



NORONT FERROCHROME PRODUCTION FACILITY

The **PATH FORWARD** in Sault Ste. Marie



City of
Sault Ste. Marie



Sault Ste. Marie
**ECONOMIC
DEVELOPMENT
CORPORATION**

Prepared by

City of Sault Ste. Marie
Sault Ste. Marie Economic Development Corporation
BDO Canada LLP
AECOM
N-Sci Technologies Inc.

We would like to recognize the following contributors

Algoma
Port of Algoma
PUC Services Inc.
Sault Ste. Marie Construction Association
Sault Ste. Marie Innovation Centre
Tourism Sault Ste. Marie
Sault Ste. Marie Chamber of Commerce



Special Thanks to

Darrell Boissoneau, Former Chief, Garden River First Nation

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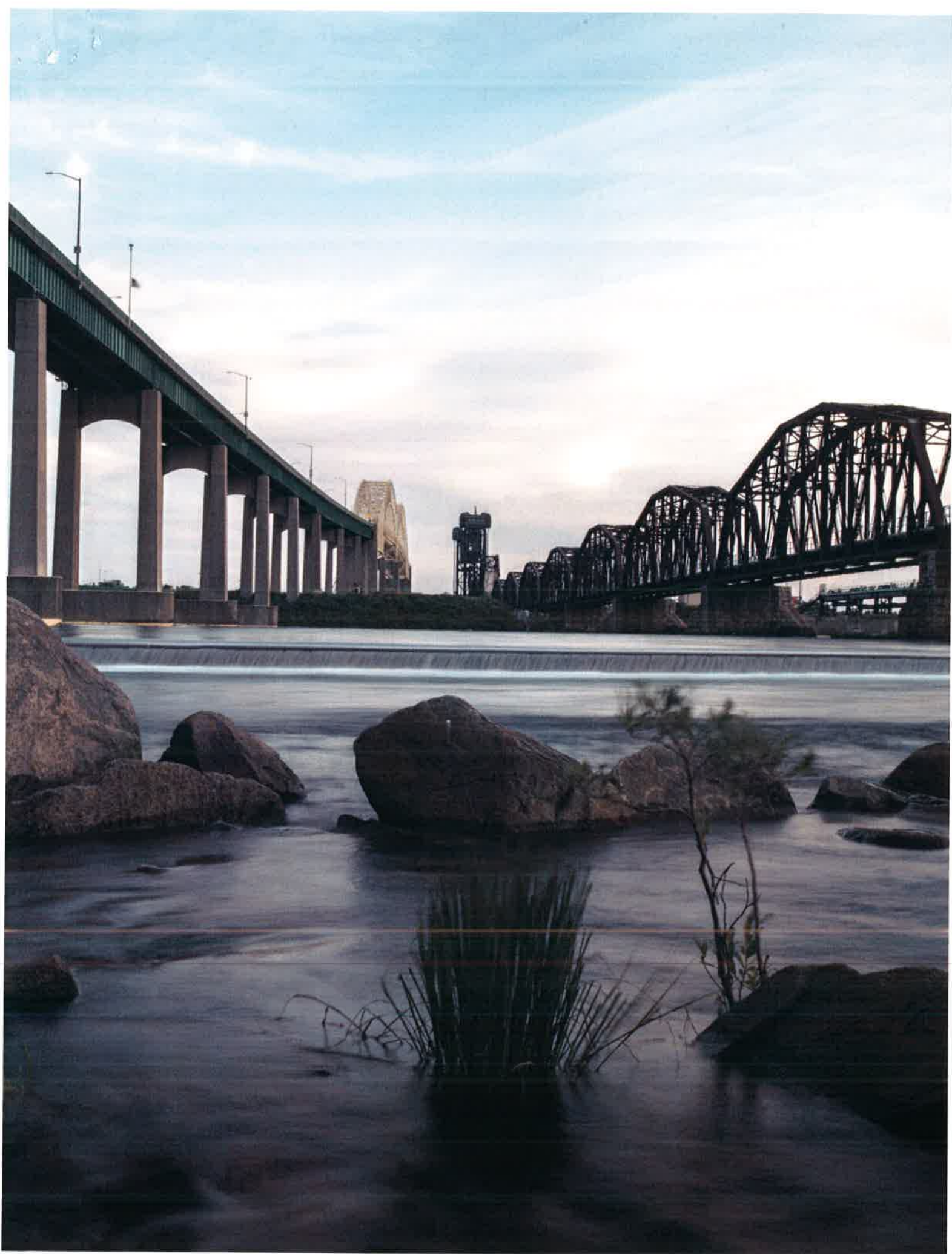
Government of Ontario



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ANNEX





INTRODUCTION FROM THE MAYOR

During our discussions, often when I had a question or sought direction, you suggested we approach our submission as an opportunity to outline a path forward for Noront in our community. As you consider the information contained herein, I believe you will recognize how that has guided our approach. I also believe you will recognize that we have succeeded.

Noront needs a serviced brownfield site compatible with heavy industrial use. We have received three site specific commitments from Algoma Steel: that it will negotiate the land Noront requires to accommodate the production facility, that it will allow Noront to locate the production facility stacks within the identified zone of impingement and that it will share raw material storage areas. The site is in close proximity to a multimodal facility, accessible by deep water port, existing rail and road with immediate access to both the Trans Canada and Interstate 75. The site is properly zoned, fully serviced and our submission demonstrates how we can accommodate the additional electrical infrastructure. Noront has a clear path forward on the site and accordant infrastructure.

Sault Ste. Marie has a long history in the metallurgical industry. We also have a long history of supporting the industry. We have consistently provided the direct and indirect workforce required by our industrial production facilities. Considering this history, the location of the site, the nature of the pre-existing infrastructure and the ability to move input/outputs to and from the site by rail and barge, we believe that Sault Ste. Marie offers the most compelling capital and operating cost considerations. I expect the path forward on capital and operating costs is to find where they are the most competitive. That path leads to us.

This project has received the support of all of Sault Ste. Marie's elected representatives. City Council passed a unanimous resolution in May, 2017. Our MP and MPP have offered to lead a committee of community volunteers to champion the project. We have met with and received the support of our First Nation partners to provide this submission. We see this as a first step. The next step requires engaging the community at large and our First Nation partners in a respectful, meaningful and sincere way. It is important to the City that we do so and, based on my conversations with you, I am confident that you share this perspective and that we can move forward with this common goal. The path forward on community and First Nation engagement is together.

Sault Ste. Marie is a community that looks forward. We look forward to new partnerships and opportunities, we look forward to developing and diversifying our economy, and most importantly we look forward to improving the community that we live in and love. We make this submission to Noront in that spirit and welcome you to join us.

Sincerely,



Christian Provenzano, BA LL.B LL.M
Mayor of Sault Ste. Marie



EXECUTIVE SUMMARY

WHY SAULT STE. MARIE

Sault Ste. Marie is the path forward for the Noront Ferrochrome Production Facility (FPF). It's a statement we make with confidence and conviction. Since the release of the guidelines issued by Noront Resources Inc. (Noront), the Sault Ste. Marie Economic Development Corporation has engaged local stakeholders, Indigenous leaders, third party experts and City staff to analyze the capacity of our community to host the FPF. The proposition that Sault Ste. Marie can offer to Noront is compelling.

SITE

Sault Ste. Marie is able to provide a brownfield site that meets all of Noront's requirements with a number of additional business advantages. Our community can place the FPF on a parcel of land that accommodates setback requirements, provides direct port access and enables significant business synergies with Algoma (formerly Essar Steel Algoma Inc.). The fact the site is already permitted for the receipt and storage of anthracite coal is a major advantage to developing the FPF.

Further, the site is investment-ready with existing gas, water and electricity services to the service line of the property and, in the case of rail, through the property. We have an innovative solution to meet the electrical requirements identified by Noront. The location requires no significant road or infrastructure construction in order to accommodate the FPF and all zoning is in place to begin operations.

LOGISTICS

Noront will realize significant cost advantages when shipping its products to market from Sault Ste. Marie. Our team engaged industry experts to analyze the data and the results are compelling. Using barge transport from Sault Ste. Marie provides Noront with the most cost effective solution, achieving cost savings of 30% and 20% relative to road and rail transport respectively. This translates into savings of more than \$5 million per year.

Further, our analysis shows that Sault Ste. Marie provides the lowest cost shipping rates across all modes of transport; marine, rail and truck, for all but one example when comparing against the other Northern Ontario communities. Sault Ste. Marie also has sufficient and available capacity on existing road and rail transportation networks with infrastructure in proper condition to accommodate the Noront facility.

From an upstream perspective, the CN corridor which runs directly to the site provides an efficient means for getting ore south to Sault Ste. Marie from the main CN east-west corridor without any trans-load requirements. This is a significant advantage versus other communities in Northern Ontario.

INDUSTRIAL WORKFORCE

Sault Ste. Marie has a long and proud history of industrial production - from Algoma and the former St. Marys Paper Corporation, to newer operations such as Tenaris Algoma Tubes and Arauco. Our community possesses the construction expertise to build the FPF, the requisite expertise for operating the facility, and the regional companies required to supply and service the FPF's operations. Looking ahead, Sault Ste. Marie has also put in place a strategy and allocated resources to assist our employers in attracting the human resources required to run a world class facility.

COMMUNITY

Sault Ste. Marie is a community that offers an incredible quality of life that will assist Noront in attracting and retaining employees. Locations such as the Lake Superior coastline, St. Joseph Island and Northern Michigan are all within a thirty minute drive. Our area offers some of the best mountain biking, skiing, hiking, sailing, camping and cottage country in North America.



LOWEST COST
FOR TRANSPORTATION FROM A
TRUE MULTI-MODAL LOCATION



SUPPORT
POLITICAL, INDIGENOUS
AND COMMUNITY



**INVESTMENT
READY SITE**

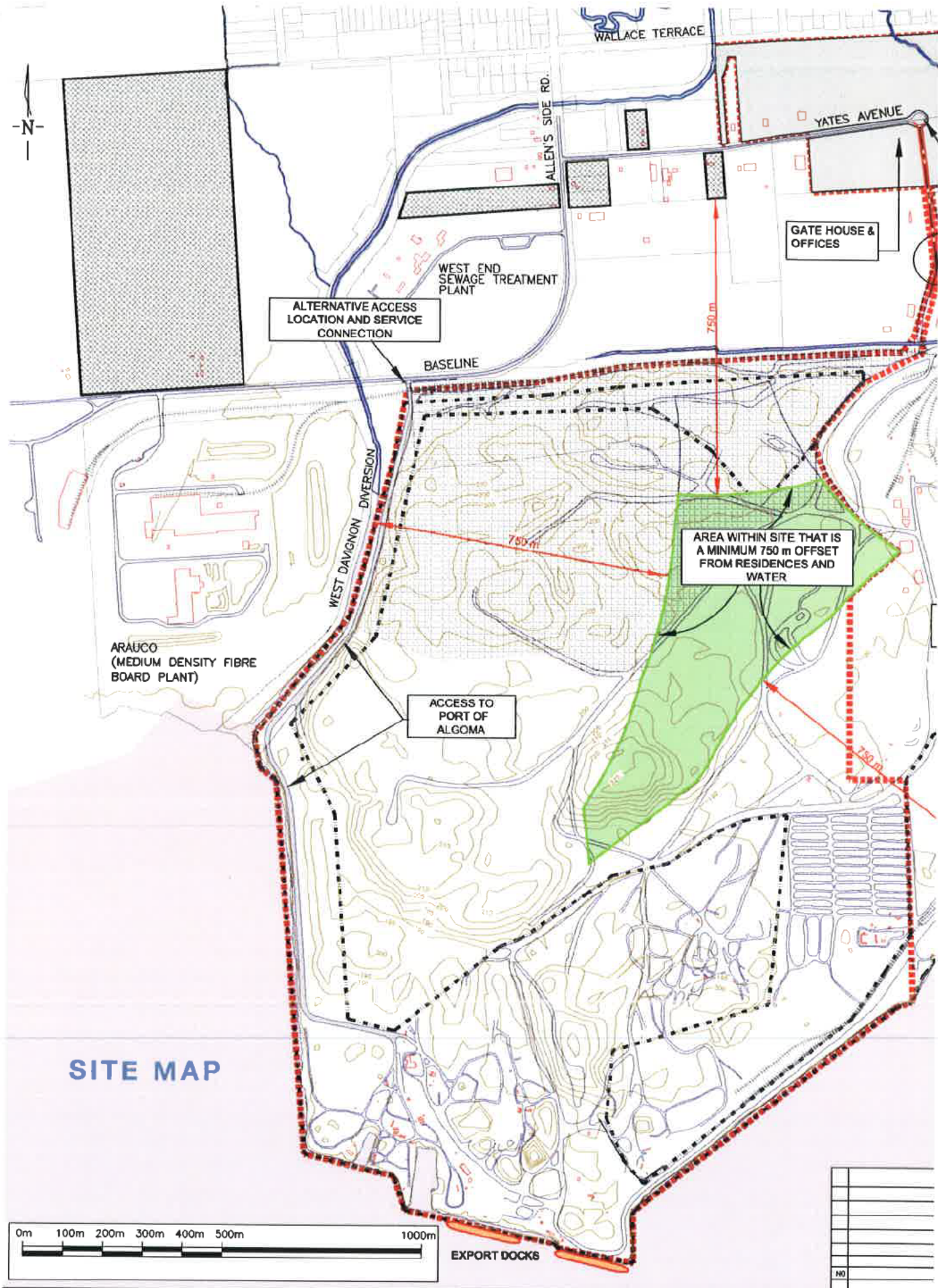


The city provides all the modern amenities required by today's professionals and their families; from local food and craft beer, diverse restaurants, and a growing arts and culture sector, to municipal infrastructure such as arenas, pools, cricket pitches and soccer fields. Sault Ste. Marie is a community that invests in its people and place so that its residents can enjoy excellent recreational amenities.

