DETAILED PROJECT DESCRIPTION

PART G: PLAIN LANGUAGE SUMMARY

CRAWFORD NICKEL PROJECT

CANADA NICKEL COMPANY

DECEMBER 2022

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CANADA NICKEL COMPANY

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1.0 INTRODUCTION

This document is a plain-language summary of the Detailed Project Description (DPD) which has been developed for the Canada Nickel Company Crawford Nickel Project.

Canada Nickel plans to develop, operate and eventually reclaim a new open pit nickel mine with associated processing, mine waste management facilities, and related infrastructure at the Crawford Project site.

The Crawford Nickel Project ("Project") is in northeastern Ontario, approximately 43 kilometres (km) north of Timmins Ontario, Canada. The Town of Cochrane is 35 km to the northeast, the Town of Smooth Rock Falls is 50 kms northwest, and The Town of Iroquois Falls is 50 km east of the Project, as shown in Figure S.1. The property is currently bisected by provincial Highway 655 and a 500 kilovolt (kV) transmission line. The Crawford Project is located on a site with no history of mining activity but has been logged extensively in the past.

Crawford Township has been an area of interest for mineral exploration since 1955. Not much was known about the geology of the area until 1964 after the discovery of the Kidd Creek Mine, approximately 15 km south of the Project site in Kidd. This led to further exploration in the Crawford Township during the 1960s, 1970s and 1980s. Spruce Ridge Resources, in partnership with Noble Mineral exploration, then initiated exploration activities in the area in 2018 to 2019. These activities led to the foundation of Canada Nickel Company Inc, (Canada Nickel or CNC), who has taken over the exploration and the development of the Crawford Project.

CNC has completed a Preliminary Economic Assessment (PEA) and has been conducting ongoing environmental baseline investigations since early 2021 in support of the Impact Assessment (IA) process.

2.0 PROJECT INFORMATION

2.1 PROJECT NAME, SECTOR AND LOCATION

Project Name	Crawford Nickel Project (Crawford Project)
Sector	Mines and minerals - base metal mine
Location	43 kilometres (km) north of Timmins, Ontario; see Figure S.1

2.2 PROPONENT

Proponent	Canada Nickel Company https://www.canadanickel.com/
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3.0 PROJECT INFORMATION

3.1 PURPOSE AND NEED FOR PROJECT, AND POTENTIAL BENEFITS

Canada Nickel plans to leverage the Crawford Project's advantageous position in the heart of the prolific Timmins-Cochrane mining camp to become a leading producer of net zero critical minerals.

The Crawford Project represents a domestic, strategically positioned source of nickel, iron, and cobalt intended to meet the increasing global demand from the stainless steel and lithium-ion battery markets. In the move toward decarbonization of the global transportation economy, Canada Nickel is committed to the responsible and sustainable mining and processing of the critical minerals of nickel and cobalt, as well as chromium, palladium and platinum. In so doing, the Project has the potential to contribute to strengthening Canada's economy through job creation and positive economic impact, while advancing global efforts to address climate change.

In addition to job creation and its associated economic contributions to the region, the Project is expected to generate government revenue through taxation. In Ontario, taxable profit from mining is subject to a mining tax of 10% for non-remote mines, as the Crawford Project could be, and 5% for remote mines (Ontario Ministry of Finance, 2022a). This is in addition to tertiary tax revenue from the Project generated from personal income, corporate taxation, and sales tax related to goods and services.

The objective of sustainable growth - economic, societal, environmental, and technological - is a core component of Canada Nickel's operating strategy and purpose, with the Crawford Project ideally positioned to meet rising global demand for accountable, dependable, and sustainable nickel, iron, chromium, cobalt, palladium and platinum.

3.2 APPLICABLE PHYSICAL ACTIVITIES REGULATION CONDITIONS

The Physical Activities Regulations (SOR/2019-285) of the Impact Assessment Act requires that if stated conditions are met, documentation (a DPD) must be provided to the Impact Assessment Agency of Canada (IAAC) to assess whether an IA is required. The following conditions of the Physical Activities Regulation may apply to the Crawford Project based on the preliminary Project design:

> *18 The construction, operation, decommissioning and abandonment of one of the following:*
>
> *(c) a new metal mine, other than a rare earth element mine, placer mine or uranium mine, with an ore production capacity of 5,000 tonnes per day (tpd) or more*
>
> *(d) a new metal mill, other than a uranium mill, with an ore input capacity of 5,000 tpd or more.*

Based on the current Project design, the maximum rate of ore processing at the Crawford Project is expected to start at 60,000 tpd for the first few years of operation before increasing to up to an anticipated 120,000 tpd for the remainder of operations. The Crawford Project is therefore expected to meet the

conditions listed above of the Physical Activities Regulations, and Canada Nickel has therefore previously submitted an IPD and currently this Detailed Project Description for review by IAAC.

The Crawford Project is not part of a larger Project that is not listed on the Project List.

3.3 ACTIVITIES, INFRASTRUCTURE, STRUCTURES AND PHYSICAL WORKS

Canada Nickel is planning to develop, operate, and eventually reclaim a new open pit mine at the Crawford Project site. The Crawford Project consists of an open pit mine, with associated processing and mine waste management facilities, and related infrastructure. A preliminary Site Plan is shown in Figure S.3. A summary listing of activities to be undertaken for the Crawford Project by Project phase is provided in Table 1.

3.3.1 *PROPOSED MINE FACILITIES AND INFRASTRUCTURE (DESIGNATED PROJECT)*

The open pit and associated surface facilities are proposed to be placed on lands held by Canada Nickel and include an on-site plant, a tailings management facility (TMF), waste rock, overburden and low-grade ore stockpiles, water management infrastructures and a maintenance shop. A new transmission line and a new section of rail line will need to be built to supply power and material to the Project. The Project will also require that Highway 655 and the 500 kV transmission line that cross the Project site be relocated.

3.3.1.1 KEY PROJECT COMPONENTS

Key Project components, based on preliminary engineering, are shown in Figure S.3. They have been arranged in a way to minimize the site footprint, and considering known environmental and human features of value. The arrangement of Project components will be optimised as engineering, technical studies and consultation progress. Key Project components are discussed below and indicated in Table 2.

OPEN PIT

The deposit at the Crawford Project is planned to be mined by open pit methods, with two immediately adjacent and intersecting pits currently proposed – the Main Zone and East Zone. Total material to be mined consists of approximately 5.9 billion tonnes (Bt), including 1.7 Bt of ore, 3.6 Bt of waste rock, and the remainder consisting of overburden to be stripped.

The approximate dimension of the open pits, recognizing there will be some overlap of the boundaries between the zones once fully developed are:

- Main Zone open pit: dimensions of approximately 3,300 metres (m) by 1,700 m, with a depth of approximately 690 m below ground surface (mbgs);
- East Zone open pit: approximately 3,800 m by 1,500 m with a depth of approximately 615 mbgs; and

The Main Zone underlies the current alignment of Highway 655 and the adjacent 500 kV transmission line, both of which will require realignment to allow for full development of that open pit.

STOCKPILES

Mining at the Crawford Project will require removal of surface overburden and waste rock to access and remove the ore. Ore, waste rock and overburden from the open pits will be stored in surface stockpiles on site. Overburden stripped during general site development will also be stockpiled on site, including for future use in site reclamation as needed.

Preliminary storage capacities of the stockpiles for the Crawford Project are as follows, subject to revision during ongoing engineering:

- Ore stockpiles: two stockpiles totalling approximately 234 million cubic metres (Mm^3);
- Mine rock and overburden stockpiles: two anticipated at approximately 961 Mt and 1,024 Mt; and
- Overburden and topsoil / organics stockpiles: three stockpiles with a combined volume of approximately 318 Mm^3 in smaller temporary stockpiles, anticipated to be used during site reclamation activities.

Low grade ore stockpiles will be developed in the early years of mine production, as ore will be produced at a faster rate in the mine than the throughput of the process plant, allowing for the early delivery of higher value ore.

A primary waste rock and overburden stockpile will be developed north of the Main Zone open pit. A second storage area for waste rock will also be developed to the west of the Main Zone open pit and the relocated Highway 655 (Figure S.3).

Overburden material stripped from the open pit and other Project development areas will be stockpiled primarily on the Waste Rock Stockpile #1 just north of the open pit. Small organic material stockpiles will also be located at strategic locations in planning of the reclamation of the impoundments.

Mine rock and low-grade stockpiles could reach over 100 m high at their maximum capacity.

ORE PROCESSING

The process plant and associated service facilities will process run of mine ore delivered to primary crushers to produce nickel concentrate, iron concentrate and tailings. Ore processing will occur at a rate of approximately 60,000 tonnes per day (tpd) at the start of mine life, ramping up to a maximum of 120,000 tpd.

The proposed process encompasses several stages of typical mineral processing, including crushing and grinding of the ore, and concentration of mineral products. Concentrate will be thickened, filtered and stockpiled on site prior to being transported to third-party processing facilities located off site. Three types of concentrate would be produced, namely a normal-grade nickel concentrate, a high-grade nickel concentrate, and an iron concentrate. The current estimation is that over the life of the Project, approximately 8.5 Mt of high-grade and standard grade nickel concentrate would be produced, and over 100 Mt of iron concentrate. These concentrates are slightly wet, dark-grey, fine- to coarse-grained material. Other valuable metals such as cobalt, chromium, palladium and platinum would be recovered indirectly in the different concentrate streams. A cobalt, chromium, palladium and platinum concentrate will not be produced.

At this time, there is no specific location identified or commercial agreement concluded for downstream processing of ore concentrate. The concentrate is anticipated to be sold on the open market and transported to processing facilities either in Canada or abroad. Potential destinations in Canada include the Sudbury region (nickel processing), southern Ontario (stainless steel industry), a port in eastern Canada for shipment abroad, or a new processing facility that could be built by a third party at some point

before or after the beginning of the operation at the Crawford Project. On-land transport is anticipated to occur by rail, considering the yearly average production of above 2 Mt of concentrate per year.

TAILINGS STORAGE

Tailings are the primary by-product from processing of the Crawford Project ore. Tailings consist of ground rock and process effluents that result from the processing of ore. Canada Nickel is currently planning for tailings from the processing of the Main Zone ore to be stored in an on-surface TMF, with design details subject to further engineering study. Once the Main Zone pit has been mined out, tailings from processing the East Zone ore will be stored within the Main Zone pit. The tailings from the processing of low grade ore temporarily stockpiled during mining operation will be stored in the East Zone pit. Storage of these mine wastes within the pit will help to reduce the overall Project footprint.

On-site processing is expected to include thickening of the tailings to reduce the water content, with recovered water recycled for re-use in the process plant.

Ditching will collect runoff from the TMF for direction to collection ponds for further management. Ditching and water management ponds will be sized to convey flows arising from a 1 in 100 year storm event. A road will be developed at the dam toe to provide access for construction, maintenance and observation.

BUILDINGS AND YARD AREAS

The following primary permanent buildings or facilities are planned for the Crawford Project:

- Process plant, and primary and secondary crushing system;
- Workshop, warehouse, core shack, laboratory and offices;
- Supporting buildings (e.g. security, pumphouses) and laydown areas; and
- Explosives storage facilities.

A preliminary plant site location has been identified to avoid potential ore resources. Geotechnical investigations are in progress to confirm the location and optimize placement of critical facilities including the plant and crusher. Associated tankage will be designed to contain / capture potential spills and prevent release to the environment. Process reagents and other chemicals used on site will be handled following applicable handling and safety requirements as outlined by the manufacturer, applicable regulations, and site procedures. A workshop and warehouse will be provided on site to allow for indoor maintenance on heavy equipment.

Access and haul roads will be established within the site as needed, minimizing water crossings as practical. New roads will be constructed of waste rock or aggregate. Waste rock is non-acid generating and does not show a high potential for metal leaching, as suggested in preliminary baseline geochemical assessments.

Related piping and power infrastructure will be provided as needed.

Explosives needed for open pit mining (and potentially for construction) will be prepared by a contractor off site and delivered to site under their care and control as required. An explosives manufacturing facility is not expected to be developed on site, due to the proximity of the site to surrounding operations. The location of any explosives-related storage facility (magazines) on site will follow all federal siting guidance.

DOMESTIC AND INDUSTRIAL WASTES

Domestic sewage during the construction and operating phases will be treated by an appropriately sized, technically acceptable method, such as a sewage treatment plant. A different method may be used during early construction and later in the closure phase, when there are fewer people on site.

Domestic and special management / hazardous materials resulting from the construction and operation of the Crawford Project will be periodically shipped off site to appropriate facilities. A demolition landfill may be established on site for disposal of non-hazardous demolition wastes during the closure phase.

WATER MANAGEMENT FACILITIES AND DRAINAGE WORKS

The open pit will collect groundwater, runoff, and direct precipitation. Canada Nickel proposes to collect minewater from the dewatering of the open pit in sumps and pump it to a primary collection pond for additional management, including for re-use as make up water for the process plant. Precipitation and surface runoff that come into contact with mine-related facilities will be collected in ditches and secondary collection ponds, and also pumped to the primary collection pond. The primary collection pond and all secondary collection ponds will be designed with sufficient capacity to support the retention and treatment of contact water, and to provide water for processing operations. Seepage from impoundments will be collected in peripheral ditches and channelled to the collection ponds. The integrated water management system will ensure that site effluent meets all regulatory requirements and can be discharged safely to the environment. If required, an effluent treatment plant may be installed for additional treatment on some of the water sources to ensure effluent quality can be consistently achieved.

Canada Nickel is currently investigating potential effluent discharge locations, including the Mattagami River, North Driftwood River and / or West Buskegau River, or potentially a combination of watercourses over the life of the Project. Each watercourse has different attributes, with the Mattagami River location requiring approximately 10 km of pipeline. After different consultation meetings with stakeholders and Indigenous Peoples, the currently preferred option for the operation phase is a single discharge to the Mattagami River, as it has a large assimilative capacity. Temporary discharge to the West Buskegau and North Driftwood rivers are currently being considered as well, due to their proximity to the Project, for the construction and closure phases. The final location(s) will be selected with care to ensure that the watercourse can receive this effluent and all related regulatory requirements are met. Further consultation including with regulatory authorities is planned on this topic.

Process water will be obtained primarily by recycling site runoff and open pit minewater. If additional fresh water is required, such as for process make up and a fire water supply, it may be sourced from a local watercourse. If needed, a potable water treatment plant will be constructed to treat water for use on site.

ACCESS

Existing Highway 655 between Timmins and Cochrane will provide direct access to the site. Since it runs through the middle of the Project site, it will need to be rerouted to allow for the full development of the open pit. The existing Highway 655 would still be used in the first years of operations to provide direct access to the site while the new portion of Highway 655 is in construction.

An approximately 20 km rail line is proposed to be constructed to connect the Project site to the regional rail network, to allow for transport of freight to and from the Project site. At this stage, the estimation is that trains would come in and out of the site once a day or every two days, pending the outcome of ongoing logistics studies. Materials that would be transported by train include diesel, concentrate, explosives, acid, and grinding media.

Additional regional transportation includes the Timmins Victor M. Power municipal airport, which offers several daily flights to and from southern Ontario.

POWER SUPPLY

Power for the Crawford Project will be supplied through development of a new 230 kV transmission line from the Porcupine substation near Timmins to the Crawford Project site where it will intercept the Crawford property edge and interface with the site electrical system via a Ring-Bus. The Ring -Bus will allow the service provider to deliver power to not only the Crawford site but other customers as well. A preliminary route for this line is shown on Figure S.4. The transmission line is proposed to follow existing rights of ways for Highway 655 and the 500 kV transmission line that goes from the Porcupine substation through the proposed site location. Ownership of this transmission line will rest with Transmission Infrastructure Partnerships 1 (TIP-1), a joint venture business of Taykwa Tagamou Nation, with Canada Nickel involved as a customer once construction is complete and the line is operational. TIP-1 will be responsible for all aspects related to provincial Environmental Assessment (EA) and permitting requirements, design, construction, connection, and operation / maintenance. This component will be subject to the provincial Class EA for Minor Transmission Facilities under either the Class EA Screening process or the Full Class EA process. The provincial Class EA processes were developed to streamline frequently occurring projects with similar characteristics and predictable environmental effects with well-defined mitigation measures.

A portion of the 500 kV transmission line (approximately 20 km) which runs parallel to Highway 655 will need to be relocated west of the property along the corridor for the Highway 655 realignment. Hydro One is the owner of the existing transmission line, and will undertake all aspects of the relocation, including provincial EA requirements, design, construction, connection and operation / maintenance. With a capacity of 500 kV and a length of less than 75 km, this component is expected to be subject to the Full Class EA process under the provincial Class EA for Minor Transmission Facilities.

Diesel-fired generation may be used early in the construction phase and during the closure phase when grid power is not available to site. Emergency diesel generators will also be present on site, however the Project does not anticipate the use of diesel generators as a significant power source once grid power is available.

ACCOMMODATION

An accommodations complex (or similar) is not proposed to be developed as part of the Crawford Project due to the close proximity of local communities. Canada Nickel anticipates that workers will commute daily from existing communities / residences which are located within approximately an hour drive of the Project site.

