of weeks (1 to 3). Does DFO want to participate in these meetings? I believe the plan is for these additional meetings to be in person and I am not certain of whether virtual attendance will be available. I suspect that will depend on the facilities where they will occur.

Please let us know so that we can forward the meeting invitation and/or organize the appropriate tools to have DFO involved.

Thanks,
Kim

Kim Connors, M.Sc., R.P.Bio
Senior Fisheries Biologist/Managing Principal



21 Lewis Street | Guelph, ON N1H 1E9
Office: (905) 873-3371 x: 228
Cell: (519) 716-3549
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Mobile: 587-341-4792

Email/Courriel: Terina.Hancock@dfo-mpo.gc.ca



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From: Kim Connors <KConnors@minnow.ca>

Sent: Thursday, October 21, 2021 11:52 AM

To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>

Cc: Mogge, Brandi <Brandi.Mogge@dfo-mpo.gc.ca>; James, Clayton <Clayton.James@dfo-mpo.gc.ca>; Campbell, Melanie <Melanie.Campbell@dfo-mpo.gc.ca>; Cote Gold Project Siims <Siims@iamgold.com>

Subject: Further Consultation for Cote Gold Project

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Please let us know so that we can forward the meeting invitation and/or organize the appropriate tools to have DFO involved.

Thanks,
Kim

Kim Connors, M.Sc., R.P.Bio
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Take a look at our new website which reflects our expanded capabilities across EHS, Engineering, and Science. Visit the new trinityconsultants.com.

Hello Terina,

Would this include DFO and Andrea and Jeff Amos from MNDMNRF?

Once we determine all parties to be involved we can determine a time to discuss.

Thanks.

><>><>><>><>><>><>><>><>

Hello Kim.

We were able to meet with MNRF regarding the discussions of Mattagami Lake offsetting. Please see Andreas follow up

Once you have assessed the comments, a meeting with all parties to discuss the Mattagami Lake offsetting further would be beneficial.

Terina Hancock, B.Sc., P.Biol.

Fish and Fish Habitat Protection Biologist

 Fisheries and Oceans Canada Pêches et Océans Canada 

From: Ellis Nsiah, Andrea (MNRF) <Andrea.EllisNsiah@ontario.ca>
Sent: Tuesday, July 20, 2021 3:13 PM
To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>; Mogge, Brandi <Brandi.Mogge@dfo-mpo.gc.ca>; James, Clayton <Clayton.James@dfo-mpo.gc.ca>
Cc: Ogunjobi, Emmanuel (MNRF) <Emmanuel.Ogunjobi@ontario.ca>; Haapakoski, Tuovi (MNRF) <tuovi.haapakoski@ontario.ca>; Rosko, Jennifer (MNRF) <jennifer.rosko@ontario.ca>
Subject: RE: Cote Project - Discussion Potential New Component to Offsetting

- If Mattagami Lake is on the monitoring schedule.
- If so, what data will be collected?

In 2012 Timmins District worked with Mattagami First Nation to hire a consultant to do a Fall Walleye Index Study (FWIN) to determine the health of walleye in the lake. This was related to the hatchery which was starting that year. This study could serve as a baseline for future work. Mattagami First Nation should have this study. **I will try to locate it in our records, as well.**

Water Management Plan

I did a cursory review of Mattagami River Water Management Plan to see if there were outstanding data gaps identified for Mattagami Lake. The only item I found was pertaining to walleye spawning below the Mattagami Lake Dam (i.e. just beyond the boundary of the lake so not relevant).

Other considerations:

- Depending on the research proposed, a Scientific Collector's Permit may be required from Timmins District NDMNRF
- Habitat restoration or creation work may require a work permit from Timmins District, NDMNRF

My office intends to backfill Emmanuel's Management Biologist position, as soon as possible. I will remain the Timmins District NDMNRF contact for this offsetting proposal for the time being. I will reach out to other staff, or bring them into discussion with DFO, as needed.

I will follow-up on my highlighted Action Items above within the next week or so.

Sincerely,
Andrea

Andrea Ellis Nsiah

District Planner
Timmins District
Regional Operations Division
Ministry of Northern Development, Mines, Natural Resources & Forestry
Ontario Government Complex
5520 Hwy 101 E, PO Bag 3090
South Porcupine, ON P0N 1H0

Email: Andrea.EllisNsiah@ontario.ca

Work Cellular: (705) 465-6254

Currently Working Remotely

Please Note: As part of providing accessible customer service, please let me know if you have any accommodation needs or require communication supports or alternate formats.

-----Original Appointment-----

From: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>

Sent: July 15, 2021 3:12 PM

To: Hancock, Terina; Mogge, Brandi; James, Clayton; Ogunjobi, Emmanuel (MNRF); Ellis Nsiah, Andrea (MNRF)

Subject: Cote Project - Discussion Potential New Component to Offsetting

When: July 20, 2021 11:00 AM-12:00 PM (UTC-07:00) Mountain Time (US & Canada).

Where: Microsoft Teams Meeting

Creighton, Stephanie

From: Krista Maydew <Krista_Maydew@iamgold.com>
Sent: Friday, October 29, 2021 4:57 PM
To: IMGsiims
Subject: FW: Cote Project - Discussion Potential New Component to Offsetting

CAUTION: External email. Please do not click on links/attachments unless you know the content is genuine and safe.

From: Hancock, Terina [mailto:Terina.Hancock@dfo-mpo.gc.ca]
Sent: October 28, 2021 5:40 PM
To: Kim Connors <KConnors@minnow.ca>
Cc: James, Clayton <Clayton.James@dfo-mpo.gc.ca>; Kathryn Kuchapski <Kathryn.Kuchapski@minnow.ca>; Cote Gold
Projet Siims <Siims@iamgold.com>; Mogge, Brandi <Brandi.Mogge@dfo-mpo.gc.ca>; Derlukewich, Shona
<Shona.Derlukewich@dfo-mpo.gc.ca>
Subject: RE: Cote Project - Discussion Potential New Component to Offsetting

Hello Kim,

I have checked my contacts and I don't see additional MNDRF contacts from Andrea and Jeff.

As per our conversation, November 15th onward we have capacity to schedule the meeting.

Thanks

Terina Hancock, B.Sc., P.Biol.
Fish and Fish Habitat Protection Biologist
Mining, Oil & Gas – South

Fish and Fish Habitat Protection Program (FFHPP) | Programme de protection du poisson et de son habitat (PPPH)
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Email/Courriel: Terina.Hancock@dfo-mpo.gc.ca



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From: Kim Connors <KConnors@minnow.ca>
Sent: Tuesday, October 26, 2021 10:58 AM
To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>
Cc: James, Clayton <Clayton.James@dfo-mpo.gc.ca>; Kathryn Kuchapski <Kathryn.Kuchapski@minnow.ca>; Cote Gold

My Apologies, the time was all jumbled, I have edited to the correct time, on Tuesday July 20.

Hello Emmanuel and Andrea,

As discussed in the One call and my previous communication please accept this meeting invite to discuss a proposed offsetting idea from Cote.

Thank you

Terina Hancock, B.Sc.,
Fish and Fish Habitat Protection Biologist
Mining , Oil & Gas – South

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From: [Krista Maydew](#)
To: [IMGsiims](#)
Subject: FW: 20-HCAA-00766 Community Consultation List
Date: Friday, November 12, 2021 2:55:37 PM
Attachments: [image001.png](#)
[image002.png](#)
[image003.jpg](#)
[image004.jpg](#)
[image006.png](#)

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From: Hancock, Terina [mailto:Terina.Hancock@dfo-mpo.gc.ca]
Sent: November 12, 2021 2:55 PM
To: Krista Maydew <Krista_Maydew@iamgold.com>; Mogge, Brandi <Brandi.Mogge@dfo-mpo.gc.ca>
Cc: James, Clayton <Clayton.James@dfo-mpo.gc.ca>; Cote Gold Projet Siims <Siims@iamgold.com>; David Brown <David_Brown@iamgold.com>; Kim Connors <KConnors@minnow.ca>; Christian Naponse <christian_naponse@iamgold.com>
Subject: RE: 20-HCAA-00766 Community Consultation List

Thank you fir the list and clarification Krista

Cheers

Terina Hancock, B.Sc., P.Biol.

*Fish and Fish Habitat Protection Biologist
Mining , Oil & Gas – South*

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1028 Parsons Rd SW
Edmonton, Alberta T6X 0J4

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From: Krista Maydew <Krista_Maydew@iamgold.com>
Sent: Wednesday, November 10, 2021 2:18 PM
To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>; Mogge, Brandi <Brandi.Mogge@dfo-mpo.gc.ca>
Cc: Derlukewich, Shona <Shona.Derlukewich@dfo-mpo.gc.ca>; James, Clayton <Clayton.James@dfo-mpo.gc.ca>; Cote Gold Project Siims <Siims@iamgold.com>; David Brown <David_Brown@iamgold.com>; Kim Connors <KConnors@minnow.ca>; Christian Naponse <christian_naponse@iamgold.com>
Subject: RE: 20-HCAA-00766 Community Consultation List

Good afternoon Terina and Brandi,

Thank you for joining us this week for the sessions in Gogama and with the Métis Nation of Ontario. Below is the list of community contacts for the Indigenous communities consulted on the amendment of the *Fisheries Act* Authorization for the Côté Gold Project. Please let me know if you also require contact information for Gogama. I wasn't sure if you follow-up with non-Indigenous communities as well as Indigenous communities.

With respect to communities consulted on the first authorization, we conducted in-person meetings with Mattagami, Métis Nation of Ontario and Gogama. Neither Flying Post nor Brunswick House requested consultation at that time (it was offered). In the case of Nipigon, that meeting (to be held on November 16) is actually with Flying Post First Nation. They do not live on a reserve, rather they live within the community of Nipigon which is close to Thunder Bay; however, the Côté Gold Project is located within their traditional territory.

Indigenous Community	Affiliated Governance Organization	Contact Information
Mattagami First Nation	Wabun Tribal Council	Chief Chad Boissoneau 75 Helen Street P.O. Box 99 Gogama, ON, P0M 1W0 Email: c.boissoneau@mattagami.com Tel: 705-894-2072 Fax: 705-894-2887 Jennifer Constant Lands and Resources Coordinator Email: jenniferconstant@mattagami.com
Flying Post First Nation	Wabun Tribal Council	Chief Murray Ray 33 First Street, P.O. Box 1027 Nipigon, ON P0T 2J0 Email: flypost@shawbiz.ca Tel: 807- 887-3071 Fax: 807-887-1138

		<p>Jeff Berube Email: ijberube21@gmail.com Tel: 807-708-2627</p>
Timmins Métis Council	Métis Nation of Ontario	<p>Pierre Lefebvre, President 347 Spruce Street South Timmins, ON P4N 2N2 Email: petele5@hotmail.com Tel: 705-264-3939</p> <p>Vanessa Potvin, Mineral Development Coordinator Email: VanessaP@metisnation.org</p>
Métis Nation of Ontario – Region 3 Consultation Committee	Métis Nation of Ontario	<p>Jacques Picotte, Chair – Regional Consultation Committee 347 Spruce Street South Timmins, ON P4N 2N2 Email: jp Picotte@live.com Tel: 705-204-3939</p>
Northern Lights Métis Council	Métis Nation of Ontario	<p>Urgel Courville, President 169 6th Street Cochrane, ON, P0L 1C0 Email: urgel1@hotmail.com Tel: 705-272-2277</p>
Timiskaming Métis Council	Métis Nation of Ontario	<p>Lorette McKnight, President 439 Fergusson Ave Haileybury, ON P0J 1K0 Email: tmcc@ntl.sympatico.ca Tel: 705-672-3790</p>
Chapleau Métis Council	Métis Nation of Ontario	<p>David Hamilton, President Box 1059, 61 Birch Street East Chapleau, ON P0M 1K0 Email: dhammychapleau@yahoo.ca Tel: 705-21-8025</p>
Brunswick House First Nation	Wabun Tribal Council	<p>Chief Renae Vanbuskirk 1 Kanata Street, P.O. Box 1178 Chapleau, ON P0M 1K0 Email: Chief@bhfn.ca Tel: 705-864-0174 ext. 212 Fax: 705-864-1960</p> <p>Kevin Tangie, Councillor chimokoman@hotmail.com</p> <p>Lisa Vanbuskirk, Lands and Resources Coordinator Email: bhfn.landsandresources@gmail.com Tel: 705-864-0174 ext. 225</p> <p>Cody Vanbuskirk, Mining, Mapping and Forestry Technician cody.vanbuskirk@Bhfn.ca</p>

Thanks,
Krista

Director, Community Relations



Subject: RE: 20-HCAA-00766 Community Consultation List

Kim Connors, M.Sc., R.P. Bio.

From: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>
Sent: Wednesday, November 3, 2021 6:58 PM
To: Kim Connors <KConnors@minnow.ca>; Krista Maydew <Krista_Maydew@iamgold.com>;
Christian Naponse <christian_naponse@iamgold.com>
Cc: Mogge, Brandi <Brandi.Mogge@dfo-mpo.gc.ca>; Derlukewich, Shona <Shona.Derlukewich@dfo-mpo.gc.ca>; James, Clayton <Clayton.James@dfo-mpo.gc.ca>
Subject: 20-HCAA-00766 Community Consultation List

Hello Everyone,

Would you be able to provide me with a list of the communities and there contact information you are consulting with for the amendment in case there have been changes since the current authorization? I have the list of communities Kim provided meeting dates for but that may not be complete. I also have the list from the current authorization, which looks like there have been changes to as I don't see Gogama and Nipigon on it.

Additionally, Shona Derlukewich will slowly be transitioning on to the project in Claytons place; therefore I have forwarded her the Gogama meeting invite.

Thanks

Terina Hancock, B.Sc., P.Biol.

*Fish and Fish Habitat Protection Biologist
Mining , Oil & Gas – South*

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Mobile: 587-341-4792

Email/Courriel: Terina.Hancock@dfo-mpo.gc.ca



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From: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>
Sent: Thursday, February 17, 2022 11:40 AM
To: Kim Connors <KConnors@minnow.ca>
Cc: James, Clayton <Clayton.James@dfo-mpo.gc.ca>; Cote Gold Projet Siims <siims@iamgold.com>; Stephen Crozier <stephen_crozier@iamgold.com>; Krista Maydew <krista_maydew@iamgold.com>; Dave Brown - IAMGOLD Côté Gold Project (David_Brown@iamgold.com) <david_brown@iamgold.com>; Rebecca Dolson <Rebecca.Dolson@minnow.ca>
Subject: RE: 20-HCAA-00766 Amendment Submission and Consultation Discussion follow up

Kim,

Great thanks very much

Thanks

Terina Hancock, B.Sc., P.Biol.
Fish and Fish Habitat Protection Biologist
Mining, Oil & Gas – South

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Email/Courriel: Terina.Hancock@dfo-mpo.gc.ca



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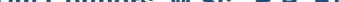
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From: Kim Connors <KConnors@minnow.ca>
Sent: Thursday, February 17, 2022 6:56 AM
To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>
Cc: James, Clayton <Clayton.James@dfo-mpo.gc.ca>; Cote Gold Projet Siims <siims@iamgold.com>; Stephen Crozier <stephen_crozier@iamgold.com>; Krista Maydew <krista_maydew@iamgold.com>; Dave Brown - IAMGOLD Côté Gold Project (David_Brown@iamgold.com) <david_brown@iamgold.com>; Rebecca Dolson <Rebecca.Dolson@minnow.ca>
Subject: RE: 20-HCAA-00766 Amendment Submission and Consultation Discussion follow up

Morning Terina,

Cheers,
Kim

Kim Connors, M.Sc., R.P. Bio.

Hello Kim,

Could you please send me a high level description of Authorization changes for me to include for the finalization of our consultation letters?

Thanks

Fish and Fish Habitat Protection Program (FFHPP) | Programme de protection du poisson et de son habitat (PPPH)
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4

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From: Kim Connors <KConnors@minnow.ca>
Sent: Friday, February 18, 2022 4:56 AM
To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>
Cc: James, Clayton <Clayton.James@dfo-mpo.gc.ca>; Cote Gold Projet Siims <siims@iamgold.com>; Stephen Crozier <stephen_crozier@iamgold.com>; Krista Maydew <krista_maydew@iamgold.com>; Dave Brown - IAMGOLD Côté Gold Project (David_Brown@iamgold.com) <david_brown@iamgold.com>; Rebecca Dolson <Rebecca.Dolson@minnow.ca>
Subject: RE: 20-HCAA-00766 Amendment Submission and Consultation Discussion follow up

Morning Terina,

The Project has identified four additional areas where adverse effects on fish and fish habitat are unavoidable, were not included in the original FOP, and for which an offsetting approach must be developed, and a FAA amendment acquired. These four areas include installing:

- a temporary discharge pipe in Upper Three Duck Lake;
- a discharge pipe in the Mollie River;
- a freshwater intake pipe in Mesomikenda Lake; and
- the installation of culverts for a small unnamed tributary road crossing.

In addition to these four adjustments to habitat effected by the Project, two of the originally proposed offsetting habitats: Bagsverd Aggregate Pit and Aggregate Pit #3 remediation will not be developed as planned. Lastly, one complementary measure was accepted in the original FOP; IAMGOLD committed to funding research on environmental deoxyribonucleic acid (eDNA) barcoding methods to support Environmental Effects Monitoring (EEM) which will not occur since the research team was unsuccessful in their application for matching funding. Due to conditions beyond IAMGOLD's control the measure cannot be completed.

To counterbalance changes proposed in the original FOP, IAMGOLD has prioritized proposing offsets recommended during consultation that target walleye spawning habitat and improvements to Mattagami Lake (e.g., shoreline stabilization, cover for walleye fry). Specifically, the amendment is proposing to construct offsetting habitat to the south of Aggregate Pit #3 (an extension of area off of Middle Three Duck Lake), create walleye spawning habitat in the Mollie River (between Middle and Lower Three Duck lakes), stabilize sections of shoreline and add habitat complexity in Mattagami Lake, and support the development of a Mattagami Lake Fisheries Plan as a complementary measure.

Let me know if you require any further clarifications on the changes that are being proposed/summarized in the amendment.

From: Krista Maydew <Krista_Maydew@iamgold.com>
Sent: Tuesday, February 22, 2022 12:50 PM
To: IMGsiims
Subject: FW: Cote Gold - Follow Up
Attachments: 2021 12 10 MFN letter of support for FAA amendment.pdf

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From: Hancock, Terina [mailto:Terina.Hancock@dfo-mpo.gc.ca]
Sent: February 22, 2022 12:06 PM
To: Stephen Crozier <Stephen_Crozier@iamgold.com>; James, Clayton <Clayton.James@dfo-mpo.gc.ca>
Cc: Kim Connors <KConnors@minnow.ca>; Krista Maydew <Krista_Maydew@iamgold.com>; David Brown <David_Brown@iamgold.com>
Subject: RE: Cote Gold - Follow Up

Thanks Steve

Thanks

Terina Hancock, B.Sc., P.Biol.
Fish and Fish Habitat Protection Biologist
Mining , Oil & Gas – South

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From: Stephen Crozier <Stephen_Crozier@iamgold.com>
Sent: Tuesday, February 22, 2022 10:00 AM
To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>; James, Clayton <Clayton.James@dfo-mpo.gc.ca>
Cc: Kim Connors <KConnors@minnow.ca>; Krista Maydew <Krista_Maydew@iamgold.com>; David Brown <David_Brown@iamgold.com>
Subject: RE: Cote Gold - Follow Up

Terina, Clayton,

After I sent my prior email Krista noted that I had attached the MNO support letter twice, but had not included the MFN support letter for the application. Please see the MFN letter attached. Apologies for the confusion.

Steve

From: Stephen Crozier

Sent: February 17, 2022 5:22 PM

To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>; James, Clayton <Clayton.James@dfo-mpo.gc.ca>

Cc: Kim Connors <KConnors@minnow.ca>; Krista Maydew <Krista_Maydew@iamgold.com>; Dave Brown <david_brown@iamgold.com>

Subject: Cote Gold - Follow Up

Terina, Clayton,

Thanks again for meeting with us yesterday. We would appreciate your feedback on how to approach consultation with Brunswick House FN once you have connected with the indigenous relations unit in DFO. IAMGOLD is prepared to commit funds immediately to ensure BHFN has resources to support their review, provided the review is focused and subject to specific time limits.

Copies of the support letters received from Mattagami FN, Flying Post FN and MNO on this application are attached for your reference. We have also attached a copy of the support letter from BHFN on the initial application from 2019.

In addition, set out below you will see the post-approval consultation mechanism that was included in some of our provincial approvals on the project, which may be worth considering in this particular context.

Regards,

Steve

SPECIAL CONDITION

1. The Owner shall implement the Aboriginal Consultation Plans as prepared and approved under condition 9 of the Order in Council 238/2017, dated January 19, 2017 and as amended from time to time.
2. The Owner shall engage with any Aboriginal community that Ontario has identified as having Aboriginal or treaty rights potentially impacted by the project and is specifically identified by the Ministry in writing to the Owner as not having received adequate capacity support for the review of the application for this Approval, to establish reasonable capacity funding to allow the Aboriginal community to complete a review of the application for this Approval and associated supporting documentation.
3. The Owner shall submit the outcome of the review(s) stated in the above condition to the District Manager within forty five (45) days of it having been received by the Owner and, based on the outcome of the review(s), the Owner may be required to submit an amendment to this Approval.

Krista Maydew

Director, Community Relations

IAMGOLD Corporation

401 Bay Street, Suite 3200, Toronto, ON, Canada M5H 2Y4

M: 416 475 7755

www.iamgold.com



From: Krista Maydew <Krista_Maydew@iamgold.com>
Sent: Wednesday, March 2, 2022 9:17 AM
To: IMGsiims
Subject: FW: 20-HCAA-00766 Amendment Submission and Consultation Discussion follow up

CAUTION: External email. Please do not click on links/attachments unless you know the content is genuine and safe.