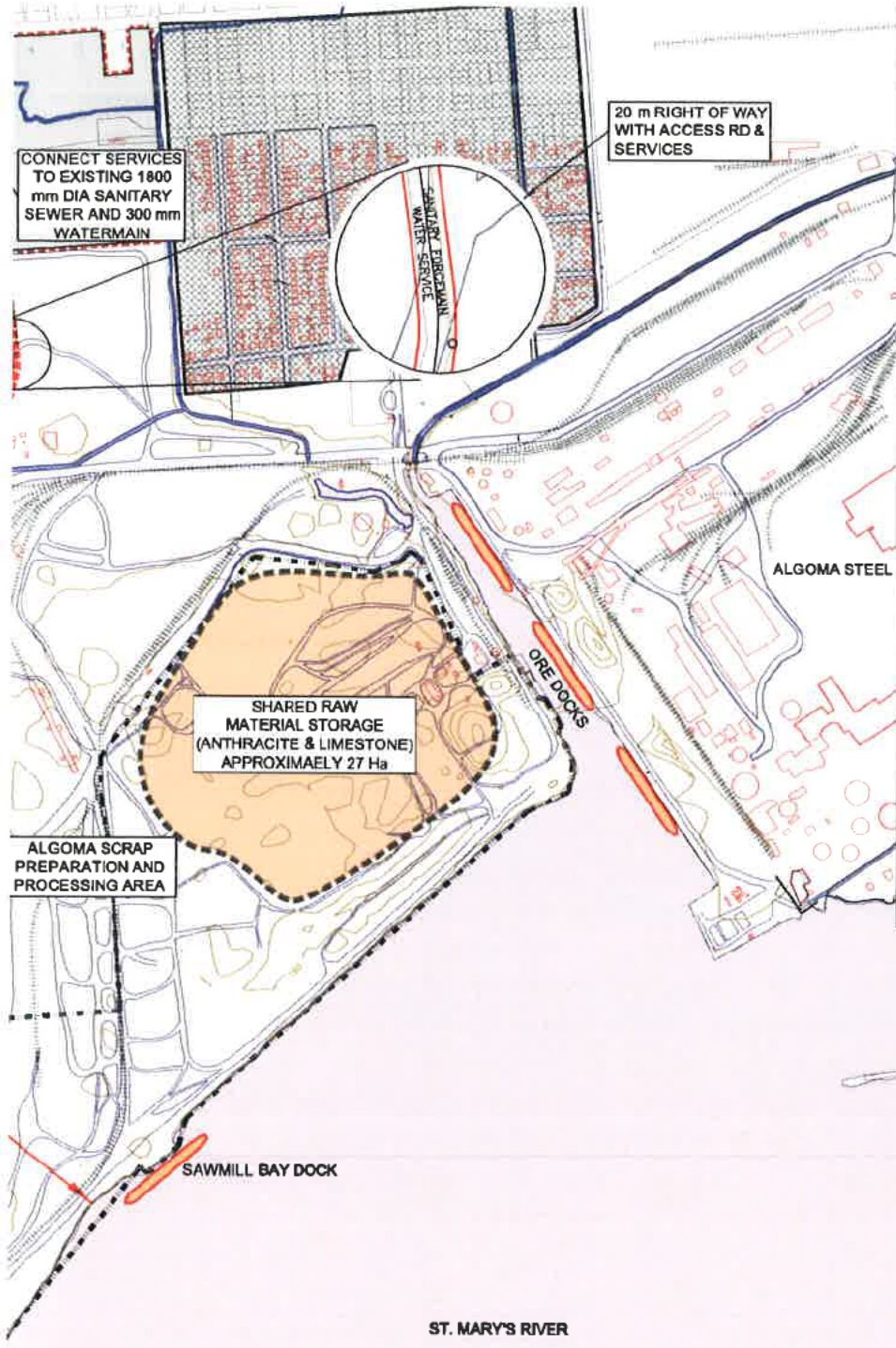
It is also important to acknowledge our Indigenous residents and neighbours with whom our community enjoys a positive relationship. Sault Ste. Marie intends on becoming a leader in reconciliation and the establishment of the Anishnabek Discovery Centre and National Chiefs Library is an important project to our community. The letters of support provided in this package and the positive meetings we have held with our First Nations leaders related to this project demonstrate the importance of this relationship to our community.

Our community recently completed a revitalization strategy with a vision to have a population of 100,000 people by 2037. We have gathered the support of leaders in the community to make this a reality and the FPF is an impressive project that aligns with our goals. We will work with Noront every step of the way to ensure project success and, together, we will build the next exciting chapter in the history of Sault Ste. Marie.












We appreciate the opportunity to provide you with this proposal and look forward to working with Noront in the future – as a team. After reviewing the information that follows, we believe Noront will come to the same conclusion that we arrived at – **simply put, Sault Ste. Marie offers the best path forward for Noront to locate the FPF in Northern Ontario.**




SITE MAP



LEGEND

-  CONTOURS
-  EXISTING BUILDING / STRUCTURES
-  EXISTING ROADS
-  EXISTING RAIL
-  PROPOSED SHARED SERVICES
-  PORT OF ALGOMA PROPERTY BOUNDARY
-  RESIDENTIAL PROPERTY
-  CITY OWNED INDUSTRIAL LANDS 25 Ha
-  POTENTIAL AREA FOR PLANT STACKS
-  DORMANT AREA (NO ACTIVITY)
-  NEGOTIABLE SPACE 310 Ha

 <small>AECOM Canada Ltd. 523 Wellington Street East, Suite 500, Markham, Ontario, Canada M3A2M1 7705-9423 905-947-1700 ext. 3542</small>				SCALE REFER TO BAR SCALE	
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CONCEPTUAL SITE PLAN

Proposed Ferrochrome Processing Plant

CONTRACT No. 60363271

DRAWING NO.

P1



SUITABILITY OF THE PROPOSED FERROCHROME PRODUCTION FACILITY SITE

Noront is seeking a brownfield site that has close proximity to a community that is familiar with large resource sector infrastructure and has the labour force and supplier network to support the facility.

Additionally, the requirements call for shipping infrastructure (roads, rail, and port), gas and electrical power supplies, and water and waste water facilities. This section will describe Sault Ste. Marie's suitability to site the ferrochrome production facility (FPF) and detail the infrastructure, labour force and supplier network to support the facility.

Sault Ste. Marie has identified an existing brownfield site within the City of Sault Ste. Marie that is zoned heavy industrial and is ideally situated adjacent to large steelmaking operations, an active shipping port and other industrial users. The overall land area owned by Algoma and bounded by the West Davignon Creek Diversion to the West, the ore docks to the east, the rail line to the north and St. Mary River to the south is approximately 400ha. Furthermore, there are other industrial lands to the north of the railway including additional Algoma owned lands, City-owned lands and the existing Yates Avenue industrial subdivision.

2.1. SITE DESCRIPTION

The proposed industrial location is approximately 400ha in total and can retain emissions within the 1.5km x 1.5km area for dispersion. Algoma and Port of Algoma (PoA) are prepared to negotiate a suitable land tenure for approximately 100ha (plant site) within the northwest and central areas of the lands bordered by the West Davignon Diversion to the west, shared raw material storage area to the east, St. Marys River to the south and the rail line to the north as delineated on the attached site plan.

See [ANNEX 1 - Site Map](#).

A portion of the area noted above is presently dormant, as delineated with hatching on the attached site plan, while other areas of the site accommodate ongoing Algoma and PoA operations. There is the potential to relocate some ongoing operations to accommodate the proposed plant site.

Algoma has also committed to locating the plant stacks within the area identified as satisfying the zone of impingement (identified on site map) and to providing access to and use of the raw material (i.e. anthracite and limestone) storage area (approx. 27ha and shaded brown on the site map). Sault Ste. Marie has vacant industrial lands (25ha) adjacent to Yates Avenue that are available to the project. The City-owned lands are well suited for an office complex and gatehouse to control access to the site and the raw material storage area is already established to support Algoma's operations.

A 20m right-of-way has also been identified to gain direct access to the site from the east end of Yates Avenue. This corridor would accommodate required services and utilities inclusive of power, potable water and waste water. Natural gas is already present within the site. Alternatively, the site could be accessed and serviced from the existing Base Line entrance immediately adjacent to West Davignon Creek Diversion as noted on the site plan.

2.1.1. SIZE OF THE SITE

The overall land area identified inclusive of shared storage areas, the City-owned industrial property on Yates Avenue and the proposed 100ha land tenure with Algoma/PoA is 152ha. Some dimensions and a bar scale have been included on the site plan to assist in understanding the site dimensions.

The areas immediately adjacent to the proposed site are industrial land uses and a significant proportion of this brownfield site is situated a minimum of 750m from adjacent sensitive uses to facilitate adequate dispersion of emissions. The area of the site that is situated at least 750m from adjacent waterways and residential properties is shaded green on the attached site plan.



AVAILABLE
PERMITTED COAL STORAGE



OVER 400HA
OF INDUSTRIAL LAND AVAILABLE

The site is suitable to address all requirements including stockpiling of raw materials, slag, and products; the pretreatment and production processes; offices, warehousing, and ancillary buildings; site roads, services, and utilities. The site is reasonably flat and can be graded to suit without significant alterations.

2.1.2. DISTANCE TO NEAREST WATER BODIES

The site plan can be developed to ensure a portion of the FPF is situated a minimum of 750m from adjacent water bodies consisting of the St. Mary River to the east, west and south and the West Davignon drainage diversion to the west. The area of the site that is a minimum of 750m away from residential properties and water bodies is shaded green on the attached site plan (ANNEX 1). It is anticipated the plant stacks would be located within the portion of the plant site within the green shaded area to provide adequate separation for emissions dispersion.

2.1.3. SEPARATION OF SITE FROM RESIDENTIAL AREAS AND OTHER NEIGHBOURING FACILITIES

The proposed site is an ideal location for the FPF. The area surrounding the site is primarily populated with other heavy industrial developments with the principal neighbours consisting of Arauco (medium density fibreboard production plant) to the west, City of Sault Ste. Marie West End Water Pollution Control Plant and the Yates Avenue industrial subdivision to the north and Algoma to the east. There are no schools or government offices in close proximity to the site and the nearest residential properties are identified on the attached site plan. The West Davignon Creek and diversion channel generally flows from north to south and is accommodated in a linear parcel of land that is zoned Environmental Management or Parks and Recreation. The diversion channel crosses Wallace Terrace and parallels Yates Avenue between Yates Avenue and Wallace Terrace before eventually turning south along the western boundary of the Algoma property and discharging to the St. Marys River. This diversion channel is shown on the attached site plan. The area of the site that is a minimum of 750m away from residential properties and water bodies is shaded green on the attached site plan (green shading –ANNEX 1).

As previously mentioned, it is anticipated the plant stacks would be located within the portion of the plant site that is also within the green shaded area to provide adequate separation for emissions dispersion.



2.1.4. PROXIMITY TO OTHER FACILITIES

The proposed site is within a 1km radius of other large industrial facilities including:

Algoma is a fully integrated steel producer with a raw steel production capacity of approximately 2.8 million tons per year. Algoma offers a wide range of hot and cold rolled steel sheet and plate products. The addition of Noront as a neighbouring industry would strengthen and augment the supplier base to the mutual benefit of both businesses.

A robust, competitive, and growing supplier base is one of many synergies that would evolve from Noront's establishment in Sault Ste. Marie.

- Potential Shared Services:
 - Maintenance Support Provided by Algoma
 - Maintenance of roads
 - Power distribution
- Potential Shared Services:
 - Logistics Support provided by Algoma
 - Stores
 - Procurement – general
 - Procurement – coal & limestone supply
 - Site storage – coal and limestone (anthracite/coal permit already in place)
 - Rail shunting
 - Environmental permitting, monitoring and reporting

Tenaris Algoma Tubes has an annual production capacity of 650,000 tons of seamless and electric resistance welded (ERW) tubes combined, and they deliver a variety of Canadian-made products to serve the diverse needs of the oil and gas industry.

- Potential Shared Services with Tenaris:
 - Port handling/stevedoring
 - Purchasing
 - Industrial services and supply

Arauco manufactures a wide range of sustainable forest product solutions, including the industry's most comprehensive selection of composite panels, premium plywood, millwork, bioenergy, lumber and wood pulp. In Sault Ste. Marie, the company produces medium density fibreboard and operates a lamination facility.

- Potential Shared Services with Arauco:
 - Rail line and shunting



2.1.5. ENVIRONMENTAL HISTORY OF THE SITE

This proposed FPF location is an existing brownfield site. Historically, it has been used by Algoma for disposal of steel making by-products, most notably slag. Numerous boreholes and monitoring wells have been advanced within or adjacent to the site over time. During the environmental assessment phase, all relevant information would need to be assessed for the proposed footprint of the FPF. Remediation requirements, if any, depend upon where the parties negotiate the location of the facility itself and relevant environmental information will have to be exchanged between Algoma and Noront during those negotiations.

2.1.6. ZONING

The proposed site is an existing brownfield and is located within an area designated for industrial use in the City's Official Plan and zoned Heavy Industrial (M3) in Zoning By-law 2005-150. An FPF is classed as heavy industrial manufacturing and is a permitted use in this zone. No zoning changes are required for the proposed plant. The immediately surrounding lands have the same designation and zoning and are used by Algoma and its lessee, the PoA, to support steel production and shipping and receiving of products and raw materials. The immediate neighbours are compatible from a land use perspective, but it may be necessary to consider cumulative environmental effects during the environmental assessment and permitting phases. With reference to the Official Plan Schedules, the site is not constrained by hazards, natural resources, archaeological resources or environmental features. Further, there are no other community or regional plans that could lead to zoning changes (See [ANNEX 2](#) - Heavy Industrial Zoning).



2.1.7. LOCAL COMMUNITY SENSITIVITIES AND CONCERNS FOR ADDING A METALLURGICAL FACILITY

Sault Ste. Marie does not have a history of opposing metallurgical facilities and is very supportive of new industry. Sault Ste. Marie has a long history of supporting Algoma and Tenaris Algoma Tubes, metallurgical companies that have heavy industrial operations. One of the significant benefits of locating in Sault Ste. Marie is that the FPF site would locate on and share space with a long standing brownfield site with compatible and similar historic use.

The City of Sault Ste. Marie has continually demonstrated its intention to build a positive and productive relationship with Noront. Since the first meeting in November, 2016, the SSMEDC, the Mayor, City Council, the MPP and the MP have all expressed support for Noront and the FPF project. Many of these parties have worked closely with Noront to date and through these collective efforts Noront has been introduced to a large part of the business community as well as the leadership of the neighbouring First Nation communities.

Attached hereto in [ANNEX 3](#) is the City Council resolution of May 29, 2017, and letters of support from each City Councillor, MPP Ross Romano, MP Terry Sheehan, Garden River First Nation, Batchewana First Nation, and the Missanabie Cree First Nation. There are in excess of 70 letters of support from members of the business community or the community at large. [ANNEX 4](#) provides all letters of support received.





There is clearly significant goodwill within the community to move forward with the FPF project, as demonstrated through the expressions of support and the cooperation Noront has received to date. However, it is important to note, recognize and respect that there are some community sensitivities and concerns. Those concerns expressed to, and shared by, the leadership of the community can be identified generally as follows:

- Environmental impact of an FPF facility
- Health impact of an FPF facility
- Meaningful community engagement of the community at large
- Meaningful community engagement of our First Nation partners

A large scale industrial development like the FPF project will have an environmental footprint. There is some concern that the processing activity could also have an adverse impact on citizen's health. Both concerns are reasonable and while the first is rooted in the understanding that the FPF will consume large amounts of energy and create significant CO2 emissions, the second is largely based on the concern over the FPF output of potential environmental contaminants.

It is important to the political leadership of the community and the community itself, that a broad and substantial effort is made to educate the community on the current technological process involved in a modern FPF (including the inputs, the outputs and the consequences thereof). Sault Ste. Marie believes that education, information sharing and respectful dialogue are essential to sincere community engagement and that sincere community engagement is essential to broad-based community support. A substantial community education and engagement effort will go a far way in alleviating community concerns and sensitivities. The leadership of the City including City Council, senior staff and the City's Planning Department will work with and support Noront to this end. In addition, MPP Ross Romano and MP Terry Sheehan will Co-Chair a committee of community members that will be available to assist and support Noront.

The committee will serve to provide community insight and feedback to Noront, but also to assist Noront and the City with engaging the community.

With respect to our First Nation partners, the project team solicited feedback directly from those communities. In addition to the expressions of support included herein, the materials provided in ANNEX 5 were developed by Darrell Boissoneau, a member of Garden River First Nation who has served as Chief and as band councillor. Darrell has worked closely with the City of Sault Ste. Marie and with the PoA to assist with the development of First Nations relationships and we provide his perspective and suggestions accordingly.

The project team has developed a web portal to provide information related to this submission, but also with the intention of communicating information during the consultation and permitting processes that will follow in Sault Ste. Marie. Sault Ste. Marie will continue to use the website post - bid submission and will make the site available to the FPF project as an additional community engagement tool. The website may be found at www.saultFPFproject.com

Sault Ste. Marie is committed to working with Noront and the First Nations to address the concerns raised by our First Nation partners and our community at large.




2.1.8. WEATHER CONDITIONS AND HISTORY

The climate of Sault Ste. Marie is very similar to other Northern Ontario cities that are located at the same latitude.

The temperature is somewhat moderated by its location and proximity to Lake Superior. During the winter months, the temperature will be warmer than other Northern Ontario communities and in the summer months it will be slightly cooler. There is very little fog and rarely any insect infestations. Weather in Sault Ste. Marie is pleasant with four distinct seasons. As the most 'southerly northern city' of the four shortlisted communities, our climate allows us to offer many types of adventure and travel options. There are no significant weather events that would impede the operations of the FPF in Sault Ste. Marie. Within city limits, our community has a focus on maintaining major arteries and truck routes during inclement weather. This is rarely disruptive and has minimal impact to business operations.