COMPENSATORY AQUATIC HABITAT

Construction of facilities for the Crawford Project is expected to require overprinting of tributaries to the North Driftwood River and West Buskegau River. Where practical and needed, these tributaries will be diverted around Project facilities. A plan for habitat compensation will be developed which will be consulted upon and approved through the rigorous federal process. When implemented, the plan will mitigate effects to aquatic resources, including direct habitat loss due to overprinting by Project facilities, and indirect impacts such as potential flow reductions.

AGGREGATE OPERATIONS

The primary material to be used for site construction will be mineral wastes (overburden and waste rock) removed from the open pit area. A sand and gravel deposit located within the property boundary, which

has historically been used as a source of aggregate, may also be utilized. Other sources of aggregate may be needed, including before the Crawford Project can produce the required material. These additional sources may include existing or new pits and quarries operated by third parties or new operations developed and operated by Canada Nickel. To reduce the amount of aggregate required, Canada Nickel may consider using lime addition to stabilize clays in roads foundations and overburden stockpiles.

3.3.1.2 PRELIMINARY DECOMMISSIONING APPROACH (DESIGNATED PROJECT)

Reclamation and closure of the Project will be governed by the Ontario *Mining Act* and its associated Regulations and Codes, and informed by ongoing engagement, including with Indigenous Peoples. A regulatory Closure Plan will be filed for the Crawford Project before construction, and financial assurance be provided to ensure that sufficient funds are in place to carry out the decommissioning activities.

Progressive reclamation during operation will be completed as practicable. Overburden stockpile(s) developed from open pit stripping and other site construction activities will be graded and revegetated progressively during the construction and operations phases to minimize erosion as needed.

A preliminary description of the proposed final closure measures is provided in the text that follows. The active phase of reclamation is currently expected to be completed within approximately three years of operations ceasing, pending additional Project planning studies. Environmental monitoring will continue after reclamation is completed until such time as the closure objectives as determined in the Closure Plan have been achieved.

OPEN PIT

A portion of the tailings produced during the mine life will be stored in the mined-out Main Zone and East Zone of the pit. Natural refilling of the pit with precipitation and localized runoff will occur at the end of mine life, forming a pit lake above these materials. There is the potential that enhanced flooding could occur, such as by transferring a portion of the spring melt water into the pit at closure, pending regulatory approval. The approach to refilling the pit with water will be assessed further through the relevant regulatory processes and detailed in the future regulatory Closure Plan. During pit filling, water quality will be monitored and pit slopes above the final pit lake level will be reclaimed as needed. Measures will be taken to ensure public / wildlife safety while the pit floods to create a permanent lake. Hydrogeological studies are in progress which will inform the final anticipated level of pit filling. The final pit lakes may be reconnected to the North Driftwood system to potentially restore aquatic habitats if the pit lake elevation and water quality are appropriate.

STOCKPILES AND TMF

The primary potential closure concern with respect to reclamation of the waste rock stockpiles and TMF is the quality of runoff and seepage from the facilities. Preliminary geochemical investigations indicated that these materials are not potentially acid generating. These areas will be reclaimed, reshaped as needed for stability and to reduce potential for erosion, and revegetated to improve soil stability and long term aesthetics. Areas of the stockpiles and TMF which are no longer required for active deposition of mine waste materials are planned to be progressively reclaimed during mine operations.

WATER MANAGEMENT FACILITIES

Once dewatering of the open pit ceases and surface water no longer needs to be treated or managed on site, the surface water management system will be decommissioned. Water holding structures will be sampled to ensure acceptable water quality and drained. Surrounding dams, berms and ditches may be breached and recontoured to allow natural drainage to the environment.

GENERAL SITE AREA

Equipment, tankage, machinery, pipelines, building and infrastructure waste materials generated through demolition, will be sold for re-use, or recycled as scrap metal, where reasonable. Demolition wastes and equipment wastes that cannot be sold for re-use, or scrap, will be handled according to environmental regulations at that time, and are expected to be transported to an off-site waste management facility, although an on-site demolition landfill could be developed. On-site roads not required for long term monitoring will be revegetated.

TRANSMISSION LINES, RAIL SPUR AND RELOCATED HIGHWAY 655

Future decommissioning (or relocation of facilities back to original locations) for the 230 kV transmission line, the 500 kV transmission line, the rail spur and Highway 655 are out of the care and control of Canada Nickel.

3.4 PRELIMINARY SCHEDULE

The preliminary schedule for the Project is outlined briefly below:

Table 1. Preliminary List of Activities for the Crawford Project

Project Phase / Activity	Timing
Engineering Studies (Feasibility)	2021 to 2023
Impact Statement Process and Environmental Approvals	2022 to 2025 (1)
Construction	2025 to 2027 (2)
Operation (mining)	2027 to 2057 (3)
Operation (processing)	2027 to 2070
Decommissioning and Closure (3)	2070 to 2073
Post-closure and Monitoring (3)	2073+

(1) The environmental and social permitting duration is based on CNC's internal evaluation integrating CNC's consultant's experience, recently permitted project timelines and a realistic appreciation of IAAC's proposed impact assessment schedule. It is not based on the maximal extent of the impact assessment schedule suggested by IAAC.
(2) Relocation of Highway 655 and the 500 kV transmission line will be initiated after the main construction phase and completed after the beginning of operations (around 2032)
(3) Timing may be extended with additional viable ore resources not currently identified.

3.5 LIST OF POTENTIAL ALTERNATIVES

Alternatives to the Project, and alternative means of completing the Project, are typically considered during regulatory reviews. There are no alternatives to development of the Crawford Project (such as abandoning the Project or delaying the Project), that meet the needs of Canada Nickel, particularly given the growing interest in critical minerals for the battery and stainless-steel markets.

Alternative means of completing the Crawford Project that are technically and economically feasible will be considered during future studies and regulatory documentation. A preliminary list of alternatives that may be considered has been provided below, which will be subject to the results of ongoing engagement, regulatory advice and engineering studies:

- Mine rock, overburden, and organics / topsoil segregation and storage (re-use as construction and reclamation material, storage in open pit, and various stockpile locations based on geotechnical and geochemical properties);
- Tailings storage methods and locations (conventional slurry, thickened, filtered tailings facility, various locations, and re-use as partial pit backfill; to also be considered in Alternatives Assessment for Mine Waste Disposal);
- Tailings management techniques and strategies to improve CO_2 sequestration (e.g. mechanical enhancement and sparging);
- Water management and treatment (water re-use and applicable treatment technologies);
- Effluent discharge locations (Mattagami River and other locations for operations phase; temporary discharge to the North Driftwood River and West Buskegau River during construction phase);
- Watercourse realignments and structures (as needed; these realignments will be coordinated with the aquatic offsetting and compensation measures, below);
- Aquatic offsetting and compensation measures (to be determined through engagement activities and regulatory advice);
- Solid waste management location (appropriate licenced existing landfill and other disposal facilities located off site / on site);
- Domestic sewage treatment method (package treatment plant and septic tile field);
- Water supply source (surface water and groundwater);
- Aggregate supply source (develop a dedicated aggregate resource on or near the site, re-use waste rock and purchase aggregate from suppliers);
- Alternative means of stabilization, such as wick drains within the TMF, and lime stabilization of clays on the roads;
- Site access road location (connection location for Highway 655); and
- Mine decommissioning and closure methods.

There are not expected to be alternative methods that are economically viable for mining methods (constrained by orebody location, which is near-surface, orebody geometry, and land ownership and tenure); and / or for ore processing methods (controlled by laboratory testing and analyses to obtain optimal recovery utilizing full scale proven technologies).

A single corridor enclosing the relocated Highway 655, rail spur, relocated 500 kV and the new 230 kV transmission line is the preferred option for linear components (Figure S.4). This represents the shortest route with no major water crossings as the Project is constrained by the Mattagami River to the west and the 115 kV transmission lines and West Buskegau River to the east. An alternate alignment corridor to the east would overprint the West Buskegau river, requiring additional flow diversions, potential flow reductions, and extending Project impacts to aquatic habitat and expanded terrestrial habitat. There would also be additional considerations for alignment of the 230 kV and 500 kV transmissions lines to avoid interference with the existing 115 kV transmission line along this side of the Project. Alternate alignment to the west would overprint a portion of Jocko Creek, requiring additional flow diversions, potential flow reductions, and extending Project impacts to aquatic habitat and expanded terrestrial habitat. The alignment would also be closer to the Mahaffey Township Ground Moraine Conservation Reserve.

4.0 LOCATION INFORMATION AND CONTEXT

4.1 GEOGRAPHIC COORDINATES

The Crawford Project site is located approximately 40 km north of the City of Timmins, Ontario, in the geographic townships of Crawford, Carnegie, Kidd, Lucas and Prosser. A small portion of the Project extent within Kidd Township also lies within the municipal boundary of the City of Timmins. The approximate centre of the property is located at coordinates:

- Universal Transverse Mercator (UTM) 5408504N, 473380E, (NAD 83 Zone 17N); and
- Latitude / longitude 81° 21' 46" W, 48° 49' 44" N.

4.2 DESCRIPTION OF LANDS

The Crawford Project property consists primarily of patented mining claims with surface and mining rights, mineral leases with surface and mining rights, and unpatented mining claims with mining rights only. Most of the Project mining facilities are planned to be placed on patent mining lands, although some infrastructures may be located on unpatented lands (provincial Crown lands).

4.3 PROXIMITY TO RESIDENCES AND COMMUNITIES

The Crawford Project is located in an area well-connected by regional infrastructure. There are no known permanent residences in the vicinity of the Project, however a few seasonal-use properties are located in the area.

The nearest larger communities are the Town of Cochrane (35 km to the northeast), the City of Timmins (40 km to the south), the Town of Smooth Rock Falls (50 km to the northwest), and the Town of Iroquois Falls (50 km to the east), as seen in Figure 1. All distances provided in this document are cross-country distances. It is expected that workers may live in these communities and commute daily to the site.

4.4 PROXIMITY TO INDIGENOUS LANDS AND COMMUNITIES

Canada Nickel is in ongoing discussions with local Indigenous Peoples to determine historic and current land and resource uses.

The Crawford Project site is located within the Treaty No. 9, 1905-1906 lands. The closest Indigenous community to the Project site is Taykwa Tagamou Nation. Taykwa Tagamou Nation, a Mushkegowuk Cree Nation, signed Treaty No. 9, also known as the James Bay Treaty, in 1905 and 1906. The primary Reserve lands of the Taykwa Tagamou Nation are the 166.8 ha New Post 69A Reserve located 14 km southeast of Cochrane and 68 km northeast of Timmins.

Based on research and publicly available information, Canada Nickel is aware of several land claims and / or assertions of the Indigenous Peoples that overlap or are near the site (Table 3). Canada Nickel will continue to engage with Indigenous Peoples to determine any assertions and whether they have assertions related to the Crawford Project. Through continuing engagement activities with Indigenous Peoples, Canada Nickel will determine whether the Project will affect any Indigenous land codes / Community Land Use Plans and will support the framework set out in the land code, if applicable.

There are no First Nation Reserve lands proximal to the site (Figure S.2, Table 3), although the Project site is anticipated to be within proximity to the Traditional or operating region of several Indigenous Peoples that have expressed interest in the Project:

- Taykwa Tagamou Nation, located approximately 45 km northeast from the Project site in the Cochrane District along the Abitibi River;
- Flying Post First Nation, located approximately 59 km southwest of the Project site;
- Matachewan First Nation, located approximately 100 km southeast of the Project site;
- Mattagami First Nation, located approximately 115 km south of the Project Site along the Mattagami River;
- Apitipi Anicinapek Nation, located approximately 104 km southeast of the Project site; and
- Métis Nation of Ontario – Region 3.

Regional Indigenous Peoples are shown in Figure S.2

4.5 PROXIMITY TO FEDERAL LANDS

The Crawford Project is not located near any federal lands. The closest lands under federal jurisdiction are the Taykwa Tagamou Nation Reserve lands located approximately 45 km away (straight line) from the Project site (14 km southeast of Cochrane).

The Crawford Project site is located inland, and there are no related marine or port aspects for the Project.

4.6 PHYSICAL AND BIOLOGICAL ENVIRONMENTAL SETTING

The Crawford Project site is located in a remote part of northeastern Ontario, with existing provincial infrastructure including the highway and transmission lines that overlap part of the site, and prior impacts from exploration or forestry operations. The primary disturbance on site to date is related to exploration activities and engineering investigations. Canada Nickel has been conducting environmental baseline investigations associated with the Crawford Project since early 2021, which remain ongoing. The physical and biological environmental settings presented in the section below are based on baseline studies completed in consideration of all designated Project components.

4.6.1 *CLIMATE, AIR QUALITY, NOISE AND LIGHT*

The nearest Environment and Climate Change Canada (ECCC) climate station for which long term, current records are available is located at Timmins Victor M. Power Airport. This station is located approximately 24 km south of the site. Average monthly temperatures range from a low of -16.8 °C in

January to a high of 17.5°C in July. The average annual precipitation for Timmins is 834.6 mm, with 558.3 mm falling as rain and 311.3 mm as snowfall.

The 25-year wind rose for Timmins has a predominantly westerly wind direction, with an overall west-northwest direction. The highest average wind speeds occur in February, May, and November with an average annual wind speed of 3.28 m/s. Maximum monthly wind gusts ranged from 85 km/h (July) to 158 km/h (June).

There are currently no continuous air emissions from the Crawford Project site, although there may be periodic emissions associated with exploration. Baseline air quality will be influenced by existing operations at a base metal mine (located approximately 17 km south along Highway 655), traffic along Highway 655, as well as natural sources such as volatile organic emissions from vegetation, pollen or natural fires. There may be localized areas where noise emissions reflect road noises and recreational and exploration activities. The existing wilderness areas surrounding the Project site may be considered as Class 3 (a rural area with an acoustical environment that is dominated by natural sounds having little or no road traffic).

Ambient light at the site at night is currently primarily from natural sources (moon). There are no local man-made sources of existing light, although there will be light given off by the Crawford Project during the construction, operation, and closure phases, and periodically along Highway 655. Air quality, ambient light, and noise baseline studies have been initiated for the site and will continue through 2022.

4.6.2 AMBIENT RADIOACTIVITY

Not applicable to the Crawford Project.

4.6.3 PHYSIOGRAPHY AND GEOLOGY

The Project is located in an area of gently rolling topography typical of the glaciated Canadian Shield. Site elevations range from about 265 and 290 metres above sea level (masl), with topographic relief averaging about 15 m. Low-lying ground is covered by deeper glacial till and muskeg / swamps. As with most of northern Ontario, the site is crossed by a number of minor waterbodies and tributaries to larger rivers. The Project site is located primarily between the North Driftwood River and the West Buskegau River. The site is located in an area of relatively low seismic activity.

4.6.4 GEOCHEMISTRY

Canada Nickel has initiated geochemical assessments of anticipated mineral wastes from the Project, including both waste rock and tailings. Geochemical characterization to evaluate acid rock drainage and metal leaching (ARD / ML) characteristics of ore and waste rock is being completed in stages. The objective of the initial phase, which started in March 2021, was to gain an understating of the geochemistry of main rock types. During this stage, acid-base accounting, metals, and shake flask extraction analyses were completed on fifty-five drill core samples representing the five major waste rock and ore lithologies. Kinetic testing to assess the potential for metal leaching from waste rock was initiated on one sample for each lithology in October 2021; the tests have been running for more than twenty weeks. Early results from the static and kinetic test work completed to date are favourable, suggesting that ARD / ML will not be a significant concern. A more comprehensive program, including static and kinetic testing on approximately 300 samples, is ongoing to confirm the initial results on the waste rock and to collect data on tailings, overburden, and low grade ore.

4.6.5 SURFACE WATER AND GROUNDWATER

HYDROLOGY

All streams and rivers in the Project area are part of the Hudson Bay watershed. The Project site is mainly located in the headwaters of the West Buskegau River and North Driftwood River watersheds, with a small portion of the site extending into the Jocko Creek watershed. The West Buskegau River has a total drainage area of approximately 167 km^2 where it crosses the Project site and drains north into the Buskegau River that ultimately drains into the Frederick House River and Abitibi River. The North Driftwood River has a total drainage area of approximately 97 km2 where it crosses the Project site and drains north into the Lower Abitibi River that ultimately drains into the Abitibi River. Jocko Creek has a drainage area of approximately 116 km^2 at the confluence with Kidd Creek, which flows into the Mattagami River. The Lower Sturgeon dam is located on the Mattagami River and controls the flow rate of the river downstream from the dam. Each of the watercourses are characterized by slow flowing, low-gradient channels with steep sides and active beaver dam activity.

SURFACE WATER QUALITY

Results of summer and fall water sampling results indicate waters are generally typical of natural environments in northeastern Ontario. Sampled sites are generally of circumneutral pH, low to moderate hardness, and have low concentrations of nutrients (i.e., nitrate, nitrite, ammonia) and anions (e.g., chloride, sulphate). Levels of total suspended solids and total dissolved solids are low.

Similarly, concentrations of total and dissolved metals are very low, often at or below analytical detection limits, with results for most parameters consistently below applicable water quality guidelines for the protection of aquatic life.

HYDROGEOLOGY

Regional overburden is dominated by organics overlying deposits consisting of silts and clays, and till overlying bedrock. A deposit of coarse sand and gravel is located in the southwest corner of the property.