From: Kim Connors [mailto:KConnors@minnow.ca]
Sent: March 1, 2022 9:44 PM
To: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>
Cc: James, Clayton <Clayton.James@dfo-mpo.gc.ca>; Cote Gold Projet Siims <Siims@iamgold.com>; Stephen Crozier <Stephen_Crozier@iamgold.com>; Krista Maydew <Krista_Maydew@iamgold.com>; David Brown <David_Brown@iamgold.com>; Rebecca Dolson <Rebecca.Dolson@minnow.ca>
Subject: RE: 20-HCAA-00766 Amendment Submission and Consultation Discussion follow up

Hi Terina,

Here are the following footprints for each area :

- discharge pipe in Upper Three Duck Lake; AREA = 208 m²
- discharge pipe in the Mollie River; AREA = 9 m²
- freshwater intake pipe in Mesomikenda Lake; AREA = 84 m²
- culverts for a small unnamed tributary road crossing; AREA = 53 m²

Let me know if you need any other information.

Kim

><>><>><>><>><>><>><>><>

Kim Connors, M.Sc., R.P. Bio.

From: Hancock, Terina <Terina.Hancock@dfo-mpo.gc.ca>
Sent: Tuesday, March 1, 2022 3:43 PM
To: Kim Connors <KConnors@minnow.ca>
Cc: James, Clayton <Clayton.James@dfo-mpo.gc.ca>; Cote Gold Projet Siims <siims@iamgold.com>; Stephen Crozier <stephen_crozier@iamgold.com>; Krista Maydew <krista_maydew@iamgold.com>; Dave Brown - IAMGOLD Côté Gold Project (David_Brown@iamgold.com) <david_brown@iamgold.com>; Rebecca Dolson <Rebecca.Dolson@minnow.ca>
Subject: RE: 20-HCAA-00766 Amendment Submission and Consultation Discussion follow up

Hello Kim,

Thanks for this information, could you please send me the footprint area for each of the additional 4 adverse effects?

Thanks

Terina Hancock, B.Sc., P.Biol.
Fish and Fish Habitat Protection Biologist

Appendix 5: Meeting Notes

Mattagami First Nation – Community Meeting Report
Côte Gold Project Update and Review of Fisheries Act Authorization
October 6, 2021
Mattagami Community Centre

IAMGOLD hosted a community information session on October 6, 2021 at the Mattagami First Nation Community Centre from 5:00 - 7:30 pm. The purpose of this session was to provide a general Project update and to consult with the community on the amendment to the *Fisheries Act* Authorization.

Participants:

Mattagami First Nation

Jennifer Constant
Juanita Luke
Doreen Luke
Andrea Naveau
Joyce Constant
Tim Harvey
Samantha McKenzie
Chief Boissoneau

IAMGOLD

Mike Garbutt
David Brown
Christian Naponse
Krista Maydew
Geoff Lake
Kyle Conway
Kim Connors (Minnow Aquatic Environmental Services)

Fisheries and Oceans Canada

Brandi Mogge
Clayton James
Terina Hancock
Melanie Campbell

Agenda

5-5:30 pm	Dinner
5:30 pm	Introductions
5:45 pm	Project update presentation (Mike Garbutt, IAMGOLD)
6:15 pm	Q&A Re: project update
6:30 pm	<i>Fisheries Act</i> Authorization presentation (Kim Connors, Minnow Aquatic Environmental Services)
7 pm	Q&A Re: <i>Fisheries Act</i> Authorization

Project Update presentation

An update on the Project presented information about key Project milestones, land acknowledgment at site, the naming of New Lake, an August 2021 tour of the site involving members of Mattagami First Nation, IAMGOLD's activities recognizing the National Day for Truth and Reconciliation, construction workforce highlights, operations workforce planning and training strategy, COVID-19 testing protocols, Impact Benefit Agreement implementation activities, an update on socio-economic management and monitoring, and communication and consultation.

***Fisheries Act* Authorization presentation**

Minnow presented an update on the *Fisheries Act* Authorization (FAA) and proposed amendment. The presentation contained an update on the status of implementation of approved offsetting measures and

overview of the approved offsetting areas. Minnow explained how since construction began, improvements to Project design resulted in changes that will require an amendment to the Offsetting Plan approved under the existing FAA. Three proposed alternate offsetting measures were presented and next steps discussed.

Questions / Comments from MFN Community Members

- Q.** When you create a new lake do you have to keep testing it?
- A.** The lake will be monitored to ensure it is performing as it is supposed to and meeting the commitments of the offsetting plan. Aquatic plants and benthic invertebrates are transplanted to provide cover and food for fish. Fish, benthic invertebrates and water will be monitored. The monitoring will occur for approximately 10 years.
- Q.** Will you be hiring from the community for the fish work?
- A.** Yes, Minnow hired two local people, one from Mattagami and one from Gogama, to work on the fish salvage work done already and plans to reach out to the community again to hire for the work to come. Next year's work will include planting the shoreline and planting aquatic plants in the new lake.
- Q.** When do you plan on hiring for the next round of working with the fish habitat?
- A.** We will be looking to hire again in spring 2022.
- Q.** Will there be work opportunities for people who are just interested in doing the planting in and around the new lake?
- A.** Yes. The planting work will begin as early as possible in spring 2022 once the freshet stops.
- Q.** Where will the fish for the new lake come from?
- A.** The fish that will be used to repopulate the new lake will be relocated from the arm of Upper Three Duck Lake that will be fished-out in 2022.
- Q.** When will it be possible to have a tour of the site for students?
- A.** It should be possible in spring.

Comment: The new school being constructed in Mattagami will include a small hatchery.

Brunswick House First Nation – Community Meeting Report
Côte Gold Project Update and Review of *Fisheries Act* Authorization Amendment
October 28, 2021

IAMGOLD hosted a virtual community information session on October 28, 2021 with Brunswick House First Nation from 10:00am – 11:00 am. The purpose of this session was to provide a general Project update and to consult with the community on the amendment to the *Fisheries Act* Authorization.

Participants:

Brunswick House First Nation

Kevin Tangie
Cody VanBuskirk
Lisa VanBuskirk

IAMGOLD

Mike Garbutt
David Brown
Christian Naponse
Krista Maydew
Stephen Crozier
Kim Connors (Minnow Aquatic Environmental Services)

Fisheries and Oceans Canada

Brandi Mogge
Clayton James
Terina Hancock
Melanie Campbell

Distribution:

Participants plus Chief Renae VanBuskirk

Agenda

- Introductions
- Project update presentation
(Mike Garbutt, IAMGOLD)
- Q&A Re: project update
- *Fisheries Act* Authorization presentation
(Kim Connors, Minnow Aquatic Environmental Services)
- Q&A Re: *Fisheries Act* Authorization

Project Update presentation

An update on the Project presented information about key Project milestones, construction workforce highlights, operations workforce planning and training strategy, COVID-19 testing protocols and communication and consultation.

Discussion

- Communications and consultation – BHFN indicated that communication via email is sufficient at this time but as we move forward more personal contact will be needed. IAMGOLD inquired about the potential for in person meetings, BHFN responded that they are currently re-evaluating their COVID protocols. BHFN acknowledge that IAMGOLD has been consulting with the community.
- Traditional Territory mapping – BHFN informed that their Traditional Territory maps are being updated with the assistance of Wabun Tribal Council and recognize that IAMGOLD has been consulting with them but due to capacity issues with the Lands and Resources department it has

been difficult to properly respond to proponent communication, however the department is now expanding. BHFN indicated that they will be seeking accommodation from any proponents operating in their Traditional Territory. IAMGOLD respects that the community is re-evaluating their territory and are open to discussing what this means for the Project and suggested that it is a conversation separate from today's meeting. IAMGOLD expressed openness to continuing a conversation with BHFN about the re-evaluation of their traditional territory recognizing that the community is engaging with the Provincial government to update the mapping.

- Data sharing agreement – BHFN indicated that the data sharing agreement was sent to IAMGOLD but they had not received a response. They would like to complete the values overlay process soon. IAMGOLD indicated that they received and reviewed the agreement but wanted to wait until after elections to continue working on this and that an email regarding this was sent on October 7. IAMGOLD offered to resend the email and work towards beginning this process but would prefer to discuss the subject on a separate call.

Fisheries Act Authorization presentation

Minnow presented an update on the *Fisheries Act* Authorization (FAA) and proposed amendment. The presentation contained an update on the status of implementation of approved offsetting measures and overview of the approved offsetting areas. Minnow explained how since construction began, improvements to Project design resulted in changes that will require an amendment to the Offsetting Plan approved under the existing FAA. Three proposed alternate offsetting measures were presented and next steps discussed.

Q. Does the fisheries plan monitor the health of the fish?

A. Typically you have to monitor the habitat after these types of modifications and there may be components to monitor fish health. If we develop an adaptive plan this can be included to ensure the overall health of the new habitat which can include monitoring the health of the fish.

Q. Will the lakes (on site) be navigable?

A. We have committed to maintaining navigability on the site; even culvert designs are made to consider canoeists. The 4M canoe route has been accommodated. We request users contact IAMGOLD prior to any canoe trips to ensure safety.

Additional Comments

- IAMGOLD indicated if further information was needed regarding the FAA that BHFN is welcome to contact IAMGOLD anytime
- Both parties agree another meeting should be scheduled to discuss the data sharing agreement
- IAMGOLD informed BHFN that the Project permitting SharePoint was updated and would now require a username and password which will be generic to the community and can be shared with anyone in the community

Gogama – Community Open House Report
Côte Gold Project Update and Review of *Fisheries Act* Authorization
November 8, 2021
Côte Gold Training Centre, Gogama, ON

IAMGOLD hosted a community Open House on November 8, 2021 at the Côte Gold training centre in Gogama from 6:30 – 8:30 pm. The purpose of this session was to provide a general Project update and to consult with the community on the amendment to the *Fisheries Act* Authorization. There were 8 community members in attendance.

Participants:

<u>IAMGOLD</u>	<u>Fisheries and Oceans Canada (joined virtually)</u>
Krista Maydew	Brandi Mogge
David Brown	Clayton James
Christian Naponse	Terina Hancock
Geoff Lake	Melanie Campbell
Kyle Conway	
Kim Connors (Minnow Aquatic Environmental Services)	

Agenda

- Introductions
- Project update presentation
(Dave Brown, IAMGOLD)
- Q&A Re: Project update
- *Fisheries Act* Authorization presentation
(Kim Connors, Minnow Aquatic Environmental Services)
- Q&A Re: *Fisheries Act* Authorization

Project Update presentation

An update on the Project presented information about key Project milestones, construction workforce highlights, operations workforce planning and training strategy, COVID-19 testing protocols, socio-economic management and monitoring, community investments, and communication and consultation.

***Fisheries Act* Authorization presentation**

Minnow presented an update on the *Fisheries Act* Authorization (FAA) and proposed amendment. The presentation contained an update on the status of implementation of approved offsetting measures and overview of the approved offsetting areas. Minnow explained how since construction began, improvements to Project design resulted in changes that will require an amendment to the Offsetting Plan approved under the existing FAA. Three proposed alternate offsetting measures were presented and next steps discussed.

Questions / Comments from Gogama Community Members

- Q. Is the brush cutting currently going on along Highway 144 for the mine?
- A. The Ministry of Transportation is doing that work as part of Highway 144 improvements. Valard will be constructing our transmission line and have hired Caron as the forestry contractor who will be doing brush cutting to prepare for construction of the transmission line.
- Q. There was access to these lakes and areas on the mine property before, but during the mine operations people can't access these places. It will be a long time before people can access these places, including New Lake. Also, are you creating alternative camping sites along the 4M canoe route since there are two within the property boundary that have been removed?
- A. The 4M canoe route is still open but there is no overnight camping within the Project boundaries. There are overnight camping sites just north of the Project at Bagsverd and further along the route. IAMGOLD is committed to allowing safe passage for anyone using the route.
- Q. What does Mattagami Lake have to do with the mine?
- A. With regards to habitat improvements / fish improvements, we offset the general loss of habitat in the area. IAMGOLD has provided support to the fish hatchery in Mattagami and the Mattagami Lake Fisheries Plan may improve understanding of how the fish hatchery efforts are impacting the fishery in the lake. Fisheries and Oceans Canada also noted that although Mattagami Lake is not within the site footprint, it is near the site. It is DFO's preference that habitat is offset within the immediate vicinity; however, in areas like this one sometimes it is challenging to create all offsets within the immediate footprint and therefore options can be explored further from site. It should be noted that the offsetting habitat is largely being compensated in the immediate vicinity of the site and that the Mattagami Lake Fisheries Plan is a small component of the overall Offsetting Plan. In some cases it does not make sense to dig a hole to create habitat, therefore destroying terrestrial habitat to create an offset may not be the best option. In previous consultation discussions with Mattagami they brought forward a potential issue with shoreline erosion and we heard the concern and want to support fishery improvements if there are no issues.
- Q. Is IAMGOLD working with Hydro One regarding shoreline erosion? Gogama is also losing its beach the same way that Mattagami is.
- A. It is IAMGOLD's understanding that Mattagami First Nation is working to understand baseline shoreline erosion.
- Q. Is there a way to include Minisinakwa and Mesomikenda lakes as part of the plan?
- A. Improvements and/or monitoring in Mattagami Lake should have net positive impacts on other lakes within the same watershed (i.e., lakes around Gogama).
- Q. Can IAMGOLD help purchase a home for teachers in the community? Teachers who live in Timmins have to rent houses in Gogama during the week while they are teaching and pay about \$1,000 a month in rent.
- A. IAMGOLD and the Gogama members of the Socio-economic Management and Monitoring Committee can discuss this at the next Socio-economic Management and Monitoring meeting.

MÉTIS NATION OF ONTARIO

IAMGOLD COTE GOLD MINE PROJECT

MINUTES

DATE: NOVEMBER 9, 2021

LOCATION: VIA ZOOM & IN PERSON

MEETING CALLED BY	IAMGOLD																				
PURPOSE OF MEETING	<ul style="list-style-type: none"> To have first IBA Implementation Meeting for the Cote Gold Project To discuss the Environmental Compliance Approval (ECA) and the Fisheries Act Authorization (FAA) Amendment 																				
ATTENDEES	<p>Kim Connors – Minnow Aquatic Environmental Services Terina Hancock – Department of Fisheries and Oceans Canada, Fish and Fish Habitat Protection Biologist Brandi Mogge - Department of Fisheries and Oceans Canada, Senior Fisheries Protection Biologist David Brown – IAMGOLD, Manager of Environment and Community Affairs – Cote Gold Project Krista Maydew – IAMGOLD, Director - Community Relations Christian Naponse – IAMGOLD, Community Affairs Coordinator Jacques Picotte – Metis Nation of Ontario, Regional Councilor and Chair for Region 3 David Hamilton – Metis Nation of Ontario, President – Chapleau Metis Council Vanessa Potvin – Metis Nation of Ontario, Mineral Development Advisor – Northeast Region Russell Ott – Metis Nation of Ontario, Project Coordinator – Intergovernmental Relations</p>																				
DISCUSSION	<p>COMMENT: Not considered consultation because only part of the regional committee is present. Notes will be brought back to the entire consultation committee for discussion and for decision making.</p> <p>Fisheries Act Authorization Amendment</p> <ul style="list-style-type: none"> Any fish habitat destroyed needs to be compensated for by offsetting losses by the construction of new habitat. There is currently a Fisheries Act Authorization (FAA) in place, but the Project design has been modified. Therefore, an amendment needs to be made to the FAA offsetting plan. Current status of offsetting measures include: <table> <tr> <th>Offsetting Habitat</th><th>Status</th></tr> <tr> <td>WRC1 – replace Clam Creek</td><td>Nearing Completion</td></tr> <tr> <td>WRC2 – replace Mollie</td><td>Nearing Completion</td></tr> <tr> <td>New Lake – replace small lost waterbodies</td><td>Under Construction</td></tr> <tr> <td>Connection of Upper Three Duck & Weeduck lakes</td><td>Completed</td></tr> <tr> <td>Connection of East Clam & Clam lakes</td><td>Completed</td></tr> <tr> <td>Connection of Little Clam & East Clam lakes</td><td>Under Construction</td></tr> <tr> <td>Unnamed Pond Outlet</td><td>Under Construction</td></tr> <tr> <td>Remediation of Bagsverd Aggregate Pit</td><td>Outstanding</td></tr> <tr> <td>Remediation of Aggregate Pit 3</td><td>Outstanding</td></tr> </table> <ul style="list-style-type: none"> Bagsverd Aggregate Pit will no longer be constructed and won't be offered as habitat. Aggregate Pit #3 will have modified habitat within the area, and will undergo remediation. 	Offsetting Habitat	Status	WRC1 – replace Clam Creek	Nearing Completion	WRC2 – replace Mollie	Nearing Completion	New Lake – replace small lost waterbodies	Under Construction	Connection of Upper Three Duck & Weeduck lakes	Completed	Connection of East Clam & Clam lakes	Completed	Connection of Little Clam & East Clam lakes	Under Construction	Unnamed Pond Outlet	Under Construction	Remediation of Bagsverd Aggregate Pit	Outstanding	Remediation of Aggregate Pit 3	Outstanding
Offsetting Habitat	Status																				
WRC1 – replace Clam Creek	Nearing Completion																				
WRC2 – replace Mollie	Nearing Completion																				
New Lake – replace small lost waterbodies	Under Construction																				
Connection of Upper Three Duck & Weeduck lakes	Completed																				
Connection of East Clam & Clam lakes	Completed																				
Connection of Little Clam & East Clam lakes	Under Construction																				
Unnamed Pond Outlet	Under Construction																				
Remediation of Bagsverd Aggregate Pit	Outstanding																				
Remediation of Aggregate Pit 3	Outstanding																				

- Three modifications were required in early 2021 that were not included in the original assessment
 - Culvert installation for road construction
 - The placement of a discharge pipe to Upper Three Duck Lake
 - Freshwater intake in Mesomikenda Lake (outstanding).
- Proposed alternative offsetting measures include:
 - Walleye spawning habitat in Mollie River by installing spawning substrate.
 - Modification to Aggregate Pit #3 off Middle Three Duck Lake. There will be the creation of an island and Middle Three Duck Lake will go around the island, and the focus will be on key species.

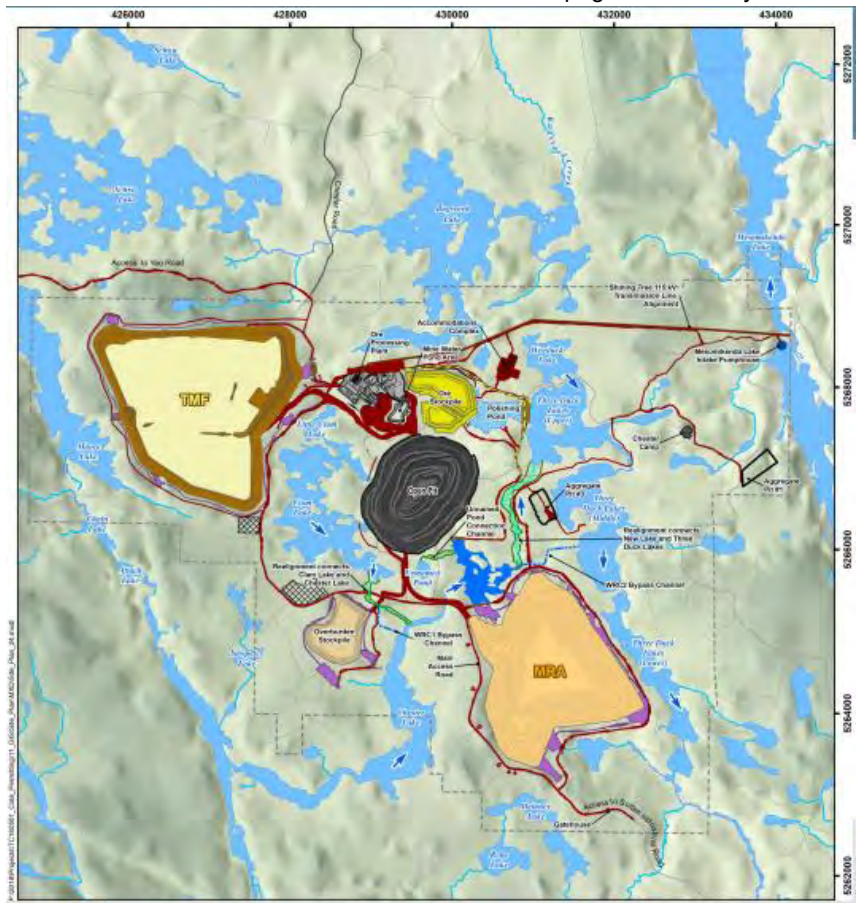


- A Mattagami Lake Fisheries Plan will be developed to support walleye population. The plan will also focus on shoreline erosion control and potential installation of juvenile walleye habitat. Apart from the fisheries plan, the Mattagami Lake Fisheries Plan will also:
 - Determine baseline/current state of knowledge for fisheries and fish habitat.
 - Proposed strategies for fish and fish habitat management and ways to execute and monitor them.
 - Include Indigenous, public, and regulatory engagement and participation.
 - Propose a process for updating the plan overtime
- An agreement on the Mattagami Lake Fisheries Plan to support the offsetting requirement has been agreed upon between the Department of Fisheries and Oceans (DFO) and the Ministry, but the scope and content needs to be formalized.

Environmental Compliance Approval (ECA) Amendment

- ECA is the major environmental permit for overall site water management
- An ECA is a legally binding instrument regulated by the Ministry of Environment, Conservation and Parks (MECP).
- An ECA is divided into 4 major sections
 - Transition and Operations Stages Sewage Works include:
 - Ore processing plant and tailing management facility (TMF), operated as a closed system.