AVERAGE MONTHLY TEMPERATURES



Jan	-9.5°C	Jul	18.6°C
Feb	-7.8°C	Aug	18.2°C
Mar	-3.1°C	Sep	13.4°C
Apr	3.9°C	Oct	7.3°C
May	11.8°C	Nov	0.6°C
Jun	15.8°C	Dec	-5.9°C

WEATHER STATISTICS



Average Daily Temperature	5.3°C
Days Above 0°C	195
Days Above 20°C	89.5



Yearly Precipitation	90.6cm
Average Snowfall	472cm
Record Snowfall (1989-1990)	782cm
Yearly Days with Precipitation	175

SECTION SUMMARY

Sault Ste. Marie provides the path forward for the successful construction and operation of an FPF with the following site advantages:

- closer to the US market than any of the other competing cities
- a brownfield 'investment-ready' site that meets all Noront's requirements
 - Over 400ha of industrial land
 - Algoma supports the community's efforts in attracting and facilitating the responsible development of a state-of-the-art FPF in Sault Ste. Marie
- readily accessible by marine, rail and truck for shipping inputs and outputs and the only site in northeastern Ontario with port access
- coal handling and material storage areas that are already permitted
- support from Indigenous communities and leaders
- Established community engagement committee with local leaders to assist Noront
- a proven community track record of working together on large public and private sector projects as evidenced by Tenaris Algoma Tubes, Ontario Lottery and Gaming Corporation, Port of Algoma and Huron Central Railway

2.2. SITE, LOCAL AND REGIONAL INFRASTRUCTURE

The proposed site for the FPF is located on the lands owned by Algoma and a section is currently leased to the PoA. The port offers competitive marine carrier and cargo handling rates for bulk and heavy general cargo compared to other transportation modes. The site is also served by the Huron Central Railway (HCRY), which connects with the Canadian Pacific (CP) mainline at Sudbury, and the Canadian National (CN), which also owns and operates the former Algoma Central Railway (ACR), a key North-South link between Hearst and Sault Ste. Marie.

As part of preparing this proposal, the Project Team engaged logistics experts at AECOM. Their high-level transportation cost assessment suggests that Sault Ste. Marie is the most cost-effective location for an FPF in Northern Ontario. This is due in large part to the direct access to dock facilities and barging services. Sault Ste. Marie's competitive advantage not only results from having direct access to all modes of transportation on site, but also from potential co-sharing agreements with other users of the port such as Algoma and Tenaris Algoma Tubes.

INPUTS: CHROMITE

Noront expects to ship between 500 thousand and 1.2 million dry tonnes of containerized chromite by truck from the mine to a facility where it will be trans-loaded onto the CN rail corridor and transported to the production facility. The rail corridor, owned and operated by CN, directly serves the PoA.

Whether the trans-loading facility is located in Nakina or Sioux Lookout, the transportation costs for shipping chromite from the mine to the FPF are expected to be very similar for Sault Ste. Marie, Timmins and Sudbury, given the similar rail distances from Nakina (i.e. 670 km, 685km and 710km respectively) and from Sioux Lookout (roughly 1,000km). The Timmins destination requires a two-line haul, which may increase the freight.

The absence of a direct rail connection between Nakina and Thunder Bay suggests that chromite would need to be transported by road, which significantly increases both the costs and the environmental impacts for this operation. A trans-loading facility in Sioux Lookout would reduce the costs for shipping to Thunder Bay, but the rail distances to Thunder Bay are still be much greater than to the more eastern locations.

Preliminary discussions with CN confirm that transporting the projected volumes from Nakina/Sioux Lookout to the port lands would not be a concern. Also, it is worth noting that Algoma currently has a railcar usage agreement for shipping out its products, mainly to the US through the international connection to upper Michigan.

INPUTS: ANTHRACITE, QUARTZ & LIMESTONE

In addition to chromite; anthracite, quartz and limestone are the three major consumables required for the production of ferrochrome. Barging is the most cost-effective mode of transportation for shipping these inputs given the large volumes required. The PoA has the barging and storage capacity for handling and storing of these products.

Preliminary discussions with Algoma suggest there are economies of scale that could be achieved through a co-sharing arrangement with Algoma for both shipping and storing the products. The steel mill purchases approximately 1.4 million tonnes of coal and 300 thousand tonnes of dolomite each year. Algoma also purchases a smaller amount of high quality limestone which is used to clean the slag machines. Algoma currently receives two shipments of coal and limestone per month during the navigation season, which extends over nine months. The marine carriers use self-unloading vessels for these two products, which offers important handling cost savings relative to other modes of transportation. Additionally, Algoma is already permitted to receive and store anthracite coal and has committed to sharing that industrial capacity with Noront.

OUTPUTS: HIGH CARBON FERROCHROME

Noront expects to produce between 200 and 560 thousand tonnes of high-carbon ferrochrome per year, which will be transported to stainless steel plants in the United States. Noront expects to transport ferrochrome by rail to its clients. However, given the location of the proposed site on port lands, barging is a feasible and much less expensive option for moving ferrochrome relative to rail or truck.

Currently barge loads of steel are shipped from Sault Ste. Marie to Chicago, Gary, Milwaukee, Detroit and Cleveland. Purvis Marine and McKeil Marine Ltd. are the two major barge operators who ship regularly from Sault Ste. Marie. Both operators have confirmed that they have the capacity to handle the ferrochrome volumes and have provided preliminary rates to different Great Lakes ports in the United States.

From any given major Great Lakes port, the ferrochrome would need to be trans-loaded onto smaller river hoppers to be shipped to final destinations. Although the end clients

have yet to be confirmed, most of the major stainless steel plants in the US have docks and are served by freight rail corridors. Barge operators on the Mississippi, Ohio, Cumberland and Tenn-Tom river systems are numerous. The marine option is available nine months of the year due to the closure of the Soo Locks from mid-January to end of March. During the winter months, ferrochrome can be transported by rail or truck to end clients.

POTENTIAL CLIENT LOCATIONS

The final destinations are yet to be determined, but potential client locations include the following:

- AK Steel, Rockport, IN (Ohio River)
- Fischer Steel, Hillsboro, TN (Cumberland River)
- Arcelor Mittal, Calvert, AL (Tenn Tom River)
- North American Stainless, Ghent, KY (Ohio River)
- Scott Steel, Northbrook, IL (Chicago Area)
- US Steel, Detroit, MI (Rouge River)
- Arcelor Mittal, Cleveland, OH (Cuyahoga River)
- MTI Metal, Pittsburgh, PA (Ohio River)



The high-level estimate suggests that barging from the Sault Ste. Marie facility to clients is the most cost-effective option. Cost estimates based on similar flows in the region suggest that marine can achieve cost savings of 30% and 12% relative to road and rail transport, respectively. These savings translate into more than \$5 million per year (in 2018), assuming a production of 200 thousand tonnes of ferrochrome.

The table below demonstrates that barging from Sault Ste. Marie is the most competitive option from a transportation cost perspective, relative to other modes and to other

potential site locations for the FPF. The cost of moving ferrochrome by barge from Sault Ste. Marie result in cost savings ranging between 10% and 55% relative to other potential locations.

The high-level cost assessment does not take into account seasonality. The closure of the Soo Locks from mid-January and to the end of March may require reverting to rail for outbound shipments during winter. The cost estimates also do not account for storage fees, wharfage fees and trans-loading fees for the raiing and trucking options.

TRANSPORTATION COST ESTIMATES

Method of Transportation	North American Stainless Ghent, KY (Ohio River)		Arcelor Mittal Calvert, AL (Tenn Tom River)		MTI Metal Pittsburgh, PA (Ohio River)		Average Cost per Metric Tonne	
	Distance	Cost per metric tonne	Distance	Cost per metric tonne	Distance	Cost per metric tonne		
FROM SAULT STE. MARIE	MARINE	700km	\$70/mT	700km	\$90/mT	700km	\$90/mT	\$80
	RAIL	1,400km	\$80/mT	2,200km	\$130/mT	1,200km	\$70/mT	\$90
	TRUCK	1,000km	\$90/mT	2,000km	\$170/mT	1,000km	\$90/mT	\$120
FROM TIMMINS	RAIL	1,800km	\$100/mT	2,600km	\$150/mT	1,300km	\$70/mT	\$110
	TRUCK	1,600km	\$140/mT	2,500km	\$220/mT	1,200km	\$100/mT	\$160
FROM SUDBURY	RAIL	1,500km	\$80/mT	2,500km	\$140/mT	1,000km	\$60/mT	\$90
	TRUCK	1,200km	\$110/mT	2,200km	\$200/mT	900km	\$80/mT	\$130
FROM THUNDER BAY	MARINE	1,100km	\$80/mT	1,100km	\$100/mT	1,100km	\$100/mT	\$90
	RAIL	2,000km	\$100/mT	2,800km	\$160/mT	1,300km	\$80/mT	\$120
	TRUCK	1,800km	\$160/mT	2,500km	\$220/mT	1,700km	\$150/mT	\$180

Notes: The cost estimates for the barging option were provided by McKeil Marine Ltd. The unit costs for truck and rail represent an average unit cost per metric tonnes for shipments of similar products between Northern Ontario and various North American locations. These costs were provided by local shippers in the region.



OUTPUTS: SLAG

The site is well equipped to store, handle and ship slag. Algoma produces over 200 thousand tonnes of granulated slag each year. The slag is purchased by a third party which uses it as binder for cement. The Michigan Department of Transportation purchases a portion of the air-cooled slag resulting from the steel making process. Inter-Ontario Inc., located on Yates Avenue just minutes from Algoma's gates, is engaged in the manufacturing of slag aggregate for both domestic and international markets. Therefore, an opportunity exists to leverage the existing operation and relationship to benefit Noront in selling and removing its slag by-products.

BULK MATERIAL AND PROJECT CARGO

Breakbulk shipping potential is directly available in Sault Ste. Marie. Foundry sites can be at or near the export dock facilities. Ocean vessels regularly offload steel at Sault Ste. Marie and the same facilities can be used to offload project cargo.

REDUCED GREENHOUSE GAS EMISSIONS

In addition to transportation cost savings, the barging option is more fuel-efficient and a lower emitter of greenhouse gases and Criteria Air Contaminants relative to land-based alternatives. A 2010 Study commissioned by the Saint Lawrence Seaway Development Corporation suggests that by 2025 vessels operating on the Great Lakes are expected to produce approximately 8g of GHG emissions per tonne-kilometre compared to 13g and 65g for rail and truck respectively. Barging ferrochrome to end clients in the United States could thus reduce annual GHG emissions by 40% and 90% relative to rail and truck respectively.



2.2.1. ROADS TO AND ON THE SITE

The site has road access that can accommodate more than 200 trucks per day, plus all other vehicular traffic anticipated. The proposed site is accessible from three interprovincial/state highways and can accommodate heavy, large and oversized loads as follows:

- Highway 17 North, 17km to the site via Great Northern Road, Second Line, Allen's Side Road and Yates Avenue
- Highway 17 East, 18km to the site via Trunk Road, Black Road, Second Line, Allen's Side Road and Yates Avenue
- International Bridge, border with Michigan, 9km to the site via Huron Street, Queen Street, Carmen's Way, Second Line, Allen's Side Road and Yates Avenue

The municipal roadways leading from the provincial highways and International Bridge to the site are hard surfaced (paved), arterial, Class A Truck Routes (truck traffic permitted 24/7). A plan illustrating the City's truck routes is attached in [ANNEX 6](#).

Each of the municipal roads from the provincial and state highway systems consist of either a Class A road cross section with storm sewers and curb and gutter or a Class B road section with shoulders and roadside ditching. There is sufficient available capacity on regional highways and municipal roads for traffic generated by this facility. There are no one-way streets or heavily congested traffic flows on access routes that would significantly impede travel times. There exists the usual customs/immigration inspection times associated with vehicular USA/Canada border crossings at the International Bridge.

The three highways leading into the community all have at-grade railway crossings as follows: one from Highway 17 North, three from Highway 17 East, and three from the International Bridge. The access route from 17 North also has one railway overpass.



Direct access to the site will be provided via an on site access road constructed from the east end of Yates Avenue southerly into the site along a proposed 20m right-of-way as shown on the attached site plan ([ANNEX 1](#)). Alternatively the site could be accessed from the existing Base Line entrance immediately adjacent to West Davignon Creek Diversion.

2.2.1.1. Traffic Restrictions

Half load restrictions due to spring thaw do not apply to Class A truck routes. Oversized or heavy loads can be delivered to site by road (with permits if necessary), water or rail. Road access to the site is provided by designated truck route arterial roads and many oversized loads have been accommodated for other large-scale developments.

There is a modest increase in travel time during busier times of the day. The community enjoys uncongested traffic along local and regional routes that provide access to the site. This is further enhanced by the City's dedicated truck route to better facilitate heavy traffic flow which was constructed in 2006 (refer also to Section 3.8).

2.2.1.2. Road Surfacing

All of the roads leading to the site are hard surfaced (asphalt roads) and suitable for all types of vehicular traffic as truck routes are well maintained by the City, particularly in the winter months.

2.2.1.3. Road Shared Use

Routes to the site are Class A truck routes. There are no major impediments to traffic flow that could result from shared use, including school bus, slow moving vehicles or other uses that could impact travel times. On site, access to cold storage and material handling will be shared with Algoma. It is proposed that a new dedicated access corridor to the site will be developed through Yates Avenue. See section 3.8 for further detail on Site Access.

2.2.1.4. Road Maintenance

Winter control and maintenance of all municipal routes to the site are the responsibility of the City. All maintenance standards are met and there is very little risk of wash-out conditions and/or other factors affecting the use of the roads or impeding traffic flow to the site.

2.2.1.5. Road Upgrades

The portion of Allen's Side Road that can provide alternate access to the site is in need of resurfacing. The budget estimate is \$2.2 million. Sault Ste. Marie may consider conversion to a Class 'A' road cross section (i.e. with curbs and storm sewers for drainage) depending on development in the area. Noront would not be expected to share in the cost or have a toll or other fee applied to cover these costs.



2.2.2. RAIL SERVICES TO AND ON THE SITE

The site is serviced by both CN and the Huron Central Railway (HCRY). Both HCRY and CN provide rail service directly to the site, with direct access to and inside Algoma.

CN has connectivity north through to the main East-West CN line servicing national and international markets. In addition CN purchased Wisconsin Central (WC) in 2001, which allowed the company's rail network to encircle Lake Michigan and Lake Superior, permitting connections that are more efficient from Chicago to western Canada. The transaction also included Canadian WC subsidiary Algoma Central Railway (ACR), giving access to Sault Ste. Marie and Michigan's Upper Peninsula.

The HCRY was established in July 1997 to operate a 173-mile (278 km) route leased from the Canadian Pacific Railway (CPR) between Sudbury and Sault Ste. Marie. Coil steel manufactured by Algoma in Sault Ste. Marie and freight from the Domtar paper mill at Espanola account for 80% of freight traffic, although pulpwood, chemicals used by the steel industry, slab steel, paper, and miscellaneous goods are also carried.

2.2.2.1. Other Rail Users

CN's involvement in local freight is as a result of its 2001 purchase of the Algoma Central Railway (ACR) as part of a larger package of railway lines from Wisconsin Central (WC), which acquired the ACR in 1995. This corridor positively affects the project providing an efficient means for getting ore south to Sault Ste. Marie by rail from the main CN east-west corridor without any trans-load requirements.

CN also operates the Agawa Canyon Tour Train, a one-day wilderness rail excursion to Agawa Canyon. It operates from early June to mid-October. With over 30,000 passengers annually, it is Sault Ste. Marie's premier tourist attraction. The Tour Train does not negatively impact freight service as its schedule is outside freight runs or the Tour Train is sided when passing through Agawa Canyon.

A Working Group exists with a focus on establishing a trans-load facility in Sioux Lookout, Ontario to serve multiple commercial and industrial businesses operating in northwestern Ontario and the Far North communities. Sault Ste. Marie has been approached and is working closely to develop a relationship between the two communities to service Noront's needs.