Local groundwater flow is anticipated to be similar to surface drainage. Shallow groundwater flow in the eastern portion of the site is interpreted to flow east towards the West Buskegau River while the western portion of the site is interpreted to report to the North Driftwood River, similar to surface water flow. Local groundwater flow directions will be confirmed once data from monitoring wells has been surveyed. Groundwater monitoring wells have been installed at select locations to sample groundwater quality.

4.6.6 TERRESTRIAL ENVIRONMENT

FLORA AND VEGETATION COMMUNITIES

Extensive vegetation inventories have been undertaken and provincially rare plants were documented. Twenty-five distinct plant communities (upland and wetland) were recorded. Coniferous forest and swamp communities dominate the area within the Property boundary.

Of the species present, 85% are native to Ontario, and 15% are non-native species. Black Ash was recorded at two locations and is a species of conservation concern that is widespread and common but in rapid decline due to the invasive Emerald Ash Borer Beetle.

MAMMALS

Aerial surveys identified a total of six mammal species. Moose were directly observed during the surveys. Tracks of Moose, River Otter, Wolf, Lynx, American Marten and Snowshoe Hare were observed throughout the investigation area.

Although the Project is located along the southern boundary of the Kesagami Caribou Range for Woodland Caribou, field studies initiated in 2021 and continued in 2022 have not identified the presence of Woodland Caribou in the area. The southern portion of the range in the area of the Crawford Project has been previously impacted by human activity, most notably timber harvest and settlement, with highly fragmented mature coniferous forest areas remaining and consequently the likelihood of occurrence of Caribou is minimal.

BAT SURVEYS

Surveys were conducted across the study area in 2021 for bat maternity roosting habitat. In general, snag density was highly variable, with findings indicating that nearly all deciduous or mixed forests in the investigation area have a relatively high number of cavity trees to support bat maternity roosts.

None of the locations of exposed bedrock identified through desktop mapping were assessed as suitable overwintering habitat for bats during field surveys.

During bat detector surveys, the most frequently recorded species was Silver-haired Bat, followed by the Hoary Bat. No passes of Big Brown Bat could be confirmed.

MIGRATORY BREEDING BIRDS

A total of 81 bird species were recorded during targeted surveys for migratory breeding birds in 2021. From the 81 bird species documented in 2021, the most abundant species were White-throated Sparrow, Swainson's Thrush, and Blue-headed Vireo. An additional 15 bird species were recorded incidentally during other investigations. Two avian species of conservation concern were documented, Olive-sided Flycatcher and Canada Warbler, both provincially designated as Special Concern in Ontario.

Data collected at acoustic monitoring stations specifically targeted avian species of conservation concern (Canada Warbler, Rusty Blackbird, Common Nighthawk, Eastern Whip-poor-will, Evening Grosbeak, Olive-sided Flycatcher, and Yellow Rail). The bird detector analysis did not detect any avian species of conservation concern, and no Eastern Whip-poor-will or Common Nighthawk were found during crepuscular bird surveys.

OTHER BIRDS

Many large birds, including some raptors (i.e., hawks, eagles, osprey, falcons, vultures, and owls), Common Ravens, and herons, typically nest in large trees. These species, as well as their nests, were searched for during aerial surveys.

Two Bald Eagles were recorded during targeted aerial surveys for stick nests in 2021, although none were found within the proposed development area

CULTURALLY IMPORTANT SPECIES

Canada Nickel understands that there are culturally important species to Indigenous Peoples. As such, Canada Nickel is working with Indigenous Peoples to identify these important species and will ensure they are carried through the IA, as applicable. These will be identified through engagement activities, country foods assessments, and Indigenous Knowledge studies on which Canada Nickel is currently engaging with Indigenous Peoples.

4.6.7 FISH AND FISH HABITAT

Aquatic baseline studies were undertaken since 2021 on the Crawford Project site and nearby, including of the following watercourses and associated tributaries:

- West Buskegau River;
- North Driftwood River; and
- Mattagami River.

The studies included fish habitat and community assessments, fish collection for fish tissue analyses, and benthic invertebrate and sediment analyses.

The fish habitat within the river systems in the area of the Crawford Project is typical of northeastern Ontario, composed of channels with dense shrubby riparian vegetation, wetland segments with ponds, as well as abundant evidence of beaver activity. The substrate is primarily composed of fine-grained sediment with high organic content attributed to the wetland habitats and also beaver inputs. Beaver dams provide some seasonal fragmentation of these watercourses; however, they do not pose year-round barriers to fish passage as demonstrated by fish presence throughout the sampled areas of the Project.

Preliminary observations from the initial baseline studies have documented the presence of 17 fish species within the investigation areas. The local fish communities are mostly represented by small bodied, forage fish species such as dace, shiners and minnows that prefer a cool water thermal regime. Some cold-water species such as Burbot are also present within these inland tributaries. Other large bodied fish species, including Northern Pike and White Sucker, are found mostly in their juvenile life stages, whereas adults of these species can be found within the larger waterbodies such as Gerry Lake and Martin Lake, as well as the Mattagami River to the west of the Project.

Lake Sturgeon of the Southern Hudson Bay – James Bay population are listed as Special Concern under the federal *Species at Risk Act* and are known to occur within the Mattagami River. The baseline studies to date have not detected Lake Sturgeon within the study areas. In addition, fish community study results from surveys provided by the Ministry of Natural Resources and Forestry (MNRF) do not include the presence of Lake Sturgeon within the reach of the Mattagami River downstream of the Lower Sturgeon generating dam. Additional studies are planned by Canada Nickel for the 2023 field season

4.6.8 SPECIES OF CONSERVATION CONCERN

Species of conservation concern, including Species at Risk, have been identified as present or potentially present within the Project site and in the local area, through desktop review and field observations. Discussions have been initiated with MECP regarding information sharing for species of conservation concern, and determination of next steps to be undertaken in support of mitigation measures which may be required for development of the Project.

While aerial surveys have not identified the presences of Woodland Caribou in the Project area, the Crawford Project is situated at the southern boundary of the Kesagami Caribou range. Woodland Caribou are listed as Threatened under both federal (Species at Risk Act; SARA) and provincial (Endangered Species Act; ESA) legislation.

Species currently known to be present within Project footprint or locally, as observed during field investigations:

- Little Brown Myotis (SARA: Endangered; ESA: Endangered);

- Canada Warbler (SARA: Threatened; ESA: Special Concern);
- Olive-sided Flycatcher (SARA: Threatened; ESA: Special Concern);
- Bald Eagle (SARA: no status; ESA: Special Concern); and
- Black Ash (currently no protection under SARA or ESA);

Other species potentially present based on desktop review and / or comments received, but not observed during field investigations are listed below. Canada Nickel is mindful that observations may occur, however based on the extent of the field studies conducted so far, the likelihood of observing these species during additional field campaigns is limited. As such, apart from the Lake Sturgeon, no additional field campaigns is planned regarding these species.

The species include:

- Northern Myotis (SARA: Endangered; ESA: Endangered);
- Tricolored Bat (SARA: Endangered; ESA: Endangered);
- Bank Swallow (SARA: Threatened; ESA: Threatened);
- Blanding's Turtle (SARA: Threatened; ESA: Threatened);
- Common Nighthawk (SARA: Threatened; ESA: Special Concern);
- Monarch Butterfly (SARA: Special Concern; ESA: Special Concern);
- Yellow-banded Bumble Bee (SARA: Special Concern; ESA: Special Concern); and
- Lake Sturgeon (SARA: Special Concern; ESA: Special Concern).

Species which are not anticipated to be present in the Project area based on habitat suitability or other information are listed below. Canada Nickel is mindful that observations may occur, however based on the current lack of observations during field investigations, additional targeted studies for these species are not warranted.

The species include:

- Red-headed Woodpecker (SARA: Threatened; ESA: Special Concern);
- Yellow Rail (SARA: Special Concern; ESA: Special Concern); and
- Peregrine Falcon (SARA: no status; ESA: Special Concern);

4.6.9 *MARINE ENVIRONMENT AND MARINE GEOHAZARDS*

The Crawford Project is situated inland and will therefore have no associated marine components.

4.7 SOCIAL, ECONOMIC AND HEALTH CONTEXT

4.7.1 *SITE HISTORY*

Crawford Township has been an area of interest for its mineral potential since 1955, with many mining companies and government bodies investigating the area. A rich base metal deposit in Kidd Township, now the site of the Kidd Creek Mine was discovered in 1963, which led to significant exploration in Crawford Township between the 1960s and 1970s. The inaugural exploration team was the International

Nickel Company of Canada Limited, who began exploring Crawford Township in the 1960s by testing several geophysical anomalies. This was followed by a few diamond drilling programs, including by Abitibi-Price Mineral Resources in the 1980s. The Project site was more actively explored starting in 2017, with airborne surveys undertaken by Noble Exploration in the area in 2017 and 2018. Additional diamond drilling on the Project site was carried out under a joint venture agreement by Noble Exploration and Spruce Ridge Resources starting in November 2018 with a 2,000 m program, followed by a second 4,000 m drill program starting in September 2019. In October of 2019, Noble Exploration announced the creation of Canada Nickel Company, with a 100% interest in the Crawford property, and with interests of Spruce Ridge Resources sold to Canada Nickel Company. Since that time, work undertaken on the Project site has consisted of exploration and resource definition drilling, and geotechnical drilling in support of ongoing engineering studies.

4.7.2 SOCIAL CONTEXT

The Project is located in the geographic townships of Crawford, Carnegie, Kidd, Lucas and Prosser within the Cochrane District, and is anticipated to affect or be of interest to the City of Timmins and towns of Cochrane, Iroquois Falls and Smooth Rock Falls. The Project site is located approximately 20 km from the nearest railhead. To the north of the Project site is provincial Highway 11. Parallel to Highway 655 is a major hydro transmission line; while another hydro transmission line runs parallel to the Project site, approximately 4 km east of the site. A hydro-electric generating station, Lower Sturgeon, is located along Mattagami River to the west, within the boundaries of Mahaffy Township. The Project site is accessible by Highway 655, which provides year-round access and leads directly north from Timmins to Ontario Highway 11. Supplies, such as food, fuel, lodgings and equipment required for mining and exploration work, are available in Timmins, Cochrane, Smooth Rock Falls and Iroquois Falls (Figure S.2).

4.7.2.1 MUNICIPALITIES

The total population of Cochrane District is 77,965, and is projected to decline between 2021 to 2046 (Ontario Ministry of Finance, 2022).

The City of Timmins is located approximately 43 km south of the Project by road, and is the regional mining centre and largest municipality in the area. There are a number of well-established operating mines in the area, as well as businesses which provide supporting goods and services for the industry. The City of Timmins is readily accessed by the provincial highway network (Highway 144, Highway 655 and Highway 101), as well as by air with several commercial flights per day from Toronto servicing the Victor M. Power airport, which is approximately 45 km from the Project site by road.

In 2021, Timmins had a population of 41,145, which is a decline of 1.5% from 2016, and a density of approximately 14 people per km^2, compared to the provincial average for population density of 16 people per km^2 (Statistics Canada, 2022a). The median age in Timmins is 42 years, which is similar to the Province's median age. The city has a balanced sex ratio, and over 66% of the population is in the age group of 15 to 64 years (Statistics Canada, 2017a). Approximately 51% of the population in Timmins also knows both official languages (Statistics Canada, 2017a). Timmins features recreational activities such as fishing, camping, trapping, hunting, snowmobiling, and skiing. In addition, there are sporting events, music festivals and cultural gatherings.

The Crawford Project is also close to the Town of Cochrane, which is located along Highway 11 in the Cochrane District, 63 km northeast by road from the Project site. Cochrane had a population of 5,390 in 2021, which indicates a 1.3% increase in population since 2016. According to the 2021 Census, the median age in the town was 44 years, with 61.5% of the population between the ages of 15 and 64 and about 21% of the population over age 65. The total population has an equal proportion of women and

men. Approximately 52% of the population in Cochrane know both official languages (Statistics Canada, 2017a). The local area surrounding Cochrane supports several recreational activities such as camping and fishing (Tourism Cochrane, 2022). Furthermore, Cochrane is easily accessible by air, rail, and bus service. Cochrane has a municipal airport, which serves as a hub for passengers and freight to the James Bay Coastline, as well as private and executive charters and medivac flights. The Cochrane Railway Station is operated by Ontario Northland Transportation Commission (ONTC) and is part of the Polar Bear Express route (Town of Cochrane, n.d.). ONTC also provides an out-of-town motor coach bus service.

The Town of Iroquois Falls is located 112 km by road from the Crawford Project. Iroquois Falls had a population of 4,418 in 2021 which is a 3% decline from the 2016 population (Statistics Canada, 2022a). The median age was 48 years, with 61% of the population within the 15 to 64 years age group and 23% of the population in the age group of 65 and over. The overall population has an equal proportion of women and men. However, women represent a higher proportion of those aged 65 and older. Approximately 55.3% of the population in Iroquois Falls know both official languages (Statistics Canada, 2017b). In terms of recreational activities and facilities, the Town of Iroquois Falls has many snowmobile and skiing trails, along with several other recreational venues and annual festivals. ONTC serves Iroquois Falls, primarily providing freight and bus services and the municipality also features a regional airport. This airport is primarily used for medical transfers, private users and flying club (Town of Iroquois Falls, 2018).

The Town of Smooth Rock Falls is located 63 km by road from the Crawford Project. Smooth Rock Falls had a population of 1,200 in 2021, which is a population decrease of 10% from 2016 (Statistics Canada, 2022a). The median age in Smooth Rock Falls is 58 years, with approximately 54% of the population between the ages of 15 to 64 years old. Men represent a higher proportion of the total population of Smooth Rock Falls, except for those aged 0 to 14 where there is an equal proportion of men and women. Approximately 69.9% of the population Smooth Rock Falls know both official languages (Statistics Canada, 2017b). Smooth Rock Falls offers a variety of recreational activities. The snowmobile trails include a French program called Aventure Nord (Town of Smooth Rock Falls, 2022a) and some trails include the Northern Corridor du Nord. ONTC also provides transportation and freight to Smooth Rock Falls (ONTC, 2022)

4.7.2.2 INDIGENOUS PEOPLES

There are no First Nation Reserve lands proximal to the site (Figure S.2, Table 3), although the Project site is anticipated to be within proximity to the Traditional or operating region of several Indigenous Peoples that have expressed interest in the Project:

- Taykwa Tagamou Nation, located approximately 45 km northeast from the Project site in the Cochrane District along the Abitibi River;
- Flying Post First Nation, located approximately 59 km southwest of the Project site;
- Matachewan First Nation, located approximately 100 km southeast of the Project site;
- Mattagami First Nation, located approximately 115 km south of the Project Site along the Mattagami River;
- Apitipi Anicinapek Nation, located approximately 104 km southeast of the Project site; and
- Métis Nation of Ontario – Region 3.

Taykwa Tagamou Nation has two Reserves: New Post 69 and New Post 69A. They are a signatory to Treaty No. 9 and are members of the Mushkegowuk Council and Nishnawbe Aski Nation (Nishnawbe Aski Nation, n.d.; CIRNAC, 2021a). The registered population of Taykwa Tagamou Nation as reported to

Crown-Indigenous and Northern Affairs Canada (CIRNAC) as of October 2022 is 664, with 22% of the population registered on Own Reserve, 76% living Off Reserve, and 2% on Other Reserves. There was one individual registered on No Band Crown Land (CIRNAC, 2022a).

The Reserve lands of Flying Post First Nation result from the signing of Treaty #9 in 1905, 1906 and adhesions in 1929 and 1930. The Reserve lands are located approximately 75 km northwest of Timmins (Wabun Tribal Council, 2020). Flying Post First Nation is a member of the Wabun Tribal Council and the Nishnawbe Aski Nation (Nishnawbe Aski Nation, n.d.; CIRNAC, 2021b). Most of the First Nation members live near Nipigon (Wabun Tribal Council, 2020). The registered population of Flying Post First Nation as reported to CIRNAC is 313 people, most of whom are registered Off Reserve. There is one person registered and living On Reserve land (CIRNAC, 2022c).

Matachewan First Nation is located approximately 30 km north of the Town of Matachewan, Ontario and about 60 km west of Kirkland Lake, off Highway 66. Matachewan First Nation is a signatory to Treaty No. 9, signed by Matachewan First Nation on June 19, 1906 (Matachewan First Nation, n.d.) Matachewan First Nation is a member of the Wabun Tribal Council and the Nishnawbe Aski Nation (Nishnawbe Aski Nation, n.d.; CIRNAC, 2021b). The registered population of Matachewan First Nation as reported to CIRNAC as of October 2022 is 990, with 5% of the population registered on Own Reserve and 94% (921) registered Off Reserve. There were 3 individuals registered on Other Reserves, 3 individuals registered on Own Crown Land, and 3 individuals registered on No Band Crown Land (CIRNAC, 2022b).