- Open pit, plant site area, ore and mine rock stock pile water management system. The effluent is discharged through treatment ponds into Upper Three Duck Lake.
- Overburden stockpile water management system, the effluent is discharged through treatment into Chester Lake.
- TMF and mine rock area runoff and seepage collection systems



- Storm Water Management Works
 - Sanitary Sewage Works
 - Temporary Construction Stage Sewage Works
- There is no discharge from the TMF but seepage flow will enter into lakes north, west and east.
 - Sampling takes place monthly for surface water across 35 different locations. There are 65-70 groundwater wells in the area that are monitored for water quality and elevation.
 - There is a hydrometric and mercury monitoring program for the site. Approximately 85% of the wells have been installed and monitored since 2017. The rest will be installed in the coming months.
 - Annual monitoring reports are due on April 30th of each year, and are very extensive.
 - 85% well are installed and the rest will be added in the coming months and have been monitored since 2017

ACTION ITEMS

1. Offsetting designs still need to be completed and submitted by IAMGOLD. It is anticipated that the FAA Amendment will be submitted at the end of the month (November 2021). To be sent to MNO for review.
2. The DFO will be contacting and consulting with communities separately.

Flying Post First Nation Report
 Côte Gold Project Update and Review of *Fisheries Act* Authorization
 November 16, 2021; 3:00 – 5:00
 Flying Post First Nation Band Office, Nipigon, ON

IAMGOLD met with Flying Post First Nation Chief and Council on November 16, 2021 at the Band Office in Nipigon. The purpose of this session was to provide a general Project update and to consult with the community on the amendment to the *Fisheries Act* Authorization.

Participants:

<u>IAMGOLD</u>	<u>Flying Post First Nation</u>	<u>Fisheries and Oceans Canada</u>
Krista Maydew David Brown (online) Christian Naponse Mike Garbutt Kim Connors (Minnow)	Chief Murray Ray Jamie Keay, Councillor Bob McLeod, Councillor Susan Baril, Councillor Lynn Ray, Councillor Jeff Berube, Lands and Resources Coordinator / IBA Coordinator	Melanie Campbell Clayton James Terina Hancock <i>Note: DFO participants joined the meeting virtually</i>

Agenda

- Introductions
- *Fisheries Act* Authorization presentation
- Q&A Re: *Fisheries Act* Authorization
- Project update presentation
- Q&A Re: Project update

***Fisheries Act* Authorization presentation**

Minnow presented an update on the *Fisheries Act* Authorization (FAA) and proposed amendment. The presentation contained an update on the status of implementation of approved offsetting measures and overview of the approved offsetting areas. Minnow explained how since construction began, improvements to Project design resulted in changes that will require an amendment to the Offsetting Plan approved under the existing FAA. Three proposed alternate offsetting measures were presented and next steps discussed.

Project Update presentation

An update on the Project presented information about key Project milestones, construction workforce highlights, operations workforce planning and training strategy, COVID-19 testing protocols, an Impact Benefit Agreement update, socio-economic management and monitoring update, and communication and consultation.

Q & A from Flying Post First Nation

Q. Will you be working with Mattagami First Nation Fisheries hatchery?

A. Yes, the plan will be set up with input from the community.

Q. How successful are these constructed spawning areas?

A. They can be very successful. Minnow previously completed a project in Kapuskasing where a new lake was created and all the fish were relocated from the lake being lost due to an open pit. The community composition of the lake and the population size remained the same post construction and all monitoring since has shown that the new lake is thriving. For example, there are juvenile fish and lots of macrophytes which have taken over.

Q. How long will it take to get down to the ore body?

A. We have already encountered some ore during blasting. Increasing ore from the pit taken out in Q1/Q2 of 2022 will be stockpiled so that once the mill is up and running there is an inventory to process.

Q. Do you ever reach out to the youth regarding training / employment?

A. As part of our training strategy we will be looking at promoting what kinds of jobs would be available in mining as a tool to determine what youth need to follow with their education and training to achieve a career path in mining.

Comments

- One Council member stated they were uncomfortable with the idea of moving fish from its natural habitat because of concern this would result in the fatality of the fish. Following the presentation and Q & A the Councillor expressed that now that she understood the process for moving the fish and that all care was given to preserve the life of the fish she was ok with the plan.
- Fisheries and Oceans Canada informed that, while they attend these meetings to hear the community feedback, they will also be reaching out to consult as well.
- Following the discussion on training programs being developed for the Project, Chief Ray expressed that once it was determined what was needed by people to get properly trained Flying Post First Nation would be able to help with the costs.

FAA Amendment 2021- FOP – Mattagami Lake Fisheries Plan

MINUTES

NOVEMBER 17, 2021 16:00

TEAMS

TYPE OF MEETING	Presentation, Feedback
ATTENDEES	Terina Hancock (DFO), Clayton James (DFO), Melanie Campbell (DFO), Jason Greer (NDMNRF), Jeff Amos (NDMNRF), Jennifer Rosko (NDMNRF), Kim Connors (Minnow), Kathryn Kuchapski (Minnow), Rebecca Dolson (Minnow)

Agenda topics

FOP – MATTAGAMI FISHERIES PLAN

KIM/KATHRYN

DISCUSSION	
	<ul style="list-style-type: none"> - Côté Gold Project is on-going. Minnow submitted a Fisheries Offsetting Plan (FOP) in 2019. Due to some changes with site design it doesn't make sense to offset some of the habitats originally proposed. While searching for candidate for areas to create further offsets, the development of a Mattagami Lake Fisheries Plan was suggested as a potential complementary measure. - Kathryn described the overview of plan: <ul style="list-style-type: none"> o Support an offsetting plan amendment for the Côté Gold Project o IAMGOLD proposed to support development of Mattagami Lake Fisheries Plan with the plan's primary objective being to support the walleye fishery o Looking for how to include the plan in the FOP, and how the plan components can augment and be aligned with other jurisdictional fisheries management (both DFO and NDMNRF) o Plan is to focus on identifying knowledge gaps within the Mattagami Lake system o Plan will focus on specific actions that flow from objective and goal setting similar to those of zone management plans o Potential actions: habitat restoration of Mattagami shoreline, review of the walleye hatchery (hatchery optimization), data collection o Potential actions are based on consultation with the local communities o Propose that consultation continues through existing Côté/IAMGOLD existing consultation framework (e.g., Mattagami First Nation [FN], Flying Post FN, Métis Nation of Ontario, and Gogama) o Plan would be primarily reviewed by DFO so that it is linked strongly to the <i>Fisheries Act</i> Authorization (FAA) and IAMGOLD commitments o Timeline for implementation and report would be linked to IAMGOLD FAA o The budget would be related to the habitat accounting and the IAMGOLD offset requirements - Clayton's DFO perspective for NDMNRF <ul style="list-style-type: none"> o This will be a complementary measure to improve fish and/or fish habitat and is new in the FOP option toolbox o DFO wants the plan to align with provincial zone planning and fisheries objectives o DFO would like to see a monitoring plan - Jeff (NDMNRF) <ul style="list-style-type: none"> o Discussed Fisheries Management Zone (FMZ) planning process including FMZ 10 and use of advisory council o FMZ 8, the zone which Côté site and Mattagami Lake falls within, does not have an advisory council nor has it begun the planning process



- Ideally, NDMNRF would have a zone plan to help guide this FOP plan to draw lake specific objectives
- Provincial direction from the Fish for the Future Provincial Fish Strategy (PFS) gives strategic direction.
 - *Recommend using PFS to guide this Fish Plan*
 - *Does not feel that lack of zone plan should prevent a lake specific plan*
 - *Should have an advisory committee within 2 years for FMZ 8*
 - *No issue with current concept plan*
 - *Comments: take direction for objectives from PFS*
 - *Is there a monitoring plan? What are the monitoring needs, and what is the schedule?*
 - *Fall walleye index netting may have occurred in the past*
- Kim – do we want to follow Broad-scale Monitoring (BsM) monitoring techniques and schedule?
 - Jeff, it would be helpful to have BsM for the province. But depends on the question. If we focus on walleye may want to use Fall Walleye Index Netting (FWIN). May want to do both programs.
 - Jeff suggested a research need to assess the impact / benefit of supplementary stocking of walleye over an existing self-sustaining population. NDMNRF's PFS doesn't support this type of stocking, but NDMNRF and guidance for community stocking is limited.
 - Could work with NDMNRF science and research branch to answer this question by developing a research plan which would help provincial needs and Indigenous community needs (e.g., is the hatchery helping the community?)
 - Fish aren't marked so it will be hard to assess this as effective or not.
 - Schedule for BsM may be once every five years depending on schedule. Could have a small impact on walleye if we do it every other year? NDMNRF wouldn't be worried about mortality (very low <2%).
 - Clayton – Mattagami Lake is scheduled to be BsM sampled between 2024-2028. Could Minnow leverage that and focus on FWIN sampling for reasons related to human consumption and water temperature?
 - If NDMNRF Timmins district and Mattagami wanted to work with Minnow to supplement monitoring that could occur.
 - BsM occurs during stratification when temperatures are warm and fish may not be fit for human consumption. FWIN may be better in this regard.
- Action to benefit hatchery operations to include practices such as fish clipping.
- Clayton – does the province use citizen science or an app to record?
 - NDMNRF has fish-online to report fish catches. Also uses the Federal Fish Recreational Survey.
 - Jeff – Biodiversity and Monitoring Section (BAMS) staff are working on developing community monitoring fisheries program for use in Hudson Bay communities – may be able to lead fisheries monitoring (reach out to Preston Lennox, Len Hunt).
 - Jeff - Creel (roving or access) to estimate angler effort and harvest. There are also tourists lodges (3) on Mattagami Lake.
 - Fish Atlas compared traditional creel data with app citizen science – MyCatch App
- Jennifer – acted as resource liaison specialist in Timmins District
 - At the time Mattagami was building its hatchery plans for the Lake. FWIN study in 2013 was conducted with Anishinabek Fisheries Centre (<https://www.aofrc.org/>). Needed special permissions to work with this nation outside of their traditional lands.
 - Main goal of the FWIN was to assess the status of the walleye population at the time.
 - Elders came to the walleye hatchery and then a community meal was held. Fisheries Centre involved the youth of the community to teach what a FWIN was.
 - Community is very proud of the hatchery, and it was thought to be an important initiative.



- Kim
 - o Minnow's initiative for the fish hatchery will focus on an evaluation of existing practices and to provide methods for optimization. Optimization will allow for the management of expectations about what the benefits and risks of stocking are.
 - o Jeff – focus on what hatchery can or can't do
- Clayton
 - o In terms of overall enhancement question: where do natural population of walleye spawn and would enhancement of that habitat be useful?
 - o Is there an opportunity to create special regulations for closed area spawning regulations?
 - o Jeff - yes the FMZ planning process involves looking at sanctuaries and open/close seasons. The walleye spawning information is likely available from provincial monitoring. Spawning areas are likely closed in the spring until June 15 if they are identified. Many Indigenous communities have put in place self-imposed fishing restrictions to help the populations.
 - o Rebecca/ Jeff - There may be a limit to what ON jurisdiction can quickly do, such as creating a new sanctuary. Variation order to the Ontario fishing regulations are 1-2 years (increasing or decreasing catch limits, altering sanctuary boundary). Amendments can take many more years because it will involve the federal minister.

ACTION ITEMS

- Andrea to provide FWIN data from 2013
- Minnow to call Jeff to discuss NDMNRF research collaboration on hatchery evaluation
- Kathryn to call Preston Lennox from NDMNRF for BAMS related to recreational fishing app and community-based monitoring programs



APPENDIX F
COMPLEMENTARY MEASURE –
MATTAGAMI LAKE FISHERIES
PLAN

APPENDIX F CONCEPTUAL MATTAGAMI LAKE FISHERIES PLAN

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F1 INTRODUCTION

IAMGOLD Corporation (IAMGOLD) owns and operates the Côté Gold Project (the Project), where an open pit gold mine is being constructed in Northeastern Ontario approximately 20 kilometers (km) southwest of Gogama, 40 km southwest of Mattagami First Nation, 130 km southwest of Timmins, and 200 km northwest of Sudbury (Figure F.1). Ongoing development of the Project has resulted in losses of fish habitat and potential death of fish requiring authorization under the *Fisheries Act*. IAMGOLD's original application for a *Fisheries Act* authorization (FAA), which included a Fisheries Offsetting Plan (FOP), was initially approved on June 29, 2020, amended on November 3, 2020, and again on February 11, 2021 (20-HCAA-00766, Minnow 2020). As a result of changes to the Project development plan, IAMGOLD has identified that the existing FAA requires further amendment, and that the original FOP must be updated to account for changes in habitat offsetting.

Development and implementation of a Mattagami Lake Fisheries Plan (MLFP) is proposed as a component of the updated FOP for the Project. The Project is located in the Mattagami River watershed, upstream of and approximately 52 km southwest of Mattagami Lake (Figure 1). The Mattagami First Nation reserve and community are located along the shore of Mattagami Lake. Mattagami First Nation and other nearby communities including Flying Post First Nation, Brunswick House First Nation, and Métis represented by the Métis Nation of Ontario Region 3 Consultation Committee, as well as the community of Gogama are consulted regularly on Project components (IAMGOLD 2022a) including those related to the FAA and FOP (IAMGOLD 2022b). Through this consultation, an opportunity was identified to support Mattagami Lake fish and fish habitat research, conservation, and/or enhancement as a component of the amended FOP.

IAMGOLD proposes to fund the development and implementation (i.e., execution, reporting, monitoring, and review) of a MLFP to contribute to the sustainability of Mattagami Lake's fish community and fish habitat. The MLFP is being proposed to offset effects of the Project on fish and fish habitat across multiple types of offsetting measures including habitat restoration and enhancement, and complementary measures (DFO 2019). The MLFP will be developed through engagement and collaboration with Mattagami First Nation, Fisheries and Oceans Canada (DFO), and the Ontario Ministry of Northern Development, Mines, Natural Resources, and Forestry (OMNDMNR). Other Indigenous communities may also be engaged through information sharing and requests for feedback using the existing consultation and communication framework developed by IAMGOLD for the Project (IAMGOLD 2022a). The MLFP is intended to compliment and support provincial fisheries management planning and its development will consider the principles laid out in Ontario's Provincial Fish Strategy



(OMNRF 2015). The MLFP will identify objectives, actions, and schedules for execution, reporting, monitoring, and review. The MLFP will also include an implementation budget.

This version of the MLFP is conceptual in that it is a first step in the development and implementation of a long-term, comprehensive fisheries plan for Mattagami Lake. It is intended to demonstrate the feasibility and value of the MLFP as a component of the FOP Amendment for the Project.

The components of this conceptual MLFP include:

- 1) A high-level summary of the current state of knowledge of Mattagami Lake fisheries and fish habitat.
- 2) Proposed MLFP objectives.
- 3) A proposed MLFP development and implementation strategy including actions and schedules for execution, reporting, monitoring, and review.
- 4) A proposed engagement plan allowing for Indigenous and regulatory input.
- 5) Proposed development and implementation costs.

The following assumptions apply to this conceptual MLFP:

- Necessary data and information for the next version of the plan will be collected during the proposed development phase (see Section F4.1).
- The proposed objectives, actions, and schedules are preliminary and expected to change with the review and incorporation of new and existing data and engagement results (see Section F4.2).
- Ongoing engagement with Mattagami First Nation, DFO, and OMNDMNRF will occur throughout the proposed development and implementation phases (see Section F5). Changes to proposed objectives, actions, and schedule for plan development and implementation are expected incorporate the results of engagement activities.
- The proposed costs for development and implementation represent a minimum commitment for investment in the MLFP by IAMGOLD (see Section F6). Changes to proposed objectives, actions, and schedule for plan development and implementation are expected to influence the final allocation of this investment.
- IAMGOLDs commitment to development and implementation of the MLFP will be tied to the Project FAA and will have criteria for completion approved by DFO.



- IAMGOLD will report results and progress to DFO and Mattagami First Nation. The sharing of results and progress with other stakeholders or Indigenous communities will be done as appropriate and in consultation with Mattagami First Nation.



F2 DESCRIPTION OF MATTAGAMI LAKE FISHERIES

Mattagami Lake is located in the upper Mattagami River Watershed, approximately 52 km northeast of the Project (Figure F.1). The lake has a surface area of 3,975 ha, a maximum depth of 75 m, and an average depth of 8.4 m (OMNRF 2017). Eight large-bodied fish species are present in Mattagami Lake (OMNRF 2017). Walleye (*Sander vitereus*) are the most abundant large-bodied fish based on a recent government survey, followed by lake whitefish (*Coregonus clupeaformis*), lake cisco (*Coregonus artedii*), burbot (*Lota lota*), and yellow perch (*Perca flavescens*; OMNRF 2017). Smallmouth bass (*Micropterus dolomieu*), northern pike (*Esox lucius*), and white sucker (*Catostomus commersonii*) are present in lower abundance. Three small-bodied fish species are present including mimic shiner (*Notropis volucellus*), spottail shiner (*Notropis hudsonius*), and trout-perch (*Percopsis omiscomaycus*; OMNRF 2017). Mattagami First Nation operates a walleye hatchery with the goal of population enhancement in Mattagami Lake. In addition to traditional harvest by Indigenous peoples, Mattagami Lake fisheries experience pressure from recreational fishing including from cottage users, campers, fishing lodges, and large-scale¹ tournaments. There are three fishing lodges located on Mattagami Lake and it hosts multiple walleye fishing tournaments each year.

Known sources of recent fish community and fish habitat data for Mattagami Lake include a 2013 Fall Walleye Index Netting (FWIN) survey, initiated by the Ontario Ministry of Natural Resources and Forestry (OMNRF) and Mattagami First Nation and carried out by the Anishinabek/Ontario Fisheries Resource Centre, and a 2017 Broad-scale Monitoring program (BsM) completed by OMNRF (OMNRF 2017). Both survey methods provide information on the abundance and health of fish species in a lake. The FWIN method assesses the relative abundance of a fish stock and other biological measures of the population's status (Morgan 2002). FWIN surveys are primarily used to support management of a percid fishery dominated by walleye (Morgan 2002). Fish population information is collected through a standardized gillnetting program and the collection of biological information from fish captured including length, weight, sex, maturity, age, and other optional information such as visceral fat, gonad wet weight, fecundity, and stomach contents.

The province-wide BsM program was initiated by OMNRF in 2008 to evaluate Ontario's fisheries on a broad level. Broad-scale monitoring samples fish populations using large and small mesh gillnets to target fish larger and smaller than 20 cm, respectively (OMNRF 2019).

¹ Mattagami Lake annually hosts two sanctioned walleye tournaments on the Northern Ontario Walleye Trail which are each attended by over one hundred teams. Mattagami First Nation also hosts an annual winter northern pike derby at Mattagami Lake with over one hundred and fifty registrations.



Fish caught in large mesh gillnets are sampled for length, weight, sex, maturity, aging structures, contaminants in muscle tissue, and stomach contents. Sampling for bathymetry, water temperature and dissolved oxygen profiles, and water chemistry (pH, conductivity, alkalinity, and major ions and nutrients) reflect fish habitat conditions. Zooplankton hauls for the detection of aquatic invasive species and surveys of angling activity are also completed as part of a BsM program. Review of 2013 FWIN and 2017 BsM monitoring data are proposed as part of MLFP development and implementation (see Section F4).



F3 PLAN OBJECTIVES

Objectives proposed in this conceptual MLFP are expected to have long-term conservation and sustainability benefits to fish and fish habitat in Mattagami Lake. Initial actions to achieve these objectives are also proposed. Proposed actions have the potential to be completed in the short-term (i.e., approximately six years). The conceptual objectives consider Ontario's Provincial Fish Strategy (OMNRF 2015) and DFO's policy for fisheries offsetting (DFO 2019). They have been developed following initial consultation with Mattagami First Nation, DFO, and OMNDMNRF. The conceptual objectives have been developed based on current knowledge, following initial consultation with Mattagami First Nation, DFO, and OMNDMNRF and are expected to be refined in the next version of the MLFP, following further engagement with these partners.

F3.1 Ontario's Provincial Fish Strategy

Ontario fisheries resource management is carried out by OMNDMNRF and guided by Ontario's Provincial Fish Strategy: Fish for the Future (OMNRF 2015). This Provincial Fish Strategy identifies fisheries goals, objectives, and tactics to achieve them. A key approach of the Provincial Fish Strategy is the management of fisheries at the landscape scale. In applying this approach, since 2008, OMNRF uses Fisheries Management Zones (FMZs) as the primary units for planning, management, and monitoring of fisheries. Mattagami Lake is in FMZ 8. Development of a management plan for FMZ 8 has not yet been initiated by OMNDMNRF and once initiated, it is anticipated to take a minimum of three years to develop (J. Amos and E. Ellis Nsiah, personal communication 2021). A MLFP has the potential to support fisheries in Mattagami Lake in the near-term, prior to the development of the FMZ 8 management plan, and to be recognized by and incorporated into the FMZ 8 plan when it is developed (J. Amos and E. Ellis Nsiah, personal communication 2021).

The Provincial Fish Strategy outlines three levels of guidance: long-term goals, supporting shorter-term objectives, and detailed and specific tactics. This guidance has been considered in development of this conceptual MLFP and will continue to be incorporated during development and implementation of the next version of the MLFP.

F3.2 DFO's Policy for Applying Measures to Offset

DFO's Policy for Applying Measures to Offset Adverse Effects on Fish and Fish Habitat Under the *Fisheries Act* (DFO's Offsetting Policy; DFO 2019) identifies the types of measures to offset that may be applied in a FOP as well as guiding principles that should be met in the selection of the appropriate measures to offset. The MLFP is primarily a complementary measure



(i.e., a community engagement, data collection, and research initiative that relates to fish and fish habitat conservation and protection). As a complementary measure, the MLFP will support fisheries management objectives both locally, through collaboration and engagement with Mattagami First Nation, and provincially, through consideration of the Provincial Fish Strategy and by supporting a future FMZ 8 plan. Additionally, through development and implementation of the MLFP, it is anticipated that other actions that are in-line with DFO's measures to offset and guiding principles (DFO 2019) may be identified and undertaken such as habitat enhancement and/or restoration projects.