2.2.2.2. Rail Condition/Upgrading Requirements

CN ensures rail conditions are safe through regular upgrades to safeguard freight; and particularly, passenger safety is maintained. Robert Bart, Senior Partner East, Network Strategies at CN indicated that:

- the FPF project would not be a concern on current track conditions
- moving gondola cars, containers or bags of product would not be an issue
- trans-loading at Aroland was the preferred point however, Sioux Lookout could work with new infrastructure and could work if East-West road becomes preferred route
- CN would enter into commercial terms with Noront when the time was appropriate
- track condition & equipment is suitable for cargo

2.2.2.3. Shunting Equipment & Other Services

A number of options are available for shunting equipment and other track services to the site. First, a shared service agreement with Algoma is available for consideration. Algoma's rail network consists of approximately 43km of mainly 115lb bolted rail. The track system is typically maintained by Algoma's internal resources that are supported by contractors as required.

The network consist of 5 main areas: north yard, south yard (CN tracks allocated to Algoma), finishing mills, plate storage and 'Transwest'. Each yard has designated inbound, outbound, empty, loaded and holding tracks. The north yard is used mainly for CN routed traffic and the south yard for HCRY/CP routed traffic. Total car capacity of the yard is approximately 650 – 700 cars depending on car types at any given time. Various car types can be handled within the facility: box cars (Arauco), gondolas, flat cars, covered coil cars, bulkhead flat cars, and tank cars.

Peak rail movements occur between mid-January and late March while the Soo Locks are closed with 350-400 cars/day being moved in and out of the facility. Car movement during the remaining months is 230-260 cars/day.

CN performs all switching into and out of Algoma and Algoma crews perform all internal movement requirements following Transport Canada guidelines. There is a shared track agreement in place with CN that allows both companies to run on each other's tracks to perform some switching requirements.

Algoma currently has a fleet of 11 locomotives (9 owned and 2 leased units) with 8 required in service to support operations. Rail car tracking and switching requirements are handled by Algoma's internally designed rail car management system. Interchange requirements with CN are handled through CN's web site. CP requirements are handled through daily communication with the HCRY/CP.

2.2.2.4. Distance to Nearest Marshalling Yard

The CN/ACR (Steeltown) Marshalling Yard is 4km from the site and it has plenty of room for marshalling. Direct access to the site is available from CN's north-south line from Hearst to Sault Ste. Marie. The HCRY yard is approximately 5km to the site. As mentioned in the previous section, there is rail access directly to the proposed site through Algoma.

2.2.2.5. Rail Ownership

To facilitate the investment by Noront, minor rail would need to be constructed to tie into the shared network at Algoma. It is expected that there would be a very minor investment with track and sidings to meet Noront's requirements as there is track to the site on the east and north sides. As identified in the previous sections, CN and HCRY/CP primarily own the rail assets leading to Algoma and Algoma owns all assets within the proposed industrial parcel.

ANNEX 7 shows the community's rail connectivity.



2.2.3. PORT FACILITIES AT/NEAR THE SITE

The PoA, located on the site of the proposed property, is strategically located on the Canada/U.S. border at the hub of the Great Lakes. It is adjacent to the Soo Locks which provides a vital shipping connection from Lake Superior to the Great Lakes - St. Lawrence Seaway System. Over 5,000 vessels pass through the Soo Locks annually hauling 86 million tonnes of cargo.

The PoA extends approximately 3.5km along the existing shoreline from the dock beside the Algoma, along the shores of the St. Mary River, Leigh's Bay and West Davignon Creek to Base Line Road, and then along a section of Base Line Road.

Many improvements are planned to expand capacity and modernize the facility. The harbour complex already handles nearly 500 vessels a year and approximately 5 million tonnes of shipments – such as finished-steel products, iron ore pellets, coal, limestone, coke and other materials – making it the fourth largest port on the Canadian Great Lakes by volume. The FPF project aligns with the PoA's expansion plans.

The PoA links to all major multi-modal transportation networks, including Class 1 Railways (CN and CP), road (the midpoint of TransCanada Highway 17 and the most northerly point of the U.S. Interstate Highway 75), and air (Sault Ste. Marie international airport).

2.2.3.1. Dock or Port Access

There is ample room to grow at the existing port site, with industrial land available for development within close proximity to industries such as steel, pipe and tube, MDF manufacturers, trap rock quarries, and an expansive fibre basket. The port complex and access would be shared with other users such as Algoma, Tenaris Algoma Tubes and Inter-Ontario Inc. Recently, the PoA has attracted new cargo volumes from Compass Minerals for salt unloading and shipping. See [ANNEX 8](#) for full map details.

The dock bulk handling facilities can handle a variety of bulk goods, from inbound iron ore and coal to outbound slag by-products. A dedicated bulk cargo ship loading berth will facilitate in getting bulk cargo onto a vessel for quick turnarounds. The PoA also has a vast amount of storage room, some of which have environmental permits in place for coal storage and handling. Equipment is readily available to handle most cargoes. Modifications and additions to existing facilities can be implemented to further aid any requirements that may arise in the future.

2.2.3.2. Restrictions and Other Users

There is ample capability for the port to accommodate the FPF. There are also other users of the port facilities: Algoma, Tenaris Algoma Tubes, Inter-Ontario Inc. and Compass Minerals. There are no load restrictions at the PoA.

2.2.3.3. Condition of Dock

Most of the current docks are in reasonable condition and with correct implementation of their required maintenance schedule will remain in an operable condition; however, two docks, which are still operable are reaching the end of the service life. Through the PoA redevelopment project, upgrades and improvements will be made to dock conditions, vessel safety and to reduce the environmental impact of the facilities.

2.2.3.4. Depth of Water

The shipping routes around the port are at least 26'6" deep for the season low water height. Maintenance dredging is performed in certain areas of the PoA facility to accommodate vessel safety and draft requirements. The redevelopment project at the PoA will also engage in some capital dredging to facilitate access to future berths.



PORT ACCESS

ONLY CITY IN NORTHEASTERN ONTARIO
WITH PORT ACCESS TO INTERNATIONAL MARKETS

2.2.3.5. Seasonal Restriction

The seasonal restrictions consist of the Soo Locks closing from January 15th to March 25th annually. During this time, the US Army Corps of Engineers perform winter repairs and maintenance. This is a common time in Canada/US for winter maintenance to be performed on any shipping channel/port/lock system. This means that the PoA, situated on Lake Superior, is isolated from the rest of the Great Lakes. However, product from Lake Superior is still able to access the Port and with a combination of public and private ice-breakers the shipping season on Lake Superior can be extended. During the off-season, it is expected that Noront can stockpile product in Burns Harbour or ship by rail or truck.

2.2.3.6. Bulk Handling Facilities & Storage

The dock bulk handling facilities can handle a variety of bulk goods, from inbound iron ore and coal to outbound slag by-products. A dedicated bulk cargo ship loading berth will facilitate in getting bulk cargo onto a vessel for quick turnarounds. The PoA also has a vast amount of storage room, some of which have environmental permits in place for coal storage and handling. Equipment is readily available to handle most cargoes. Modifications and additions to existing facilities can be implemented to further aid any requirements that may arise in the future.

Sault Multimodal Terminal (SMMT) consists of a 60,000 square foot warehouse and distribution center (30ft. ceiling height) situated on 20 acres of land. The terminal is conveniently located on Carmen's Way (truck route) and adjacent to the International Bridge. The property is also adjacent to Algoma with the potential of avoiding city streets for transiting between the two properties.

The terminal is unique in that it is serviced by both CN and CP Railroads. Both rail lines run through the terminal building allowing cargo to be loaded and unloaded within a secure facility. SMMT currently operates with 3,000 feet of railroad track, but have the potential to expand to 12,000 feet of track.

Sault Ste. Marie is the only border crossing that does not experience any significant delays to cross the border.





KEY FEATURES OF SMMT

Building

400ft of enclosed rail-to-warehouse transfer area with 30ft of clear ceiling height, truck docks with one heavy load ramp, and warehouse is accessible to both main Canadian railways with no inter-rail switching costs.

Rail Access

The heated warehouse is accessible to both main Canadian railways (CN and CP) with no inter-rail switching costs. Storage capacity for 6 rail cars inside heated warehouse for easy truck to rail handling. Three rail tracks are available for loading or offloading goods.

Truck Access

Warehouse has 12 truck bay doors for unloading, reloading or cross docking. Concrete trailer pads at all bay doors. Easy access to Sault Multimodal Terminal via Carmen's Way Truck Route to and from International Bridge crossing to United States (1km away). Truck Driver's lounge inside warehouse.

Loading Equipment

Consists of both a 6000lb and 5000lb capacity fork truck. Paper roll fork truck is a Caterpillar Hewitt Model #GC5SKSTR with the capacity of handling up to 12,000lb. The folk truck has a Cascade Adaptive Force Control "smart clamp" technology. Scissor lifts are available for securing rail loads inside or outside warehouse. Also, a heavy loading 60,000lb fork truck is available on request.

Outside Storage Availability

Sault Multimodal Terminal Inc. has 10 acres of outside storage. Any forestry, mining, industrial equipment, or goods can be staged on the property for shipment via truck or rail.

[Purvis Marine Ltd.](#) (PML) is predominantly a tug and barge company servicing the Great Lakes. PML's flat-decked barges have capacities up to 11,000NT. PML barges frequently call at Chicago, Burns Harbor, Milwaukee, Detroit, Toledo and Cleveland. The barges are capable of self-discharging some commodities. The company is capable of providing equipment for, towing, salvage, barging, dredging, and marine construction, on an operated (fully found basis) or by equipment rental (bare boat basis).

2.2.4. AIRPORT

The Sault Ste. Marie Airport is located 16km from the city centre and is operational 24 hours per day 7 days a week for aircraft access. With two 6000ft runways, the airport's current volume is 212,000 passengers/year and ranks among the 30 busiest airports in Canada. The airport has on site ARFF service to Category 6 to 17 hours per day as well as winter maintenance from November to March 17 hours per day. Security is on site 24 hours per day, and NAV Canada provides Air Traffic Control 16 hours per day.

2.2.4.1. Regular Scheduled Service by Common Carriers

Scheduled carriers currently serving the airport are Air Canada Express with direct flights to and from Toronto Pearson International Airport (up to 6 times daily). Porter Airlines also provides service to Toronto via Billy Bishop Toronto Island Airport downtown Toronto (up to 3 flights daily). Bearskin Airlines provides direct service to and from Thunder Bay and Sudbury (up to 7 flights daily). All flights are approximately 75 to 90 minutes in duration gate to gate.



2.2.4.2. Chartered Services

There are no charter operations located at the airport, however, any charter company can provide services to the airport. On site companies such as Sault Academy of Flight with a small Aircraft and Eagle Feather Aviation with a small helicopter could provide a very limited passenger level charter service.

Sunwing also provides winter seasonal service to Punta Cana weekly. The Airport has 'Airport of Entry' international customs service availability with the Canadian Border Service Agency.

2.2.4.3. Hire Car & other Airport Services

The airport is home to car rental companies Avis/Budget and Enterprise/National car rentals. There is also limousine service on site by Hollywood Limo. Taxi service is provided on site by Soo Yellow Cab. Other airport on site services available includes:


- Sault College Aviation
- JD Aero
- Ministry of Natural Resources and Forestry
- Eagle Feather Aviation Inc.
- Sault Academy of Flight
- Humphrey Aircraft Services

2.2.5. ELECTRICAL POWER

Sault Ste. Marie and the Algoma District region are served by a regional energy network that is diverse and robust with large generators of power (hydro, wind, and solar) available for large industrial loads. The community is in a strong position related to transmission system capacity in the Province of Ontario. There are many areas outside of Sault Ste. Marie that experience congestion and have limited capacity for growth. The historical development of energy generation in excess of local load places Sault Ste. Marie in the position to accept large load connections without requiring significant expansion.



The community also has a unique option for business travelers with service from Sault Ste. Marie, Michigan's Chippewa Airport. Delta Airlines offers convenient flights to all major markets via their Detroit terminal offering a low-cost alternative for travel to the United States.



For over a century, Sault Ste. Marie has been a hub for innovative energy development, and the resulting mix of generation sources, transmission facilities, and world class service providers make electricity supply and pricing a key strength in Sault Ste. Marie's proposal.

The FPF will be developed initially with two electric-arc furnaces and have two additional furnaces added in a subsequent expansion. Electric-arc furnaces operate on batch cycles which use significant power for a short period of time. The project team has worked to design a solution that meets Noront's requirements.

Sault Ste. Marie retained the services of N-Sci Technologies Inc. to undertake an analysis of requirements, planning, capital cost estimates, operating costs and a description of resources. [ANNEX 9](#) contains a more detailed analysis of Sault Ste. Marie's electricity supply options for Noront's consideration.

2.2.5.1 Electrical Supply

The Independent Electricity System Operator (IESO) has 21 electricity regions across the province of Ontario, divided based on electrical infrastructure boundaries.

The East Lake Superior Region includes all the former Great Lakes Power Transmission's (GLPT) 560km of transmission lines, as well as ties to the provincial grid at Hydro One's Wawa Transformer Station (TS) in the North West; Mississagi TS in the Northeast; and, Hydro One's 115kV line supplied from the Wawa TS. Hydro One purchased GLPT in 2016. It is currently operating as Hydro One Sault Ste Marie Limited Partnership. There is an abundance of power available in the region, with over 1300MW to supply Noront's requirements.

A needs assessment was conducted for the East Lake Superior region in late 2014. Through this process, it was determined that there are no electricity needs in the next 10 years requiring regional coordination. This study covered a period addressing future requirements through 2024.

Therefore, there are no known reasons that the FPF load cannot be serviced through the existing transmission network in, and to, Sault Ste. Marie.

2.2.5.2. Condition of Existing Electrical Service

Sault Ste. Marie, through a community-owned and Ontario Energy Board licensed transmission entity – PUC TransCo, is proposing to provide all the transmission connection facilities that would be needed to connect the new FPF to the existing 230 kV Third Line TS owned by Ontario Hydro Sault Ste. Marie. This would be newly constructed infrastructure.

The connection assets would consist of the following:

- Two new 230kV breakers at Hydro One Sault Ste. Marie's Third Line TS
- Two new 230kV feeders routed from Hydro One Sault Ste. Marie's Third Line TS to the FPF Substation, each feeder rated for 360MVA continuous operation
- One new 230kV substation rated for 360MVA continuous operation





LOWEST ELECTRICAL

DISTRIBUTION COSTS AVAILABLE IN NORTHERN ONTARIO

The proposed routing for this new infrastructure is through an existing corridor that has easements in place. **ANNEX 9** provides greater detail on the location and routing of the infrastructure through the community.

If Noront was required to provide these assets as privately-owned transmission facilities, they would incur a considerable capital cost that can be avoided by the City of Sault Ste. Marie's innovative approach.

2.2.5.3. Substation Facilities & Availability

The existing transmission facilities are owned by Hydro One in the community and they are contained at the Third Line TS. This is a 230/115kV transfer station and it is part of Hydro One's provincial network. This station underwent a major overhaul during the last few years and it is a key element in the regional transmission system. As such, it is a key resource for Hydro One and receives ongoing annual maintenance.

Two new 230kV breaker positions will be required to be added to Hydro One's station to connect Noront's two new feeders. The breaker assets at Third Line TS will be owned by Hydro One.

The remainder of the transmission facilities being proposed for Noront's connection would be new facilities with a design life in excess of 40 years.

2.2.5.4. Local Market Supply Costs & Conditions

Large wholesale electricity customers have three basic components to their bills: electricity supply, global adjustment (GA) and transmission delivery charges. As stated in the request document, Noront will be negotiating a rate for electricity supply directly with the Province of Ontario.

The global adjustment charges may, or may not, be part of that negotiation. If not, the City of Sault Ste. Marie, through its municipally owned utility services company, PUC Services Inc. (PUC), can provide energy storage facilities that will ensure Noront can reduce their GA charges through a shared savings arrangement.