Mattagami First Nation is located approximately 20 km northeast of Gogama and is accessible by road 5 km from Highway 144. Mattagami First Nation is a signatory to Treaty No. 9, signed by Mattagami First Nation on July 7, 1906. Mattagami First Nation is a member of the Wabun Tribal Council and the Nishnawbe Aski Nation (Nishnawbe Aski Nation, n.d.; CIRNAC, 2021b). The registered population of Mattagami First Nation as reported to CIRNAC as of October 2022 is 666, with 25% of the population registered on Own Reserve and 73% of the population registered Off Reserve. There are six individuals registered on Other Reserves and six individuals registered on No Band Crown Land (CIRNAC, 2022d).

Apitipi Anicinapek Nation is an Algonquin First Nation near Abitibi Lake. The Apitipi Anicinapek Nation in Ontario and the Pikogan in Québec (both historically part of the Apitipi Anicinapek band) signed Treaty No. 9 on June 1, 1906. In 1979, the Ontario community changed its name from the Abitibi Ontario Band of Abitibi Indians to Wahgoshig First Nation and on March 27, 2022, changed its name to Apitipi Anicinapek Nation (Apitipi Anicinapek Nation, 2022). Apitipi Anicinapek Nation is part of the Anicinape Nation and is a member of the Algonquin Anishinabeg Tribal Council in Québec, and the Nishnawbe Aski Nation in Ontario.

The registered population of Apitipi Anicinapek Nation as reported to CIRNAC as of October 2022 is 412, with 36% of the population on Own Reserve and 61% Off Reserve. There are 12 individuals registered on Other Reserves and 2 individuals registered on No Band Crown Land (CIRNAC, 2022e).

The Crawford Project site is located within Region 3, as defined by the Métis Nation of Ontario. The Métis Nation of Ontario has a Province-wide governance structure and is a Governing Member of the Métis National Council. The Métis Nation of Ontario exists to represent and advance the interests of the Métis Peoples of Ontario. The Métis Nation of Ontario has a Consultation Agreement with the Province of Ontario signed on July 31, 2015, that establishes a consultation process with members represented by Métis Nation of Ontario to consult on proposed actions and decisions that may impact asserted or established Indigenous rights (Métis Nation of Ontario, n.d.). Although demographic information specific to Ontario Region 3 Métis is currently unavailable, there are 120,585 self-identifying Métis people in Ontario, which notes a 40% increase from 2011 and an increase of 64% since 2006 (MIRR, n.d.).

4.7.3 ECONOMIC CONTEXT

Timmins, Cochrane, Iroquois Falls, and Smooth Rock Falls are within the boundaries of Cochrane District. The primary industries include mining, healthcare and social assistance, education, construction and retail trade (Statistics Canada, 2017c).

The average weekly earnings for mining, quarrying, and oil and gas extraction in Ontario in 2021 was $1,934 which is 1.66 times the average earnings across industries (Statistics Canada, 2022). Men made up a larger proportion of the population in mining, while women made up a higher proportion of the population in health care and social assistance for all four municipalities (Statistics Canada, 2017a; Statistics Canada, 2017b; Statistics Canada, 2017c). Barriers can exist to pursuit of employment opportunities in the mining industry. The risk of sexual harassment can limit participation rates of women within certain industries (Kansake et al., 2021). Women faced the highest risk of sexual harassment in the mining industry, with a rate of 72 reports per 100,000 workers according to a 2011 study of sexual harassment filed with the Equal Employment Opportunity Commission (PDAC, n.d.).

There are several mining operations within the District, including Newmont Porcupine and Glencore's Kidd Creek, as well as exploration programs, such as the West Cache Gold Project (Galleon Gold) and Fenn-Gib Project (Mayfair Gold). Canada Nickel cannot comment on the anticipated timelines, probabilities for these projects to move forward, the scale of their operations, or status of mine closure.

Eco-tourism is a popular recreational activity in the District, with activities including snowmobiling, ATV touring, camping, and water sports. A snowmobile trail crosses the Project footprint in the area of Mine Rock Stockpile #1. Available information indicates that there are no designated ATV trails, canoe or trail routes which overlap with the Project site (Adventure North Ontario, 2022). According to the Abitibi River Forest 2022-2032 Forest Management Plan (ARFMI, 2022), there are no recorded trapper cabins, access points, beaches, boat caches, clubhouses, designated camp sites, fishing access points, commercial campgrounds, main base lodges, outpost camps, shooting ranges, recreation camps, or youth camps in the Project site footprint.

Through engagement activities and primary research, Canada Nickel will engage and work with communities and Indigenous Peoples to gather information on economic activities and to understand potential impacts on those activities. The economic context of Indigenous Peoples will be assessed during the impact assessment process.

4.7.4 HEALTH CONTEXT

The Porcupine Health Unit (PHU) is in northeastern Ontario, primarily serving Cochrane District and the Town of Hornepayne. The head office is located in Timmins, with eight branch offices located throughout the serviced area.

It has been identified by the PHU that people in the District of Cochrane and surrounding area fare better than the Provincial average on some measures of well-being, such as:

- Higher levels of a strong, or somewhat strong, sense of community belonging (73.2% in PHU versus 70.9% in Ontario);
- Higher levels of self-reported physical activity during leisure time (60.9% PHU vs. 54.7% Ontario); and
- Higher compliance rates for vaccination of school-aged children (over 90% PHU).

However, in comparison to provincial averages, the residents with PHU service are experience the following challenges:

- Higher rates of population obesity (72.3% PHU vs. 61.5% Ontario), alcohol use (54.4% PHU vs. 44.4% Ontario) and smoking (27.8% PHU vs. 18.1% Ontario);
- Lower percentage of food secure households (86.5% PHU vs. 91.4% Ontario); and
- Higher rates of teenage pregnancy (2.5 times the Ontario average)

Residents within the PHU service area have a lower life expectancy with 4.4 years less than the provincial average for men and 4.1 years less for women. Residents also have heightened risks for potentially avoidable mortality issues e.g., deaths due to smoking, excessive drinking, or injuries (1.6 times Ontario). Residents within the PHU service area are also more likely to experience the following health events:

- Higher rates of hospitalization for conditions associated with lifestyle factors such as heart disease, diabetes, and injuries;
- Higher rates of chronic diseases such as asthma, diabetes, high blood pressure, mood and anxiety disorders; and
- Higher rates of sexually transmitted and blood-borne diseases such as chlamydia, hepatitis C, and gonorrhea (Porcupine Health Unit, 2021)

There is a significant gap in available data on First Nations on Reserve and Indigenous People living off-reserve within the PHU area (Porcupine Health Unit, 2021).

There are multiple effects pathways between mining and individual and social health, with gainful employment leading to positive health outcomes such as reduced economic stress and lower rates of mental health illness on one hand and conversely increased workplace stress and spending on gambling, drug and alcohol addiction, and prostitution and consequential sexually transmitted diseases. These problems can be amplified due to the influx of a migrant workforce with different economic, social and cultural values, and can adversely impact families and Indigenous women (Gibson and Klinck, 2005).

Timmins, Cochrane, Iroquois Falls, and Smooth Rock Falls are serviced by the PHU. Through engagement activities and primary research, Canada Nickel will evaluate health effects to human receptors from air and noise emissions, effluent discharges to waterbodies, and increased use of socio-economic infrastructure, such as schools, hospitals, emergency services, municipal services, transportation and communication networks, as a result of Project activities.

Through engagement activities and primary research, Canada Nickel will engage and work with Indigenous Peoples to gather information on health of Indigenous Peoples, including social determinants of health and community well-being, and how the Indigenous Peoples define these aspects. The Impact Statement, if required, will include a health impact assessment that examines the health and well-being of Indigenous Peoples and will use a gender-based framework to assess potential impacts. Canada Nickel will be completing additional primary research to understand community-specific plans that support improving well-being. This may include research with nearby municipalities, Indigenous Peoples, healthcare providers, and diverse population groups.

4.7.4.1 OPIOID CRISIS IN NORTHERN ONTARIO

The rates of emergency department visits for opioid toxicity and opioid-related mortality in Ontario doubled from 2017 to 2021. During the same period, the rates of emergency department visits for opioid toxicity increased by five times and rate of opioid-related mortality increased by 20 times in the Porcupine Health Unit (Ontario Agency for Health Protection and Promotion, 2022). This may be due to lower availability of services in rural and remote regions, making it difficult to reach those at highest risk of

overdose (Gomes, et al., 2021). The rate of opioid-related deaths during the Covid-19 pandemic in northern Ontario was three times that of southern Ontario (Gomes, et al., 2022).

5.0 FEDERAL, PROVINCIAL, INDIGENOUS AND MUNICIPAL INVOLVEMENT AND EFFECTS

5.1 FEDERAL FUNDING

There is no anticipated federal funding for the Crawford Project.

5.2 FEDERAL LANDS NEEDED

There are no federal lands required to carry out the Project, including Reserve lands.

5.3 FEDERAL, PROVINCIAL AND MUNICIPAL ENVIRONMENTAL APPROVALS

A number of environmental approvals will be required at both the federal and provincial levels to allow for development of the Crawford Project. A summary of these approvals as currently understood is provided in Tables 4 and 5.

- Federal

In addition to the potential requirement for completion of an IA for the *Impact Assessment Act*, the Crawford Project may require federal approvals related to the *Fisheries Act*, *Canada Navigable Waters Act*, and *Aeronautics Act*, pending additional regulatory guidance. Fisheries and Oceans Canada (DFO), ECCC, Transport Canada and NRCan have a broad range of responsibilities, and are the federal departments primarily involved with approvals under the above statutes.

Table 4 provides a preliminary list of federal environmental approvals that could potentially be required for the Crawford Project. Others may arise through consultation with federal agencies.

5.3.1 *PROVINCIAL*

The Crawford Project may require completion of one or more provincial environmental assessment (EA) processes pursuant to the Ontario Environmental Assessment Act, depending on the final Project design. It is anticipated that an EA will be required for the disposition of Crown resources (Class EA for Resource Stewardship and Facility Development Project, Category B or C). There is also the potential that there could be an EA requirement related to the provision of grid power to the site. A Class EA for Minor Transmission Facilities is expected to be required based on the preliminary design of a 230 kV transmission line of less than 50 km length, the relocation of the 500 kV transmission line, transformers and diesel generators. The same body of knowledge is commonly used to meet both the federal and

these provincial process needs in accordance with the existing Canada-Ontario Agreement on Environmental Assessment Cooperation.

A MTO Class EA for Provincial Transportation Facilities for the relocation of Highway 655 (Group B or C) is also expected to be required. This process is more strongly engineering-driven while having an environmental component, and may require separate documentation from the Impact Statement, pending regulatory advice.

The Ontario *Mining Act*, *Ontario Water Resources Act*, *Environmental Protection Act*, *Lakes and Rivers Improvement Act*, *Public Lands Act* and the *Ontario Heritage Act* contain associated regulations, guidelines and policies stipulating that relevant aspects of the natural and / or human use environments are to be protected against undue disturbance from industrial and other sources, except as provided through the granting of permits, approvals and authorizations.

Three primary provincial agencies are expected to be involved with approvals for the Crawford Project:

- MINES has a responsibility to ensure the orderly development of mineral resources in Ontario, including responsibilities for the disposition of provincial Crown lands for mining, and primary responsibility for mine closure activities and approval for mining-related dams located on land; as well as, the wise use of Crown resources not otherwise disposed, such as through the *Mining Act*, including natural heritage features;
- MECP grants permits and approvals that address Project aspects related to water and air quality (including sound), waste management, and Species at Risk; and
- MNRF is responsible for authorizations related to the disposition of some provincial Crown resources (such as aggregate and timber resources), issuing approval for dam construction and other works within water, activities which may affect aquatic species (such as relocation of fish and diversion of watercourses), and authorization of works occurring on provincial Crown Land.

The MTCS may also be involved with permitting of Project components, although no permits are expected to be issued. MTCS provides confirmation that appropriate archeological studies and mitigation, if required, have been completed for the Project.

The Ontario Energy Board has responsibility for energy-related approvals, including approval to construct transmission lines, and operates as an adjudicative tribunal, carrying out its regulatory function through oral or written public hearings.

Table 5 provides a preliminary listing of the provincial environmental approvals that are expected to be required to construct, operate and close the Crawford Project site based on the preliminary Project design.

There are no facilities planned in the Province of Québec, and no transboundary effects from the Crawford Project are anticipated with Québec or the USA.

5.3.2 *MUNICIPAL*

A small portion of the Project footprint is located within Kidd Township and within the municipal boundary of the City of Timmins. Project components within this area include portions of the Highway 655 realignment and the rail spur line. It is also noted that as part of the linear infrastructure corridor, the 230 kV transmission line proposed by TIP-1 will also pass through this area.

Canada Nickel will engage with the City of Timmins for any required municipal approvals associated with the infrastructure occurring on municipal lands

6.0 POTENTIAL EFFECTS OF THE PROJECT

Potential effects which may arise from development of the Crawford Project based on current information are presented in Tables 6 and Table 7.

Table 6 presents potential effects which may be subject to regulation under various federal environmental instruments, including the *Fisheries Act*, the *Migratory Birds Convention Act, 1994*, the *Species at Risk Act,* and the *Canadian Navigable Waters Act*.

Table 7 presents a preliminary listing of additional potential environmental and socio-economic effects which may arise from development of the Crawford Project.

These tables are preliminary and may be revised as a result of ongoing engagement activities, as well as the comprehensive effects assessment that will be completed as part of the IA process, if required.

6.1 CHANGES TO THE MARINE ENVIRONMENT

The Crawford Project is located inland, therefore this aspect is not applicable.

6.2 CHANGES TO FISH AND FISH HABITAT, AQUATIC PLANTS AND MIGRATORY BIRDS

A preliminary listing of changes to the following that may result from the construction, operation and closure of the Crawford Project associated with the following legislation is provided in Table 6:

- Fish and fish habitat as defined in subsection 2(1) of the *Fisheries Act*, through the overprinting of local watercourses and potential downstream flow reductions; and
- Migratory birds, as defined in subsection 2(1) of the *Migratory Birds Convention Act, 1994*, through the overprinting of terrestrial habitat which may support parts of the life cycle of affected species.

The timing of construction activities will be arranged in accordance with the appropriate freshwater fisheries timing and breeding bird windows for the Project area, unless otherwise approved by the applicable regulatory agency. Preliminary Project construction scheduling is currently in development.

As the Project is located inland, there are no associated ports or other marine facilities, and there will not be any risk associated with the introduction of aquatic invasive species arising from ballast water discharge, ship wash, or other similar activities.

There are no effects expected to federal fish Species at Risk as defined in subsection 2(1) of the Species at Risk Act (marine plants). None are known or expected to be present within the immediately adjacent watercourses based on the environmental baseline studies completed to date and published information.

Marine environments are not present. As such, there are no effects to other marine organisms such as sea turtles, marine benthic organisms or shellfish, or coral.

Water takings during construction and operations will comply with applicable guidance from DFO to avoid entrainment and impingement of fish.

Water will not be used for cooling purposes, and as such there will be no effects to the aquatic environment arising from the discharge of heated effluent.

6.3 POTENTIAL CHANGES TO THE ENVIRONMENT ON FEDERAL LANDS OR LANDS OUTSIDE ONTARIO

There are no federal lands near the Crawford Project site, and no development is planned to occur on federal lands. The Crawford Project is not expected to result in changes to federal lands, including Reserve lands.

The Crawford Project is not of a scale or location that could result in changes to the environment outside of Ontario or Canada.

6.4 POTENTIAL EFFECTS TO INDIGENOUS PEOPLES – HERITAGE, TRADITIONAL LANDS AND OTHER

Canada Nickel acknowledges that the Crawford Project may result in effects to Indigenous Peoples and their culture, Treaty rights, and Traditional and current land uses. This could include potential changes to land access, loss of Traditional lands and ability to hunt, fish, gather and / or trap, as well as the ability to practice their culture. These potential effects will be investigated through the environmental approvals process for the Project, including during the IA process, if required, and ongoing engagement activities. Traditional Knowledge and Land Use studies will provide insights into Indigenous land use activities, such as approximate locations, frequency, and duration, to help identify sensitive receptor locations for the evaluation of effects from biophysical pathways of exposure and the human health risk assessment.

There is the potential that structures, sites or objects that are of historical, archaeological, paleontological or architectural significance to Indigenous Peoples could be affected by the Crawford Project, if present within the development area. None are currently known to be present but may be identified through ongoing engagement with potentially impacted Indigenous Peoples and the Project engineering and design process.

Initial preliminary desktop studies have identified areas of higher archeological potential, mostly on the banks of watercourses. A Stage 2 archeological field program is planned in 2023 to confirm the presence or absence of archeological features, and will be informed by Traditional Knowledge / Traditional Land Use studies which are currently ongoing.

In addition, the area comprising the Project footprint shown on Figure S.3 can be considered as an estimation of lands that would no longer be accessible for traditional land use. To address this, the site layout has been developed with an effort to reduce the footprint as practical.

Background research, information gathering, and checklist for the Project identified one potential cultural heritage landscape and two properties in the study area with buildings or structures more than 40 years old:

- The Mattagami River, used as a transportation route during the post-contact period and likely also utilized throughout the pre-contact period by Indigenous Peoples;

- Lower Sturgeon Generating Station, built 1923; and
- Kidd Creek Mine, began operations in 1964.

However, none of these are predicted to be directly or indirectly impacted by the Project.