F3.3 Conceptual Mattagami Lake Fisheries Plan Objectives

Conceptual objectives of the MLFP are:

1. Sustainable Mattagami Lake fish populations that support cultural, recreational, and economic fishery opportunities for current and future fishery users, including future generations of Mattagami First Nation members.
2. A Mattagami First Nation walleye hatchery that supports the walleye population in Mattagami Lake, engages local community members in stewardship of Mattagami Lake fisheries, and provides educational opportunities for local community members and youth.
3. Mattagami Lake fisheries stewardship that is informed by Indigenous and scientific knowledge and involves engaged Mattagami First Nation community members and other stakeholders.



F4 PLAN DEVELOPMENT AND IMPLEMENTATION

Long-term progress toward meeting the proposed MLFP objectives requires a strategy to guide the development and implementation of the MLFP. A strategy is proposed in this conceptual MLFP and is separated into three phases, to be implemented over a period of six years (Table F.1). Phase 1 includes background data review and collection and the development of the first version of the MLFP (i.e., Version 1.0). Phase 2 involves implementation of the actions proposed in MLFP Version 1.0. The MLFP will then be reviewed and updated (i.e., to Version 2.0) in Phase 3.

This conceptual MLFP does not include all details associated with execution of the strategy; it proposes actions, including information requirements, methods, and an implementation schedule, that will be developed further in MLFP Version 1.0. The strategy also outlines annual reporting requirements and commitments (Table F.1). Finally, engagement with Mattagami First Nation, DFO, and OMNDMNRF has been incorporated into all three phases of the conceptual MLFP development and implementation strategy (Table F.1).

F4.1 Phase 1 – Development

F4.1.1 Background Data Review and Compilation

A comprehensive review of existing fish and fish habitat information is proposed to guide development and refine objectives and actions in the MLFP (Table F.1). Known fish and fish habitat information including results of the 2013 FWIN survey and the 2017 BsM program (OMNRF 2017) will be reviewed. Other potential sources of existing fish and fish habitat data for Mattagami Lake that could contribute to MLFP development will also be investigated. Data will be compiled such that they may be used to identify key knowledge gaps requiring data collection efforts, to describe reference fish and fish habitat conditions in Mattagami Lake during engagement for MLFP development, and in progress reporting on MLFP implementation. The format of the data compilation will depend on planned uses but may be a report, technical memorandum, and/or presentation materials for engagement meetings.

F4.1.2 Mattagami First Nation Hatchery Program Review and Optimization

The Mattagami First Nation hatchery was built in 2013 and has the capacity to hatch an estimated 2 to 2.5 million eggs per year. In its first year of operation, an estimated 250,000 walleye fry were stocked to Mattagami Lake. Members of Mattagami First Nation have described a positive influence on walleye catches resulting from hatchery efforts but the influence of fish stocking from the hatchery on the overall fish community in Mattagami Lake



has not been rigorously quantified. Hatchery effectiveness relies on multiple metrics including support of the walleye population in Mattagami Lake, as well as engagement of local community members in stewardship of Mattagami Lake fisheries, and educational opportunities for local community members and youth.

As part of MLFP development, review of the Mattagami First Nation hatchery program is proposed. The review will be initiated as soon as possible in the first year of MLFP development (Table F.1) and will include engagement meetings with hatchery operators to discuss methods, opportunities, and constraints. Published hatchery and stocking methods for walleye and methods used at other small and/or community-run walleye hatcheries may also be reviewed to provide examples of alternate methods, best practices, and successes. This review is anticipated to provide details on current hatchery operations to support refinement of the MLFP objectives and actions for the hatchery. This review may also result in identification of immediate opportunities for hatchery program optimization (e.g., modification to numbers of individuals used in gamete collection, methods for marking/identifying stocked fish and estimating recruitment of hatchery fish). If feasible, opportunities for optimization are recommended to be implemented as soon as possible, potentially prior to development of MLFP Version 1.0, as timely implementation has the potential to have the greatest benefits to hatchery effectiveness.

Results of the hatchery program review and any hatchery optimization efforts will be reported in an annual progress report submitted to DFO and provided to other engagement partners.

F4.1.3 Data Collection

Knowledge of available Mattagami Lake fish and fish habitat data suggests gaps that could affect development and success of the MLFP. Standardized fish and fish habitat sampling in Mattagami Lake is therefore proposed. Proposed data collection during Phase 1 includes a FWIN survey and a fish habitat assessment in Mattagami Lake in the first year of MLFP development (Table F.1). Local community members will be invited to participate in data collection efforts to build capacity for potential future community-based monitoring. Fish collected through the FWIN survey that are suitable for consumption are proposed to be provided to Mattagami First Nation following sampling.

FWIN protocols for the fish community survey are proposed for several reasons. FWIN is a standardized method primarily designed to support management of a walleye-dominant fishery (Morgan 2002). Extensive use in Ontario has allowed for the development of benchmarks for use in managing and supporting walleye resources (Morgan et al. 2002). FWIN protocols are appropriate for Mattagami Lake given that walleye are the most abundant sportfish



(OMNRF 2017) and are the major focus of Indigenous and recreational fishing. The 2013 survey of Mattagami Lake fish was also conducted by FWIN methods. The use FWIN protocols will therefore allow data collected as part of implementation and development of the MLFP to be directly compared to historical data from Mattagami Lake and other lakes in Ontario. Finally, although the BsM method has been used as the primary method of monitoring for fisheries management in Ontario since 2008, netting timing in the BsM protocol is prescribed during periods when surface water temperatures are above 18 °C, potentially resulting in higher fish mortality rates during sampling as well as affecting the quality of fish for consumption following sampling. Netting timing in the FWIN protocol is prescribed between surface water temperatures of 10 and 15 °C which is anticipated to result in fewer mortalities and a greater proportion of fish that can be consumed following sampling. Data collected as part of the Phase 1 FWIN survey will be used throughout the life of the MLFP to evaluate effectiveness of plan actions, progress toward plan objectives, and guide review and update of the plan.

Existing fish habitat data for Mattagami Lake is limited. The locations and quality of walleye spawning and rearing habitat in the lake have not been identified or evaluated in the context of potential limiting factors for Mattagami Lake fish populations. Phase 1 data collection proposes an assessment of fish habitat in the lake with a focus on identifying and evaluating the quality of these critical habitats. Involvement of local community members is expected to benefit the fish habitat assessments through contributions of local/traditional knowledge and increased survey efficiency. Fish habitat information collected during Phase 1 may be used to identify potential opportunities for fish habitat restoration or enhancement in Mattagami Lake as part of the MLFP. Restoration and enhancement activities are proposed as part of Phase 2 (plan implementation; see Section F4.2.1).

Results of Phase 1 data collections will be reported in annual progress reports submitted to DFO and provided to other engagement partners.

F4.1.4 MLFP Version 1.0

Development of the MLFP (Version 1.0) is proposed over the course of approximately one year following background data and hatchery program review and initial data collection efforts (Table F.1). MLFP development will involve multiple rounds of engagement with Mattagami First Nation, DFO, and OMNDMNRF. MLFP Version 1.0 may be similar in format to this conceptual plan and will include, at minimum, an introduction to the plan, a description of Mattagami Lake (physical, biological, cultural and socio-economic, current management, etc.), plan objectives, plan actions and/or recommendations, an engagement strategy, and



conditions for reporting, review, and plan amendment. The final MLFP Version 1.0 will be submitted to DFO for review.

F4.2 Phase 2 – Implementation

Following finalization of MLFP Version 1.0 by DFO, actions proposed in the plan will be initiated (Table F.1). Conceptual actions proposed below are based on limited data review and consultation to date. They are, however, conceptually feasible and provide a starting point for scheduling and estimating costs associated with implementation of the MLFP. Data review and collection and engagement proposed as part of Phase 1 will direct the final actions proposed in MLFP Version 1.0.

F4.2.1 Habitat Enhancement or Restoration Work and Monitoring

Fish habitat information collected during Phase 1 is proposed to be used to identify potential opportunities for fish habitat enhancement or restoration in Mattagami Lake as part of the MLFP. Habitat enhancement or restoration work will include design, permitting, mitigation planning, construction, and monitoring plan development. Design of enhancement or restoration projects will be initiated once MLFP Version 1.0 is submitted to DFO. Construction is proposed to occur in up to two open-water seasons (Table F.1). Monitoring plans will be developed and implemented, with the first year of monitoring planned for the first year following construction (Table F.1). The frequency of subsequent monitoring will depend on the type of enhancement (and DFO approval) or restoration works but has tentatively been planned annually for the first three post-construction years (Table F.1). Construction and monitoring reports will be included with annual progress reports submitted to DFO and provided to other engagement partners.

F4.2.2 Mattagami First Nation Hatchery Program Optimization and Monitoring

Review of the Mattagami First Nation hatchery program in Phase 1 is anticipated to result in identification of opportunities for hatchery optimization. Some examples include recommendations on the numbers of individuals used in gamete collection (to maintain genetic diversity), methods for marking/identifying stocked fish, and methods for estimating recruitment of hatchery fish. While hatchery optimization opportunities identified in Phase 1 are recommended to be implemented as soon as possible, some methods may require additional data collection prior to implementation or a longer period to be implemented. Therefore, hatchery optimization efforts may continue throughout Phase 2 (Table F.1). Although initiation and capacity building for the hatchery optimization program is expected to be heavily technically supported by IAMGOLD in Phase 1, implementation during Phase 2 will ideally be led by hatchery operators, with funding and other support from IAMGOLD,



as required. Leadership in implementation of the hatchery optimization program by hatchery operators will allow for long-term sustainability of program efforts.

Throughout the identification and implementation of hatchery optimization strategies, methods of monitoring hatchery effectiveness will also be developed. Metrics of hatchery effectiveness may be related to its influence on fish populations in Mattagami Lake as well as stewardship, engagement, and educational opportunities provided for local community members. Hatchery monitoring may also support provincial fisheries management and research needs related to community-run hatcheries (J. Amos, personal communication 2021). Specific hatchery monitoring programs in Mattagami Lake may be developed and/or data collection for hatchery monitoring may be combined with other ongoing fishery monitoring (see Section F4.2.3). Hatchery monitoring reports will be included with annual progress reports submitted to DFO and provided to other engagement partners.

F4.2.3 Fishery Monitoring

Monitoring of Mattagami Lake fish and fish habitat will be an ongoing component of the MLFP. Monitoring efforts by FWIN protocols are initially proposed at a frequency of every other year (Table F.1). These efforts will build a knowledge base on the status of Mattagami Lake fisheries and will support monitoring of other actions implemented as part of the MLFP. Each year of FWIN monitoring will also build local capacity for fisheries monitoring with the goal of future monitoring carried out through a community-based monitoring program. A BsM program may be considered as part of the MLFP depending on the frequency at which Mattagami Lake is monitored through the provincial BsM program and the value of BsM data in the evolution of the MLFP and the development of a provincial fisheries management plan for FMZ 8.

Ongoing fish habitat monitoring efforts are expected to occur primarily through monitoring of enhancement and restoration works. However, specific fish habitat monitoring goals may be identified during development of MLFP Version 1.0 that would require a routine habitat monitoring program. Fish and fish habitat monitoring reports will be included with annual progress reports submitted to DFO and provided to other engagement partners.

F4.3 Phase 3 – Review and Update

The first review and update to the MLFP is proposed five years after initiation of the development phase of MLFP Version 1.0 (Table F.1). Review of MLFP Version 1.0 will be carried out through engagement with Mattagami First Nation, DFO, and OMNDMNR. The purpose of the review will be to:



- evaluate progress toward MLFP objectives;
- evaluate the extent of completion and success of proposed actions in MLFP Version 1.0;
- consider updates to MLFP objectives; and
- identify new actions or modify existing actions to meet MLFP objectives.

The review process may include development of a technical review document for distribution and request for comments and/or one or more workshops with engagement partners. Following the review of MLFP Version 1.0, the MLFP will be updated to Version 2.0. MLFP Version 2.0 will incorporate the findings of the Version 1.0 review to refine MLFP objectives, propose ongoing actions, and set the framework for the next plan review and update. MLFP Version 2.0 will be submitted to DFO for review. The finalized MLFP Version 2.0 will mark IAMGOLDs fulfillment of commitments related to the MLFP under the Project FAA (with the potential exception of ongoing monitoring of fish habitat enhancement or restoration works). During Phase 3, the MLFP will be reviewed and updated with succession planning in mind such that further plan implementation may be carried out without support or with more limited support from IAMGOLD.



F5 ENGAGEMENT

A conceptual plan and schedule for MLFP engagement is proposed (Table F.1) and will be updated and included in MLFP Version 1.0. Engagement for the development and implementation of the MLFP is proposed to be carried out with Mattagami First Nation, DFO, and OMNDMNRF. At minimum, engagement meetings (in-person or virtual) with these engagement partners will be held annually over the initial six-year period of plan development and implementation (Table F.1). Annual engagement meetings with Mattagami First Nation, DFO, and OMNDMNRF will communicate and solicit feedback on progress and results of plan development and implementation actions. Upcoming activities under the MLFP (e.g., data collection and monitoring programs, enhancement or restoration construction, etc.) will also be communicated. Other Indigenous communities may also be engaged through information sharing and requests for feedback using the existing consultation and communication framework developed by IAMGOLD for the Project (IAMGOLD 2022a).

The frequency of engagement is expected to increase during Phases 1 and 3 (Table F.1). During Phase 1, engagement is proposed with hatchery operators during the Mattagami First Nation Hatchery Program review and with local community members during fish habitat data collection. Members of Mattagami First Nation will be invited to participate in field programs. Increased frequency in engagement meetings to a minimum of twice per year is also proposed during the Phase 1 development of MLFP Version 1.0 and the Phase 3 review and update of the MLFP. During these phases, Mattagami First Nation, DFO, and OMNDMNRF input are considered critical to the development of plan objectives and actions that support Mattagami Lake fish and fish habitat while meeting DFO's requirements under the Project FAA and recognizing OMNDMNRF's responsibility for provincial fisheries management.

Following each meeting or engagement activity, a summary that includes a list of participants, meeting minutes, and presentation materials will be distributed to engagement partners.



F6 COSTING

A preliminary cost estimate has been proposed for development and implementation of the MLFP (Table F.2). As a complementary measure in the Project's amended FOP, the value of the MLFP as offsetting is derived from the estimated cost of its development and implementation relative to the cost of implementing other measures to offset proposed in the FOP (DFO 2019). Proposed costs represent a minimum investment by IAMGOLD. Changes to the proposed objectives, actions, and schedule for MLFP development and implementation are expected to influence the final allocation of the investment. Given that the cost estimate is preliminary and based on a conceptual development and implementation strategy, it is also assumed that final costs may be up to 30% greater or less than the proposed amounts.



F7 REFERENCES

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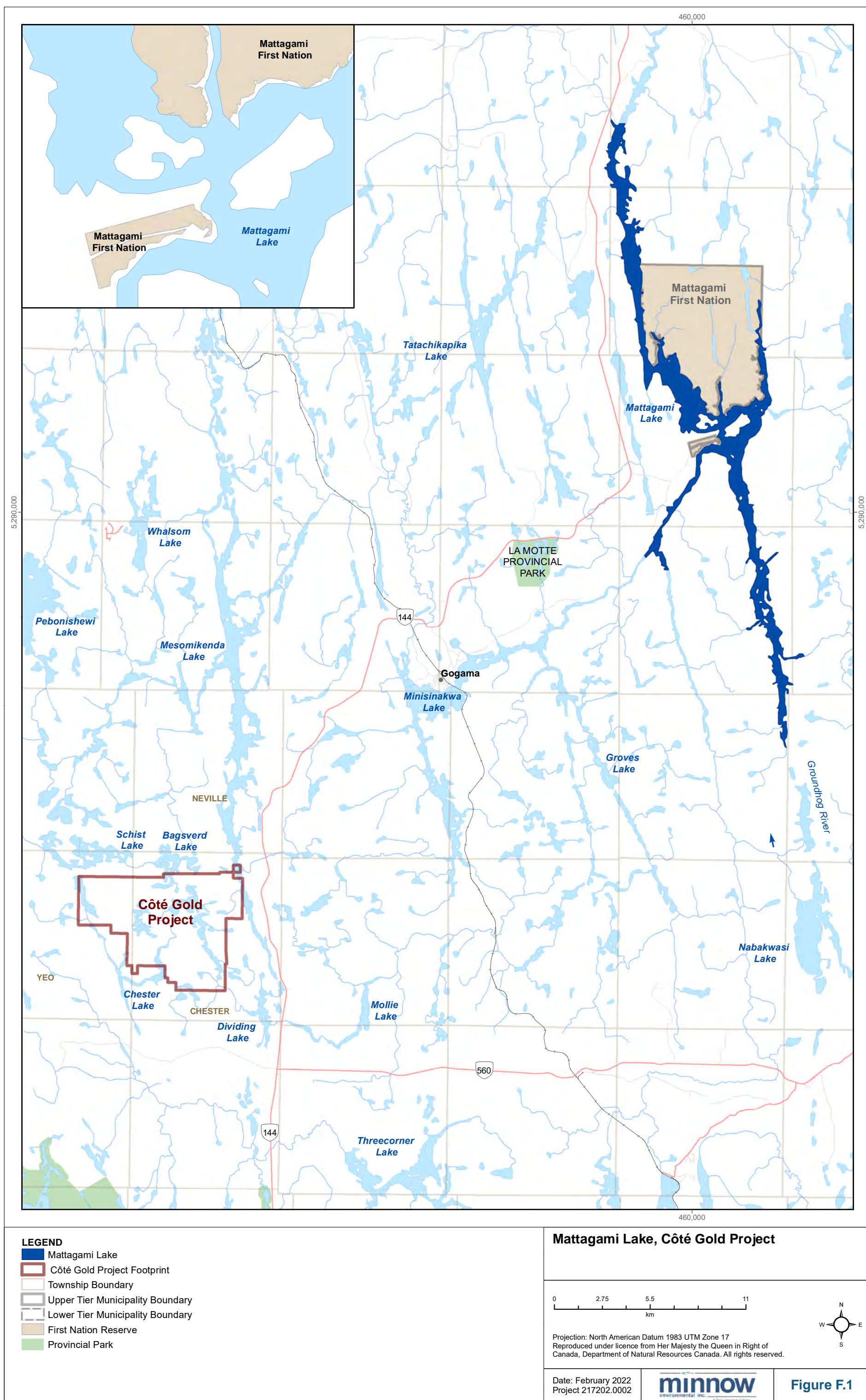


Table F.1: Proposed Schedule for Mattagami Lake Fisheries Plan Development and Implementation, Year 1 to Year 6

Action	Phase 1 Development							Phase 2 Implementation												Phase 3 Review and Update				
	Year 1				Year 2			Year 2	Year 3				Year 4				Year 5			Year 5	Year 6			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Background Data Compilation and Review																								
Background Hatchery Review																								
Hatchery Optimization Program																								
FWIN Survey																								
Fish Habitat Assessment Survey																								
Habitat Enhancement or Restoration Work																								
Habitat Enhancement or Restoration Monitoring																								
Results and Progress Reporting																								
MLFP Development (Version 1.0)																								
MLFP Review and Update (Version 2.0)																								
Engagement - Hatchery and Field Programs																								
Consultation - MLFP Development and Review																								
Consultation - Progress Updates and Feedback																								

Notes: MLFP = Mattagami Lake Fisheries Plan, FWIN = Fall Walleye Index Netting. Shaded areas represent the proposed timing of actions.

Table F.2: Proposed Cost Estimate for Mattagami Lake Fisheries Plan Development and Implementation, Year 1 to Year 6

	General Background Data Compilation and Review	Hatchery Review and Optimization	FWIN and Fish Habitat Surveys	Habitat Enhancement or Restoration Work and Monitoring	MLFP Development (V 1.0), Review and Update (V 2.0)	Annual Consultation	Total ^a
Data Review, Plan Development, Reporting	\$8,000	\$48,000	\$50,000	\$60,000	\$113,000	-	\$279,000
Field Programs	-	\$28,000	\$256,000	\$90,000	-	-	\$374,000
Consultation	-	\$12,000	\$6,000	-	\$26,000	\$54,000	\$98,000
Design and Construction	-	-	-	\$370,000	-	-	\$370,000
Total	\$8,000	\$88,000	\$312,000	\$520,000	\$139,000	\$54,000	\$1,121,000

Notes: MLFP = Mattagami Lake Fisheries Plan, FWIN = Fall Walleye Index Netting.

^a Estimate based on conceptual plan. Final costs assumed to vary by up to 30%.

APPENDIX G
APPROVED FISHERIES ACT
AUTHORIZATIONS



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Ontario and Prairie Region
520 Exmouth Street
Sarnia, Ontario
N7T 8B1

Région de l'Ontario et des Prairies
520 rue Exmouth
Sarnia (Ontario)
N7T 8B1

June 29, 2020

Your file Votre référence

Our file Notre référence
20-HCAA-00766

IAMGOLD Corporation
Attention to: Stephen Crozier
401 Bay Street, Suite 3200
P.O. Box 153
Toronto ON M5H 2Y4

Dear Stephen Crozier:

Subject: *Fisheries Act* Authorization

Pursuant to paragraphs 34.4(2)(b) and 35(2)(b) of the *Fisheries Act*, the Minister of Fisheries and Oceans Canada authorizes the carrying on of your proposed work, undertaking or activity that results in the death of fish by means other than fishing and the harmful alteration, disruption or destruction of fish habitat associated with the construction and operation of the Côté Gold Mine Project. Attached is an authorization issued under paragraphs 34.4(2)(b) and 35(2)(b) of the *Fisheries Act*.

Failure to comply with any of the terms or conditions of the attached Authorization may lead to prosecution under the *Fisheries Act*.

A copy of this Authorization should be kept on site while the work is in progress and upon request be provided to relevant federal or provincial officials. Work crews should be familiar with, and able to adhere to, the conditions.

If you or anyone conducting work on your behalf has any questions please contact Brett Ellis at 587-926-6154, or by email at Brandi.Mogge@dfo-mpo.gc.ca.

Sincerely,

David Nanang
Regional Director General
Ontario and Prairie Region
Fisheries and Oceans Canada

ATTACHMENT: AUTHORIZATION

c.c.: Brandi Mogge, Fisheries and Oceans Canada
Kim Connors, Minnow Environmental Inc.