By providing all the required transmission connection facilities through a municipally owned transmission entity, the City of Sault Ste. Marie could ensure that the delivery charges paid by Noront will be minimized.

This combined approach should provide Noront with the lowest electrical operating costs available in Ontario.

In 2016, electricity rates for residential customers in Sault Ste. Marie were the third-lowest in the Province of Ontario, based on an average monthly bill of 750kWh. The PUC provided this data and it indicates that the community is highly competitive for power costs in comparison to the other short-listed communities. See section 4.2.1 'Electrical Power Costs and Delivery'.

2.2.6. NATURAL GAS

Existing services are in place and there are no issues meeting natural gas requirements for the FPF. Based on discussions with Union Gas, all requirements are in-place regarding the needs of the FPF on the proposed location on Algoma lands. The company has indicated that the existing infrastructure meets the requirements of the proposal, with some modifications.

While much more in-depth analysis and engineering work would be required following the identification of the exact location of the proposed facility, Union Gas has indicated that there is a 16-inch gas pipe that crosses the northern boundary of Algoma lands. With some modifications to allow increased gas flow, there should be no issues meeting natural gas requirements for this project.

Based on the work completed to date by distribution planning, the minimum construction activities required for natural gas service for the facility at the proposed site are:

- modifications will be made to allow for the increased flow
- approximately 1.5km of high pressure steel main to be added extending the high pressure line in the area to the edge of the proposed site
- a new customer station to be constructed
- environmental and regulatory approvals will be completed prior to construction

Note that this information is based on the current status of the distribution system. Depending on conditions at the time of contract, additional system reinforcement may be required and could vary significantly from the information presented herein.

2.2.7. WATER SUPPLY

In discussions with PUC Engineering, the potable water supply is not of any concern. There is a relatively new 400mm water main at the edge of the property on Allen's Side Rd, which is connected to the main transmission water main on Second Line that comes from the water treatment plant. As a result, there are no capacity or condition concerns.

2.2.7.1. Process & Potable Water

Municipal water servicing is available along Yates Avenue and has ample capacity to meet the requirements of the proposed plant. Potable water would be extended from the Yates Avenue corridor directly to the proposed ferrochrome production facility as shown on the attached [ANNEX 1](#) site plan.

Alternatively the site could be serviced from Base Line as noted on the site plan.

For process water, the site is situated adjacent to the St. Mary River. This large waterway is used by other industrial users, mostly Algoma, for the supply of process water.

2.2.7.2. Mains/Branch Lines To/On the Site

There is a 300mm diameter distribution water main along Yates Avenue that is looped and has adequate capacity to meet the proponent's needs. A suitably sized service line would be interconnected to this main and constructed into the site along the proposed 20m wide road allowance. There is also an existing 400mm main on Base Line and as noted previously servicing, could be provided from this location if desired.

Water supply for firefighting measures can be provided from city water services or St. Marys River and it is expected that a reservoir will need to be constructed on site.

2.2.7.3 Ability to Take Water from Local Water Bodies

The site is located adjacent to the St. Mary River, which forms part of the Great Lakes system and has the capability of supporting significant water takings. This affords the opportunity to apply to the Ministry of Environment and Climate Change (MOECC) for a permit to take water to meet the plant's process water requirements. Other industrial users in the area draw water from the St. Marys River to meet process needs.



2.2.8. WASTE WATER

In discussions with the City engineering staff, a new connection would need to be established for on site waste water to the City's sanitary system. Off site waste water treatment is described below. There are no limits or restrictions, including seasonal factors, identified for providing waste water treatment from the proposed Noront facilities.

2.2.8.1. Existing Site Treatment Facilities & Capacities

The West End Waste Water Treatment Plant, located adjacent to the site ([ANNEX 1](#) site plan), is a secondary treatment facility commissioned in 1985 that has an exemplary record of meeting effluent criteria. The Plant is in the design stage of phase one of a two phased \$60 million upgrade. The plant capacity was assessed during the preliminary design phase and it has adequate reserve capacity to support anticipated growth over a 20 year period.

2.2.8.2. Shared Use

There is no requirement for shared use. A dedicated sewer line will be considered through the City of Sault Ste. Marie as part of the City's budget as described in section 2.1.

2.2.8.3. Waste Water Discharge

It is anticipated that the proposed plant would be serviced by a pump station with a discharge to the trunk sanitary sewer on Yates Avenue as shown on the [ANNEX 1](#) site plan. The Yates Avenue trunk sanitary sewer is 1800mm in diameter and has ample capacity to meet the requirements of the proposed plant. Discharge to the receiving sewer from the proposed facility must comply with the City's Municipal sewer use by-law. The by-law features nothing atypical, as it was modeled after the Ontario Provincial standard by-law.

Storm water management would be accommodated on site with appropriate storm water management features. Outlets would be provided to the adjacent surface water bodies through easements as necessary.



2.2.9. COMMUNITY AND HOUSING

Sault Ste. Marie has an adequate and available supply of housing to support Noront's workforce. Each year, new homes and apartment complexes are being constructed to meet the needs of new residents. In fact, several new multi-residential complexes are planned or under development.

2.2.9.1. Housing Availability

The real estate market in Sault Ste. Marie is strong, but housing remains affordable. The average price of homes sold in November 2017 was \$176,459, up 2.9% from November 2016. The more comprehensive year-to-date average price was \$173,519, up 2.1% from the first eleven months of 2016.

New residential listings in Sault Ste. Marie rose 3.2% from year-ago levels to 163 units in November 2017. Overall supply has been trending lower over the last couple of years. Active listings on the MLS® System numbered 693 units at the end of November, down 15.5% from a year earlier.

The rental cost for a two-bedroom apartment in Sault Ste. Marie is much less than the cost in larger cities. The average cost in 2016 was just \$808 per month compared to \$1,341 in Toronto and \$1,204 in Ottawa. When compared to other Northern Ontario communities, Sault Ste. Marie still comes out on top.

In 2017, the average rental cost for a two-bedroom apartment in Sudbury was \$1,048 (Rental Market Report – Greater Sudbury CMA, Canada Mortgage and Housing Corporation). Similarly, the average rental cost for a two-bedroom apartment in Thunder Bay was \$959 (Rental Market Report – Thunder Bay CMA, Canada Mortgage and Housing Corporation).

2.2.9.2. Community Services and Amenities Quality of Life

Sault Ste. Marie offers an excellent quality of life for individuals and families. The community is situated at the heart of the Great Lakes and provides opportunities for world-class recreational activities that span four seasons.

Sault Ste. Marie has a proactive population that is committed to its arts and culture scene. Further, the City of Sault Ste. Marie has invested heavily in improving the quality of place for residents, including the construction of a downtown boardwalk, establishment of the 23km Hub Trail and creation of new bike paths for residents. Sault Ste. Marie recently won the Canadian Urban Institute's Excellence in Project Development: Neighborhood Scale for the Sault Ste. Marie Waterfront Revitalization project.

The community is among the safest places to live in Canada with low crime rates and excellent social support infrastructure.

Sault Ste. Marie offers affordable housing, and cottage living within a short commute. The affordable cost-of-living allows for a big lifestyle compared to other centres.

Healthcare

Sault Ste. Marie, Ontario is home to the new \$400 million Sault Area Hospital. Featuring an inviting, patient-centered environment, the state-of-the-art facility offers access to leading edge medical technology and more than 250 beds.

The Group Health Centre also operates in Sault Ste. Marie as a leading, progressive, multi-specialty ambulatory care health organization. It is one of Canada's first consumer-sponsored health care facilities built with private funds donated by local union members.

The Physician's Recruitment Committee has ensured that the city has the appropriate and necessary number of healthcare professionals to provide quality healthcare.



Public Transit

Sault Ste. Marie Transit has 8 major bus routes and 2 Community bus routes serviced by a fleet of 26 (40 foot) conventional buses and 2 (30 foot) medium duty buses. These 10 fixed routes cover 1.765 million kilometres annually and provide for 1.87 million passenger trips in 2015.

The Parabus service is comprised of 10 vehicles, which travel a total of 250,469km (2015), and provide 46,790 passenger trips (2015) for 2,831 registered clients (2015).

Transit similarly operates a charter service, which functions within the Urban Service Area.

Fire Services

Sault Ste. Marie Fire Services is comprised of 5 divisions including: Fire Suppression, Emergency Medical Services (EMS), Fire Prevention and Public Education, Support Services, and Community Emergency Management.

Resources are deployed from 5 strategically located Response Centres to provide the community with optimum response times.

Sault Ste. Marie is completing a Comprehensive Risk Assessment and a Fire Master Plan to ensure that it offers an optimal and effective fire service within the community.

Shopping

Sault Ste. Marie offers a mix of retail shopping opportunities from an attractive and walkable downtown, to multiple shopping malls and Big Box stores such as Home Depot, Best Buy, Lowe's, Walmart and Michaels.

The historic downtown stretches seven blocks and features plenty of shops, restaurants and high-end fashion outlets. The largest indoor mall is the Station Mall, featuring 97 stores (Eddy Bauer, Coles, Roots, Walmart) in 55,000 square feet of retail space located downtown on the shores of the St. Marys River. Other malls include the Cambrian Mall (Canadian Tire, Winners, and Urban Planet), Market Mall and Wellington Square Mall.

Schools

Sault Ste. Marie is serviced by three boards of Education, including the Algoma District School Board, Huron Superior Catholic District School Board and Conseil scolaire catholique du Nouvel Ontario. Sault Ste. Marie has 30 elementary schools, five secondary schools and two post-secondary schools.





Arts, Culture and Recreation

As a mid-size city, Sault Ste. Marie definitely punches above its weight when it comes to the arts and recreation scene.

The geographic location of the city places it in one of the most picturesque and beautiful environments in the country. To the east, by twenty minutes' drive, the North Channel and St. Joseph Island provide a beautiful cottage country location with premiere boating, fishing, swimming and sailing opportunities. West of the community, by twenty minute drive, the coast line of Lake Superior provides an awe-inspiring location with miles of beach and the greatest of the Great Lakes. South of the community, the playground of upper Michigan provides wonderful scenery and upscale communities such as Harbor Springs, Traverse City and Petoskey.

The recreation of the region is unparalleled with opportunities for every outdoor pursuit one can imagine. World class mountain biking, hiking, fishing, downhill skiing, cross country skiing, boating, hunting, snowmobiling – the area is a treasure trove for those who enjoy the outdoors.

The arts scene has also been a focus area for the community and Sault Ste. Marie boasts an impressive array of art opportunities and events for everyone:



The Art Gallery of Algoma

This full sized art gallery, located in downtown Sault Ste. Marie, boasts permanent and traveling collections. The AGA was founded as a non-profit public art gallery and incorporated on July 7, 1975. Established by a group of dedicated volunteers and arts enthusiasts, the AGA honours its roots as a community organization with its mission celebrating culture, educating visitors and enriching lives through the visual arts. The AGA's vision is to be a premiere visual arts institution in northern Ontario, gaining national recognition and international partnerships. The AGA moved to its present location next to the scenic and historic St. Mary River in 1980, a 10,000 square foot facility including four exhibition spaces, the Ken Danby Education Studio, the Gallery Café and the AGA Gallery Shop.

www.artgalleryofalgoma.com

Bon Soo Winter Carnival

Bon Soo was created to bring excitement and activity during the cold, quiet, first quarter of the year. Since 1964 we have welcomed Community Groups and individuals of all ages to be part of Bon Soo, an impressive winter carnival with fun activities for every age group and a week-long extravaganza of activities. There truly is something for everyone!

www.bonsoo.on.ca

RotaryFest

An annual summer festival that includes music, parades, food, and entertainment for all ages, is located in downtown Sault Ste. Marie and is organized by the local Rotary International Club.
www.rotaryfest.com

Algoma Conservatory of Music

Is a non-profit music school that works in association with Algoma University. Established in 1971, Sault Ste. Marie has become home to one of the largest and finest music schools in Ontario. From professional violinists, singers, flutists, guitarists and pianists, to our many youth orchestras and choirs - there is hardly a music event in Sault Ste. Marie which does not involve one of their many resident instructors or students.

Many members of the faculty have relocated to Sault Ste. Marie from across Canada to teach at the Conservatory and through Algoma University's Music & Fine Arts Programs, bringing their performance and teaching experience to hundreds of students every year. A full range of group music classes are offered for young children, as well as private instrumental and vocal lessons for all ages with outstanding teachers. In addition there are several levels of youth orchestras, group violin & cello classes, youth choirs and guitar ensembles; as well as music theory and history classes to meet the requirements for Royal Conservatory of Music examinations. The Conservatory also hosts many student concerts and special events including: Algoma Conservatory Concerts - featuring some of the finest Canadian and international touring ensembles and soloists.
www.algomaconservatory.com



Sault Symphony Orchestra

Established in 1956, the group joined the Ontario Federation of Symphony Orchestras as Ontario's 25th symphony orchestra. The organization emerged stronger than ever with the appointment in 1977 of the present conductor and artistic director, Dr. John Wilkinson, who continues to dedicate himself to the Orchestra. The Sault Symphony continues to work at providing varied and exciting programs, often with internationally recognized soloists. The Orchestra consists of international talent spanning both sides of the Canadian and American border. Consisting of 50+ regular musicians, the Symphony's continued existence is a tribute to the hard work of board members, volunteers, musicians, and conductor. The Sault Symphony also operates a fun community event each year with the "Beer, Bratwurst and Beethoven" festival under the Roberta Bondar Pavilion.
www.saultsymphony.ca

Algoma Fall Festival

The Algoma Arts Festival Association is the presenter of the Algoma Fall Festival, a multi-disciplinary arts celebration held each year in Sault Ste. Marie in October. The Festival maintains a range of programming that includes music, theatre, dance and the visual arts. The Association also delivers the Festival of Learning; an extensive arts outreach and education program. The Association was incorporated in 1972 and celebrated its 40th anniversary in 2012. Exciting performers to present at the Fall Festival include: The Tenors, Nikki Yanofsky, Emilie-Claire Barlow, K'naan, Randy Bachman, The Beaton Sisters, Barra McNeils, Ashley MacIsaac, Jesse Cook, Chantal Kreviazuk, the late Stuart McLean and many more.
www.algomafallfestival.com



Essar Centre Concerts

The Essar Centre provides a state-of-the-art facility that enables Sault Ste. Marie to host major concerts. Since opening the facility has hosted diverse artists and events including Elton John, Jerry Seinfeld, Cirque du Soleil, Randy Bachman, Neil Young, Bob Dylan, KISS, John Mellencamp, John Fogerty, Brad Paisley, The Tragically Hip, The Barenaked Ladies, and Jann Arden.

www.essarcentre.ca

Festival of Beer

Featuring more than 40 different beers from several Ontario craft and microbreweries, including Mill Street, Railway City, Flying Monkeys, Hop City, Wellington, King, Beau's, Black Oak, Lake of Bays, Broadhead and Nickel Brook. The Festival of Beer will also host popular national brands such as Labatt, Steam Whistle and Molson Coors. The Sault Ste. Marie Festival of Beer strives to expand the public's appreciation while celebrating quality, craftsmanship and a uniquely Canadian cultural experience.