6.5 POTENTIAL EFFECTS TO INDIGENOUS PEOPLES – SOCIAL, ECONOMIC AND HEALTH CONDITIONS

Canada Nickel is engaging with Indigenous Peoples to determine the potential impacts to health, social and economic conditions which may arise as a result of development of the Crawford Project.

Canada Nickel believes that the Crawford Project can provide an overall positive benefit to Indigenous Peoples, particularly regarding economic opportunities and the associated outcomes arising from improvements in economic circumstances. Key initiatives to support this effect include opportunities for employment, commerce, and contribution programs. Engagement with Indigenous Peoples throughout the assessment will help Canada Nickel understand the needs of diverse population groups to potentially help enhance employment opportunities through strategic, targeted programs.

Canada Nickel acknowledges the potential for impacts to Indigenous Peoples, including diverse population groups (such as Indigenous women, youth, elders) and localized effects to individuals or groups of individuals who may exercise Traditional land use rights in the area, connected with development of the Crawford Project. Potential impacts will be assessed in the Impact Statement, and may include:

- The effect of developments on historic and current lands and resource uses, and ways of life / culture;
- Effects of Project emissions and effluents to human health through biophysical pathways including quality of air, recreational and drinking water, noise and country foods;
- Changes to community well-being;
- Contribution to cumulative effects already being experienced in the region; and
- Impacts to physical and social infrastructure in the region, including road safety, availability of social services, increased pressure on recreational facilities, etc.

These potential effects will be determined through ongoing engagement activities and the environmental approvals process for the mine. Canada Nickel is engaging with Indigenous Peoples to develop Traditional Knowledge and Land Use studies and country foods studies to document the socio-economic baseline and to understand the culture and history of Indigenous Peoples within the local and regional area of the Crawford Project. Information gathered through the Traditional Knowledge and Land Use studies will be used to inform baseline conditions, identify impacts through effects pathways, and define mitigation measures as appropriate. Traditional Knowledge will be validated with Indigenous Peoples to ensure information is reflected and used appropriately.

6.6 ESTIMATE OF GREENHOUSE GAS EMISSIONS

The Crawford Project will include sources of direct and indirect greenhouse gas emissions. Combustion of fossil fuels will produce carbon dioxide (CO_2), nitrous oxide (N_2O), and methane (CH_4). Primary sources of emissions are as follows:

- Construction phase: diesel combustion in mobile equipment, blasting, and indirect emissions from purchased electricity;
- Operation phase: diesel combustion in mobile equipment, blasting in the open pit, processing of ore, and indirect emissions from purchased grid power; and
- Closure phase: diesel combustion in mobile equipment.

In accordance with the Strategic Assessment of Climate Change guidelines (ECCC 2020), and the Draft Technical Guide Related to the Strategic Assessment of Climate Change (ECCC 2021) net greenhouse gas emissions associated with the Crawford Project were estimated for each of the construction, operation, and closure phases. Sources, sinks and reservoirs relevant to the Project were considered in order to estimate net greenhouse gas emissions for each year, as well as the total greenhouse gas emissions for the life of the Project.

The following sources and sinks were considered:

- Direct emissions included diesel combustion in stationary power and heat equipment, for mobile equipment used onsite, and released from explosive detonation;
- Acquired energy emissions are the purchased electricity that will be supplied for the Project; and
- Land use changes at the Project.

Emissions of each greenhouse gas were converted to units of carbon dioxide equivalent (CO_2Eq) using the Intergovernmental Panel on Climate Change Fourth Assessment Report AR4 (IPCC 2007), and consistent with Schedule 3 in the *Greenhouse Gas Pollution Pricing Act*. It is important to note that no carbon capture and storage was considered in the current estimation.

Greenhouse gas emissions were calculated for all phases of the Project life. The maximum net greenhouse gas emissions per year are estimated to be 470 kilotonne-CO_2Eq / year, which includes 440 kilotonne-CO_2Eq / year of direct emissions, and 30 kilotonne-CO_2Eq / year acquired electricity. The cumulative net greenhouse gas emissions for the total Project life are estimated to be 9,800 kilotonne-CO_2eq. The potential loss of carbon uptake due to changes in land use were estimated at 110 kilotonne-CO_2Eq / year.

Should an Impact Statement be required, a detailed assessment of greenhouse gas emissions and mitigation measures will be undertaken in support of that document.

The Crawford Project has a number of design elements aimed at reducing greenhouse gas emissions, including:

- the use of electricity from the provincial grid will provide the Project with low carbon intensity energy;
- grid power will be used to meet Project stationary equipment power demands, thereby reducing direct greenhouse gas emissions at site;
- mine planning will optimize distances travelled by haul trucks;
- the use of energy-efficiency equipment such as electric trolley assist and electric rope shovels; and
- an equipment maintenance program will also reduce fuel consumption and the associated greenhouse gas emissions.

Canada Nickel also understands that carbon offset and carbon capture projects can be a practical and complementary option to support the organization's efforts to reduce greenhouse gas emissions, and ultimately achieve a net zero carbon target for 2050. One measure includes the mineral carbonation of tailings, discussed in the following section. Based on the research completed so far, this measure itself

has the potential to offset carbon emissions from the Project. However, the estimation of net emissions presented above does not consider any carbon capture and storage from the mineral carbonation.

6.6.1 *MINERAL CARBONATION OF THE CRAWFORD TAILINGS*

The tailings and waste rock produced by the Crawford Project spontaneously and permanently capture CO_2 when exposed to the atmosphere. Canada Nickel is developing processes anticipated to optimize the carbon capture potential of the Project to offset Project emissions. Though some degree of carbon capture will occur regardless of additional actions taken by Canada Nickel, research and development around methods for enhanced carbon capture at the Crawford Project is ongoing at this stage, leaving results for total potential sequestration quantities unconfirmed. Therefore, no carbon capture is included in the estimation of net emissions. However, Canada Nickel is actively reassessing the potential to include carbon capture in the net emissions calculation. Globally, Canada Nickel is working towards developing the Crawford Project as a potentially carbon negative mining operation. Additional research is currently in progress at Kingston Process Metallurgy to further demonstrate the potential and optimize the carbon capture and storage that can be achieved with the tailings.

6.7 WASTES AND EMISSIONS

A brief summary of the types of wastes and emissions that may be generated from the Crawford Project, in the air, in or on water, and in or on land, during the construction, operation, closure phase of the Project is provided in Table 8.

6.7.1 *ATMOSPHERIC EMISSIONS*

AIR EMISSIONS

Air emissions for the Crawford Project will largely be derived from fugitive sources, with additional smaller quantities derived from point sources.

Fugitive dust can be expected to be released from:

- Drilling and blasting operations;
- Loading and offloading of overburden, mine rock and ore;
- Vehicle and heavy equipment travel; and
- Wind entrainment from the TMF / stockpiles and other exposed earth materials.

Due to the presence of chrysotile within the deposit, quantification of chrysotile will be completed and, if required, programs developed for managing chrysotile in airborne dust.

Suspended particulate from conveyors and crushing equipment is expected to be the primary point source emission for the Crawford Project. Measures will be taken to minimize dust creation at the plant site including during crushing, and to utilize dust collection devices where practical. Additional dust control will be installed if needed.

Diesel fuel combustion, such as in vehicle and heavy equipment during all Project phases will release particulates, sulphur dioxide, and nitrogen oxides from the combustion of fuel. Nitrogen gases, carbon dioxide and other trace gases will also be released from explosives usage.

General dust control for vehicle and heavy equipment travel will be implemented to minimize airborne dust generation from roads on site.

GREENHOUSE GAS EMISSIONS

Greenhouse gas emissions will be derived principally from diesel fuel combustion in heavy equipment operation, with lesser amount arising from other fuel sources such as gasoline. Grid power will be used to meet Project stationary equipment power demands, thereby reducing direct greenhouse gas emissions at the site.

NOISE EMISSIONS

Noise source modeling will be carried out to ensure that noise and noise related effects and mitigation are fully considered during engineering design.

The principal anthropogenic noise sources during the operation of the Crawford Project are expected to be from the operation of heavy equipment for construction and handling of mine materials (mine trucks, shovels, loaders, etc.). Plant site operations, including crushing and grinding operations, will be enclosed and emissions are expected to be minor in comparison to open air noise sources. Blasting from open pit operations will also contribute to noise emissions. Blasts are expected to occur at a maximum rate of once per day, with a very limited duration of one to two minutes.

During the mine construction and closure phases, there will be heavy equipment operation that will contribute to noise emissions, albeit at a lower expected level than during the operations phase of the Crawford Project.

6.7.2 *LIQUID DISCHARGES*

MINEWATER AND SURFACE CONTACT WATERS

Contact water on the site, coming from direct precipitation and groundwater inflows, will be collected using ditches and sumps. It will then be directed to a system of collection and sedimentation ponds for management. Modelling will be completed to assess the quantity of water to be managed, which will be used in the design of the water management facilities on site.

More specifically, mine water, including both direct precipitation and groundwater inflows into the pit, will potentially contain:

- Suspended solids from general mining and earthmoving activities;
- Ammonia residuals from ammonia-based explosives; and
- Residual hydrocarbons from heavy equipment operation.

The majority of site runoff (contact water other than mine water) is not anticipated to pose a water quality concern. Runoff from the ore, mine rock and overburden stockpiles may contain suspended solids as well as some level of dissolved metals (ore, tailings and mine rock only). Although preliminary geochemistry results suggest very low dissolved metals concentration, the monitoring of water quality would cover a wide range of parameters, likely including arsenic, copper, lead, nickel, zinc, selenium, mercury, chromium, cobalt, and iron.

Contact water will be used as the primary freshwater supply to the process plant. When required, excess water will be discharged to the environment after treatment. A water management plan is currently being developed to ensure that excess water meets all regulatory requirements and can be discharged to the environment. A water treatment plant will be established, if required.

PROCESS PLANT AND TAILINGS WATER

Excess process plant water, including water resulting from tailings thickening, is expected to contain metals and residual processing reagent products. Effluent may be treated within the plant and recycled in the process or may be directed to a sedimentation pond. All effluent discharged from the site will be managed and treated such that it will meet regulatory requirements.

DOMESTIC SEWAGE

Domestic sewage waste will be limited at the Crawford Project as there will not be a permanent accommodations complex at the site. Waste will be generated from washroom facilities in the office and administrative complex as well as the mine dry. During the construction and operations phases domestic sewage will be treated by an appropriately sized method, such as a sewage treatment plant. Effluent meeting regulatory requirements will be either directed to a pond on site or discharged to the environment.

6.7.3 *SOLID WASTES*

DOMESTIC WASTE

Domestic wastes produced at the Project site during all Project phases are anticipated to include the following:

- Food waste;
- Clothing;
- Scrap metal;
- Glass;
- Plastic; and
- Fibrous material (wood and paper).

These materials are expected to be transported off site for management according to regulations. Canada Nickel will evaluate the feasibility of segregating waste streams (domestic waste, recyclable materials) and available facilities in order to reduce the amount of material directed to a landfill.

SPECIAL MANAGEMENT WASTE

Special management wastes at the site are expected to include:

- Vehicle maintenance wastes (waste petroleum products, waste glycol, and packaging);
- Petroleum contaminated soil (in case of a spill);
- Waste explosives; and
- Biomedical waste.

Special management wastes produced during the construction, operations, and closure phases of the Crawford Project will be stored indoors and/or in sealed containers in an area with secondary containment until they can be transported to an appropriately licensed facility off site.

DEMOLITION WASTE

Salvageable machinery, equipment and other materials will be dismantled and taken off site for sale or re-use if economically feasible. A dedicated non-hazardous landfill may be developed on site during the closure phase for storage of demolition wastes, such as concrete, steel, wallboard and similar materials.

6.8 LAND AND RESOURCE USE

6.8.1 *RESIDENTIAL LAND USE*

There are no anticipated effects to residential land use as there are no residential properties near the area to be developed by the Crawford Project.

6.8.2 *AGRICULTURE*

There are no agricultural properties situated in the area to be developed by the Crawford Project and therefore there are no anticipated effects to agricultural land use, including effects to livestock health and productivity.

6.8.3 *VIEWSCAPES*

Highway 655 between Timmins and Cochrane will be re-routed around Project components, as it currently runs through the area which will become an open pit. Waste rock stockpiles, which will rise up to 100 m above the generally low-relief terrain in the area, will be visible from the re-routed highway. As there are no permanent residents in the area, this change would be experienced for a brief duration as drivers transit through the immediate area of the Crawford Project and is not anticipated to have an effect on the well-being of residents of the surrounding communities.

6.8.4 *TOURISM*

A snowmobile trail has been identified which crosses through the footprint of the Crawford Project. Through communications to date with local snowmobile clubs, it is determined that some trails may require relocation for the construction and operation of the Crawford Project. These trails are planned for relocation off-season to reduce interruptions to participant activities.

Based on information available through online tourism and municipal platforms as well as the 2022-2023 Forest Management Plan, there are no designated canoe routes, hiking or biking trails, ATV trails, outfitters, outdoor experiences, tours, provincial parks, or other resource-based tourism activities, aside from the snowmobile trails, situated in the area to be developed by the Crawford Project. There is a Bear Management Area located in proximity to the Project, though through preliminary discussions with the owner it is believed there will be no impact to any associated activities. As such, there are no anticipated direct effects to the aforementioned tourism activities.

6.8.5 *TRAFFIC*

A potential increase in traffic volume is expected on Highway 655 due to the commuting of the workforce needed at site. There is a potential effect on health and safety, travel time, noise, and on the durability of the road pavement.

6.9 COMMUNITY WELL-BEING

6.9.1 *EFFECTS TO LANGUAGE*

The workforce for the Crawford Project is expected to largely be drawn from the surrounding communities. As such, there is not expected to be an anticipated effect on language in the region arising from the development of the Crawford Project.

6.9.2 *EMPLOYMENT OPPORTUNITIES*

Canada Nickel will place an emphasis on hiring Indigenous Peoples and from local communities as practical to meet anticipated workforce demands. Canada Nickel is working with local training, education, immigration, and recruitment institutes to begin early planning to meet Project workforce requirements. Relating to these institutions, particularly those for education and training, this collaboration includes review of available programs, potential development of new programs, and support from Canada Nickel in developing or enhancing the relevant programs where necessary, for example, supplied through letters of support and provision of subject matter expertise.

Canada Nickel is committed to Diversity and Inclusion in its hiring and day-to-day operations, and has discussed with education and training partners, as well as knowledgeable local organizations such as Keepers of the Circle, the Stardust Alliance, the Far Northeast Training Board, and the Rural Northern Immigration Pilot, the importance of emphasizing opportunities for those groups underrepresented in the labour market, including but not limited to youth and Indigenous women. Canada Nickel has and will continue to participate in events centred around raising awareness in underrepresented groups of opportunities in mining and encouraging engagement in local training programs already tailored to managing diverse, unique needs and access requirements.

Canada Nickel's own programs for training and hiring, as well as more formalized partnerships with local institutions, will be further developed at a date closer to Project initiation.

6.9.3 *TAXATION AND INFRASTRUCTURE*

With an increased population resulting from new mine operations, there is a potential for strain on existing infrastructure (Pembina Institute, 2008), however, the Province accrues tax revenue from mining, which can be used to offset some of this potential added strain. In 2020, mining contributed $7.5 billion dollars to Ontario's gross domestic product of which approximately 73% stayed in Ontario according to the Ontario Mining Association (Ontario Mining Association, 2021). Ontario taxes non-remote mines at 10% of annual operator's profit that exceeds $500,000 (Ministry of Finance, 2022). In addition, 1.5% of royalties were collected by the government of Ontario from mining in the previous decade (Celli, 2015). The Province is also able to recover tertiary tax dollars through personal income tax generated from a mine's active labour force. Tertiary tax dollars also include those generated from corporate taxation and Ontario's harmonized sales tax at 13%, a portion of which currently offsets infrastructure needs that may experience additional burden such as healthcare and transportation. The Province proposes expenditures to grow from $174.1 billion in 2021–22 to $188.1 billion in 2024–25, primarily to support services including health care, education and other critical investments (Ministry of Finance, 2022b).

6.9.4 *BARRIERS TO EMPLOYMENT*

The availability of affordable childcare is a barrier to employment. The average cost of childcare in Ontario as of 2018 was $11,500 per child, per annum. Accordingly, the average income earner in local municipalities and townships would spend between 17 to 19% of their income on childcare (Statistics Canada, 2017a). Furthermore, there are 23 childcare services in Timmins but 2 each in Cochrane and Iroquois Falls, and 1 in Smooth Rock Falls (PHU, n.d.). A combination of affordability issues and accessibility have a disproportionately negative effects on women, whose work hours decrease more than men with the presence of a child in the household (Moyser, 2017)

6.9.5 *SUBSTANCE ABUSE*

Residents within the catchment area of the PHU (which includes the Project area) experience significantly higher rates of illicit drug use compared to Ontario (50.6% PHU versus 39.8% Ontario average). In addition, an influx of male transient workers likely for employment in mining is correlated with increased rates of drug and alcohol consumption (Brown, 2003; Cullen, n.d.; Goldenberg et al., 2010). Given that there are nine health care facilities in the study area, with one specializing in substance abuse detoxification within Smooth Rock Falls, there is an increased risk to overwhelming current health care infrastructure (Porcupine Health Unit, 2022b). Potential mitigation measures could include workplace policies to discourage alcohol and drug abuse and support rehabilitation through drug testing and employee assistance programs designed to support treatment of workers with substance abuse problems (Lee, 2020).