DFO File No.: 20-HCAA-00766

Related file numbers: 19-HCAA-00354

11-HCAA-CA4-03811

Paragraphs 34.4(2)(b) and 35(2)(b) *Fisheries Act* Authorization

Authorization issued to

IAMGOLD Corporation (*hereafter referred to as the "Proponent"*)

Attention to: Stephen Crozier

401 Bay Street, Suite 3200

P.O. Box 153

Toronto ON M5H 2Y4

Location of Proposed Project

Nearest community (city, town, village): Gogama

Municipality, district, township, county: District of Sudbury, Chester and Neville Townships

Province: Ontario

Name of watercourse, waterbody: Côté Lake

Longitude and latitude, UTM Coordinates: 47.555556, -81.940556; UTM Zone 17 429239E 5267333N

Description of Proposed Project

The proposed project of which the work, undertaking or activity authorized is a part involves:

The construction, operation, decommissioning, and closure of the Côté Gold Mine Project (the Project), which includes an open pit, associated mine infrastructure, a camp, a tailings management facility (TMF), storage stockpiles for overburden and mine rock waste, water collection ponds, and structures for diverting water. The Project has an ore input and production capacity of 36,000 tonnes per day, with a life of approximately 17 years.

Description of Authorized work(s), undertaking(s) or activity(ies) likely to result in the death of fish by means other than fishing:

The work(s), undertaking(s), or activity(ies) associated with the proposed project described above, that are likely to result in the death of fish by means other than fishing, are:

- Dewatering and overprinting associated with construction of mine features impacting fish and fish habitat, including fish rescue and relocation.

Description of Authorized work(s), undertaking(s) or activity(ies) likely to result in the harmful alteration, disruption or destruction of fish habitat:

The work(s), undertaking(s), or activity(ies) associated with the proposed project described above, that are likely to result in the harmful alteration, disruption or destruction of fish habitat, are:

- Dewatering and overprinting of watercourses and waterbodies to facilitate construction of the open pit
- Dewatering and overprinting of watercourses and waterbodies to facilitate construction of TMF and mine rock storage dams
- Construction of watercourse crossings
- Diversion of watercourses to facilitate construction of New Lake

The authorized work(s), undertaking(s), or activity(ies) are likely to result in the following impacts to fish and fish habitat:

- Incidental death of fish resulting from rescue and relocation during dewatering, and stranding of fish that may become trapped within isolated areas.
- The harmful alteration and destruction of a total of 475,399 m² or 2,816,611 Habitat Units (HUs) of lentic fish habitat affecting the following waterbodies:

Destruction (Dewatering)

- North Beaver Pond – 4,076 m²
- East Clam Lake – 5,961 m²
- Clam Lake – 10,092 m²
- Côté Lake – 188,546 m²
- Upper Three Duck Lake – 214,478 m²

Destruction (TMF Dam Footprint)

- West Beaver Pond – 49,265 m²

Harmful alteration (New Lake Construction)

- East Beaver Pond – 2,981 m²

- The harmful alteration and destruction of approximately 56,431 m² or 294,148 Habitat Units (HUs) of lotic fish habitat affecting the following watercourses:

Destruction (Dewatering)

- Mollie River – 49,818 m²
- Clam Creek – 1,226 m²
- Tributary from Unnamed Pond to Mollie River – 980 m²
- Tributary from East Beaver Pond – 70 m²
- Tributary between East Beaver Ponds – 57 m²

Destruction (TMF and Mine Rock Storage Dam Footprints)

- Tributary of Unnamed Lake #3 – 38 m²
- Unnamed Stream from West Beaver Pond to Bagsverd South Arm – 3,874 m²

Harmful alteration (Chester Lake Road Crossing)

- o Mollie River – 368 m²

Conditions of Authorization

The above described work, undertaking or activity must be carried on in accordance with the following conditions.

1. Conditions that relate to the period during which the work, undertaking or activity can be carried on

The work, undertaking or activity that is/are authorized to be carried on during the following period:

From **Date of Issuance** To: **November 30, 2022**

If the Proponent cannot complete the work, undertaking or activity during this period, Fisheries and Oceans Canada (DFO) must be notified in advance of the expiration of the above time period. An application for amendment, suspension or cancellation of the authorization should be submitted to DFO.

The periods during which other conditions of this authorization must be complied with are provided in their respective sections below.

2. Conditions that relate to the Proponent plan

- 2.1 The Proponent confirms that all plans and specifications relating to this Authorization have been duly prepared and reviewed by appropriate professionals working on behalf of the Proponent. The Proponent acknowledges that the Proponent is solely responsible for all design, safety, and workmanship aspects of all the works associated with this Authorization.
- 2.2 HADD and death of fish other than that specifically identified within this Authorization is not permitted.
- 2.3 Notwithstanding the conditions of this Authorization, works specified in this Authorization, completed within the valid authorization period, shall be conducted following the plans outlined in the following reports:
 - 2.3.1 Côté Gold Project Offsetting Plan - dated May 2020; and
 - 2.3.2 Application Form for the Issuance of an Authorization under Paragraphs 34.4(2)(b) and 35(2)(b) of the *Fisheries Act* (Non-Emergency Situations) – signed May 8, 2020.
- 2.4 Where there is more than one version of a plan, the most recent version, reviewed and approved by DFO, shall be used. Deviation from the plans as specified above shall be submitted to DFO well in advance of the date proposed for implementation of changes in order to allow DFO sufficient time to conduct a proper review.

3. Conditions that relate to notification

- 3.1 The proponent shall notify DFO at least 10 days prior to the commencement of each work, undertaking or activity set out under the heading *Description of Authorized work(s), undertaking(s) or activity(ies) likely to result in the harmful alteration, disruption or destruction of fish habitat* above unless otherwise agreed to by DFO.

4. Conditions that relate to measures and standards to avoid and mitigate impacts to fish and fish habitat

- 4.1 The Aquatic Management and Monitoring Plan, and the Fish and Fish Habitat Management and Monitoring Plan shall be reviewed and approved by DFO prior to commencement of any

works, undertakings or activities affecting fish and fish habitat, unless otherwise approved by DFO.

- 4.2 Sediment and erosion control: Sediment and erosion control measures must be in place and shall be maintained, repaired, and/or upgraded throughout the life of the project, as required, such that release of sediment directly or indirectly into fish and fish habitat is avoided.
 - 4.2.1 All spoil materials and debris shall be disposed of above the high water mark (HWM) such that it does not enter the watercourse. Any materials stored above the HWM shall be stabilized until properly disposed of.
- 4.3 List of measures and standards to avoid and mitigate impacts to fish and fish habitat:
 - 4.3.1 A qualified environmental professional shall be on-site to monitor all instream and shoreline activities with the potential to impact fish and fish habitat.
 - 4.3.2 Every reasonable effort shall be made to minimize the duration of any instream works in any watercourse or waterbody containing fish habitat.
 - 4.3.3 The Proponent shall employ all feasible measures to mitigate the deposit of deleterious substances into fish habitat. A response plan shall be developed and implemented to avoid, mitigate, and respond to a spill of deleterious substances.
 - 4.3.4 Machinery shall arrive on site in a clean condition and be maintained free of leaks, invasive species and noxious weeds.
 - 4.3.5 Machinery shall be washed, refuelled and serviced, and fuel and other materials for the machinery stored in such a way as to prevent any deleterious substance from entering the water.
 - 4.3.6 Whenever possible, machinery shall be operated on land above the high water mark in a manner that minimized disturbance to the bank and the bed of the waterbody.
 - 4.3.7 All in-water works, undertakings or activities shall be conducted in isolation of open or flowing water. The isolation methods employed shall be designed to avoid and mitigate sedimentation into fish habitat.
 - 4.3.8 Water management on-site shall follow Environmental Monitoring Plans developed by the proponent.
 - 4.3.9 Diversion channels shall be:
 - 4.3.9.1 Constructed to accommodate the peak seasonal flows for the time period the diversion will be in place, and provide fish passage.
 - 4.3.9.2 Stabilized before any water flow is diverted from a natural channel into a diversion channel.
 - 4.3.10 Where water is pumped from fish-frequented waters for any purpose, pump intakes shall be screened in accordance with DFO's *Freshwater Intake End-of-Pipe Fish Screen Guideline* (1995) or the code of practice for water intake screens, <https://www.dfo-mpo.gc.ca/pnw-ppe/codes/screen-ecran-eng.html>, whichever is applicable. Each pump outlet shall have a diffuser or be placed in a location that is not subject to erosion from the outflow.
 - 4.3.11 Pumping systems shall be sized appropriately to accommodate water quantities during construction, and shall be monitored at all times to ensure proper functioning.
 - 4.3.12 When the need for dewatering arises, water shall be released into a well-vegetated area or settling basin and not directly into fish-frequented waters. Water released to the environment shall meet the Council of Ministers of the Environment (CCME) "Canadian Water Quality Guidelines for the Protection of Aquatic Life". DFO shall be notified immediately of any exceedance of the CCME guidelines for suspended sediment levels in water released from the site into any watercourse or waterbody during mine development and associated infrastructure, and until stabilization of the work and construction areas is complete.
 - 4.3.13 Downstream flow shall be maintained to mitigate impacts to downstream fish habitat not permitted as part of this Authorization.

- 4.3.14 A fish rescue shall be undertaken within all isolated areas prior to dewatering activities of the isolated areas:
 - 4.3.14.1 The fish rescue shall be undertaken by a qualified professional using appropriate and effective capture and handling procedures designed to minimize mortality, and with a level of effort to effectively mitigate the death of fish by stranding.
 - 4.3.14.2 Fish shall be safely relocated to an appropriate location as specified in Table 4.3 of the offsetting plan.
 - 4.3.14.3 The fish rescue shall follow conditions related to temperature and dissolved oxygen set in Table 4.4. of the offsetting plan to minimize mortality.
 - 4.3.14.4 Block nets or another appropriate barrier shall be put in place and maintained to prevent fish from re-entering areas where rescues have been completed prior to fish rescue and dewatering.
- 4.3.15 DFO's *Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters* (1998) shall be followed to mitigate the impacts of open pit blasting on fish and fish habitat.
 - 4.3.15.1 During the spawning period of April 15 to July 15 of any year, a charge size of 536 kg/delay shall be respected within 350 m of the open pit and a charge size of 250 kg/delay shall be respected in an area extending 240 m outwards from the 350 m area.
 - 4.3.15.2 Disturbed areas associated with the construction site shall be stabilized as soon as possible following disturbance. Where possible, disturbed areas shall be revegetated as soon as possible with native vegetation.
- 4.4 Contingency measures shall be put in place and DFO shall be notified immediately if monitoring required in condition 3 below indicates that the measures and standards to avoid and mitigate impacts to fish and fish habitat are not successful. Monitoring and regular reporting of the corrective actions taken shall be provided to DFO until the contingency measures are successful and the proponent is in compliance.
- 4.5 Dates by which these measures and standards shall be implemented: Measures and standards to avoid and mitigate impacts to fish and fish habitat shall be implemented prior to the initiation of works, undertakings or activities, and maintained throughout the duration of the project.

5. Conditions that relate to monitoring and reporting of measures and standards to avoid and mitigate impacts to fish and fish habitat

- 5.1 Monitoring of avoidance and mitigation measures: The Proponent shall monitor the implementation of avoidance and mitigation measures referred to in section 4 of this authorization and report to DFO in an annual report due by May 31 of each year, as per condition 7.2, and indicate whether the measures and standards to avoid and mitigate impacts to fish were conducted according to the conditions of this authorization. This shall be done by:
 - 5.1.1 Developing the Aquatic Management and Monitoring Plan, and the Fish and Fish Habitat Management and Monitoring Plan to be reviewed and approved by DFO prior to commencement of any works, undertakings or activities affecting fish and fish habitat, and implementation of the plans to the satisfaction of DFO. This shall include monitoring and reporting to effectively demonstrate impacts to fish and fish habitat were limited to what was authorized. Parameters shall include but not be limited to:
 - 5.1.1.1 Water level monitoring: The Proponent shall monitor water levels and/or flow in waterbodies and watercourses potentially affected by mine and offsetting construction.

- 5.1.1.2 Water quality monitoring: The Proponent shall conduct total suspended sediment and turbidity monitoring throughout construction in waterbodies and watercourses potentially affected by mine and offsetting construction.
- 5.1.1.3 Methylmercury monitoring: The Proponent shall monitor methylmercury in fish tissue and as part of water quality sampling in watercourses and waterbodies with potential for increases in total mercury and methylmercury, and downstream of those potentially affected watercourses and waterbodies.
- 5.1.1.4 Blasting monitoring: The Proponent shall conduct acoustic and noise monitoring of fish and fish habitat potentially impacted by blasting adjacent to the open pit.
- 5.1.1.5 Fish rescues: A fish rescue report by affected watercourse/waterbody name shall be provided including a tally of rescued fish by method employed including date, location of capture and release, species, weight, fork length, life stage using fork length, as well as any incidental mortality. Representative photographs of fish captured shall also be taken and provided as part of the fish rescue results. For each species, if more than 100 fish are rescued, the tally information shall be collected on a representative subsample.
- 5.1.2 Demonstration of effective implementation and functioning: Providing dated and annotated photographs with a photo reference map and inspection reports pre-construction, during construction, and post construction periods, showing works, undertakings, and activities completed according to the approved plan and conditions of this Authorization to demonstrate effective implementation and functioning of mitigation measures and standards described above to limit the impacts to fish and fish habitat to what is covered by this authorization. Photographs shall be taken from the same vantage point(s), direction and angle of view each monitoring year for easy comparison.
- 5.1.3 All monitoring shall be reported on relative to an appropriate baseline or reference condition, and compared to modelled predictions, when applicable.
- 5.1.4 Contingency measures: Providing details of any contingency measures that were followed, to prevent impacts greater than those covered by this authorization in the event that mitigation measures did not function as described.

6. Conditions that relate to offsetting

- 6.1 Letter of credit or performance bond or any other equivalent financial security accepted by DFO: DFO may draw upon funds available to DFO as the beneficiary of the performance bond provided to DFO as part of the application for this authorization (Bond Number: TMS0411171-1001120653), to cover the costs of implementing and maintaining the offsetting measures required to be implemented under this authorization, including the associated monitoring measures included in section 5 of this authorization, in instances where the Proponent fails to implement these required measures.
- 6.2 Scale and description of offsetting measures: The offsetting measures shall be carried out in accordance with the measures set out in the Proponent's offsetting plan "Côté Gold Project Offsetting Plan" (hereafter referred to as the Offsetting Plan) dated May 2020, approved by DFO, or the most recent version reviewed and approved by DFO, as summarized below:
 - 6.2.1 The construction of the offsetting habitat shall occur according to the schedule set out in Table 4.1 of the offsetting plan.
 - 6.2.2 Construction of offsetting habitat shall result in a total of 512,981 m² (3,245,547 HUs) of lentic habitat and 18,541 m² (207,013 HUs) of lotic habitat.

- 6.2.3 Expansion of the south end of Clam Lake - 21,450 m²
 - 6.2.4 New Lake including removal of terrestrial vegetation and organic soils to mitigate methylmercury production - 265,182 m²
 - 6.2.5 Rehabilitation of Aggregate Pit #3 - 52,600 m²
 - 6.2.6 Channel between Aggregate Pit #3 to Middle Three Duck Lake - 450 m²
 - 6.2.7 Rehabilitation of Bagsverd Aggregate Pit - 166,600 m²
 - 6.2.8 Channel between Bagsverd Aggregate Pit to North Wetland - 150 m²
 - 6.2.9 Watercourse Realignment #2 (WRC2) habitat enhancements including stream and wetland habitat from New Lake to Upper Three Duck Lake - 24,314 m²
 - 6.2.10 Channel between Aggregate Pit #3 to Middle Three Duck Lake - 450 m²
 - 6.2.11 In order to reduce lag times between offsetting habitat construction and functioning of offsetting habitat, the proponent shall incorporate habitat enhancements in all aspects of the offsetting habitat, relocate and transplant aquatic macrophytes from habitat to be lost to the offsetting habitat during the spring following construction, and collect and relocate benthic invertebrates from within habitat to be lost to the offsetting habitat.
 - 6.2.12 Complementary measure – research on eDNA barcoding methods for Environmental Effects Monitoring.
- 6.3 Offsetting criteria to assess the implementation and effectiveness of the offsetting measures: All fish habitat offsetting measures shall be completed and functioning according to the summarized criteria below and as set out in the Proponent's offsetting plan referred to in condition 6.2:
- 6.3.1 Construction of all offsetting habitat shall be complete by **December 31, 2021**, and according to the schedule set out in Table 4.1 of the offsetting plan. Construction of WRC2 shall be completed and allowed to stabilize and season prior to flow introduction in 2021.
 - 6.3.2 Offsetting measures shall provide a minimum of 3,245,547 HUs of lentic habitat that shall be stable and support multiple life stages of local fish populations (northern pike, yellow perch, walleye, lake whitefish, smallmouth bass, and various forage fish species).
 - 6.3.3 Offsetting measures shall provide a minimum of 207,013 HUs of lotic habitat that shall support multiple life stages of local fish populations (northern pike, yellow perch, walleye, lake whitefish, smallmouth bass, and various forage fish species). All channels constructed as offsetting shall be stable relative to an appropriate reference condition, incorporate natural channel design principles, maintain hydrologic connectivity within the watershed, and promote connectivity within the watershed and between habitats.
 - 6.3.4 Geomorphic performance criteria specified in Table 5.2 of the offsetting plan shall be met.
- 6.4 Contingency measures: If the offsetting measures are not completed by the date specified, the Proponent shall give written notice to DFO immediately. If the results of monitoring as required in section 7 indicate that the offsetting measures are not functioning according to the above criteria in 6.3, the Proponent shall give written notice to DFO and shall implement the contingency measures and associated monitoring measures, as contained within the approved offsetting plan referenced in section 6.2, in consultation with DFO, to ensure the implementation of the offsetting measures is completed and functioning as required by this authorization.
- 6.4.1 Scale and description of contingency measures: The Proponent shall conduct necessary works, undertakings or activities to ensure the structural stability and ongoing functionality of any contingency offsetting habitat in consultation with and to the satisfaction of DFO, should the offsetting plan not meet the requirements for offsetting associated with this Authorization.

- 6.4.2 Monitoring measures to ensure offsetting contingency is completed and/or functioning as required: The Proponent shall conduct monitoring to document the success of any contingency offsetting habitat to the satisfaction of DFO, to ensure the offsetting measures are completed and functioning as required by this authorization.
- 6.5 The Proponent shall not carry on any work, undertaking or activity that will adversely impact the offsetting measures.
- 6.6 The Proponent shall obtain written permission for the Proponent, DFO, and anyone authorized to act on behalf of DFO, to access lands, water sources, or water bodies that are not owned by or under the care, control, or administration of the Proponent that must be accessed in order to implement the offsetting measures in this section and the monitoring of said measures.
- 6.7 The Proponent shall provide the written permission to DFO prior to the commencement of the Authorized work(s), undertakings(s) or activity(ies) that are likely to result in impacts to fish and fish habitat, described herein, and prior to the commencement of the implementation of the Proponent's offsetting plan referred to in condition 6.2 that is to take place on lands or in water sources or water bodies not owned by or under the care, control, or administration of the Proponent.
- 7. Conditions that relate to monitoring and reporting of implementation of offsetting measures (described in section 4):**
- 7.1 Schedule(s) and criteria: The Proponent shall conduct monitoring of the implementation and functioning of offsetting measures according to the timeline and criteria in the offsetting plan approved by DFO, referred to in section 6.2, as summarized below.
- 7.1.1 The Fish and Fish Habitat Management and Monitoring Plan shall be provided to DFO prior to construction, and is subject to DFO approval. Other applicable environmental management plans, including but not limited to the Aquatic Management and Monitoring Plan and the Water Management and Monitoring Plan shall be provided to DFO as they become available. Those that further refine measures and triggers related to avoidance, mitigation and offsetting monitoring are subject to DFO approval, and shall be included as updates to the offsetting plan.
- 7.1.2 Monitoring shall be undertaken over a 10 year period in years 1, 2, 3, 5 and 10 following construction according to the schedule set out in Table 5.1 of the offsetting plan. Frequency and seasonality of monitoring varies by endpoint for each offsetting measure; timing of sampling shall occur at an appropriate time of year for each variable.
- 7.1.3 For each offsetting measure, appropriate baseline reference, guidelines, and/or model predictions shall be used to evaluate the success of each endpoint and the offsetting measures as a whole.
- 7.1.4 Photographic documentation: A digital photographic record, including a photo reference map, of pre-construction, during construction and post-construction conditions shall be compiled using the same vantage points and direction.
- 7.1.5 As-built drawings shall be provided for all constructed offsetting measures once post-construction.
- 7.1.6 Habitat verification: Habitat variables used to assign HSI values to lost habitat and offsetting habitat shall be measured to confirm the analysis of impacted habitat and offsetting habitat.
- 7.1.7 Habitat condition and stability: Fish habitat, including vegetation, shall be measured and mapped. The stability and condition of habitat shall be documented as part of the habitat monitoring. Aquatic and riparian vegetation growth, survival, species diversity, per cent cover shall be assessed. Invasive species sweeps shall be conducted.
- 7.1.8 Geomorphic stability and performance: Geomorphic surveys including longitudinal profiles, monumented cross-sections, bank erosion, and substrate measurements shall be

undertaken for each constructed natural channel, and reported on at local and reach scales.

7.1.9 Benthic invertebrate community: Benthic invertebrate community composition, structure, biomass, and density shall be measured.

7.1.10 Water quantity and quality: Flow, water level, and water quality parameters shall be measured.

7.1.11 Fish community: Fish sampling shall be conducted to confirm fish presence and fish community structure, estimate abundance, confirm age classes present, assess growth and condition, and assess spawning success. Fish capture techniques shall be appropriate for the specific habitat being sampled. A population study shall be conducted in New Lake in year 5 of the monitoring program. Fish density and biomass shall be measured in WRC2.