Searchmont Resort

Is an 18 run ski resort is located 25 minutes from Sault Ste. Marie and one of the largest ski resorts in Ontario. Located 48km north of Sault Ste. Marie, Searchmont Resort is a premiere ranked, regional training and recreation facility with high quality mountain terrain, amenities, events and entertainment.

www.searchmont.com

Stokely Creek

Located in the Algoma Highlands, embracing King Mountain, Stokely Creek Lodge is your point of departure for cross country adventures. This dramatic region located along Lake Superior's eastern shore is home to world class Nordic trails. Here skiers, snowshoers, and hikers alike enjoy the tremendous variety of terrain and skillfully designed trails. Stokely is known for its friendly atmosphere, fine food, and guests who come from all over the world.

www.stokelycreek.com

Hiawatha Highlands

Offering over 45km of cross-country ski trails and 14km of double track snowshoeing. Enjoy the soothing sounds of the whispering pines and the magnificent views of ice falls in our winter wonderland. The trail system caters to both the beginner and advanced skiers and welcomes all types of Nordic skiing.

www.hiawathahighlands.com





John Rowswell Hub Trail

The Hub Trail is a 25km multi-use non-motorized trail system that provides an urban ring throughout the city for biking, walking, roller-blading and more and offers increased recreational opportunities for residents and visitors to Sault Ste. Marie. The portion of the trail that crosses Fort Creek conservation area offers impressive views across span bridges purposely built for the Hub Trail. www.hubtrail.com

Golfing

The Sault Ste. Marie area is home to 10 golf courses. From 18 hole challenges to 9 hole beginner courses, the region caters to golfers of all ages and abilities. One of the city's premier golf courses, Crimson Ridge, winds its way through the Canadian Shield and was voted 3rd Best New Course in the province by Ontario Golf Magazine in 2003.

COMMUNITY AMENITIES

Hotels	28	Swimming Pools Indoor	3
Convention Centers	8	Swimming Pools Outdoor	2
Community Centers	2	Tennis Courts Public	24
Libraries	3	Tennis Courts Private	3
Arenas	5	Soccer/Football Fields	62
Marinas	2	Golf Courses Public	4
Theatres	3	Golf Courses Private	1
Cinemas	1	Baseball Diamonds	15
Museums	4	Daycares	22
Galleries	3	Senior Homes	2

See **ANNEX 10** for more information on Community Services.

SECTION SUMMARY

Sault Ste. Marie provides the path forward to the successful construction and operation of an FPF with the following local/regional infrastructure advantages:

- easy road access to site using Sault Ste. Marie's improved truck routes leading to/from the TransCanada and US Interstate highways
- international rail connectivity through CN & CP Rail directly to site, no major capital investment required
- only community in Northeastern Ontario with deep water port access to international markets where:
 - marine movements can achieve cost savings of 30% and 12% relative to road and rail transport, respectively from Sault Ste Marie
 - the cost of moving ferrochrome by barge from Sault Ste. Marie results in cost savings of up to 55% relative to other potential locations
 - the marine cost advantage translate into more than \$5 million per year (assuming a production of 200 thousand tonnes of ferrochrome)
 - barging ferrochrome to end clients in the United States could reduce annual GHG emissions by 40% and 90% relative to rail and truck respectively
- global access from two airports (Sault Ste. Marie, Ontario and Chippewa County, Michigan)
- "Investment Ready" local/regional infrastructure with planned or in place elements for:
 - an innovative solution on electrical energy supply through a local partnership
 - a planned energy corridor with permitted easements already in place
 - natural gas/water/wastewater infrastructure already in place at site boundaries
- best quality of life in the North with affordable living!



CAPITAL COST CONSIDERATIONS

Sault Ste. Marie has the capacity to undertake a large scale industrial project such as the proposed FPF. Many local contractors have been involved with construction projects at Algoma, Tenaris Algoma Tubes, Arauco and the former St. Marys Paper Company. The community has accessible corridors and truck routes to enable efficient shipments of large scale deliveries of products and equipment. This section will further highlight the local capacities and competencies for the main construction cost areas.

3.1. EXISTING FACILITIES ON OR NEAR THE SITE TO SUPPORT CONSTRUCTION

The site is brownfield and has limited facilities on site for storage and warehousing. However, there are several large buildings located within Algoma that could be utilized for temporary storage solutions. Algoma has indicated that they are prepared to enter into shared services arrangements on these matters and this would provide appropriate areas to store construction materials and equipment while the FPF is in development. The lands adjacent to the site are also suitable for off-site facilities to support construction efforts. Most facilities are within 5km of the proposed site with adequate road access.

3.2 KNOWN GEOTECHNICAL LIMITATIONS

There are no known geotechnical limitations. Drilling of boreholes typically show the presence of variable depth fill (i.e. slag) underlain with silty sand and/or silty clays of varying depths with bedrock encountered at depths ranging from approximately 10m to 30m.

The topography is undulating and varies across the site but the slag fill can be graded to suit. A site design would identify the optimal site grading to provide a relatively flat site while accommodating the proposed site services.

3.3. LOCAL CONSTRUCTION COMPANIES & TRADE UNIONS

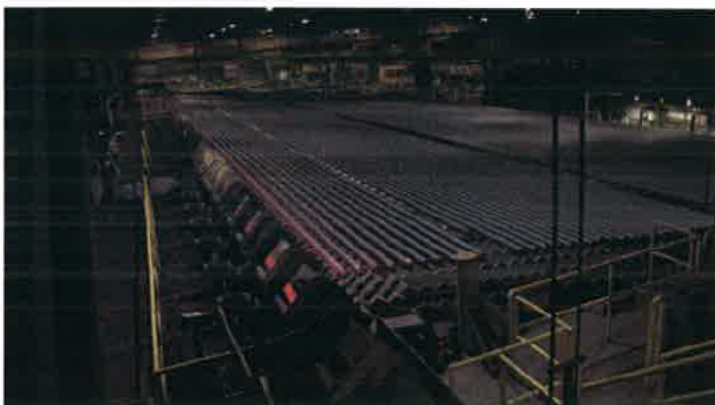
Sault Ste. Marie enjoys a successful track record with the construction community as a designer and supplier of complete construction services for both new build and maintenance at Algoma. The needs of Algoma and other industries in Sault Ste. Marie require professional construction companies with well-trained and experienced employees in all of the major building trades. The local construction workforce has constructed the vast majority of large industrial construction projects dating back to the early 1900s.

There are many long-standing companies in the area servicing large industrial clientele, such as Algoma, Tenaris Algoma Tubes and Arauco. Many of these companies utilize the skilled trades that Noront will require to execute the construction of this project.

Tradespeople employed locally regularly work for large industrial clients. Local firms invest heavily in training and upgrading their skills to exceed provincial health and safety requirements and enhance productivity.

A significant portion of the local contractors that would be involved in the construction of the FPF are bound to one or more of the ICI Provincial Collective Agreements. There are others who are bound to agreements with the Christian Labourers Association of Canada who maintain a local presence in addition to non-union firms. Contractors bound to agreements with either Building Trades Unions or CLAC enjoy a positive relationship with their counterpart, they are active in bargaining of the collective agreements applicable to this construction and maintain a healthy, non-confrontational relationship.

Sault Ste. Marie has complete access to all Ontario Building Trades Unions. These unions have a duty to supply workers. This labour most often comes from local trades people; however, when demand increases, they are able



to draw from other hiring halls across the province through mobility provisions within the collective agreements to fill the need. Regardless of where this facility is constructed, it will require both local and out of town labour. This is a common practice for the industry, especially within Northern Ontario. There are also a variety of independent local civil agreements between contractors and unions that could be used to complete the necessary site servicing for the construction of the project.

Through the outreach to foster support for the FPF, the City has received letters of support from the IBEW, Local 2724, Local 2251 and the Sault Ste. Marie Construction Association. See [ANNEX 4](#) on Community Support for further details.

3.4. LOCAL SERVICES

Sault Ste. Marie is well positioned to meet Noront's needs in terms of suppliers and local services for the construction, operations and maintenance of a FPF.

As mentioned above, the rich industrial heritage of Sault Ste. Marie has created a strong local service sector and the community is home to a number of advanced manufacturing facilities. A growing small business community of over 2,200 firms, as well as multiple agencies offering networking, training and development opportunities, helps to create a supportive business environment.

Sault Ste. Marie is home to many businesses that specialize in delivering equipment, materials and providing services to large-scale industrial facilities, such as Algoma, Tenaris Algoma Tubes and Arauco, in addition to a number of gold mines north of Sault Ste. Marie. One of the advantages our city has over others is the diversity of companies in the construction and industrial sectors. Many companies crossover into both and this provides a workforce with tremendous knowledge and expertise that other cities just do not have. The diversity of the local workforce allows workers to easily adapt to new challenges and provide a better overall service to Noront. The result is a more knowledgeable workforce, better prepared to tackle the challenges of building an FPF.

There are numerous organizations that can support the construction of the FPF in Sault Ste. Marie. They are highlighted in [ANNEX 11](#) 'Construction Association Members/Services'.



3.5. ENGINEERING AND TECHNICAL SERVICES

Sault Ste. Marie is well positioned to service the various technical needs Noront will require for the design and construction of this project. Our community is home to more than 10 local, independent engineering offices, as well as several national and international engineering firms with local offices. Sault Ste. Marie's engineering and technical community continually provide their expertise to clients who require the services Noront will need throughout the development of the FPF. These firms have experience in performing technical work in civil, environmental, geo-technical, electrical, mechanical and architecture. See [ANNEX 12](#) 'Engineering Services' for more detail on the specialization of professional capacity.

3.6. LOCAL HIRING BY NORONT FOR THE CONSTRUCTION PHASE

Sault Ste. Marie's local construction workforce has contributed significantly to major construction projects over the past 50 years. Even when major projects have been taken on by large general contractors, it's been the local contractors and their workforce who completed the majority of the work.

The local union hiring halls guarantee a supply of workers. This is accomplished by drawing from available local labour, and when required, through mobility from other areas of the province. It's important to note that this facility cannot be built anywhere else in Northern Ontario without mobilizing a portion of the workforce from other areas of the province.

The local workforce has a high level of expertise in the large industrial sector, commercial and institutional sectors. Noront gains the advantage of diversified trades people, who are not only comfortable with addressing the challenges of this type of construction, but also a workforce that has been comfortable traveling around Northern Ontario, servicing the steel, mining, pulp/paper, forestry, and power sectors.

3.7. ACCOMMODATION & FOOD SERVICES

Sault Ste. Marie is home to major hotel names such as Delta, Days Inn, Comfort Inn, Quality Inn and Fairfield Inn as well as high-end independent hotels such as Algoma's Water Tower Inn and Quattro Hotel & Conference Centre. In all, there are nearly 1,400 hotel rooms available in the city.

Sault Ste. Marie is known for its authentic Italian food, and amazing pizza. There are over 30 restaurants in addition to the typical fast food restaurants available. These range from fine dining, steak and seafood, family style, sushi, Italian, Thai, East Indian and Mediterranean. This is a recognized strength of the community and visitors are often surprised at the quality and variety of excellent restaurants.

A number of established catering businesses also provide capabilities in serving large employee events and meetings. Numerous large conferences and events have been held in Sault Ste. Marie that have been served by these organizations.

There are nine full service grocery stores in Sault Ste. Marie including three Metro, two WalMart, Rome's Independent Grocer, Pino's Get Fresh and multiple Food Basics. There are also a number of smaller, independent grocers such as RJ's Market, City Meat Market and Paesano Foods.

For more information, please see [ANNEX 13](#) on 'Accommodation and Food Services'.





3.8. SITE ACCESS FOR CONSTRUCTION

The site has excellent access for construction given its location within the municipal boundary and the existing road network available. Access to the site during construction could be provided via the proposed access corridor at the east end of Yates Avenue and supplemented with the existing Base Line Road access to the PoA through A.B. McLean Drive, if needed. Oversize loads could be accommodated by road (with permits as necessary), rail or vessel. Road access through the municipality to the site is provided from the Provincial highway system and from the International Bridge via Class A truck routes which permit truck traffic 24/7 and many oversized loads have been accommodated. For example, many wind turbine components have made their way to and through Sault Ste. Marie. There are no substandard highway dimensions at structures within the city.

In terms of road infrastructure, there is no significant access encumbrances anticipated. There is one overhead rail structure on the access from Highway 17 North and one on the access from the International Bridge under the bridge itself. The access from Highway 17 East has no overhead road or rail structures within the city. Clearances to overhead signage and power lines meet highway standards throughout. Navigation through some city intersections may require police escort, if turning maneuvers require them.

There are two hills on the route from Highway 17 East to the site. Both are located on Second Line: one between Carmen's Way and North Street - length 800m (average grade is 3%, maximum 6%) and the other between Old Garden River Road and Black Road - length 1.3km (average grade 4%, and maximum 7%). No significant access encumbrances are anticipated.

3.9. SEASONAL CONSTRUCTION RESTRICTIONS

There are no seasonal construction restrictions, events or conditions which would or could impact site access or construction activities.

3.10. BUILDING OR SITE LIMITATIONS

There are no local restrictions on building heights, lighting (light pollution), or other regulation or by-law aspects that may affect the facility design, construction or operation. Noise By-law 80-200 has been amended numerous times. Section 2 prohibits the operation of construction equipment between 23:00 hours and 07:00 hours the next day. However, Schedule B exempts the activities of Algoma and the proposed ferrochrome plant would be located on land currently owned by Algoma.





SECTION SUMMARY

Sault Ste. Marie provides the path forward to the successful construction and operation of an FPF with the following capital cost competitive advantages:

- a strong construction and industrial steel making heritage
- temporary storage, warehousing and staging area for supplies, workers and equipment
- local specialized construction and professional firms with impressive track records:
 - synergies with Algoma provides a robust competitive and growing supplier base
 - engineering and Architectural firms with national and international experience
- a modern and diverse community with upscale amenities, full-service hotels and fine dining
- world class arts, culture and recreation opportunities with quick access to Michigan vacation amenities



OPERATING COST CONSIDERATIONS

Sault Ste. Marie offers the requisite skilled labour force at competitive compensation levels to make a compelling location for the FPF. In addition, the community has a cost advantage as it relates to other operational costs such as electricity and water. A unique solution to address Noront's power requirements is proposed below. All other services required can be provided by existing companies at competitive rates using modern technology.

4.1. LABOUR FORCE

Sault Ste. Marie has a highly skilled workforce and access to thousands of new graduates from local post-secondary institutions. From the community's industrial heritage of 100 plus years of steel making, seamless tube manufacturing, paper manufacturing, forestry, metal fabrication and machining, the community has developed a workforce that will meet the needs of Noront. Talented labour is not only required to build and construct the facility, but to provide the workforce for metallurgical and heavy industrial positions. The FPF will need experienced smelter/iron making technicians, maintenance and technical personnel. The community and region can supply the required labour force. In addition, the community has a diversified workforce to perform roles such as electricians, plumbers, welders, mechanical and instrument technicians, site maintenance, and site equipment operators. Some of these requirements could also be filled by contracted services with existing firms.

TOP OCCUPATIONS IN MANUFACTURING (ALGOMA DISTRICT, 2016)



1. Construction millwrights & industrial mechanics: **817** persons
2. Industrial electricians: **467** persons
3. Welders and related machine operators: **414** persons
4. Labourers in wood, pulp & paper processing: **220** persons
5. Supervisors, mineral and metal processing: **199** persons

TOP FIVE MANUFACTURING INDUSTRIES (ALGOMA DISTRICT, 2016)



1. Iron and steel mills and ferro-alloy manufacturing: **57%**
2. Steel product manufacturing from purchased steel: **11%**
3. Non-ferrous metal production and processing: **6%**
4. Veneer, plywood and engineered wood product: **5%**
5. Sawmills and wood preservation: **4%**

Noront Proposed Workforce Numbers

The community can meet the requirements of Noront's proposed workforce. It is proposed that there will be approximately 297 jobs including support staff in stage 1, growing to a total workforce of 494 in stage 2. It is anticipated that core workers will be in manufacturing/production, millwrighting, maintenance and some specialty workers, which is typical for an industrial production operation.

Workforce Advantage #1

Sault Ste. Marie's Existing Steel Making Workforce

The ferrochrome production process is similar to steel making in that both involve taking raw materials, which are heated in a furnace from which the molten material is then processed into a finished product that is ultimately shipped out to market. The competitive advantage that Sault Ste. Marie has relates to its rich history in steel making and a workforce that would have skills which would translate well in the development and operations of the FPF.

Workforce Advantage #2

Manufacturing is Sault Ste. Marie's Strength

Based on employment, Sault Ste. Marie has the largest manufacturing sector in Northern Ontario, even greater than Sudbury and Thunder Bay, which have larger populations. Almost half of this workforce is under the age of 45. This will provide Noront with a larger existing pool of potential employees to draw on who have experience in the heavy manufacturing sector.