6.10 OVERVIEW OF POTENTIAL ENVIRONMENTAL EFFECTS

Tables 6 and 7 provide an overview of changes to the environment and preliminary assessment of the potential effects of the Crawford Project.

Cumulative effects will be assessed in the Impact Statement in accordance with IAAC guidance, if required. The Impact Assessment Act requires that cumulative effects be considered that are likely to result from the designated Project in combination with other physical activities that have been or will be carried out. For the Crawford Project, it is anticipated this would include cumulative effects associated with the ongoing exploration program. Cumulative effects may also arise from other industrial developments in the area, including the Kidd Mine, which discharges effluent to Kidd Creek and ultimately the Mattagami River, as well as the North Timmins Gold Project (Gowest Gold) which discharges effluent to the West Buskegau River.

7.0 SUMMARY OF ENGAGEMENT

7.1 OVERVIEW

Canada Nickel was created at the end of 2019 and listed on the TSX Venture Exchange in early 2020. Canada Nickel set the basis of its stakeholder engagement strategy by hiring a Vice-President, Sustainability at the end of 2020 and a Community Relations and Communications Coordinator in June 2021. Initial discussions with Project stakeholders began in June 2021.

7.2 ENGAGEMENT WITH STAKEHOLDERS

7.2.1 *SUMMARY OF ENGAGEMENT WITH STAKEHOLDERS*

Various means of communication have been established, or are in the process of full development, to initiate and maintain dialogue between Canada Nickel and the surrounding communities and stakeholders of the Crawford Project.

- Information sharing by email regarding proposed activities, meetings, and Project updates;
- Newsletters (published quarterly, with the first issue released in October 2021);
- Project website with a community specific page (www.canadanickel.com / sustainability), which includes general Project information, Project documents (including publicly available meeting reports and summarized factsheets, as they become available), and an inquiry submission form;
- An email address dedicated to community relations (administered daily by the Community Relations and Communications Coordinator);
- Individual and group meetings (held primarily virtually during the COVID-19 Pandemic) with stakeholders;
- Meeting reports produced by the consulting firm Transfert Environnement et Société following scheduled meetings, distributed to participants for validation, and shared on Project website;
- Anonymous feedback surveys to collect stakeholder feedback on various subjects (the summary results of the feedback surveys were shared during early meetings and used in the development of the Project's Preliminary Engagement Plan);
- Factsheet summarizing the federal Impact Assessment (IA) Process and how Canada Nickel will integrate it into the Project's engagement process, made available at the Timmins Office and on the Project website;
- Factsheet summarizing the Project's Preliminary Economic Assessment, made available at the Timmins Office;
- Summary document for the Initial Project Description (IPD), made available on the Project website and distributed to public meeting registrants and to interested communities;
- Formation of a Community Contributions and Procurement Committee, consisting of select stakeholders (chosen by demonstrated interest or expertise) and focused on the implementation of

informed strategies and policies concerning local procurement and contributions, with meetings held quarterly;

- Formation of an Environmental Committee, consisted of select stakeholders (chosen by demonstrated expertise) and focused on review of the Crawford Project's potential environmental impacts and planned mitigation measures, with meetings held quarterly;
- A plan to establish a Labour and Training Committee, pending availability of sufficient information; and
- Letters posted to known cabins, hunting blinds, and other evidence of activity on all Canada Nickel properties inviting the user(s) to contact Canada Nickel for information on exploration activities and safe coordination of property use.

STAKEHOLDER CONTACTS

The following is a list of all stakeholders who have been contacted throughout Canada Nickel's engagement process:

- Abitibi Institute;
- Access Better Living;
- Apatisiwin Employment and Training Program;
- Arctic Riders of Smooth Rock Falls;
- Big Water;
- Black River-Matheson Township;
- Canadian Mental Health Association Cochrane-Timiskaming Branch;
- Canadian Parks and Wilderness Society – Wildlands League;
- City of Timmins;
- Cochrane Board of Trade ;
- Cochrane District Social Planning Council;
- Cochrane District Social Services Administration Board;
- Cochrane Economic Steering Board;
- Cochrane Local Citizens Committee;
- Collège Boréal;
- Ellevive;
- Far Northeast Training Board;
- Friends of the Porcupine River Watershed;
- Hardwood Lake Hunt Club
- Ininew Friendship Centre
- Iroquois Falls Cross Country Ski Club
- Jackpine Snowmobile Club
- Jubilee Centre
- Keepers of the Circle
- Living Space Timmins
- Mattagami Region Conservation Authority;
- Mattagami Region Source Protection Committee
- Mushkegowuk Environmental Research Centre
- Nature and Outdoor Tourism Ontario ;
- NORCAT
- Northern Claybelt Complex Conservation Reserve
- Northern College;
- Northglen Community;
- Northwatch;
- Ojibway and Cree Cultural Centre;
- Ontario Federation of Anglers and Hunters;
- Polar Bear Riders (Cochrane) Snowmobile Club;
- Porcupine Health Unit;

- Porcupine Prospectors and Developers Association;
- Porcupine Ski Runners;
- Land users around the Project footprint, including, though not limited to, land owners, trappers, bear management area operators, and bait harvesters ;
- South Cochrane Addiction Services;
- The Venture Center;
- Timmins and Area Women in Crisis;
- Timmins and District Multicultural Centre;
- Timmins ATV Club;
- Timmins Chamber of Commerce;
- Timmins Community Development Committee;
- Timmins Downtown Association ;
- Timmins Economic Development Corporation;
- Timmins Fur Council;
- Timmins Local Citizens Committee;
- Timmins Native Friendship Centre;
- Timmins Snowmobile Club;
- Town of Cochrane;
- Town of Iroquois Falls;
- Town of Smooth Rock Falls ;
- Workplace Safety North – Ontario Mine Rescue.

Government groups spoken with to date include:

- Hydro One Networks Inc. (Hydro One);
- Impact Assessment Agency of Canada (IAAC);
- Ontario Ministry of Natural Resources and Forestry (MNRF);
- Ontario Ministry of Mines (MINES);
- Ontario Ministry of the Environment, Conservation and Parks (MECP);
- Ontario Ministry of Tourism, Culture, and Sport (MTCS);
- Ontario Ministry of Transportation (MTO);
- Ontario Northland Transportation Commission (ONTC);
- Ontario Power Generation.;

7.2.2 *MAIN ISSUES*

Open discussions, feedback surveys, and the presentations given during summer 2021, fall 2021, and for the Initial Project Description in spring 2022 are the primary sources of feedback collection to date, in addition to some comments received via the community email address and during Canada Nickel's attendance at community and industry events. Comments and concerns voiced by Project stakeholders will be taken into consideration during Project design and implementation.

Key issues raised to date by Project stakeholders to date include:

- Water management practices and discharge into the surrounding environment;
- Project's potential impact on land use, mainly hunting and fishing;

- Surface and ground water quality and flow;
- Equitable distribution of Project's economic and social benefits;
- Project footprint and potential impacts on wildlife;
- Workforce requirements and early planning; and
- Project's potential impacts to socio-economic conditions, including housing availability and healthcare.

7.2.3 *PLAN FOR FUTURE ENGAGEMENT*

Those communication methods previously mentioned will continue to be implemented, alongside additional activities expected to include:

- Openness to initiating discussion with newly interested groups and individuals;
- Formation of the Labour and Training Committee, and consolidation of committee information through an annual joint-committee meeting;
- Interviews, focus groups, and discussions, as appropriate, to facilitate socio-economic primary research; and
- Potentially hosting a public open house.

Canada Nickel has and will continue to pursue engagement with diverse population groups to support an understanding of unique perspectives and socio-economic conditions. To date, this has included efforts to contact organizations focused on representation of some of these populations for engagement opportunities (including a presentation to the Non-Profit Hub), and approaching such organizations at community events. In the event that an IA is required, this engagement will support the gender-based analysis plus (GBA+) framework that will be completed to illustrate the unique experiences (including potential impacts and benefits from the Project) of diverse population groups.

7.3 ENGAGEMENT WITH INDIGENOUS PEOPLES

7.3.1 *SUMMARY OF ENGAGEMENT WITH INDIGENOUS PEOPLES*

Canada Nickel will work in partnership with Indigenous Peoples to establish a mutually beneficial, cooperative, and productive relationship centred around transparent information sharing, respectful engagement, open dialogue, and meaningful partnerships. The following list shows Indigenous Peoples that have specific interest in the Project and with whom Canada Nickel has engaged with prior to and during preparation of this Detailed Project Description. Canada Nickel will continue to engage with these groups for the remainder of the Crawford Project's IA process:

- Taykwa Tagamou Nation;
- Flying Post First Nation;
- Matachewan First Nation;
- Mattagami First Nation; and
- Métis Nation of Ontario - Region 3.

Per feedback received during IAAC's engagement on the Initial Project Description and incorporated into the Summary of Issues, contextual information for Apitipi Anicinapek Nation has been incorporated into the Detailed Project Description. Further conversations between Apitipi Anicinapek Nation and Canada Nickel are ongoing.

Canada Nickel conducts a number of information sharing and engagement activities with Indigenous communities, which vary from community to community, depending on the stage of the relationship and specific community interests. In addition to those activities mentioned for Stakeholder Engagement which also apply to Indigenous Engagement, Canada Nickel community specific activities include:

- Participation in community events, including open houses and community meetings;
- Exploration agreements, business MOUs, IBAs, and other agreements as relevant under development, signed or upcoming, as appropriate;
- Formation of committees, hiring of community liaisons, and initiation of regularly scheduled meetings, as appropriate, requested, and / or included in agreements;
- Participation in baseline studies, including site visits, field work accompaniment, and review of baseline work plans and schedules, as appropriate, requested, and / or included in agreements;
- Provision of draft impact documents for review, such as sharing of the draft Initial Project Description prior to formal submission;
- Sharing of maps and other material to support identification by community members, specifically Elders, of culturally significant or potential archeological sites;
- Provision of funding, support, and opportunities for participation relating to the IA and a number of baseline study programs, including Traditional Knowledge and Land Use, to support capacity building, information sharing, and meaningful collaboration;
- Sharing of job opportunities and contracts. Future training opportunities and programs, job postings, and business opportunities will also be shared, with an emphasis in Canada Nickel's procurement and hiring programs placed upon Indigenous Peoples, Indigenous owned businesses, and joint ventures;
- Regular reporting of environmental incidents and activities;
- Sponsorship and contributions to community activities and organizations, including support provided to date for sporting events / teams, POW WOWs, youth programs, etc.; and
- Community meetings led by Canada Nickel, hosted in the community when appropriate, to present the Detailed Project Description and other Project updates, with opportunities for comprehensive question and answer periods.

Canada Nickel's engagement with Matachewan First Nation, Mattagami First Nation, and Flying Post First Nation is regularly supported by the Wabun Tribal Council.

Canada Nickel has provided introductory notification of Project letters to a number of Indigenous communities identified by the IAAC as having potential interest in the Project. Conversations are ongoing with Apitipi Anicinapek Nation. The Cree Nation Government has responded to IAAC via the IAAC website and will continue to be provided with information regarding the Project. No responses have been received by Canada Nickel from the remaining communities to date. The list of identified communities are as follows:

- Algonquins of Barriere Lake;
- Apitipi Anicinapek Nation;

- Cree Nation Government;
- Kebaowek First Nation;
- Kitcisakik Anishinabeg;
- Kitigan Zibi Anishinabeg;
- La Premiere Nation Abitibiwinni;
- Long Point First Nation;
- Nation Anishnabe de Lac Simon;
- Timiskaming First Nation; and
- Wolf Lake First Nation.

7.3.2 MAIN ISSUES

Comments and concerns voiced by Indigenous Peoples will be taken into consideration during Project design and implementation.

The main topics discussed to date are:

- Training and employment opportunities, in particular opportunities for women and youth (to be addressed, in part, through discussion with, where appropriate, the community primary contacts, IA committee and coordinator training, community training, retention, and recruitment coordinators, local training institutes, Keepers of the Circle, Apatisiwin Training and Employment, and other avenues appropriate to specific communities);
- Capacity building as it relates to participation in business opportunities;
- Involvement in environmental and IA studies;
- Environmental topics, relating to transparent reporting, potential impacts to water quality and aquatic species, and potential impacts to wildlife from site activities;
- Project impacts on practices, activities, and ways of life, including trap lines, fishing and hunting; and
- Discretionary sharing of Traditional Knowledge.

7.3.3 PLANS FOR FUTURE ENGAGEMENT

Canada Nickel intends to continue engagement activities with interested Indigenous Peoples, with an emphasis on open, respectful dialogue, clear communication channels and meaningful participation. A specific plan for future engagement in connection with the IA process will be designed and reviewed with Indigenous Peoples and IAAC at an appropriate time.

Main topics and objectives of future engagement activities, to occur alongside those activities already outlined above, are:

- Involvement of Indigenous Peoples in the environmental baseline studies process according to each community or group's interests, expectations, and capacity for participation, with particular emphasis on the archeology program;
- Validating the interpretation and use of Traditional Knowledge in IA documentation (accounted for or to be accounted for in the relevant Agreement and plans for engagement);

- Identification of Indigenous land use activities through ongoing community engagement and TKLU studies, and discussion with primary community contacts and IA committees, where appropriate;;
- To confirm and validate the engagement activities planned for communities and to adjust activities and methods of engagement according to feedback and government and community COVID-19 pandemic restrictions; and
- Information sharing by email regarding proposed activities, meetings and Project updates.

These activities are in addition to those global communication strategies outlined in Section 7.2.1, including the Project website.

Canada Nickel has and will continue to pursue engagement with diverse population groups to support an understanding of unique perspectives and socio-economic conditions. In the event that an IA is required, this engagement will support the GBA+ framework. Identification of diverse population groups and associated information gathering will be co-defined with the communities.

7.4 SUMMARY OF ISSUES

Following submission of the IPD to initiate the federal IA Planning Process for the Crawford Project, IAAC undertook consultation on the submission and has provided Canada Nickel with a Summary of Issues based on the feedback received.

A copy of the comments provided in the Summary of Issues and responses from Canada Nickel are provided in Appendix D of the Detailed Project Description, with additional information provided within the text of this Detailed Project Description, where appropriate.

7.5 REGIONAL STUDIES / ASSESSMENTS

There are no other applicable regional studies / assessments. There are no regional studies or Regional Assessments close to the location of the proposed Project, including any Regional Assessment carried out under the *Impact Assessment Act,* or by any jurisdiction including by or on behalf of an Indigenous governing body, where the study or plan is available to the public.

7.6 STRATEGIC ASSESSMENTS

This Detailed Project Description has considered the Strategic Assessment of Climate Change as developed by Environment and Climate Change Canada (ECCC), including assessment of net greenhouse gas emissions associated with the Project (see Section 6.6).

There are no other known applicable strategic assessments.