7.2 List of reports to be provided to DFO: The Proponent shall report to DFO on whether the offsetting measures were conducted according to the conditions of this authorization by providing the following:

7.2.1 Annual monitoring reports for years 1, 2, 3, 5, and 10 following offsetting commissioning, shall be submitted by May 31 of the following year, with the year 3 report integrating results from the first three years of monitoring. The annual monitoring report shall incorporate previous years' results, as required, to present the entire monitoring program in a single, coherent report, and shall include adaptive management measures proposed, if required. The report shall also include updates on the complementary measure, and a final results report in the applicable reporting year.

Authorization Limitations and Application Conditions

The Proponent is solely responsible for plans and specifications relating to this authorization and for all design, safety and workmanship aspects of all the works associated with this authorization.

The holder of this authorization is hereby authorized under the authority of Paragraphs 34.4(2)(b) and 35(2)(b) of the *Fisheries Act*, R.S.C., 1985, c.F-14, to carry on the work(s), undertaking(s) and/or activity(ies) that are likely to result in impacts to fish and fish habitat as described herein.

This authorization does not purport to release the applicant from any obligation to obtain permission from or to comply with the requirements of any other regulatory agencies.

This authorization does not permit the deposit of a deleterious substance in water frequented by fish. Subsection 36(3) of the *Fisheries Act* prohibits the deposit of any deleterious substances into waters frequented by fish unless authorized by regulations made by Governor in Council.

At the date of issuance of this authorization, no individuals of aquatic species listed under the *Species at Risk Act* (SARA) were identified in the vicinity of the authorized works, undertakings or activities.

It is also your *Duty to Notify* DFO if you have caused, or are about to cause, the unauthorized death of fish by means other than fishing and/or the harmful alteration, disruption or destruction of fish habitat. Such notifications should be directed to (<http://www.dfo-mpo.gc.ca/pnw-ppe/CONTACT-eng.html>).

The failure to comply with any condition of this authorization constitutes an offence under Paragraph 40(3)(a) of the *Fisheries Act*, and may result in charges being laid under said Act.

A copy of this authorization should be kept on site while the work is in progress and upon request be provided to relevant federal or provincial officials. The authorization holder is responsible for ensuring work crews are familiar with, and able to adhere to, the conditions.

This authorization cannot be transferred or assigned to another party. If the work(s), undertaking(s) or activity(ies) authorized to be conducted pursuant to this authorization are expected to be sold or transferred, or other circumstances arise that are expected to result in a new Proponent taking over the work(s), undertaking(s) or activity(ies), the Proponent named in this authorization shall advise DFO in advance.

Date of Issuance: _____ June 29, 2020 _____

Approved by: _____

David Nanang
Regional Director General
Ontario and Prairie Region
Fisheries and Oceans Canada



Fisheries and Oceans
Canada

Fisheries and Oceans Canada
Ontario and Prairie Region
520 Exmouth Street
Sarnia, Ontario
N7T 8B1

Pêches et Océans
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520 rue Exmouth
Sarnia, Ontario
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November 3, 2020

Your file Votre référence

Our file Notre référence

20-HCAA-00766

IAMGOLD Corporation (*hereafter referred to as the "Proponent"*)

Attention to: Stephen Crozier

401 Bay Street, Suite 3200

P.O. Box 153

Toronto ON M5H 2Y4

Subject: Amendment to Côté Gold Mine Project Authorization (20-HCAA-00766)

Dear Stephen Crozier:

The Fish and Fish Habitat Protection Program (the Program) of Fisheries and Oceans Canada (DFO) would like to acknowledge receipt of your request made pursuant to section 5 of the *Authorizations Concerning Fish and Fish Habitat Protection Regulations* (the Regulations) to amend your authorization issued under paragraph 35(2)(b) of the *Fisheries Act* on June 29, 2020.

The Program has reviewed the content of your amendment request and is notifying you that it is complete and that the authorization is hereby amended effective on this date. Your authorization is now replaced by the amended and restated authorization attached to this letter.

The amendments are as follows:

Condition 3.1 previously stated: “Conditions that relate to notification: The proponent shall notify DFO at least 10 days prior to the commencement of each work, undertaking or activity set out under the heading *Description of Authorized work(s), undertaking(s) or activity(ies) likely to result in the harmful alteration, disruption or destruction of fish habitat* above unless otherwise agreed to by DFO.”

Condition 3.1 now states: “Conditions that relate to notification: The proponent shall notify DFO at the beginning of each season with a summary that outlines the projected commencement of each work, undertaking or activity set out under the heading *Description of Authorized work(s), undertaking(s) or activity(ies) likely to result in the*

Canada 

harmful alteration, disruption or destruction of fish habitat above unless otherwise agreed to by DFO.

Condition 4.3.8 now includes subconditions:

“4.3.8.1 The proponent shall monitor levels of suspended solids resulting from activities that have the potential to release sediment laden water into fish bearing waterbodies and watercourses, as well as implement measures to prevent the release of sediment laden water into fish bearing waterbodies and watercourses.

4.3.8.2 In the case of a failure in mitigation against erosion, or for any other cause, DFO shall be notified immediately of any exceedances of the current version of the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the Protection of Aquatic Life for total suspended sediment (TSS) levels, temperature, and dissolved oxygen in water released from the site into any fish bearing waterbodies and watercourses during mine development and associated infrastructure construction, and communicate the measures taken to lessen the impact and to correct the situation. Monitoring and regular reporting of the incident and corrective actions taken must be provided to DFO until stabilization of the work site and construction areas is completed, and the situation has passed.”

Condition 4.3.12 previously stated: “When the need for dewatering arises, water shall be released into a well-vegetated area or settling basin and not directly into fish-frequented waters. Water released to the environment shall meet the Council of Ministers of the Environment (CCME) “Canadian Water Quality Guidelines for the Protection of Aquatic Life”. DFO shall be notified immediately of any exceedance of the CCME guidelines for suspended sediment levels in water released from the site into any watercourse or waterbody during mine development and associated infrastructure, and until stabilization of the work and construction areas is complete.”

Condition 4.3.12: now states: “When the need for dewatering arises, all water discharged into any watercourses/waterbodies frequented by fish shall upon complete mixing meet the water quality guidelines set out by the CCME. The CCME guidelines are as follows: maximum increase of 25 mg/L from background levels for any short term exposure (within 24 hour period); and maximum average increase of 5 mg/L from background levels for longer term exposure (inputs lasting between 24 hours and 30 days). To ensure compliance with CCME guidelines in the receiving waters, turbidity will be sampled daily at a location within 100 m downstream of the discharge point on the receiving watercourse/waterbody. If turbidity measures exceed the CCME guideline of 8 NTU above background, a TSS sample will be taken and compared to the values noted above. Discharge water that results in an exceedance of the CCME guidelines in the receiving water shall be released into a well-vegetated area or settling basin and not directly into fish-frequented waters. DFO shall be notified immediately of any exceedance of the CCME guidelines for suspended sediment levels in water released from the site into any

watercourse or waterbody during mine development and associated infrastructure, and until stabilization of the work and construction areas is complete.”

Condition 4.3.15.2 previously stated: “Disturbed areas associated with the construction site shall be stabilized as soon as possible following disturbance. Where possible, disturbed areas shall be revegetated as soon as possible with native vegetation.”

Condition 4.3.15.2 is now Condition 4.3.16 and states: “Disturbed areas associated with the construction site shall be stabilized as soon as possible following disturbance. Where possible, disturbed areas shall be revegetated as soon as possible with native vegetation.”

Condition 4.4 previously stated: “Contingency measures shall be put in place and DFO shall be notified immediately if monitoring required in condition 3 below indicates that the measures and standards to avoid and mitigate impacts to fish and fish habitat are not successful. Monitoring and regular reporting of the corrective actions taken shall be provided to DFO until the contingency measures are successful and the proponent is in compliance.”

Condition 4.4 now states: “Contingency measures: shall be put in place and DFO shall be notified immediately if monitoring required in condition 5 indicates that the measures and standards to avoid and mitigate impacts to fish and fish habitat are not successful. Monitoring and regular reporting of the corrective actions taken shall be provided to DFO until the contingency measures are successful and the proponent is in compliance.”

Condition 5.1.1.3 previously stated: “Methylmercury monitoring: The Proponent shall monitor methylmercury in fish tissue and as part of water quality sampling in watercourses and waterbodies with potential for increases in total mercury and methylmercury, and downstream of those potentially affected watercourses and waterbodies.”

Condition 5.1.1.3 was moved to another section of the Authorization, and subcondition numbers were adjusted accordingly.

Condition 6.2.10 previously stated: “Channel between Aggregate Pit #3 to Middle Three Duck Lake - 450 m²”

Condition 6.2.10 was removed, and numbering of conditions 6.2.11-12 were updated accordingly.

Condition 7 previously stated: “Conditions that relate to monitoring and reporting of implementation of offsetting measures (described in section 4):”

Condition 7 now states: “Conditions that relate to monitoring and reporting of implementation of offsetting measures (described in section 6):”

Condition 7.1.12 has been added and states: “Methylmercury monitoring The Proponent shall monitor methylmercury in fish tissue and as part of water quality sampling in watercourses and waterbodies with potential for increases in total mercury and methylmercury, as outlined in the Mercury Environmental Management Plan.”

All other stipulations and conditions within the original authorization remain unchanged.

Failure to comply with any of the terms or conditions of the authorization as amended may lead to prosecution under the *Fisheries Act*.

A copy of the amended authorization, and this letter containing the amendments should be kept on site while the work is in progress and upon request be provided to relevant federal or provincial officials. The authorization holder is responsible for ensuring work crews are familiar with, and able to adhere to, the conditions.

If you, or anyone conducting work on your behalf have any questions please contact Terina Hancock at 587-341-4792 or by email at Terina.Hancock@dfo-mpo.gc.ca

Yours sincerely,

David Nanang
Regional Director General
Ontario and Prairie Region
Fisheries and Oceans Canada

COPY LIST:
Laura Phalen, DFO
Terina Hancock, DFO

(ATTACHMENT: AUTHORIZATION)



Paragraphs 34.4(2)(b) and 35(2)(b) *Fisheries Act* Authorization

Authorization issued to

IAMGOLD Corporation (*hereafter referred to as the "Proponent"*)

Attention to: Stephen Crozier

401 Bay Street, Suite 3200

P.O. Box 153

Toronto ON M5H 2Y4

Location of Proposed Project

Nearest community (city, town, village): Gogama

Municipality, district, township, county: District of Sudbury, Chester and Neville Townships

Province: Ontario

Name of watercourse, waterbody: Côté Lake

Longitude and latitude, UTM Coordinates: 47.555556, -81.940556; UTM Zone 17 429239E 5267333N

Description of Proposed Project

The proposed project of which the work, undertaking or activity authorized is a part involves:

The construction, operation, decommissioning, and closure of the Côté Gold Mine Project (the Project), which includes an open pit, associated mine infrastructure, a camp, a tailings management facility (TMF), storage stockpiles for overburden and mine rock waste, water collection ponds, and structures for diverting water. The Project has an ore input and production capacity of 36,000 tonnes per day, with a life of approximately 17 years.

Description of Authorized work(s), undertaking(s) or activity(ies) likely to result in the death of fish by means other than fishing:

The work(s), undertaking(s), or activity(ies) associated with the proposed project described above, that are likely to result in the death of fish by means other than fishing, are:

- Dewatering and overprinting associated with construction of mine features impacting fish and fish habitat, including fish rescue and relocation.

Description of Authorized work(s), undertaking(s) or activity(ies) likely to result in the harmful alteration, disruption or destruction of fish habitat:

The work(s), undertaking(s), or activity(ies) associated with the proposed project described above, that are likely to result in the harmful alteration, disruption or destruction of fish habitat, are:

- Dewatering and overprinting of watercourses and waterbodies to facilitate construction of the open pit

- Dewatering and overprinting of watercourses and waterbodies to facilitate construction of TMF and mine rock storage dams
- Construction of watercourse crossings
- Diversion of watercourses to facilitate construction of New Lake

The authorized work(s), undertaking(s), or activity(ies) are likely to result in the following impacts to fish and fish habitat:

- Incidental death of fish resulting from rescue and relocation during dewatering, and stranding of fish that may become trapped within isolated areas.
- The harmful alteration and destruction of a total of 475,399 m² or 2,816,611 Habitat Units (HUs) of lentic fish habitat affecting the following waterbodies:

Destruction (Dewatering)

- North Beaver Pond – 4,076 m²
- East Clam Lake – 5,961 m²
- Clam Lake – 10,092 m²
- Côté Lake – 188,546 m²
- Upper Three Duck Lake – 214,478 m²

Destruction (TMF Dam Footprint)

- West Beaver Pond – 49,265 m²

Harmful alteration (New Lake Construction)

- East Beaver Pond – 2,981 m²

- The harmful alteration and destruction of approximately 56,431 m² or 294,148 Habitat Units (HUs) of lotic fish habitat affecting the following watercourses:

Destruction (Dewatering)

- Mollie River – 49,818 m²
- Clam Creek – 1,226 m²
- Tributary from Unnamed Pond to Mollie River – 980 m²
- Tributary from East Beaver Pond – 70 m²
- Tributary between East Beaver Ponds – 57 m²

Destruction (TMF and Mine Rock Storage Dam Footprints)

- Tributary of Unnamed Lake #3 – 38 m²
- Unnamed Stream from West Beaver Pond to Bagsverd South Arm – 3,874 m²

Harmful alteration (Chester Lake Road Crossing)

- Mollie River – 368 m²

Conditions of Authorization

The above described work, undertaking or activity must be carried on in accordance with the following conditions.

- 1. Conditions that relate to the period during which the work, undertaking or activity can be carried on**

The work, undertaking or activity that is/are authorized to be carried on during the following period:

From **Date of Issuance** To: **November 30, 2022**

If the Proponent cannot complete the work, undertaking or activity during this period, Fisheries and Oceans Canada (DFO) must be notified in advance of the expiration of the above time period. An application for amendment, suspension or cancellation of the authorization should be submitted to DFO.

The periods during which other conditions of this authorization must be complied with are provided in their respective sections below.

2. Conditions that relate to the Proponent plan

- 2.1 The Proponent confirms that all plans and specifications relating to this Authorization have been duly prepared and reviewed by appropriate professionals working on behalf of the Proponent. The Proponent acknowledges that the Proponent is solely responsible for all design, safety, and workmanship aspects of all the works associated with this Authorization.
- 2.2 HADD and death of fish other than that specifically identified within this Authorization is not permitted.
- 2.3 Notwithstanding the conditions of this Authorization, works specified in this Authorization, completed within the valid authorization period, shall be conducted following the plans outlined in the following reports:
 - 2.3.1 Côte Gold Project Offsetting Plan - dated May 2020; and
 - 2.3.2 Application Form for the Issuance of an Authorization under Paragraphs 34.4(2)(b) and 35(2)(b) of the *Fisheries Act* (Non-Emergency Situations) – signed May 8, 2020.
- 2.4 Where there is more than one version of a plan, the most recent version, reviewed and approved by DFO, shall be used. Deviation from the plans as specified above shall be submitted to DFO well in advance of the date proposed for implementation of changes in order to allow DFO sufficient time to conduct a proper review.

3. Conditions that relate to notification

- 3.1 The proponent shall notify DFO at the beginning of each season with a summary that outlines the projected commencement of each work, undertaking or activity set out under the heading *Description of Authorized work(s), undertaking(s) or activity(ies) likely to result in the harmful alteration, disruption or destruction of fish habitat* above unless otherwise agreed to by DFO.

4. Conditions that relate to measures and standards to avoid and mitigate impacts to fish and fish habitat

- 4.1 The Aquatic Management and Monitoring Plan, and the Fish and Fish Habitat Management and Monitoring Plan shall be reviewed and approved by DFO prior to commencement of any works, undertakings or activities affecting fish and fish habitat, unless otherwise approved by DFO.
- 4.2 Sediment and erosion control: Sediment and erosion control measures must be in place and shall be maintained, repaired, and/or upgraded throughout the life of the project, as required, such that release of sediment directly or indirectly into fish and fish habitat is avoided.
 - 4.2.1 All spoil materials and debris shall be disposed of above the high water mark (HWM) such that it does not enter the watercourse. Any materials stored above the HWM shall be stabilized until properly disposed of.
- 4.3 List of measures and standards to avoid and mitigate impacts to fish and fish habitat:

- 4.3.1 A qualified environmental professional shall be on-site to monitor all instream and shoreline activities with the potential to impact fish and fish habitat.
- 4.3.2 Every reasonable effort shall be made to minimize the duration of any instream works in any watercourse or waterbody containing fish habitat.
- 4.3.3 The Proponent shall employ all feasible measures to mitigate the deposit of deleterious substances into fish habitat. A response plan shall be developed and implemented to avoid, mitigate, and respond to a spill of deleterious substances.
- 4.3.4 Machinery shall arrive on site in a clean condition and be maintained free of leaks, invasive species and noxious weeds.
- 4.3.5 Machinery shall be washed, refuelled and serviced, and fuel and other materials for the machinery stored in such a way as to prevent any deleterious substance from entering the water.
- 4.3.6 Whenever possible, machinery shall be operated on land above the high water mark in a manner that minimized disturbance to the bank and the bed of the waterbody.
- 4.3.7 All in-water works, undertakings or activities shall be conducted in isolation of open or flowing water. The isolation methods employed shall be designed to avoid and mitigate sedimentation into fish habitat.
- 4.3.8 Water management on-site shall follow Environmental Monitoring Plans developed by the proponent.
 - 4.3.8.1 The proponent shall monitor levels of suspended solids resulting from activities that have the potential to release sediment laden water into fish bearing waterbodies and watercourses, as well as implement measures to prevent the release of sediment laden water into fish bearing waterbodies and watercourses.
 - 4.3.8.2 In the case of a failure in mitigation against erosion, or for any other cause, DFO shall be notified immediately of any exceedances of the current version of the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the Protection of Aquatic Life for total suspended sediment (TSS) levels, temperature, and dissolved oxygen in water released from the site into any fish bearing waterbodies and watercourses during mine development and associated infrastructure construction, and communicate the measures taken to lessen the impact and to correct the situation. Monitoring and regular reporting of the incident and corrective actions taken must be provided to DFO until stabilization of the work site and construction areas is completed, and the situation has passed.
- 4.3.9 Diversion channels shall be:
 - 4.3.9.1 Constructed to accommodate the peak seasonal flows for the time period the diversion will be in place, and provide fish passage.
 - 4.3.9.2 Stabilized before any water flow is diverted from a natural channel into a diversion channel.
- 4.3.10 Where water is pumped from fish- frequented waters for any purpose, pump intakes shall be screened in accordance with DFO's *Freshwater Intake End-of-Pipe Fish Screen Guideline* (1995) or the code of practice for water intake screens, <https://www.dfo-mpo.gc.ca/pnw-ppe/codes/screen-ecran-eng.html>, whichever is applicable. Each pump outlet shall have a diffuser or be placed in a location that is not subject to erosion from the outflow.
- 4.3.11 Pumping systems shall be sized appropriately to accommodate water quantities during construction, and shall be monitored at all times to ensure proper functioning.
- 4.3.12 When the need for dewatering arises, all water discharged into any watercourses/waterbodies frequented by fish shall upon complete mixing meet the water quality guidelines set out by the CCME. The CCME guidelines are as follows: maximum increase of 25 mg/L from background levels for any short term exposure (within 24 hour period); and maximum average increase of 5 mg/L from background

levels for longer term exposure (inputs lasting between 24 hours and 30 days). To ensure compliance with CCME guidelines in the receiving waters, turbidity will be sampled daily at a location within 100 m downstream of the discharge point on the receiving watercourse/waterbody. If turbidity measures exceed the CCME guideline of 8 NTU above background, a TSS sample will be taken and compared to the values noted above. Discharge water that results in an exceedance of the CCME guidelines in the receiving water shall be released into a well-vegetated area or settling basin and not directly into fish-frequented waters. DFO shall be notified immediately of any exceedance of the CCME guidelines for suspended sediment levels in water released from the site into any watercourse or waterbody during mine development and associated infrastructure, and until stabilization of the work and construction areas is complete.

- 4.3.13 Downstream flow shall be maintained to mitigate impacts to downstream fish habitat not permitted as part of this Authorization.
- 4.3.14 A fish rescue shall be undertaken within all isolated areas prior to dewatering activities of the isolated areas:
 - 4.3.14.1 The fish rescue shall be undertaken by a qualified professional using appropriate and effective capture and handling procedures designed to minimize mortality, and with a level of effort to effectively mitigate the death of fish by stranding.
 - 4.3.14.2 Fish shall be safely relocated to an appropriate location as specified in Table 4.3 of the offsetting plan.
 - 4.3.14.3 The fish rescue shall follow conditions related to temperature and dissolved oxygen set in Table 4.4. of the offsetting plan to minimize mortality.
 - 4.3.14.4 Block nets or another appropriate barrier shall be put in place and maintained to prevent fish from re-entering areas where rescues have been completed prior to fish rescue and dewatering.
- 4.3.15 DFO's *Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters* (1998) shall be followed to mitigate the impacts of open pit blasting on fish and fish habitat.
 - 4.3.15.1 During the spawning period of April 15 to July 15 of any year, a charge size of 536 kg/delay shall be respected within 350 m of the open pit and a charge size of 250 kg/delay shall be respected in an area extending 240 m outwards from the 350 m area.
- 4.3.16 Disturbed areas associated with the construction site shall be stabilized as soon as possible following disturbance. Where possible, disturbed areas shall be revegetated as soon as possible with native vegetation.

4.4 Contingency measures shall be put in place and DFO shall be notified immediately if monitoring required in condition 5 indicates that the measures and standards to avoid and mitigate impacts to fish and fish habitat are not successful. Monitoring and regular reporting of the corrective actions taken shall be provided to DFO until the contingency measures are successful and the proponent is in compliance.

4.5 Dates by which these measures and standards shall be implemented: Measures and standards to avoid and mitigate impacts to fish and fish habitat shall be implemented prior to the initiation of works, undertakings or activities, and maintained throughout the duration of the project.