2017 Total Manufacturing Jobs

Sault Ste. Marie **4,280**

Greater Sudbury/Grand Sudbury **3,895**

Timmins **523**

Thunder Bay **2,522**

With Sault Ste. Marie's existing large manufacturing base, including Algoma, Tenaris Algoma Tubes, Arauco, and numerous steel fabricators and machine shops, there is significant existing capacity for skilled labour and trades people.

4.1.1. LABOUR COMPENSATION

ANNEX 14 provides a summary of the top 30 occupations in manufacturing in Sault Ste. Marie. Taking into consideration that most of the city's manufacturing jobs are in steel making, the occupations reflect the heavy manufacturing nature of the industry. Given the similarities in the ferrochrome production process to steel making, this is a workforce that would have transferable skills to Noront. The estimated annual income is based on a 40 hour workweek for reference purposes.

4.1.2.1. OTHER INDUSTRY LABOUR FORCE DEMAND


Sault Ste. Marie has many other sectors that support the development of skilled talent in the city. There may be some crossover opportunities for professional services such as accountants, human resource professionals, information technology, marketing, management and administration. Sault Ste. Marie, Ontario is the headquarters of the Ontario Lottery and Gaming Corporation (OLG) – a \$7 billion Crown corporation, with annual net profits exceeding \$2 billion, and

one of the largest gaming organizations in North America. For over 25 years, expertise on operating and growing Ontario's lottery business has been developing in Sault Ste. Marie and a cluster of businesses servicing this sector naturally continues to develop. Companies like Canadian Bank Note, Pollard Banknote and Brooks Marketing are based in Sault Ste. Marie or have a presence here supporting lottery game development, operations and promotion.

Sault Ste. Marie has been harnessing renewable energy for well over 100 years, since its first hydro-electric project on the St. Marys River. Today, Sault Ste. Marie is a hotbed for experimental energy and clean tech projects, including reverse polymerization of tires, smart grid technology, and battery energy storage.

Heliene, a solar panel manufacturer is based in Sault Ste. Marie, exports panels throughout North America and Europe. Significant experience exists in the installation, operation and servicing of hydro, solar and wind projects as well.

The digital economy sector in the community is comprised of software development, web development, business process outsourcing, digital marketing, app development, game development and cloud-based software companies. Some examples include business process software company Workiva, online media company Village Media, Insightworks (online training and onboarding), Microsoft Dynamics technical support firm – Createch365, Canadian Bank Note, SSI System Solutions, Lucidia, Miramar and Cavera.



Sault Ste. Marie is also home to two advanced research institutions with the Great Lakes Forestry Research Centre and Ontario Forest Research Institute.

In short, with deep roots in manufacturing and processing, Sault Ste. Marie's existing labor market includes skilled trades, IT and technical, business, science and research and development talent. The city is home to major industrial companies, manufacturers, corporate headquarters, and organizations with years of corporate executive and operations experience.

To assist in attracting international talent and serving local employer's needs, the Local Immigration Partnership (LIP) was created to develop extensive and comprehensive local settlement strategies for the development and implementation of services for newcomers and to ease the transition into the work force and social integration into the City.

LIP is made up of approximately 50 members representing local organizations, institutions, service providers and cultural groups with the City of Sault Ste. Marie being the lead organization. Through LIP's efforts and with community participation from various sectors and newcomers, a collaborative framework of existing settlement services and future recommendations for developing a welcoming community were established.

4.1.3. SKILLED LABOUR: ELECTRICIANS, IT, WELDERS, PLUMBERS AND MECHANICAL

To highlight the skilled labour pool in the community of Sault Ste. Marie, as one example, the International Brotherhood of Electrical Workers (IBEW) has over 600 active members who are available for work in Sault Ste. Marie (attached in [ANNEX 4](#) support letter). Each of these individuals is properly trained and often possess multiple trade certifications. The IBEW has also suggested there is a strong core of other trades in the community such as iron workers, pipefitters, welders and mechanical tradespeople with similar qualifications.

Sault Ste. Marie, Ontario is home to two outstanding post-secondary institutions (Algoma University and Sault College) with annual enrolment of over 5,500 students. The community boasts a higher-than-average participation rate in post-secondary education. Sault Ste. Marie, Michigan is also home to Lake Superior State University (2,500 students) with degree programs in business, computer engineering, mechanical and electrical engineering and robotics.

Our local post-secondary institutions have a well established history of partnering together, and with other organizations to understand and deliver on current and emerging requirements for education and skills to meet local private



sector needs. One of the benefits of a smaller community is that institutional leaders are very open to working with industry to adjust curriculum to ensure they are meeting the needs of local employers.

Specific to Noront's request for information on skilled trades, Sault College works with employers to develop custom training programs that meet their needs. Whether it is specific employee training, or curriculum to support local business and industry, Sault College has the capabilities to deliver. The Corporate Training Unit within Sault College's Centre for Continuing Education and Corporate Training plays a vital role in meeting the training needs of business and industry and for apprenticeships. Highly qualified training consultants work closely with employers in all sectors of the local economy to identify training requirements and design and deliver quality training programs, courses and workshops. Staff also maintains frequent communication with government ministries and departments and local economic development groups to ensure that labour market and training information is current and relevant.

Sault College has remained one of the top two Colleges in Ontario in student satisfaction. Ranking first or second overall for the past six years on a key performance indicator survey, these results continue to highlight the quality education and superior student experience offered at Sault College. In the surveyed categories Sault College scored very highly:

- 86% student satisfaction rate
- 88.9% employer satisfaction rate
- 80.7% graduate satisfaction rate
- 9th year in a row Sault College top of class in quality of learning
- 4 years in a row top of class in facilities

Sault College has the largest apprenticeship program in Northern Ontario. They provide a complete program offering with many relevant courses for Noront's business needs including Business and Accounting, Engineering

Technology, Indigenous Studies, Truck and Coach Technician, Information Technology/Robotics, and a full suite of other apprenticeship and certificate programs.

Algoma University offers a full suite of university programming including a number of relevant programs for Noront:

- Accounting
- Biology
- Business Administration
- Accounting
- Economics
- Human Resources Management
- Marketing
- Community Development
- Computer Science
- Economics
- Engineering
- Environmental Science
- Finance and Economics

See [ANNEX 15](#), Post-Secondary Education for more details.

Funding for Training

There are numerous government-sponsored and subsidized training programs and funds available to Noront. Below are some of those available:

Ontario Graduated Apprenticeship Grant: Receive up to \$16,700 to train an apprentice in more than 100 eligible trades. Receive bonuses of up to \$2,500 if your apprentice is from an under represented group – women, Indigenous peoples, Francophones, people with disabilities, newcomers or racialized people.

Government of Canada Apprenticeship Job Creation Tax Credit. The employer can claim up to \$2,000 per year for each eligible apprentice (non-refundable tax credit equal to 10% of the eligible salaries and wages).

Canada-Ontario Job Grant: Provides direct financial support to individual employers who wish to purchase training for their employees.

- available to small, medium and large businesses with a plan to deliver short-term training to existing and new employees
- provide up to \$10,000 in government support per person for training costs
- require employers to contribute one-third of the total costs

Science Horizons Youth Internship Program: Supports green jobs for youth by providing wage subsidies to eligible employers to hire interns in environmental and clean technology sectors (up to \$15,000 per intern).

Northern Ontario Internship Program: To strengthen Northern Ontario's competitive advantage and build economic development capacity by attracting and retaining graduates in the North. The program provides recent graduates who are interested in launching and building their careers in Northern Ontario access to internships. Provides a contribution of up to 50% of a recent graduate's salary to a maximum of \$31,500.

FedNor Youth Internship Program: FedNor provides support for youth interns under the Northern Ontario Development Program (NODP) and the Economic Development Initiative (EDI). FedNor will contribute up to 90% (\$31,500 per year) for the eligible costs of salary and employee benefit expenses in a full-time position for the internship period.

Please see **ANNEX 16** Algoma Workforce Investment Corporation (AWIC) - Dollars and Sense: a guide to employer training credits, incentives, supports and www.investsaultstemarie.com for more information.

The SSMEDC has worked with several clients over the past few years to assess skills requirements for industrial applications. There are no similar projects under development at this time that would cause any competition for Noront in attracting talent to successfully operate the FPF. The SSMEDC works with industry to assist in developing options for recruitment (job fairs, marketing of positions, traveling with clients to find candidates).

The SSMEDC also works with Sault College and Algoma University to bridge employers needs with the development of curriculum at these institutions.

In 2018, the City of Sault Ste. Marie will be launching a new workforce development initiative to ensure the future talent requirements of the business community are met and that there is better understanding of employer/employee/trainer needs.

4.2. UTILITY & SERVICE COSTS

Sault Ste. Marie has a cost advantage as it relates to utility and service costs. Sault Ste. Marie along with the PUC prides itself on providing reliable services at the lowest possible prices. The sections below outline these services in more detail.

4.2.1. ELECTRICAL POWER COSTS & DELIVERY

PUC Distribution Inc. (PDI) is the local utility provider for the City of Sault Ste. Marie. Customers of PDI pay 0.5 cents per kWh less than the rest of the province for the government imposed "Debt Retirement Charge". The Debt Retirement Charge is currently set at \$0.2/kWh for PDI customers while the rest of the Province pays \$0.7/kWh. The Ontario Energy Board approved this reduced rate for our customers in recognition of the corresponding historical percentage of power purchased by Great Lakes Power from the former Ontario Hydro to supplement its energy production.

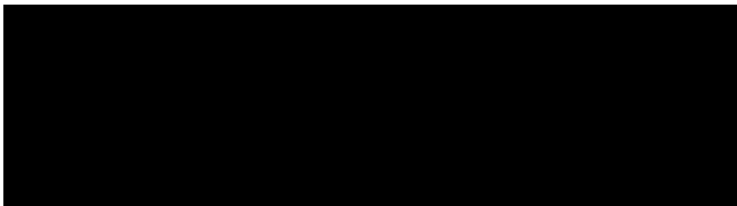
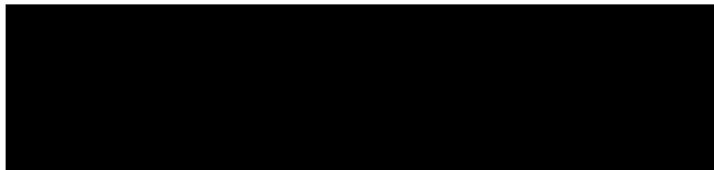
ELECTRICITY STANDARD SUPPLY SERVICE (PER KW) DELIVERY CHARGES

	Residential	General Service less than 50kW	General Service greater than 50kW
TIME OF USE RATES REGULATED PRICE PLAN			
Off Peak	\$0.065	\$0.065	
Mid Peak	\$0.095	\$0.095	
On Peak	\$0.132	\$0.132	
TIERED RATES REGULATED PRICE PLAN			
First 1000kWh	\$0.077		
Balance of kWh	\$0.090		
ANNUAL CONSUMPTION less than or equal to \$250,000kWh			
First 1000kWh		\$0.077	
Balance of kWh		\$0.090	
Stand Supply Service (non-interval per kWh)			weighted average hourly spot price
Stand Supply Service (interval per kWh)			hourly spot market price

Charges	Residential	General Service less than 50kW	General Service greater than 50kW
Monthly Service	\$16.84	\$17.11	\$114.46
Smart Meter Entity	\$0.79	\$0.79	
Distribution (per kWh)	\$0.0103	\$0.0225	
Transmission Network (per kWh)	\$0.0059	\$0.0055	
Distribution (per kW)			\$5.5153
Transmission Network (per kW)			\$2.2455
Transmission Network (interval per kW)			\$2.8240

REGULATORY CHARGES

Charges	Residential	General Service less than 50kW	General Service greater than 50kW
Standard supply service: Administration	\$0.25	\$0.25	\$0.25
Wholesale Market Service (per kWh)	\$0.0039	\$0.0039	\$0.0039
Debt Retirement		\$0.0020	\$0.0020



4.2.2. WATER

Sault Ste. Marie is extremely competitive on water rates and has the lowest water rates (with no surcharges) when compared to other communities in Ontario. In fact, the PUC is consistently in the top 15 communities in the Province on combined water and sewage service cost based on a base annual consumption rate of 200m³ (16.7/m³/month), that is demonstrated below:

- Sault Ste. Marie: \$839
- Greater Sudbury: \$1,120
- Thunder Bay: \$1,049

CLASS A METERED WATER RATES

Size of Service	Basic Charge Per Month
< 1-1/2in: 37mm	\$27.54
1-1/2in: 37mm	\$78.36
2in: 50mm	\$78.36
3in: 75mm	\$105.42
4in: 100mm	\$130.45
6in: 150mm	\$150.38
8in: 200mm	\$193.62
10in: 250mm	\$255.02
12in: 300mm	\$299.96
18in: 450mm	\$449.02

METERED WATER RATES

- \$0.63 per cubic metre for the first 15 cubic meters for each one month period
- \$1.85 per cubic metre for the next 250 cubic metre for each one month period
- \$1.45 per cubic metre for the remainder of the water consumption

4.2.3. WASTE WATER

Waste water is calculated based on fresh water consumption that is metered at the site of the plant. The calculation is normally 50% of the fresh water used and it is based upon the residential rates. There are no differing rates or costs associated for site discharges for residential or industrial consumers.

4.2.4. NATURAL GAS

The following natural gas prices were prepared based on the peak consumption of 10 million m³. The Breakdown of natural gas costs are estimated as:

- total \$0.17787/m³ (\$4.65/GJ)
 - molecule cost at Empress Alberta for December 2017 \$0.1052/m³ (\$2.75/GJ)
 - transportation Empress to Sault Ste. Marie on TransCanada Pipelines effective July 1, 2017 \$0.05517/m³ (\$1.442/GJ)
 - delivery based on Contract Rate 20 at 80% Load Factor \$0.0175/m³ (\$0.458/GJ)
- based on estimated yearly consumption of 10,000,000 m³ plant would be designated as a Large Facility Emitter (LFE) for Cap and Trade and may be eligible for free credits. Noront would need to confirm with the Ministry of Environment and Climate Change once the plant design is finalized and environmental approvals are attained.

4.2.5. COMMUNICATIONS

There is high speed internet service available to the proposed site for the FPF on Yates Avenue that would be useable by Noront.

The Sault Ste. Marie area can meet the information and communication technology needs of any company, as the region is served by three independent broadband carriers each offering OC192 network lines with 10Gbps and GbE capacity.

Path diversity is achieved by Bell Canada, which has two "west-east" paths (Bell + Ontera) plus a "northern loop" to Sudbury, Ontario; and by Shaw Communications, which has two paths in/out of the city via a "west-east" path to Sudbury (using Eastlink) and a "U.S. path" via the International Bridge into Michigan where it connects to the regional network owned by Peninsula Fiber Network, LLC (PFN) and its partner routes to Chicago, Minneapolis and Grand Rapids.

Our local communications infrastructure currently services the needs of major companies, the education sector including Sault College and Algoma University, and research institutions such as the Great Lakes Forestry Centre, Ontario Forest Research Institute and the Invasive Species Centre. Sault Ste. Marie and area are serviced by all major cellular companies including Bell Canada, Rogers, TELUS and Virgin Mobile in Ontario, along with AT&T, Sprint, Verizon and more in Michigan.