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Table 2. Preliminary List of Activities for the Crawford Project

CONSTRUCTION PHASE	OPERATIONS PHASE	DECOMMISSIONING AND CLOSURE PHASE
Continuation and completion of engineering studies	Development and implementation of environmental protection and monitoring plan(s) for operation	Development and implementation of environmental protection and monitoring plan(s) for closure
Corporate decision to proceed	Ongoing engagement and consultation	Ongoing engagement and consultation
Development and implementation of environmental protection and monitoring plan(s) for construction	Overburden and waste rock extracted from the open pit will be either stockpiled or used for progressive reclamation	Remove mine equipment and allow open pit to flood
Ongoing engagement and consultation	Ore will be extracted from the open pit, and will be either temporarily stockpiled, or will be transported directly to the primary crusher for sizing	Removal of reagents and chemicals for proper disposal
Application for, and receipt of environment-related permits	Sized ore will be processed to recover metals in the same processing facility, and produce concentrate that will be periodically shipped off site for sale	Potential establishment of on-site demolition landfill for inert waste, and / or contracts for demolition waste removal
Hiring of individuals and contractors, and procurement of material and equipment	Tailings produced from processing Main Zone ore will be stored in a surface facility which will expand as needed	Demolish facilities as no longer needed with waste disposed of in accordance with all regulatory requirements
Mitigation for heritage resources and other effects, if / as needed	Once the Main Zone is mined out and mining has moved to the East Zone, tailings will be stored in the Main Zone pit	Investigate and remediate residual ground with spillage if any, such as near liquid fuel storage areas
Construction of rail spur line	Progressive reclamation will occur for Project components when no longer needed / depleted	Remove site power infrastructure when no longer needed
Upgrade of local access roads to site and installation of culverts / bridges as needed	Progressive reclamation of the open pit slopes and studies to ensure long term success of pit lake	Break up concrete, scarify compacted grounds etc. to establish free drainage
Additional land clearing and implementation of erosion and sediment control measures	Ongoing management and treatment of waters for discharge of excess waters that meet regulatory requirements	Regrade areas (plant site, stockpiles, TMF) as needed for long term stability and establish final surface drainage
Excavation and grading as needed	Ongoing management of chemicals and wastes, including remediation of any incidental spillage during operations	Place a growth material over affected areas (including TMF, plant site, overburden piles) as needed to ensure long term vegetation success
Movement of construction materials to site	Environmental monitoring and reporting, as applicable	Environmental monitoring and reporting, as applicable
Construction of new site facilities	Follow up environmental studies	Revocation of approvals to operate when no longer required
Development of aquatic habitat offset and compensation features as needed (Project scheduling may allow some aspects of this component to be deferred to late in the construction phase or early operations phase)	Periodic updates / amendments of the Closure Plan as needed to reflect changes to the Project and site activities	If appropriate, connect the flooded open pit to the local drainage system once the flooded pit lake quality meets regulatory requirements
Construction of diversion of local watercourses and stabilization	Expansion of mine waste management facilities as mine development proceeds	Return of reclamation financial assurance
Stripping of overburden and initiation of open pit mine development	Rail transportation of material to and from the site	
Establishment of water management and treatment works, including ponds, pipelines and treatment facilities		
Environmental monitoring and reporting		
Relocation of Highway 655 (will be initiated after the main construction phase and completed after the beginning of operations (around 2032))		
Construction of 230 kV transmission line		
Relocation of 500 kV transmission line (Project scheduling may allow to be deferred to late in the construction phase or early operations phase)		

Table 3. Land Claims and Assertions of Indigenous Peoples

INDIGENOUS PEOPLES	CLAIM AND ASSERTIONS
Taykwa Tagamou Nation	There is no publicly available information available about land claims and assertions by the Taykwa Tagamou Nation at this time.
Flying Post First Nation	In 2020, there was final settlement of a 115-year-old land claim due to a shortfall of land as a result of James Bay Treaty (Treaty #9).
Matachewan First Nation	In 2009, Matachewan First Nation filed a Treaty Land Entitlement claim indicating that the Nation did not receive all the land it was entitled to under Treaty #9 (1906). It is understood from the federal government that this claim has been settled.
Mattagami First Nation	There is no publicly available information available about land claims and assertions by the Mattagami First Nation at this time.
Apitipi Anicinapek Nation	In April 2010, the Algonquin Anishinabeg Nation Tribal Council made assertions of their rights in their ancestral territory to the federal government. The claim included a map of boundaries of the traditional territory which is the same as presented in their comprehensive land claim of 1989.
Cree Nation of Eeyou	In 2016, the Cree Nation filed an action in the Ontario Superior Court of Justice to obtain recognition of its rights over certain lands in northeastern Ontario (Matthew Coon Come et al v. Ontario and Canada, Ontario Superior Court File Nos. CV-16-547938 and CV-16-552834).
Métis Nation of Ontario – Region 3	Métis assert a right to harvest in large areas of Ontario. The government has accommodated Métis rights on a regional basis within the Métis harvesting territories identified by the Métis Nation of Ontario. An interim agreement between the Métis Nation of Ontario and the Ontario government recognizes the Métis Nation of Ontario's Harvester Card system. On April 30, 2018, the Métis Nation of Ontario and Ontario signed a new Framework Agreement on Métis Harvesting that advanced the recognition of Métis' rights in Ontario.

Sources: (Queen's Printer for Ontario, 2020; Metis Nation of Ontario, 2021; Matachewan First Nation, n.d.)

Table 4. Preliminary List of Potential Federal Approvals

DEPARTMENT	ACT, APPROVAL AND PROJECT-RELATED ACTIVITIES
ECCC	Fisheries Act, Schedule 2 Listing (Metal and Diamond Mining Effluent Regulations): - Storage of potentially deleterious mineral waste covering minor tributaries that are frequented by fish - An alternative assessment for mineral waste disposal in the prescribed format could be required along with an approved fish habitat compensation plan
DFO	Fisheries Act, Authorization for Harmful Alteration, Disruption or Destruction of Fish Habitat or Death of Fish by means other than Fishing: - Direct impacts to fish habitat including overprinting of waterbodies and construction of structures in waterbodies / watercourses - Indirect impacts to fish habitat, including flow reductions - An approved fisheries offset plan will be required
NAV Canada	Aeronautics Act, Land Use Clearance: - Construction of tall structures, use of cranes, transmission line towers.
Transport Canada	Aeronautics Act, aeronautical obstruction clearance Canadian Aviation Regulations (SOR / 96-433) - Marking and lighting for structures that could interfere with aeronautical navigation. Canada Navigable Waters Act, approval under the Navigation Protection Program: - Alteration of navigable waters and crossing of navigable waters with infrastructure - Diversion of unscheduled watercourse to provide for safe mining

Note: Although not expected, a federal Species at Risk Act permit could be required, pending the results of ongoing environmental baseline investigations.

Table 5. Preliminary List of Potential Provincial Approvals

MINISTRY	ACT, APPROVAL AND PROJECT-RELATED ACTIVITIES
MINES	*Mining Act*, Closure Plan: - Progressive reclamation and final closure of the site - Construction of dams above the high-water mark of watercourses if any
MECP	Ontario Water Resources Act, Permit to Take Water: - Dewatering activities in support of construction and longer term mine dewatering Fresh water supply
	Environmental Protection Act, Environmental Compliance Approval for Industrial Sewage Works: - Mine water, process water and contact water, and tailings management
	Environmental Protection Act, Environmental Compliance Approval for Domestic Sewage: - Management and treatment of grey water, domestic sewage, etc.
	Environmental Protection Act, Environmental Compliance Approval for Air and Noise: - Atmospheric emissions from Project
	Environmental Protection Act, Environmental Compliance Approval - For establishment of a waste disposal site, if required
	Ontario *Environmental Assessment Act*, Class EA(s) for Minor Transmission Facilities: - Based on the preliminary Project design, the Crawford Project is expected to require completion of this Class Environmental Assessment, based on the anticipated length of the line (greater than 2 km length) in comparison to the Electricity Projects Regulation.
	Endangered Species Act, Overall Benefit Agreement - To address impacts to habitat for Species at Risk.
MNRF	Ontario *Environmental Assessment Act*, Class EA(s) for Resource Stewardship and Facility Development Projects: - Based on the preliminary Project design, the Crawford Project is expected to require completion of this - Class Environmental Assessment, subject to regulatory confirmation.
	Public Lands Act or Lakes and Rivers Improvement Act, Work Permits: - Construction of facilities on Crown land including below the high-water mark of waterbodies / watercourses
	Public Lands Act, Land Use Permit: - Temporary land tenure for facilities off the mining lease if required
	Crown Forest Sustainability Act, Forest Resource Licence: - For cutting of merchantable timber for site development
	Fish and Wildlife Conservation Act, Permit to Collect Fish for Scientific Purpose: - Potential fish transfer during construction - Fisheries investigations during construction, operation and closure - Authority to remove beavers and / or beaver dams
	Aggregate Resources Act: - If the proposed field investigations are successful in finding an appropriate resource, Canada Nickel may pursue an aggregate resource permit to provide a source of aggregate to support the mine construction and operation

Table 6. Preliminary List of Changes to the Environment Under Federal Jurisdiction

ENVIRONMENTAL COMPONENT	PROJECT PHASE	POTENTIAL SOURCE OF EFFECT	POTENTIAL CHANGE TO THE ENVIRONMENT	PRELIMINARY AREA OF INFLUENCE
Fish and fish habitat, as defined in subsection 2(1) of the Fisheries Act	Construction	Diversion of non-contact waterbodies / watercourses, (including lakes west of the tailings management facility, in the North Driftwood watershed Installation of temporary and permanent infrastructure Uncontrolled spill	Alteration, disruption and destruction of fish and benthic fauna habitat Change to the natural surface water flow pattern Surface water quality alteration	Project footprint Downstream flow reductions (North Driftwood River)
	Operations	Water management and treatment Uncontrolled spill	Surface water quality alteration	Project Footprint Downstream flow reductions (North Driftwood River) Short mixing zone downstream of effluent discharge point
	Closure	Site reclamation and closure Uncontrolled spill	Surface water quality alteration (improvement)	Project Footprint Downstream flow reductions (North Driftwood River) Short mixing zone downstream of effluent discharge point
Migratory birds, as defined in subsection 2(1) of the *Migratory Birds Convention Act, 1994*	Construction	Clearing of habitat to allow for site construction Installation of permanent facilities Additional vehicle traffic	Habitat loss Disturbance of species Increased risk of collision or mortality	Project footprint Potential limited distance from Project footprint due to localized noise effects Project roads
	Operations	Operation of permanent facilities Additional vehicle traffic	Disturbance of species Increased risk of collision or mortality	Project footprint Potential limited distance from Project footprint due to localized noise effects Project roads
	Closure	Site reclamation and closure	Habitat redevelopment	Project footprint
Navigable Waters, as defined in subsection 2 of the *Canadian Navigable Waters Act*	Construction	Diversion of potentially navigable waterbodies / watercourses (North Driftwood River)	Project components overprinting watercourse which may have historic or future use as a navigable waterway.	Project footprint Downstream flow reductions (North Driftwood River)
	Operations	Diversion of potentially navigable waterbodies / watercourses (North Driftwood River)	Project components overprinting watercourse which may have historic or future use as a navigable waterway.	Project footprint Downstream flow reductions (North Driftwood River)
	Closure	None	None	None

Table 7. Preliminary Summary of Potential Environmental Effects

ENVIRONMENTAL COMPONENT	POTENTIAL EFFECT (PRELIMINARY)	PROPOSED MITIGATION (PRELIMINARY)	PROJECT PHASE			PRELIMINARY AREA OF INFLUENCE
			CONSTRUCTION	OPERATION	CLOSURE	
Air Quality, Greenhouse Gases, Noise and Light	Air emissions (point source at the plant or diffuse from roads and blasting) have the potential to generate dust or products of petroleum hydrocarbon combustion that could potentially affect human health, and plant and animal health. Due to the presence of chrysotile within the formation, there is a potential that airborne dust from the mining operations and the TMF might contain chrysotile. Noise emissions from the Project have the potential to disturb other area users although the site is remote from residences Greenhouse gas emissions from Project have the potential to contribute to global carbon dioxide (CO_2) emissions and the associated phenomenon of climate change Operation of an industrial facility will require provision of continuous localized and appropriately aimed lighting to ensure effective operations and the safety of workers and others which will result in an increase in the ambient light at the Project site and a localized glow off-site Impacts on how and where Indigenous Peoples' Rights are exercised	Provincial regulatory requirements will be met for on site emissions and air quality at the property boundary An assessment will be made on the quantity of chrysotile in the orebody. Asbestos safety will be a consideration in site design as needed. Canada Nickel has decided not to use chrysotile bearing material for road surface building. Provincial regulatory criteria will be met for on site emissions and at surrounding noise sensitive locations (i.e., points of reception) Development and implementation of Project specific Air Quality and Noise Best Management Practice (BMP) Plans Water sprays will be used to control dust emissions from haul roads and construction areas, and best management practices will be followed for dust control during operations Measures to be used to reduce sound emission effects on other area land users and wildlife, and are expected to include maintaining tree screens around work areas as practical Other sound reduction measures to be employed are expected to include maintaining equipment in good working order and utilizing efficient mufflers to reduce sound emissions at source Development of a compact overall site as practical will reduces haulage / transportation distances for greater fuel economy and reduce greenhouse gas emissions Usage of electric trolley-assist for mining trucks and electric shovels to reduce fuel consumption and greenhouse gas emissions. Assessing the different options to optimize carbon capture from waste rock and tailings, and consider the implementation of the best alternatives. Maintaining equipment and vehicles in good working order also improves fuel combustion efficiency Care will be taken to ensure lights are appropriately aimed to minimize off-site disturbance	X	X	X	Project footprint and area up to approximately 10 km from centroid of open pit
Local waterbodies / watercourses	Project development will overprint watercourses, including small creeks and beaver ponds in the North Driftwood and West Buskegau watersheds, and have the potential to reduce downstream flow Vibration (such as from explosives use) may disturb aquatic species An intake / discharge location is proposed which has the potential for habitat disturbance and may affect water quality and flows Water crossings will be needed which has the potential for aquatic habitat disturbance Uncontrolled spills (diesel, hydraulic oil, untreated water) Impacts on how and where Indigenous Peoples' Rights are exercised	Efforts will be made to develop to limit the overprinting of watercourses, where feasible The tailings management strategy will aim to maximize tailings impounded in the pits, to reduce the footprint of the tailings impoundment at surface Effluent discharge to the environment will meet all federal and provincial regulatory requirements Effluent discharge location will be analyzed and consulted upon to ensure the acceptability and to limit overall impacts Water from waterbodies located upstream from the Project will be diverted to a downstream waterbody within the same catchment, if feasible In-water structures will be designed to avoid effects to fish, as reasonable Design will be realized to contain spills in storage and high-risk areas Intervention plans will be developed in case of uncontrolled spills Compensatory plan for aquatic habitat, which will be consulted upon and approved through a rigorous federal process, will be provided to mitigate effects on aquatic resources including habitat loss	X	X	X	Project Footprint Downstream flow reductions (North Driftwood River)
Groundwater System	Open pit dewatering will affect the local groundwater levels and may affect surface water flows Groundwater quality could be affected by the seepage from the impoundments at surface and in the pit Risk that groundwater could be affected by spills and fuel storage	Modelling investigations will fully assess potential effects, to support mitigation if needed Groundwater levels will return after the open pit re-fills with water at closure Geochemistry program on waste rock and tailings will help assess the potential for metal leaching over time Design of fuel storage areas will be realized to contain spills and prevent leaks Intervention plans will be developed in case of uncontrolled spills	X	X	X	Project footprint Area adjacent to Project footprint affected by drawdown cone from pit dewatering (est. 1-2 km)
Natural Vegetation and Wildlife	Mine site and related infrastructure development if any, will displace existing terrestrial habitat	Efforts will be made to develop a compact site as practical for the new mine to limit disturbance to new areas as reasonable Tree clearing will be avoided during the bird nesting season	X	X		Project footprint Potential limited distance from Project