5. Conditions that relate to monitoring and reporting of measures and standards to avoid and mitigate impacts to fish and fish habitat

- 5.1 Monitoring of avoidance and mitigation measures: The Proponent shall monitor the implementation of avoidance and mitigation measures referred to in section 4 of this authorization and report to DFO in an annual report due by May 31 of each year, as per condition 7.2, and indicate whether the measures and standards to avoid and mitigate impacts to fish were conducted according to the conditions of this authorization. This shall be done by:
- 5.1.1 Developing the Aquatic Management and Monitoring Plan, and the Fish and Fish Habitat Management and Monitoring Plan to be reviewed and approved by DFO prior to commencement of any works, undertakings or activities affecting fish and fish habitat, and implementation of the plans to the satisfaction of DFO. This shall include monitoring and reporting to effectively demonstrate impacts to fish and fish habitat were limited to what was authorized. Parameters shall include but not be limited to:
 - 5.1.1.1 Water level monitoring: The Proponent shall monitor water levels and/or flow in waterbodies and watercourses potentially affected by mine and offsetting construction.
 - 5.1.1.2 Water quality monitoring: The Proponent shall conduct total suspended sediment and turbidity monitoring throughout construction in waterbodies and watercourses potentially affected by mine and offsetting construction.
 - 5.1.1.3 Blasting monitoring: The Proponent shall conduct acoustic and noise monitoring of fish and fish habitat potentially impacted by blasting adjacent to the open pit.
 - 5.1.1.4 Fish rescues: A fish rescue report by affected watercourse/waterbody name shall be provided including a tally of rescued fish by method employed including date, location of capture and release, species, weight, fork length, life stage using fork length, as well as any incidental mortality. Representative photographs of fish captured shall also be taken and provided as part of the fish rescue results. For each species, if more than 100 fish are rescued, the tally information shall be collected on a representative subsample.
 - 5.1.2 Demonstration of effective implementation and functioning: Providing dated and annotated photographs with a photo reference map and inspection reports pre-construction, during construction, and post construction periods, showing works, undertakings, and activities completed according to the approved plan and conditions of this Authorization to demonstrate effective implementation and functioning of mitigation measures and standards described above to limit the impacts to fish and fish habitat to what is covered by this authorization. Photographs shall be taken from the same vantage point(s), direction and angle of view each monitoring year for easy comparison.
 - 5.1.3 All monitoring shall be reported on relative to an appropriate baseline or reference condition, and compared to modelled predictions, when applicable.
 - 5.1.4 Contingency measures: Providing details of any contingency measures that were followed, to prevent impacts greater than those covered by this authorization in the event that mitigation measures did not function as described.

6. Conditions that relate to offsetting

- 6.1 Letter of credit or performance bond or any other equivalent financial security accepted by DFO: DFO may draw upon funds available to DFO as the beneficiary of the performance bond provided to DFO as part of the application for this authorization (Bond Number: TMS0411171-1001120653), to cover the costs of implementing and maintaining the offsetting measures required to be implemented under this authorization, including the associated monitoring measures included in section 5 of this authorization, in instances where the Proponent fails to implement these required measures.

- 6.2 Scale and description of offsetting measures: The offsetting measures shall be carried out in accordance with the measures set out in the Proponent's offsetting plan "Côté Gold Project Offsetting Plan" (hereafter referred to as the Offsetting Plan) dated May 2020, approved by DFO, or the most recent version reviewed and approved by DFO, as summarized below:
- 6.2.1 The construction of the offsetting habitat shall occur according to the schedule set out in Table 4.1 of the offsetting plan.
 - 6.2.2 Construction of offsetting habitat shall result in a total of 512,981 m² (3,245,547 HUs) of lentic habitat and 18,541 m² (207,013 HUs) of lotic habitat.
 - 6.2.3 Expansion of the south end of Clam Lake - 21,450 m²
 - 6.2.4 New Lake including removal of terrestrial vegetation and organic soils to mitigate methylmercury production - 265,182 m²
 - 6.2.5 Rehabilitation of Aggregate Pit #3 - 52,600 m²
 - 6.2.6 Channel between Aggregate Pit #3 to Middle Three Duck Lake - 450 m²
 - 6.2.7 Rehabilitation of Bagsverd Aggregate Pit - 166,600 m²
 - 6.2.8 Channel between Bagsverd Aggregate Pit to North Wetland - 150 m²
 - 6.2.9 Watercourse Realignment #2 (WRC2) habitat enhancements including stream and wetland habitat from New Lake to Upper Three Duck Lake - 24,314 m²
 - 6.2.10 In order to reduce lag times between offsetting habitat construction and functioning of offsetting habitat, the proponent shall incorporate habitat enhancements in all aspects of the offsetting habitat, relocate and transplant aquatic macrophytes from habitat to be lost to the offsetting habitat during the spring following construction, and collect and relocate benthic invertebrates from within habitat to be lost to the offsetting habitat.
 - 6.2.11 Complementary measure – research on eDNA barcoding methods for Environmental Effects Monitoring.
- 6.3 Offsetting criteria to assess the implementation and effectiveness of the offsetting measures: All fish habitat offsetting measures shall be completed and functioning according to the summarized criteria below and as set out in the Proponent's offsetting plan referred to in condition 6.2:
- 6.3.1 Construction of all offsetting habitat shall be complete by **December 31, 2021**, and according to the schedule set out in Table 4.1 of the offsetting plan. Construction of WRC2 shall be completed and allowed to stabilize and season prior to flow introduction in 2021.
 - 6.3.2 Offsetting measures shall provide a minimum of 3,245,547 HUs of lentic habitat that shall be stable and support multiple life stages of local fish populations (northern pike, yellow perch, walleye, lake whitefish, smallmouth bass, and various forage fish species).
 - 6.3.3 Offsetting measures shall provide a minimum of 207,013 HUs of lotic habitat that shall support multiple life stages of local fish populations (northern pike, yellow perch, walleye, lake whitefish, smallmouth bass, and various forage fish species). All channels constructed as offsetting shall be stable relative to an appropriate reference condition, incorporate natural channel design principles, maintain hydrologic connectivity within the watershed, and promote connectivity within the watershed and between habitats.
 - 6.3.4 Geomorphic performance criteria specified in Table 5.2 of the offsetting plan shall be met.
- 6.4 Contingency measures: If the offsetting measures are not completed by the date specified, the Proponent shall give written notice to DFO immediately. If the results of monitoring as required in section 7 indicate that the offsetting measures are not functioning according to the above criteria in 6.3, the Proponent shall give written notice to DFO and shall implement the contingency measures and associated monitoring measures, as contained within the approved

offsetting plan referenced in section 6.2, in consultation with DFO, to ensure the implementation of the offsetting measures is completed and functioning as required by this authorization.

6.4.1 Scale and description of contingency measures: The Proponent shall conduct necessary works, undertakings or activities to ensure the structural stability and ongoing functionality of any contingency offsetting habitat in consultation with and to the satisfaction of DFO, should the offsetting plan not meet the requirements for offsetting associated with this Authorization.

6.4.2 Monitoring measures to ensure offsetting contingency is completed and/or functioning as required: The Proponent shall conduct monitoring to document the success of any contingency offsetting habitat to the satisfaction of DFO, to ensure the offsetting measures are completed and functioning as required by this authorization.

6.5 The Proponent shall not carry on any work, undertaking or activity that will adversely impact the offsetting measures.

6.6 The Proponent shall obtain written permission for the Proponent, DFO, and anyone authorized to act on behalf of DFO, to access lands, water sources, or water bodies that are not owned by or under the care, control, or administration of the Proponent that must be accessed in order to implement the offsetting measures in this section and the monitoring of said measures.

6.7 The Proponent shall provide the written permission to DFO prior to the commencement of the Authorized work(s), undertakings(s) or activity(ies) that are likely to result in impacts to fish and fish habitat, described herein, and prior to the commencement of the implementation of the Proponent's offsetting plan referred to in condition 6.2 that is to take place on lands or in water sources or water bodies not owned by or under the care, control, or administration of the Proponent.

7. Conditions that relate to monitoring and reporting of implementation of offsetting measures (described in section 6):

7.1 Schedule(s) and criteria: The Proponent shall conduct monitoring of the implementation and functioning of offsetting measures according to the timeline and criteria in the offsetting plan approved by DFO, referred to in section 6.2, as summarized below.

7.1.1 The Fish and Fish Habitat Management and Monitoring Plan shall be provided to DFO prior to construction, and is subject to DFO approval. Other applicable environmental management plans, including but not limited to the Aquatic Management and Monitoring Plan and the Water Management and Monitoring Plan shall be provided to DFO as they become available. Those that further refine measures and triggers related to avoidance, mitigation and offsetting monitoring are subject to DFO approval, and shall be included as updates to the offsetting plan.

7.1.2 Monitoring shall be undertaken over a 10 year period in years 1, 2, 3, 5 and 10 following construction according to the schedule set out in Table 5.1 of the offsetting plan. Frequency and seasonality of monitoring varies by endpoint for each offsetting measure; timing of sampling shall occur at an appropriate time of year for each variable.

7.1.3 For each offsetting measure, appropriate baseline reference, guidelines, and/or model predictions shall be used to evaluate the success of each endpoint and the offsetting measures as a whole.

7.1.4 Photographic documentation: A digital photographic record, including a photo reference map, of pre-construction, during construction and post-construction conditions shall be compiled using the same vantage points and direction.

7.1.5 As-built drawings shall be provided for all constructed offsetting measures once post-construction.

- 7.1.6 Habitat verification: Habitat variables used to assign HSI values to lost habitat and offsetting habitat shall be measured to confirm the analysis of impacted habitat and offsetting habitat.
 - 7.1.7 Habitat condition and stability: Fish habitat, including vegetation, shall be measured and mapped. The stability and condition of habitat shall be documented as part of the habitat monitoring. Aquatic and riparian vegetation growth, survival, species diversity, per cent cover shall be assessed. Invasive species sweeps shall be conducted.
 - 7.1.8 Geomorphic stability and performance: Geomorphic surveys including longitudinal profiles, monumented cross-sections, bank erosion, and substrate measurements shall be undertaken for each constructed natural channel, and reported on at local and reach scales.
 - 7.1.9 Benthic invertebrate community: Benthic invertebrate community composition, structure, biomass, and density shall be measured.
 - 7.1.10 Water quantity and quality: Flow, water level, and water quality parameters shall be measured.
 - 7.1.11 Fish community: Fish sampling shall be conducted to confirm fish presence and fish community structure, estimate abundance, confirm age classes present, assess growth and condition, and assess spawning success. Fish capture techniques shall be appropriate for the specific habitat being sampled. A population study shall be conducted in New Lake in year 5 of the monitoring program. Fish density and biomass shall be measured in WRC2.
 - 7.1.12 Methylmercury monitoring: The Proponent shall monitor methylmercury in fish tissue and as part of water quality sampling in watercourses and waterbodies with potential for increases in total mercury and methylmercury, as outlined in the Mercury Environmental Management Plan.
- 7.2 List of reports to be provided to DFO: The Proponent shall report to DFO on whether the offsetting measures were conducted according to the conditions of this authorization by providing the following:
- 7.2.1 Annual monitoring reports for years 1, 2, 3, 5, and 10 following offsetting commissioning, shall be submitted by May 31 of the following year, with the year 3 report integrating results from the first three years of monitoring. The annual monitoring report shall incorporate previous years' results, as required, to present the entire monitoring program in a single, coherent report, and shall include adaptive management measures proposed, if required. The report shall also include updates on the complementary measure, and a final results report in the applicable reporting year.

Authorization Limitations and Application Conditions

The Proponent is solely responsible for plans and specifications relating to this authorization and for all design, safety and workmanship aspects of all the works associated with this authorization.

The holder of this authorization is hereby authorized under the authority of Paragraphs 34.4(2)(b) and 35(2)(b) of the *Fisheries Act*. R.S.C., 1985, c.F-14, to carry on the work(s), undertaking(s) and/or activity(ies) that are likely to result in impacts to fish and fish habitat as described herein.

This authorization does not purport to release the applicant from any obligation to obtain permission from or to comply with the requirements of any other regulatory agencies.

This authorization does not permit the deposit of a deleterious substance in water frequented by fish. Subsection 36(3) of the *Fisheries Act* prohibits the deposit of any deleterious substances into waters frequented by fish unless authorized by regulations made by Governor in Council.

At the date of issuance of this authorization, no individuals of aquatic species listed under the *Species at Risk Act* (SARA) were identified in the vicinity of the authorized works, undertakings or activities.

It is also your *Duty to Notify* DFO if you have caused, or are about to cause, the unauthorized death of fish by means other than fishing and/or the harmful alteration, disruption or destruction of fish habitat. Such notifications should be directed to (<http://www.dfo-mpo.gc.ca/pnw-ppe/CONTACT-eng.html>).

The failure to comply with any condition of this authorization constitutes an offence under Paragraph 40(3)(a) of the *Fisheries Act*, and may result in charges being laid under said Act.

A copy of this authorization should be kept on site while the work is in progress and upon request be provided to relevant federal or provincial officials. The authorization holder is responsible for ensuring work crews are familiar with, and able to adhere to, the conditions.

This authorization cannot be transferred or assigned to another party. If the work(s), undertaking(s) or activity(ies) authorized to be conducted pursuant to this authorization are expected to be sold or transferred, or other circumstances arise that are expected to result in a new Proponent taking over the work(s), undertaking(s) or activity(ies), the Proponent named in this authorization shall advise DFO in advance.

Date of Issuance: November 3, 2020

Approved by: _____
David Nanang
Regional Director General
Ontario and Prairie Region
Fisheries and Oceans Canada



Paragraphs 34.4(2)(b) and 35(2)(b) *Fisheries Act* Authorization

Authorization issued to

IAMGOLD Corporation (*hereafter referred to as the "Proponent"*)

Attention to: Stephen Crozier

401 Bay Street, Suite 3200

P.O. Box 153

Toronto ON M5H 2Y4

Location of Proposed Project

Nearest community (city, town, village): Gogama

Municipality, district, township, county: District of Sudbury, Chester and Neville Townships

Province: Ontario

Name of watercourse, waterbody: Côté Lake

Longitude and latitude, UTM Coordinates: 47.555556, -81.940556; UTM Zone 17 429239E 5267333N

Description of Proposed Project

The proposed project of which the work, undertaking or activity authorized is a part involves:

The construction, operation, decommissioning, and closure of the Côté Gold Mine Project (the Project), which includes an open pit, associated mine infrastructure, a camp, a tailings management facility (TMF), storage stockpiles for overburden and mine rock waste, water collection ponds, and structures for diverting water. The Project has an ore input and production capacity of 36,000 tonnes per day, with a life of approximately 17 years.

Description of Authorized work(s), undertaking(s) or activity(ies) likely to result in the death of fish by means other than fishing:

The work(s), undertaking(s), or activity(ies) associated with the proposed project described above, that are likely to result in the death of fish by means other than fishing, are:

- Dewatering and overprinting associated with construction of mine features impacting fish and fish habitat, including fish rescue and relocation.

Description of Authorized work(s), undertaking(s) or activity(ies) likely to result in the harmful alteration, disruption or destruction of fish habitat:

The work(s), undertaking(s), or activity(ies) associated with the proposed project described above, that are likely to result in the harmful alteration, disruption or destruction of fish habitat, are:

- Dewatering and overprinting of watercourses and waterbodies to facilitate construction of the open pit

- Dewatering and overprinting of watercourses and waterbodies to facilitate construction of TMF and mine rock storage dams
- Construction of watercourse crossings
- Diversion of watercourses to facilitate construction of New Lake

The authorized work(s), undertaking(s), or activity(ies) are likely to result in the following impacts to fish and fish habitat:

- Incidental death of fish resulting from rescue and relocation during dewatering, and stranding of fish that may become trapped within isolated areas.
- The harmful alteration and destruction of a total of 475,608 m² or 2,817,963 Habitat Units (HUs) of lentic fish habitat affecting the following waterbodies:

Destruction (Dewatering)

- North Beaver Pond – 4,076 m²
- East Clam Lake – 5,961 m²
- Clam Lake – 10,092 m²
- Côté Lake – 188,546 m²
- Upper Three Duck Lake – 214,478 m²

Destruction (TMF Dam Footprint)

- West Beaver Pond – 49,265 m²

Harmful alteration (New Lake Construction)

- East Beaver Pond – 2,981 m²

Harmful alteration (Temporary)

- Discharge Pipe to Upper Three Duck Lake – 209 m²
- The harmful alteration and destruction of approximately 56,480 m² or 294,160 Habitat Units (HUs) of lotic fish habitat affecting the following watercourses:

Destruction (Dewatering)

- Mollie River – 49,818 m²
- Clam Creek – 1,226 m²
- Tributary from Unnamed Pond to Mollie River – 980 m²
- Tributary from East Beaver Pond – 70 m²
- Tributary between East Beaver Ponds – 57 m²

Destruction (TMF and Mine Rock Storage Dam Footprints)

- Tributary of Unnamed Lake #3 – 38 m²
- Unnamed Stream from West Beaver Pond to Bagsverd South Arm – 3,874 m²

Harmful alteration (Road Crossings)

- Mollie River (Chester Lake Road) – 368 m²
- Unnamed Tributary from Bagsverd Pond to Bagsverd Lake – 49 m²

Conditions of Authorization

The above described work, undertaking or activity must be carried on in accordance with the following conditions.

1. Conditions that relate to the period during which the work, undertaking or activity can be carried on

The work, undertaking or activity that is/are authorized to be carried on during the following period:

From **Date of Issuance** To: **November 30, 2022**

If the Proponent cannot complete the work, undertaking or activity during this period, Fisheries and Oceans Canada (DFO) must be notified in advance of the expiration of the above time period. An application for amendment, suspension or cancellation of the authorization should be submitted to DFO.

The periods during which other conditions of this authorization must be complied with are provided in their respective sections below.

2. Conditions that relate to the Proponent plan

- 2.1 The Proponent confirms that all plans and specifications relating to this Authorization have been duly prepared and reviewed by appropriate professionals working on behalf of the Proponent. The Proponent acknowledges that the Proponent is solely responsible for all design, safety, and workmanship aspects of all the works associated with this Authorization.
- 2.2 HADD and death of fish other than that specifically identified within this Authorization is not permitted.
- 2.3 Notwithstanding the conditions of this Authorization, works specified in this Authorization, completed within the valid authorization period, shall be conducted following the plans outlined in the following reports:
 - 2.3.1 Côté Gold Project Offsetting Plan - dated May 2020; and
 - 2.3.2 Application Form for the Issuance of an Authorization under Paragraphs 34.4(2)(b) and 35(2)(b) of the *Fisheries Act* (Non-Emergency Situations) – signed May 8, 2020.
- 2.4 Where there is more than one version of a plan, the most recent version, reviewed and approved by DFO, shall be used. Deviation from the plans as specified above shall be submitted to DFO well in advance of the date proposed for implementation of changes in order to allow DFO sufficient time to conduct a proper review.

3. Conditions that relate to notification

- 3.1 The proponent shall notify DFO at the beginning of each season with a summary that outlines the projected commencement of each work, undertaking or activity set out under the heading *Description of Authorized work(s), undertaking(s) or activity(ies) likely to result in the harmful alteration, disruption or destruction of fish habitat* above unless otherwise agreed to by DFO.

4. Conditions that relate to measures and standards to avoid and mitigate impacts to fish and fish habitat

- 4.1 The Aquatic Management and Monitoring Plan, and the Fish and Fish Habitat Management and Monitoring Plan shall be reviewed and approved by DFO prior to commencement of any works, undertakings or activities affecting fish and fish habitat, unless otherwise approved by DFO.
- 4.2 Sediment and erosion control: Sediment and erosion control measures must be in place and shall be maintained, repaired, and/or upgraded throughout the life of the project, as required, such that release of sediment directly or indirectly into fish and fish habitat is avoided.

- 4.2.1 All spoil materials and debris shall be disposed of above the high water mark (HWM) such that it does not enter the watercourse. Any materials stored above the HWM shall be stabilized until properly disposed of.
- 4.3 List of measures and standards to avoid and mitigate impacts to fish and fish habitat:
 - 4.3.1 A qualified environmental professional shall be on-site to monitor all instream and shoreline activities with the potential to impact fish and fish habitat.
 - 4.3.2 Every reasonable effort shall be made to minimize the duration of any instream works in any watercourse or waterbody containing fish habitat.
 - 4.3.3 The Proponent shall employ all feasible measures to mitigate the deposit of deleterious substances into fish habitat. A response plan shall be developed and implemented to avoid, mitigate, and respond to a spill of deleterious substances.
 - 4.3.4 Machinery shall arrive on site in a clean condition and be maintained free of leaks, invasive species and noxious weeds.
 - 4.3.5 Machinery shall be washed, refuelled and serviced, and fuel and other materials for the machinery stored in such a way as to prevent any deleterious substance from entering the water.
 - 4.3.6 Whenever possible, machinery shall be operated on land above the high water mark in a manner that minimized disturbance to the bank and the bed of the waterbody.
 - 4.3.7 All in-water works, undertakings or activities shall be conducted in isolation of open or flowing water. The isolation methods employed shall be designed to avoid and mitigate sedimentation into fish habitat.
 - 4.3.8 Water management on-site shall follow Environmental Monitoring Plans developed by the proponent.
 - 4.3.8.1 The proponent shall monitor levels of suspended solids resulting from activities that have the potential to release sediment laden water into fish bearing waterbodies and watercourses, as well as implement measures to prevent the release of sediment laden water into fish bearing waterbodies and watercourses.
 - 4.3.8.2 In the case of a failure in mitigation against erosion, or for any other cause, DFO shall be notified immediately of any exceedances of the current version of the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the Protection of Aquatic Life for total suspended sediment (TSS) levels, temperature, and dissolved oxygen in water released from the site into any fish bearing waterbodies and watercourses during mine development and associated infrastructure construction, and communicate the measures taken to lessen the impact and to correct the situation. Monitoring and regular reporting of the incident and corrective actions taken must be provided to DFO until stabilization of the work site and construction areas is completed, and the situation has passed.
 - 4.3.9 Diversion channels shall be:
 - 4.3.9.1 Constructed to accommodate the peak seasonal flows for the time period the diversion will be in place, and provide fish passage.
 - 4.3.9.2 Stabilized before any water flow is diverted from a natural channel into a diversion channel.
 - 4.3.10 Where water is pumped from fish- frequented waters for any purpose, pump intakes shall be screened in accordance with DFO's *Freshwater Intake End-of-Pipe Fish Screen Guideline* (1995) or the code of practice for water intake screens, <https://www.dfo-mpo.gc.ca/pnw-ppe/codes/screen-ecran-eng.html>, whichever is applicable. Each pump outlet shall have a diffuser or be placed in a location that is not subject to erosion from the outflow.
 - 4.3.11 Pumping systems shall be sized appropriately to accommodate water quantities during construction, and shall be monitored at all times to ensure proper functioning.