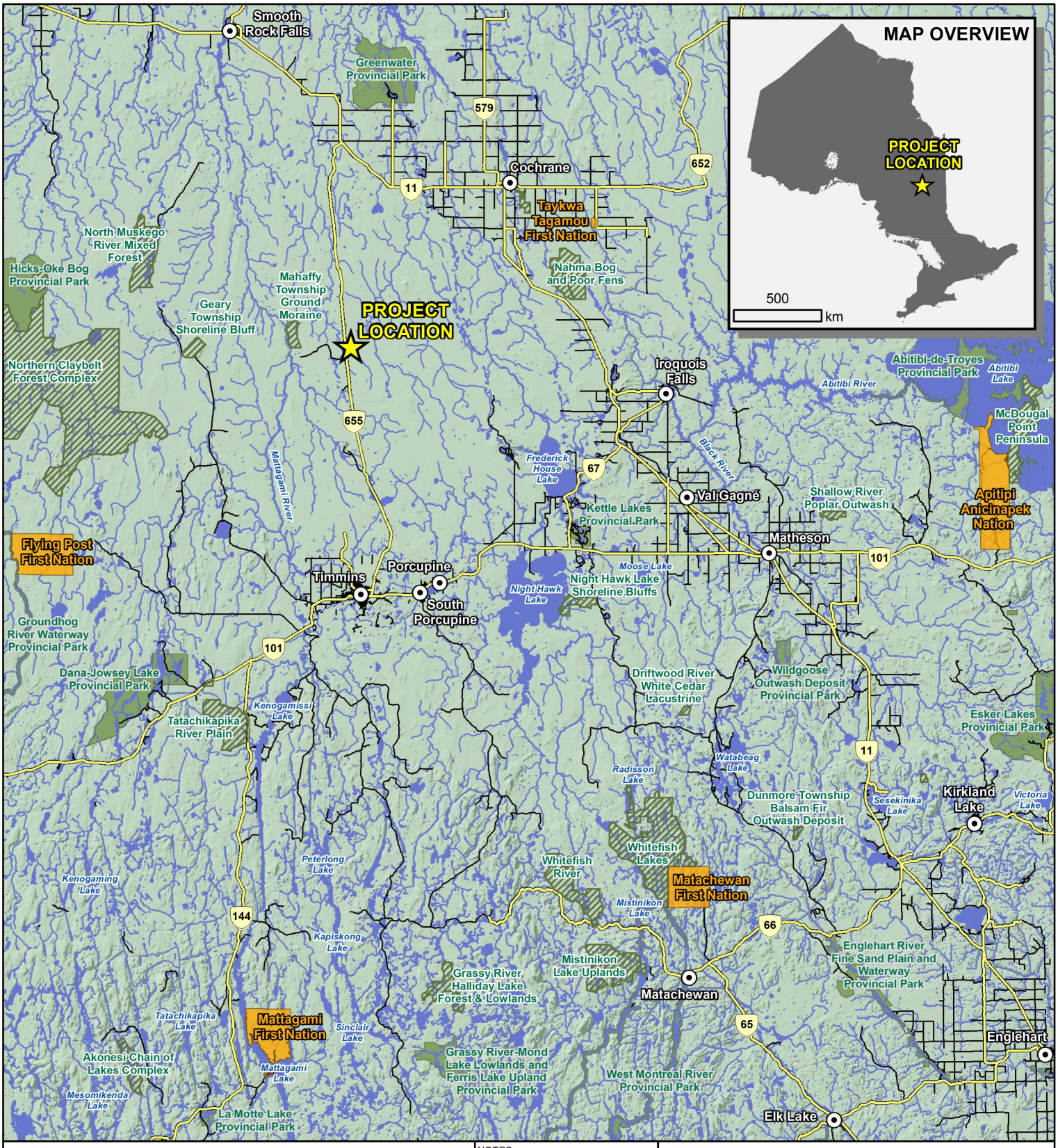
ENVIRONMENTAL COMPONENT	POTENTIAL EFFECT (PRELIMINARY)	PROPOSED MITIGATION (PRELIMINARY)	PROJECT PHASE			PRELIMINARY AREA OF INFLUENCE
			CONSTRUCTION	OPERATION	CLOSURE	
	Wildlife may be affected by site activities and disturbances, including noise Mine site development may displace existing terrestrial habitat for species of conservation concern, if present Impacts on how and where Indigenous Peoples' Rights are exercised	The site will be reclaimed after mining ends to support future productive habitat If Species at Risk or associated habitat are present, an Overall Benefits Agreement and associated compensation measures will be negotiated with the Province, if appropriate				footprint due to localized noise effects Project roads
Hunting, Fishing and Tourism	Limited effect as the mine is to be located on an active exploration program site, where access is controlled / restricted for safety of workers. There will be a more extensive disruption to the local experience in the immediate vicinity of the site from the larger scale mining operation There is no anticipated effect to known tourism activities, aside from potential relocation of one snowmobile trail	Canada Nickel intends to continue work with the Project stakeholders to mitigate potential localized effects during the operation Hunting will continue to be restricted on the Project site in order to ensure the safety of workers and others Impacted snowmobile trails will be relocated as necessary and in collaboration with the appropriate snowmobile club	X	X	X	Project footprint Potential limited distance from Project footprint due to localized noise effects
Commercial Operations	Could limit access to people and resources for other operations and industries; could potentially draw local people back to the area for jobs	No mitigation measures are proposed other than to optimize economic benefits to the local and regional economies, including to local Indigenous Peoples as reasonable	X	X	X	N / A
Traditional use of lands and resources	Effects on spiritual relationships and connection with the environment Effects on locations of sentimental, Traditional and heritage value Effects on Traditional use of lands and resources as sites of value and interest to Indigenous Peoples Effects on Traditional use of lands and resources as sites of value and interest to Indigenous Peoples Effects on cultural practices Changes to land and resources resulting in effect on exercising rights	Ongoing engagement with Indigenous Peoples to mitigate potential effects Archeological Stage 2 field campaign to identify potential archeological features of interest	X	X	X	Project footprint
Indigenous / Public Health and Safety	All regulatory requirements will be met, although there will be release of air contaminants associated with processing operations, fuel combustion and fugitive dust; and release of contaminants in process plant and mine water effluents, and from stockpile drainage Effects on Indigenous women's safety Effects on Indigenous women, youth, elders, etc. Changes to community safety, well-being, and health Changes to Indigenous Peoples' safety, well-being, and health Increased risk of vehicle collision due to increased traffic Increased concerns regarding risk to human health (air emissions, water quality, tailings dam failure, diesel and chemicals storage and transportation, stress)	Canada Nickel will work with communities and local Indigenous Peoples with an aim of helping ensure the Project will provide an overall positive benefit Traffic management and awareness will reduce potential for accidents on public roads; design changes may also be incorporated in the highway re-routing, such as turn lanes(s) Regulatory requirements will be met for all potential emissions / releases that could impact air or water quality Design, construction, operation, and maintenance and decommissioning of tailings management facility, diesel storage, chemical storage based on all applicable criteria and international best practice Canada Nickel will work collaboratively with community and Indigenous representatives to address social and health concerns that could arise as a biproduct of the Project's development and operation	X	X	X	N / A
Socio-economics	Benefits including employment and procurement opportunities Benefits for education and training opportunities Effects on healthcare services and providers Effects on traffic due to mine personnel commuting to site Pressure on local housing and effects to vulnerable populations	Canada Nickel will work with local Indigenous Peoples and Non-Indigenous communities with an aim of helping ensure the Project will provide a positive benefit Canada Nickel intends to implement an extensive community contribution program designed in collaboration with relevant local stakeholders to specifically address local needs and challenges. Canada Nickel has made, and will continue to make, contributions to support social, economic, health, and other activities / programs for specific Indigenous communities Canada Nickel is working with local training, education, and recruitment institutes to begin early planning for Project workforce requirements. This includes review of available programs, potential development of	X	X	X	Regional municipalities, Reserve lands

ENVIRONMENTAL COMPONENT	POTENTIAL EFFECT (PRELIMINARY)	PROPOSED MITIGATION (PRELIMINARY)	PROJECT PHASE			PRELIMINARY AREA OF INFLUENCE
			CONSTRUCTION	OPERATION	CLOSURE	
		new programs, and support from Canada Nickel in developing or enhancing the relevant programs (done through letters of support, provision of subject matter expertise, etc.)				
Physical and cultural heritage	No anticipated effect to known archaeology site Effects to cultural heritage to be determined	Archaeological studies are ongoing and no cultural heritage features or artefacts have been identified in proposed development areas so far. Archeological Stage 2 field campaign to identify potential archeological features of interest. Measures will be put in place to identify any as yet undetected features or artefacts during construction	X	X	X	Project footprint
Identified structures or sites *	No effect expected, pending determination of diversion routing / water levels	None expected to be required Archeological Stage 2 field campaign to identify potential archeological features of interest.	N / A	N / A	N / A	N / A

Note: Structures or sites of historical, archaeological, palaeontological or architectural significance.*

Table 8. Preliminary Listing of Types of Wastes or Emissions

ENVIRONMENTAL COMPONENT	PROJECT PHASE	ANTICIPATED WASTE OR EMISSION
In the air	Construction	Dust emissions Emissions from machinery and equipment Noise Light
	Operations	Dust emissions Emissions from machinery and equipment Noise Light
	Closure	Dust emissions Emissions from machinery and equipment including greenhouse gases Noise Light
In or on land	Construction	Domestic solid waste Regulated and non-regulated, industrial solid and liquid waste Mineral waste (overburden and waste rock) Vibration
	Operations	Domestic solid waste Regulated and non-regulated, industrial solid and liquid waste Mineral waste (overburden, waste rock and tailings) Vibration
	Closure	Domestic solid waste Regulated and non-regulated, industrial solid and liquid waste
In or on water	Construction	Treated contact runoff Treated domestic sewage
	Operations	Treated contact runoff and effluent Treated domestic sewage
	Closure	Treated contact runoff and effluent Treated domestic sewage



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LEGEND

- Project Location
- First Nation Reserve
- Town / Community
- Conservation Reserve
- Provincial Park
- Local Street
- Highway
- Watercourse
- Waterbody

NOTES:
- Topographic map information extracted from Land Information Ontario (MNRF), Queen's Printer for Ontario, 2019/2020.

Datum: NAD83
Projection: UTM Zone 17N

0 5 10 20 30 40 50 Kilometres

CANADA NICKEL COMPANY

WSP

CRAWFORD NICKEL PROJECT

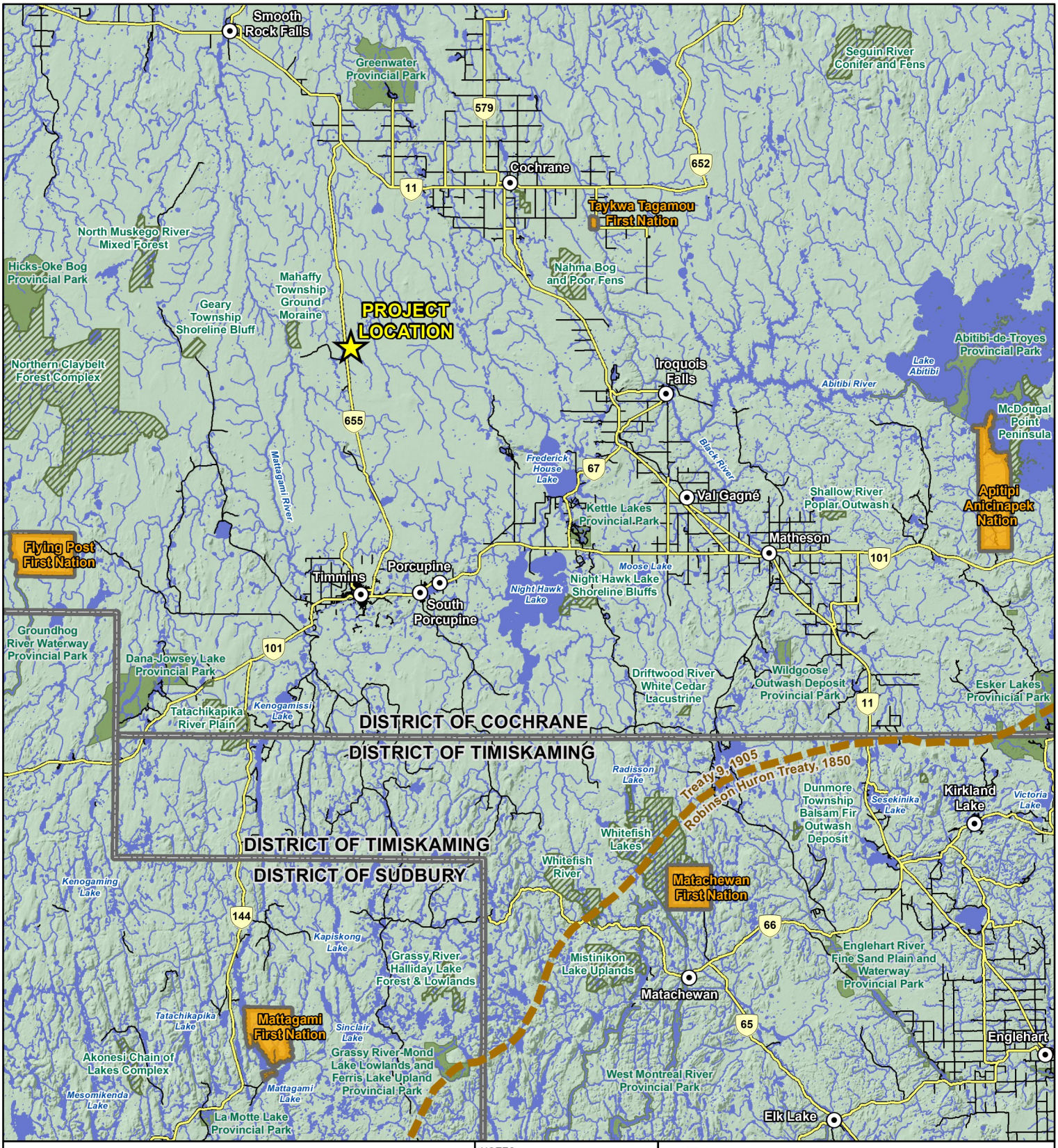
Project Location

PROJECT N°:OMEMA2002

FIGURE: S.1

SCALE: 1:830,000

DATE: December 2022



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LEGEND

- Project Location
- First Nation Reserve
- First Nation Treaty Boundary (historical)
- Town / Community
- Upper Tier Municipal Boundary
- Conservation Reserve
- Provincial Park
- Local Street
- Highway
- Watercourse
- Waterbody

NOTES:
- Topographic map information extracted from Land Information Ontario (MNRF), Queen's Printer for Ontario, 2019/2020
- First Nation Treaty Boundaries (historic) extracted from "Historic First Nations Treaties in Canada - GIS dataset of pre 1930 treaty boundaries", 2000, Global Forest Watch Canada.

CANADA NICKEL COMPANY

WSP

CRAWFORD NICKEL PROJECT

Local Communities and First Nations

Datum: NAD83
Projection: UTM Zone 17N

0 5 10 20 30 40 50 Kilometres

N W E S

PROJECT N°:OMEMA2002 | **FIGURE: S.2**

SCALE: 1:830,000 | DATE: December 2022

465000 470000 475000 480000

5415000 5410000 5405000 5400000 5395000 5390000

AUBIN TOWNSHIP
MAHAFFY TOWNSHIP
NESBITT TOWNSHIP
BECK TOWNSHIP
LUCAS TOWNSHIP
CRAWFORD TOWNSHIP
CARNEGIE TOWNSHIP
REID TOWNSHIP
PROSSER TOWNSHIP
MACDIARMID TOWNSHIP
KIDD TOWNSHIP
WARK TOWNSHIP
KESAGAMI CARIBOU RANGE

Diversion Channel
Collection Pond 2
Waste Rock Stockpile 1
(Waste Rock Stockpile 1 to provide storage for both open pit mine rock as well as overburden from stripping for site development)
Collection Pond 3
Collection Pond 4
Waste Rock Stockpile 2
Collection Pond 1
Reclaim Stockpile 3
Collection Pond 6
East Zone
LG Stockpile West
Main Zone
Collection Pond 5
LG Stockpile East
Northeast Pond
Diversion Channel
Effluent Discharge Pipeline
Reclaim Stockpile 2
Lower Sturgeon Dam Road
Process Plant Area
Contact Water Pond
Polishing Pond
Effluent Treatment Plant
Martin Lake
Gerry Lake
Reclaim Stockpile 1 Northwest Pond
Jack Lake
Sutherland Lake
Davis Lake
Tailings Management Facility
Diversion Channel
New Rail Line to Site (Connected to Existing Spur)
Highway 655 Relocation
Prosser Lake
Jocko Creek
Exsiting Trasnsmission Line
Exsiting Trasnsmission Line
Potential Aggregate Source
New 230 kV Transmission Line to Site
500 kV Transmission Line Relocation
Kidd Creek
KIDD CREEK MINE
Feldman Lake
Nesbitt Creek
Mattagami River
Buskegau River
West Buskegau River
Macdiarmid Creek

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LEGEND

- Kesagami Caribou Range
- Township Boundary
- Existing Transmission Line
- Existing Primary Road / Highway
- Secondary Road (resource road)
- Existing Railway
- 270 Contours (10 m interval)

Site Plan Features

- Preliminary Project Boundary
- Open Pit
- Access/Haul Road
- Tailings Management Facility
- Pond
- Waste Rock Stockpile (WRS)
- Reclaim Stockpile
- Low Grade Ore Stockpile (LG)
- Process Plant Area / Ancillary Buildings
- Diversion Channel
- Effluent Discharge Pipeline
- New Rail Line to Site
- New 230 kV Transmission Line to Site
- Highway 655 Relocation
- 500 kV Transmission Line Relocation
- Water Crossing Location
- Potential Aggregate Source

NOTES:
- Topographic map information extracted from Land Information Ontario (MNRF), Queen's Printer for Ontario, 2019/2020
- Preliminary site plan data provided by Canada Nickel Company, November 21, 2022.
- Preliminary project boundary provided by Canada Nickel Company, November 30, 2022.
- Aerial imagery provided by CNC, scene date, summer 2021 and ESRI online mapping service, 2019.

Datum: NAD83
Projection: UTM Zone 17N

0 1 2 4 6 8 10 Kilometres

CANADA NICKEL COMPANY

WSP

CRAWFORD NICKEL PROJECT

Preliminary Site Plan Layout

PROJECT N°:OMEMA2002 | **FIGURE: S.3**

SCALE: 1:80,000 | DATE: December 2022

470000 480000 490000 500000

5420000 5410000 5400000 5390000 5380000 5370000

PROJECT LOCATION

East Alternative

West Alternative

D501P: 500 kV

D2H: 115 kV

P91G: 230 kV

KIDD CREEK MINE

TIMMINS

655 101 101

Mattagami River
North Driftwood River
Gerry Lake
Prosser Creek
Prosser Lake
Crawfish Lake
Frederick House River
Buskegau River
West Buskegau River
Jocko Creek
Kidd Creek
Macdiarmid Creek
Nerandeau Lake
Feldman Lake
Gowanmarsh Lake
North Procupine River
Bigwater Lake
Rota Lake
Porcupine River
Little Goose Lake
Murphy Creek
Bell Creek
Three Nations Lake
Night Hawk Lake
Pearl Lake
Porcupine Lake
Simpson Lake

LEGEND

- Project Location
- Watercourse
- Waterbody

Existing Infrastructure

- Airport
- Transmission Station (115 kV, 230 kV, 500 kV)
- Transmission Line
- Railway
- Highway
- Secondary / Local Road
- Resource / Recreation Road

Planned Infrastructure

- 230 kV Transmission Line to Site
- New Rail Line to Site
- Highway 655 Relocation
- 500 kV Transmission Line Relocation
- 500 kV Transmission Line Relocation Alternative

NOTES:
- Aerial imagery provided by ESRI online mapping service.
- Topographic map information extracted from Land Information Ontario (MNRF), Queen's Printer for Ontario, 2019/2020

Datum: NAD83
Projection: UTM Zone 17N

0 2.5 5 10 15 20 Kilometres

CANADA NICKEL COMPANY

WSP

CRAWFORD NICKEL PROJECT

Regional Existing and Planned Infrastructure

PROJECT N°: OMEMA2002 | **FIGURE: S.4**

SCALE: 1:150,000 | DATE: December 2022

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