- 4.3.12 When the need for dewatering arises, all water discharged into any watercourses/waterbodies frequented by fish shall upon complete mixing meet the water quality guidelines set out by the CCME. The CCME guidelines are as follows: maximum increase of 25 mg/L from background levels for any short term exposure (within 24 hour period); and maximum average increase of 5 mg/L from background levels for longer term exposure (inputs lasting between 24 hours and 30 days). To ensure compliance with CCME guidelines in the receiving waters, turbidity will be sampled daily at a location within 100 m downstream of the discharge point on the receiving watercourse/waterbody. If turbidity measures exceed the CCME guideline of 8 NTU above background, a TSS sample will be taken and compared to the values noted above. Discharge water that results in an exceedance of the CCME guidelines in the receiving water shall be released into a well-vegetated area or settling basin and not directly into fish-frequented waters. DFO shall be notified immediately of any exceedance of the CCME guidelines for suspended sediment levels in water released from the site into any watercourse or waterbody during mine development and associated infrastructure, and until stabilization of the work and construction areas is complete.
- 4.3.13 Downstream flow shall be maintained to mitigate impacts to downstream fish habitat not permitted as part of this Authorization.
- 4.3.14 A fish rescue shall be undertaken within all isolated areas prior to dewatering activities of the isolated areas:
- 4.3.14.1 The fish rescue shall be undertaken by a qualified professional using appropriate and effective capture and handling procedures designed to minimize mortality, and with a level of effort to effectively mitigate the death of fish by stranding.
 - 4.3.14.2 Fish shall be safely relocated to an appropriate location as specified in Table 4.3 of the offsetting plan.
 - 4.3.14.3 The fish rescue shall follow conditions related to temperature and dissolved oxygen set in Table 4.4. of the offsetting plan to minimize mortality.
 - 4.3.14.4 Block nets or another appropriate barrier shall be put in place and maintained to prevent fish from re-entering areas where rescues have been completed prior to fish rescue and dewatering.
- 4.3.15 DFO's *Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters* (1998) shall be followed to mitigate the impacts of open pit blasting on fish and fish habitat.
- 4.3.15.1 During the spawning period of April 15 to July 15 of any year, a charge size of 536 kg/delay shall be respected within 350 m of the open pit and a charge size of 250 kg/delay shall be respected in an area extending 240 m outwards from the 350 m area.
- 4.3.16 Disturbed areas associated with the construction site shall be stabilized as soon as possible following disturbance. Where possible, disturbed areas shall be revegetated as soon as possible with native vegetation.
- 4.4 Contingency measures shall be put in place and DFO shall be notified immediately if monitoring required in condition 5 indicates that the measures and standards to avoid and mitigate impacts to fish and fish habitat are not successful. Monitoring and regular reporting of the corrective actions taken shall be provided to DFO until the contingency measures are successful and the proponent is in compliance.
- 4.5 Dates by which these measures and standards shall be implemented: Measures and standards to avoid and mitigate impacts to fish and fish habitat shall be implemented prior to the initiation of works, undertakings or activities, and maintained throughout the duration of the project.

5. Conditions that relate to monitoring and reporting of measures and standards to avoid and mitigate impacts to fish and fish habitat

- 5.1 Monitoring of avoidance and mitigation measures: The Proponent shall monitor the implementation of avoidance and mitigation measures referred to in section 4 of this authorization and report to DFO in an annual report due by May 31 of each year, as per condition 7.2, and indicate whether the measures and standards to avoid and mitigate impacts to fish were conducted according to the conditions of this authorization. This shall be done by:
- 5.1.1 Developing the Aquatic Management and Monitoring Plan, and the Fish and Fish Habitat Management and Monitoring Plan to be reviewed and approved by DFO prior to commencement of any works, undertakings or activities affecting fish and fish habitat, and implementation of the plans to the satisfaction of DFO. This shall include monitoring and reporting to effectively demonstrate impacts to fish and fish habitat were limited to what was authorized. Parameters shall include but not be limited to:
 - 5.1.1.1 Water level monitoring: The Proponent shall monitor water levels and/or flow in waterbodies and watercourses potentially affected by mine and offsetting construction.
 - 5.1.1.2 Water quality monitoring: The Proponent shall conduct total suspended sediment and turbidity monitoring throughout construction in waterbodies and watercourses potentially affected by mine and offsetting construction.
 - 5.1.1.3 Blasting monitoring: The Proponent shall conduct acoustic and noise monitoring of fish and fish habitat potentially impacted by blasting adjacent to the open pit.
 - 5.1.1.4 Fish rescues: A fish rescue report by affected watercourse/waterbody name shall be provided including a tally of rescued fish by method employed including date, location of capture and release, species, weight, fork length, life stage using fork length, as well as any incidental mortality. Representative photographs of fish captured shall also be taken and provided as part of the fish rescue results. For each species, if more than 100 fish are rescued, the tally information shall be collected on a representative subsample.
 - 5.1.2 Demonstration of effective implementation and functioning: Providing dated and annotated photographs with a photo reference map and inspection reports pre-construction, during construction, and post construction periods, showing works, undertakings, and activities completed according to the approved plan and conditions of this Authorization to demonstrate effective implementation and functioning of mitigation measures and standards described above to limit the impacts to fish and fish habitat to what is covered by this authorization. Photographs shall be taken from the same vantage point(s), direction and angle of view each monitoring year for easy comparison.
 - 5.1.3 All monitoring shall be reported on relative to an appropriate baseline or reference condition, and compared to modelled predictions, when applicable.
 - 5.1.4 Contingency measures: Providing details of any contingency measures that were followed, to prevent impacts greater than those covered by this authorization in the event that mitigation measures did not function as described.

6. Conditions that relate to offsetting

- 6.1 Letter of credit or performance bond or any other equivalent financial security accepted by DFO: DFO may draw upon funds available to DFO as the beneficiary of the performance bond provided to DFO as part of the application for this authorization (Bond Number: TMS0411171-

1001120653), to cover the costs of implementing and maintaining the offsetting measures required to be implemented under this authorization, including the associated monitoring measures included in section 5 of this authorization, in instances where the Proponent fails to implement these required measures.

- 6.2 Scale and description of offsetting measures: The offsetting measures shall be carried out in accordance with the measures set out in the Proponent's offsetting plan "Côté Gold Project Offsetting Plan" (hereafter referred to as the Offsetting Plan) dated May 2020, approved by DFO, or the most recent version reviewed and approved by DFO, as summarized below:
- 6.2.1 The construction of the offsetting habitat shall occur according to the schedule set out in Table 4.1 of the offsetting plan.
 - 6.2.2 Construction of offsetting habitat shall result in a total of 512,981 m² (3,245,547 HUs) of lentic habitat and 18,541 m² (207,013 HUs) of lotic habitat.
 - 6.2.3 Expansion of the south end of Clam Lake - 21,450 m²
 - 6.2.4 New Lake including removal of terrestrial vegetation and organic soils to mitigate methylmercury production - 265,182 m²
 - 6.2.5 Rehabilitation of Aggregate Pit #3 - 52,600 m²
 - 6.2.6 Channel between Aggregate Pit #3 to Middle Three Duck Lake - 450 m²
 - 6.2.7 Rehabilitation of Bagsverd Aggregate Pit - 166,600 m²
 - 6.2.8 Channel between Bagsverd Aggregate Pit to North Wetland - 150 m²
 - 6.2.9 Watercourse Realignment #2 (WRC2) habitat enhancements including stream and wetland habitat from New Lake to Upper Three Duck Lake - 24,314 m²
 - 6.2.10 Connection of Weeduck Lake to Upper Three Duck Lake – 2,100 m²
 - 6.2.11 Connection of East Clam and Clam Lakes – 1,700 m²
 - 6.2.12 Connection of Little Clam and East Clam – 520 m²
 - 6.2.13 In order to reduce lag times between offsetting habitat construction and functioning of offsetting habitat, the proponent shall incorporate habitat enhancements in all aspects of the offsetting habitat, relocate and transplant aquatic macrophytes from habitat to be lost to the offsetting habitat during the spring following construction, and collect and relocate benthic invertebrates from within habitat to be lost to the offsetting habitat.
 - 6.2.14 Complementary measure – research on eDNA barcoding methods for Environmental Effects Monitoring.
- 6.3 Offsetting criteria to assess the implementation and effectiveness of the offsetting measures: All fish habitat offsetting measures shall be completed and functioning according to the summarized criteria below and as set out in the Proponent's offsetting plan referred to in condition 6.2:
- 6.3.1 Construction of all offsetting habitat shall be complete by **December 31, 2021**, and according to the schedule set out in Table 4.1 of the offsetting plan. Construction of WRC2 shall be completed and allowed to stabilize and season prior to flow introduction in 2021.
 - 6.3.2 Offsetting measures shall provide a minimum of 3,245,547 HUs of lentic habitat that shall be stable and support multiple life stages of local fish populations (northern pike, yellow perch, walleye, lake whitefish, smallmouth bass, and various forage fish species).
 - 6.3.3 Offsetting measures shall provide a minimum of 207,013 HUs of lotic habitat that shall support multiple life stages of local fish populations (northern pike, yellow perch, walleye, lake whitefish, smallmouth bass, and various forage fish species). All channels constructed as offsetting shall be stable relative to an appropriate reference condition, incorporate natural channel design principles, maintain hydrologic connectivity within the watershed, and promote connectivity within the watershed and between habitats.

- 6.3.4 Geomorphic performance criteria specified in Table 5.2 of the offsetting plan shall be met.
- 6.4 **Contingency measures:** If the offsetting measures are not completed by the date specified, the Proponent shall give written notice to DFO immediately. If the results of monitoring as required in section 7 indicate that the offsetting measures are not functioning according to the above criteria in 6.3, the Proponent shall give written notice to DFO and shall implement the contingency measures and associated monitoring measures, as contained within the approved offsetting plan referenced in section 6.2, in consultation with DFO, to ensure the implementation of the offsetting measures is completed and functioning as required by this authorization.
- 6.4.1 Scale and description of contingency measures: The Proponent shall conduct necessary works, undertakings or activities to ensure the structural stability and ongoing functionality of any contingency offsetting habitat in consultation with and to the satisfaction of DFO, should the offsetting plan not meet the requirements for offsetting associated with this Authorization.
- 6.4.2 Monitoring measures to ensure offsetting contingency is completed and/or functioning as required: The Proponent shall conduct monitoring to document the success of any contingency offsetting habitat to the satisfaction of DFO, to ensure the offsetting measures are completed and functioning as required by this authorization.
- 6.5 The Proponent shall not carry on any work, undertaking or activity that will adversely impact the offsetting measures.
- 6.6 The Proponent shall obtain written permission for the Proponent, DFO, and anyone authorized to act on behalf of DFO, to access lands, water sources, or water bodies that are not owned by or under the care, control, or administration of the Proponent that must be accessed in order to implement the offsetting measures in this section and the monitoring of said measures.
- 6.7 The Proponent shall provide the written permission to DFO prior to the commencement of the Authorized work(s), undertakings(s) or activity(ies) that are likely to result in impacts to fish and fish habitat, described herein, and prior to the commencement of the implementation of the Proponent's offsetting plan referred to in condition 6.2 that is to take place on lands or in water sources or water bodies not owned by or under the care, control, or administration of the Proponent.
- 7. Conditions that relate to monitoring and reporting of implementation of offsetting measures (described in section 6):**
- 7.1 Schedule(s) and criteria: The Proponent shall conduct monitoring of the implementation and functioning of offsetting measures according to the timeline and criteria in the offsetting plan approved by DFO, referred to in section 6.2, as summarized below.
- 7.1.1 The Fish and Fish Habitat Management and Monitoring Plan shall be provided to DFO prior to construction, and is subject to DFO approval. Other applicable environmental management plans, including but not limited to the Aquatic Management and Monitoring Plan and the Water Management and Monitoring Plan shall be provided to DFO as they become available. Those that further refine measures and triggers related to avoidance, mitigation and offsetting monitoring are subject to DFO approval, and shall be included as updates to the offsetting plan.
- 7.1.2 Monitoring shall be undertaken over a 10 year period in years 1, 2, 3, 5 and 10 following construction according to the schedule set out in Table 5.1 of the offsetting plan. Frequency and seasonality of monitoring varies by endpoint for each offsetting measure; timing of sampling shall occur at an appropriate time of year for each variable.

- 7.1.3 For each offsetting measure, appropriate baseline reference, guidelines, and/or model predictions shall be used to evaluate the success of each endpoint and the offsetting measures as a whole.
 - 7.1.4 Photographic documentation: A digital photographic record, including a photo reference map, of pre-construction, during construction and post-construction conditions shall be compiled using the same vantage points and direction.
 - 7.1.5 As-built drawings shall be provided for all constructed offsetting measures once post-construction.
 - 7.1.6 Habitat verification: Habitat variables used to assign HSI values to lost habitat and offsetting habitat shall be measured to confirm the analysis of impacted habitat and offsetting habitat.
 - 7.1.7 Habitat condition and stability: Fish habitat, including vegetation, shall be measured and mapped. The stability and condition of habitat shall be documented as part of the habitat monitoring. Aquatic and riparian vegetation growth, survival, species diversity, per cent cover shall be assessed. Invasive species sweeps shall be conducted.
 - 7.1.8 Geomorphic stability and performance: Geomorphic surveys including longitudinal profiles, monumented cross-sections, bank erosion, and substrate measurements shall be undertaken for each constructed natural channel, and reported on at local and reach scales.
 - 7.1.9 Benthic invertebrate community: Benthic invertebrate community composition, structure, biomass, and density shall be measured.
 - 7.1.10 Water quantity and quality: Flow, water level, and water quality parameters shall be measured.
 - 7.1.11 Fish community: Fish sampling shall be conducted to confirm fish presence and fish community structure, estimate abundance, confirm age classes present, assess growth and condition, and assess spawning success. Fish capture techniques shall be appropriate for the specific habitat being sampled. A population study shall be conducted in New Lake in year 5 of the monitoring program. Fish density and biomass shall be measured in WRC2.
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- 7.2 List of reports to be provided to DFO: The Proponent shall report to DFO on whether the offsetting measures were conducted according to the conditions of this authorization by providing the following:
- 7.2.1 Annual monitoring reports for years 1, 2, 3, 5, and 10 following offsetting commissioning, shall be submitted by May 31 of the following year, with the year 3 report integrating results from the first three years of monitoring. The annual monitoring report shall incorporate previous years' results, as required, to present the entire monitoring program in a single, coherent report, and shall include adaptive management measures proposed, if required. The report shall also include updates on the complementary measure, and a final results report in the applicable reporting year.

Authorization Limitations and Application Conditions

The Proponent is solely responsible for plans and specifications relating to this authorization and for all design, safety and workmanship aspects of all the works associated with this authorization.

The holder of this authorization is hereby authorized under the authority of Paragraphs 34.4(2)(b) and 35(2)(b) of the *Fisheries Act*, R.S.C., 1985, c.F-14, to carry on the work(s), undertaking(s) and/or activity(ies) that are likely to result in impacts to fish and fish habitat as described herein.

This authorization does not purport to release the applicant from any obligation to obtain permission from or to comply with the requirements of any other regulatory agencies.

This authorization does not permit the deposit of a deleterious substance in water frequented by fish. Subsection 36(3) of the *Fisheries Act* prohibits the deposit of any deleterious substances into waters frequented by fish unless authorized by regulations made by Governor in Council.

At the date of issuance of this authorization, no individuals of aquatic species listed under the *Species at Risk Act* (SARA) were identified in the vicinity of the authorized works, undertakings or activities.


It is also your *Duty to Notify* DFO if you have caused, or are about to cause, the unauthorized death of fish by means other than fishing and/or the harmful alteration, disruption or destruction of fish habitat. Such notifications should be directed to (<http://www.dfo-mpo.gc.ca/pnw-ppe/CONTACT-eng.html>).

The failure to comply with any condition of this authorization constitutes an offence under Paragraph 40(3)(a) of the *Fisheries Act*, and may result in charges being laid under said Act.

A copy of this authorization should be kept on site while the work is in progress and upon request be provided to relevant federal or provincial officials. The authorization holder is responsible for ensuring work crews are familiar with, and able to adhere to, the conditions.

This authorization cannot be transferred or assigned to another party. If the work(s), undertaking(s) or activity(ies) authorized to be conducted pursuant to this authorization are expected to be sold or transferred, or other circumstances arise that are expected to result in a new Proponent taking over the work(s), undertaking(s) or activity(ies), the Proponent named in this authorization shall advise DFO in advance.

Date of Issuance: February 11, 2021

Approved by: 
C. Thomas Hoggarth
Regional Director, Aquatic Ecosystems
Ontario and Prairies Region
Fisheries and Oceans Canada



Fisheries and Oceans
Canada

Ontario and Prairie Region
Fish and Fish Habitat Protection Program
867 Lakeshore Rd.
Burlington, ON
L7S 1A1

Pêches et Océans
Canada

Région de l'Ontario et des Prairies
Programme de protection du poisson et de son habitat
867 chemin Lakeshore
Burlington, ON
L7S 1A1

February 11, 2021

Your file Votre référence

Our file Notre référence

20-HCAA-00766

IAMGOLD Corporation (*hereafter referred to as the "Proponent"*)
Attention to: Stephen Crozier
401 Bay Street, Suite 3200
P.O. Box 153
Toronto ON M5H 2Y4

Subject: Notice of amendment - Côté Gold Mine *Fisheries Act* Authorization

Dear Stephen Crozier:

The Fish and Fish Habitat Protection Program (the Program) of Fisheries and Oceans Canada (DFO) would like to acknowledge receipt of your request made pursuant to section 5 of the *Authorizations Concerning Fish and Fish Habitat Protection Regulations* (the Regulations) to amend your authorization issued under paragraph 35(2)(b) of the *Fisheries Act* on February 4, 2021.

The Program has reviewed the content of your amendment request and is notifying you that it is complete and that the authorization is hereby amended effective on this date. Your authorization is now replaced by the amended and restated authorization attached to this letter.

The amendments are as follows:

The authorized work(s), undertaking(s), or activity(ies) are likely to result in the following impacts to fish and fish habitat previously included:

“The harmful alteration and destruction of a total of 475,399 m² or 2,816,611 Habitat Units (HUs) of lentic fish habitat affecting the following waterbodies:”

The authorized work(s), undertaking(s), or activity(ies) are likely to result in the following impacts to fish and fish habitat now includes:

“The harmful alteration and destruction of a total of 475,608 m² or 2,817,963 Habitat Units (HUs) of lentic fish habitat affecting the following waterbodies:”

Canada 

The authorized work(s), undertaking(s), or activity(ies) are likely to result in the following impacts to fish and fish habitat now includes:

“Harmful alteration (Temporary)

- Discharge Pipe to Upper Three Duck Lake – 209 m²”

The authorized work(s), undertaking(s), or activity(ies) are likely to result in the following impacts to fish and fish habitat previously included:

“The harmful alteration and destruction of approximately 56,431 m² or 294,148 Habitat Units (HUs) of lotic fish habitat affecting the following watercourses:”

The authorized work(s), undertaking(s), or activity(ies) are likely to result in the following impacts to fish and fish habitat now includes:

“The harmful alteration and destruction of approximately 56,480 m² or 294,160 Habitat Units (HUs) of lotic fish habitat affecting the following watercourses:”

The authorized work(s), undertaking(s), or activity(ies) are likely to result in the following impacts to fish and fish habitat previously included:

Harmful alteration (Chester Lake Road Crossing)

- Mollie River – 368 m²

The authorized work(s), undertaking(s), or activity(ies) are likely to result in the following impacts to fish and fish habitat now includes:

Harmful alteration (Road Crossings)

- Mollie River (Chester Lake Road) – 368 m²
- Unnamed Tributary from Bagsverd Pond to Bagsverd Lake – 49 m²

Condition 6.2.10 has been added and states: “Connection of Weeduck Lake to Upper Three Duck Lake – 2,100 m²”

Condition 6.2.11 has been added and states: “6.2.11 Connection of East Clam and Clam Lakes – 1,700 m²”

Condition 6.2.12 has been added and states: “6.2.12 Connection of Little Clam and East Clam – 520 m²”

All other stipulations and conditions within the original authorization remain unchanged.

Failure to comply with any of the terms or conditions of the authorization as amended may lead to prosecution under the *Fisheries Act*.

A copy of the amended authorization, and this letter containing the amendments should be kept on site while the work is in progress and upon request be provided to relevant federal or provincial officials. The authorization holder is responsible for ensuring work crews are familiar with, and able to adhere to, the conditions.

If you, or anyone conducting work on your behalf have any questions please contact Terina Hancock at 587-341-4792 or by email at Terina.Hancock@dfo-mpo.gc.ca

Yours sincerely,

A handwritten signature in black ink, appearing to read 'C. Thomas Hoggarth', with a stylized, wavy flourish at the end.

C. Thomas Hoggarth
Regional Director, Aquatic Ecosystems
Ontario and Prairie Region
Fisheries and Oceans Canada

COPY LIST:

Clayton James, Fisheries and Oceans Canada
Terina Hancock, Fisheries and Oceans Canada
Kim Connors, Minnow Environmental Inc.

(ATTACHMENT: AUTHORIZATION)