Both Shaw and Bell offer competitive data packages depending on the level of service required by Noront. Packages start at \$50 per month for basic internet services plus phone services, which would need to be designed for Noront's specific requirements. As an example of capacity, Bell offers a Fibre-to-the-Home service in Sault Ste. Marie. As an overview for pricing, please find below rates for both Shaw and Bell business services:

SHAW COMMUNICATIONS

Business Internet 20 \$50/month
 - up to 20mps download speed*
 - up to 4mps download speed *
 - unlimited data
 - register 10 Shaw Go WiFi devices

Business Internet 75 \$80/month
 - up to 70mps download speed *
 - up to 15mps download speed *
 - unlimited data
 - register 10 Shaw Go WiFi devices

Business Internet 150 \$115/month
 - up to 150mps download speed *
 - up to 15mps download speed *
 - unlimited data
 - register 12 Shaw Go WiFi devices

Business Phone \$36.95/month
 - \$0.05/minute long distance calls to CND & USA
 - 1 toll free number
 - \$4/month per distinctive ring (up to 3)

Business Phone Plus \$51.95/month
 - unlimited long distance calls to CND & USA*
 - 1,000/month international calls*
 - \$4/month per distinctive ring (up to 3)

*restrictions may apply

BELL CANADA

Business Internet \$56/month
 - up to 20mps download speed

Business Internet \$67/month
 - up to 50mps download speed

Business Internet \$82/month
 - up to 300mps download speed

Business Internet \$151/month
 - up to 940mps download speed*

Business Phone \$53.95/month
 - voicemail; including to email
 - 17 more calling features
 - mobile app

4.2.6. SOLID WASTE

In Sault Ste. Marie there are several solid waste management contractors that service both residential and commercial customers, including MWRC (Municipal Waste & Recycling Consultants), Waste Management and Green for Life Environmental (GFL). It is understood that GFL has a licensed transfer station servicing the (Institutional, Commercial and Industrial (IC&I) sector and utilizes multiple avenues for disposal, including the local landfill and international sites due to the community's proximity to the Michigan border.

The Municipal Landfill is located at 402 Fifth Line East in Sault Ste. Marie and accepts domestic, commercial and non-hazardous solid industrial waste. The commercial tipping fees is a minimum \$10 gate fee, and \$7 per 100kg over 145kg or \$70 per MT.

The Municipal Landfill is 83.6 hectares in size, of which 42 hectares is utilized for landfilling, with a planned expansion underway. The expansion includes a bio-solids management facility to process sewage sludge currently transported to the site by H. Wellwood & Sons Ltd. from the City's two wastewater treatment facilities. Furthermore, an active methane gas collection system has been in place since 2010 and burns the methane at a central enclosed flare.

GFL owns and operates a material recovery facility in Sault Ste. Marie and collects and processes regulated material from residents and the IC&I sector. GFL also hauls alternative materials, including waste oil from several City and industrial facilities for proper disposal. This includes the City operated Household Hazardous Waste Depot. Several contractors, including Drain-All Environmental, Triple M Metal Recyclers, and McKeivitt Trucking Limited, haul and properly dispose of a variety of subject waste collected from residents and small businesses throughout the Algoma District. Much of this material is hauled to Southern Ontario for processing.

2018 solid waste disposal and operating hours are:

- Monday to Friday: 8:30am to 4:30pm (January 2 to March 30, 2018)
- Monday to Saturday: 8:30am to 4:30pm (April 2 to October 28, 2018)
- Monday to Friday: 8:30am to 4:30pm (October 29 to December 28, 2018)

4.2.7. PUBLIC SERVICES

Sault Ste. Marie is a safe and modern city with numerous amenities and services available at no cost to the public or companies such as Noront.

Health Services

Sault Ste. Marie, Ontario is home to the new \$400 million Sault Area Hospital. Featuring an inviting, patient-centered environment, the state-of-the-art facility offers access to leading edge medical technology, and more than 250 beds.

The Group Health Centre (GHC) is a leading, progressive, multi-specialty ambulatory care health organization, and one of Canada's first consumer-sponsored health care facilities built with private funds donated by local union members. Since opening the doors over 50 years ago, the Centre has been a leader in medical innovation and the site of countless pilot projects and studies on a provincial, national, and international level. The Group Health Centre has won National Best Practice Awards, was featured in Maclean's Magazine as one of Canada's top ten models of healthcare, and was once referred to as "Canada's best kept health care secret" by Commissioner for the Future of Health Care in Canada, Roy Romano. GHC is home to 80 primary and specialty care physicians, 11 nurse practitioners, over 100 nurses, 33 allied health professionals, 5 physiotherapists, and serves over 80,000 patients.

Algoma Public Health (APH) is a public health agency committed to improving health and reducing social inequities in health through evidence-informed practice. APH has 200 employees who deliver provincially legislated public health services and community programs, including

addictions and mental health, disease and illness, inspection services, parent/child services and more.

Other services such as the Superior Family Health Team, provide a growing range of programs and services to the community. The City along with the Sault Area Hospital has done an impressive job in recruiting professionals in the healthcare sector to ensure excellence in patient care.

Policing Services

Sault Ste. Marie is serviced by the Sault Ste. Marie Police Service with approximately 140 uniformed personnel. Law enforcement is divided into patrol services (community patrol, Emergency Services Unit, Canine Unit, and specialized patrol units) and investigation services (major crime, drugs, technological crime, and forensic identification)

Fire Services

Sault Ste. Marie Fire Services is comprised of five divisions including; fire suppression, emergency medical services (EMS), fire prevention and public education, support services, and community emergency management.

Public Works and Engineering Services

Public Works is responsible for the maintenance of municipal infrastructure that includes parks, operations, traffic and waste management.

Parks Division

Responsible for the maintenance of grounds at municipal parks, sports complexes and various other facilities. On site maintenance includes grass cutting, field lining, floral bed and tree management, outdoor ice rink maintenance and more.

Operations Division

Responsible for maintaining paved roadways (including snow removal), surface-treated roadways, ditches, entrance culverts, curbs and gutters, and sidewalks. Storm and sanitary sewer systems are also maintained year-round by Public Works crews. In-ground storm and sanitary sewer systems provide for the City's drainage and sanitation needs.

Traffic Division

Accumulates and interprets traffic accident data and traffic counts to identify vehicular speed and traffic volumes for streets and intersections throughout the city.

This information is used to make recommendations that are based upon established provincial warrant standards for signals and signs. Staff also make recommendations to the Engineering and Planning Department on suggested widths and configuration of lanes for roadways proposed for reconstruction.

Studies carried out by the Traffic Division include visibility requirements at intersections, traffic signals, School guard locations, and stop signs and yield signs locations.

Waste Management Division

Strives to provide cost-effective, efficient and environmentally responsible waste management services. Waste management services include refuse (garbage) collection, recycling programs, special pick-ups and leaf/yard waste pick-up. The City also operates a Household Hazardous Waste Depot and a municipal landfill site.



NO DEVELOPMENT CHARGES

Building Services and Engineering

Building Services provides maintenance, janitorial services and security for the Civic Centre and Ontario Works. This division also provides telephone service support for City-owned operations. The Engineering and Construction Division provides services associated with engineering design, construction, technical services and special project initiatives.

4.2.8. LOCAL SUPPLIERS

There are a variety of local industrial suppliers that would be able to supply the needs of Noront. Based on the city's rich industrial heritage, there are local supply/service firms that provide support for daily operations or supply during the construction phase.

The suppliers may include equipment suppliers, industrial contractors (mechanical, electrical, HVAC, plumbing, hydraulics), industrial cleaners, industrial belting, transportation firms, industrial products suppliers, lubricants and fuel providers, industrial gases and equipment supply, crane services, industrial tire suppliers, environmental services, automation/robotics, testing labs etc. A full list of firms can be provided. The SSMEDC's website has a searchable directory of companies that may be found at: www.business.sault-canada.com/en/businessdirectory/search.aspx

4.2.9. TRANSPORTATION COSTS

There are no other charges (or pending charges) associated with using roads, rail or water transportation that could apply to the operation of the facility that have not already been described in this document.

4.2.10. TAXES AND TAX INCENTIVES

Local manufacturers enjoy lower labour costs, overall operating costs, and affordable industrial lands. The city Sault Ste. Marie does not levy development charges.

Property Taxes

In 2016, Sault Ste. Marie ranked 10th globally out of 111 cities in KPMG's Competitive Alternatives study which examined competitive business cost structure. The study is attached in [ANNEX 17](#). As demonstrated herein, the City of Sault Ste. Marie has the lowest large industrial taxes per square foot amongst the comparator communities.

Sault Ste. Marie's City Council has worked hard to minimize budget increases and has made a number of difficult decisions in order to maintain healthy services while managing costs. Over the course of this Council term, Mayor and Council have managed to hold that part of the municipal levy increase which it controls to less than 2% each year. (2015: 1.89%, 2016: 1.29%, 2017: 1.04%, 2018: 0.99%)

The community has 12 property tax classes and it compares favorably, performing at the mean or better, in almost all of the classes. Property tax rates in Sault Ste. Marie for Residential, Industrial Occupied and Large Industrial (3 of the 12 classes) are:

Property Class	RTC/ RTC	Municipal	Education	Total
Urban Residential	RT/RH	0.01390641	0.00179	0.01569641
Industrial Occupied	IT/IH/JT	0.6568882	0.0114	0.07708882
Large Industrial	LT	0.11666505	0.0114	0.12806505
Rural Residential	RT/RH	0.01331967	0.00179	0.01510967

For an accurate picture of the municipal tax profile, the tax rate has to be considered in relation to municipal property assessment. BMA Consulting Inc. annually produces an independent review of municipal taxation and spending in Ontario referred to as the Municipal Study (the data referred to in this submission is included in [ANNEX 18](#)).



LOWEST TAX

PER SQUARE FOOT COST OF COMPARATOR CITIES

The study demonstrates that Sault Ste. Marie is well managed financially with a very low debt load and reasonable spending levels.

For instance, the City has the lowest total debt outstanding per capita in relation to the other communities under consideration at \$105 (Greater Sudbury \$511, Timmins \$1,317, Thunder Bay \$1,786) and the lowest tax debt outstanding per capita at \$105. (Greater Sudbury \$220, Timmins \$349, Thunder Bay \$850)

Sault Ste. Marie's net municipal levy per capita of \$1,434 is also the lowest amongst the communities (Greater Sudbury \$1,483, Thunder Bay \$1,641, Timmins \$1,651)

A detached bungalow has lower residential taxes in Sault Ste. Marie at \$2,954 than any of the other communities (Greater Sudbury \$3,132, Thunder Bay \$3,695, Timmins \$4,294)

A senior executive home has lower residential taxes in Sault Ste. Marie at \$5,294 than any of the other communities (Greater Sudbury \$6,128, Thunder Bay \$7,677, Timmins \$8,628)

Sault Ste. Marie also ranks lowest with multi-residential walk-up buildings at \$996 (Timmins \$1,367, Greater Sudbury \$1,577, Thunder Bay \$2,064) and multi-residential high rise buildings at \$1,124 (Timmins \$1,401, Greater Sudbury \$1,744, Thunder Bay \$2,372)

With respect to commercial office buildings, Sault Ste. Marie has the second lowest taxes per square foot at \$2.81 (Timmins \$2.40, Greater Sudbury \$3.24, Thunder Bay \$4.25)

With respect to standard industrial taxes per square foot, Sault Ste. Marie ranks third at \$2.93 (Thunder Bay \$1.86, Timmins \$2.38, Greater Sudbury \$3.50).

Most importantly, with respect to the large industrial class, Sault Ste. Marie has the lowest taxes per square foot at \$1.01 (Thunder Bay \$1.10, Greater Sudbury \$1.16). Timmins does not have a large industrial class so the comparator is the standard industrial class which comes in at \$2.38 per square foot.

Sault Ste. Marie ranks the lowest in property taxes as a percentage of income at 3.6% (Greater Sudbury 3.8%, Thunder Bay 4.0%, Timmins 4.0%) and the lowest in total municipal burden as a percentage of income at 4.5% (Timmins 4.9%, Greater Sudbury 5%, Thunder Bay 5.3%).

Notwithstanding its success in keeping its spending at very reasonable levels and the comparatively positive taxation position, City Council in Sault Ste. Marie is committed to continue to manage its spending responsibly. City Council has recognized that as a matter of tax policy fairness, it should address the tax ratios between the residential, commercial and industrial burden. On a motion of the Mayor, passed unanimously by City Council, it will be doing so upon receipt of the 2018 property assessment from the Municipal Property Assessment Corporation.

Municipal Support/Incentives

Sault Ste. Marie has an annual fund of Five Hundred Thousand Dollars (\$500,000) available to it to support economic development projects (referred to as the 'economic development fund'). None of these funds have been allocated beyond the 2018 calendar year. Noront will be able to make an application to the economic development fund through the SSMEDC.

The City is currently preparing an Industrial Community Improvement Plan, which will provide for a tax rebate of up to 100% of the incremental increase in the municipal portion of the property taxes for up to three years resulting from the development, rehabilitation and reassessment of lands and buildings. As provincial approval is required, it is anticipated that this plan will come into effect in April 2018.



Community Improvement Plans provide a means of planning and financing development activities that effectively use, reuse and restore lands, buildings and infrastructure. Section 28 of the Planning Act and Section 365.1 of the Municipal Act allows municipalities to issue grants or loans, or provide property tax assistance to registered owners, assessed owners or tenants of lands within a Community Improvement Plan (CIP) Project Area.

The City of Sault Ste. Marie has industrial property in and around the proposed site which may be of interest or use to Noront (see site plan). The City is interested in, and open to, having discussion about its properties and would consider any support or assistance that is permissible within its legislative restrictions and framework.

Provincial Support

The Ontario government will offer financial incentives to support commitments with a focus on existing programs available. Based on eligibility, consideration for the following incentive programs is available:

INVESTING IN ONTARIO

Jobs and Prosperity Fund

- the JPF program supports major investments in Ontario, prioritizing projects that drive innovation, productivity and export development across the Ontario economy. Eligible costs can include R&D, capital costs and training
 - grant or Loan (or combination)
 - funding amount is discretionary and calculated based on the scale of investment commitments and eligible costs

Northern Ontario Heritage Fund (NOHFC)

- these regional funds support projects that create and retain jobs, encourage the introduction of new technologies, and pursue global growth. The Funds provide grants and loans to businesses and not-for-profit organizations
 - funding is available in either the form of a grant or loan

Strategic Innovation Fund

- the Strategic Innovation Fund allocates repayable and non-repayable contributions to firms of all sizes across all of Canada's industrial and technology sectors to spur innovation.
 - funding is available in either the form of a grant or loan (or combination).
 - funding amount is discretionary and calculated based on the scale of the investment commitments.

INNOVATE FOR LESS IN ONTARIO

Ontario Research and Development Tax Credit (ORDTC)

- tax incentive program that encourages Canadian companies to conduct research and development in Canada that will lead to innovative products or processes
 - qualifying corporations can claim a 3.5% non-refundable tax credit

Scientific Research and Experimental Development Program (SR&ED)

- Canada's SR&ED program is among the most generous tax incentives for R&D in the industrialized world. Encourages Canadian companies to conduct research and development in Canada that will lead to innovative products or processes
 - Canadian-controlled private corporations can earn a refundable ITC at the rate of 35% on SR&ED expenditures, up to a maximum threshold of \$2.4 million
 - other corporations can earn a non-refundable ITC of 15%
 - tax credit percentages vary based on company size and revenue

BUILDING YOUR WORKFORCE

Canada-Ontario Job Grant

- direct financial support to employers who wish to purchase training for their employees. Available to small and large businesses with a plan to deliver short-term training to employees
 - covers two-thirds of the direct training costs, up to \$8,130 per trainee
 - employers must contribute at least one-third of eligible costs

Co-operative Education Tax Credit

- financial assistance for companies to hire Ontario university and college students enrolled in a post-secondary co-operative education program.
 - covers 25% to 30%, refundable up to \$2,439

Federal Support

FedNor is the Government of Canada's economic development organization for Northern Ontario. Through its programs and services, and through its financial support of projects that lead to job creation and economic growth, FedNor works with businesses and community partners to build a stronger Northern Ontario.

FedNor is committed to working with economic development and industry stakeholders to build strong and sustainable communities in Northern Ontario. FedNor supports communities' efforts to plan and mobilize their resources, enhance business growth, and exploit new opportunities for economic development and diversification.

For these reasons, FedNor would be supportive of the Noront ferrochrome production facility project and may have funds available under their Community Economic Development and Innovation priorities, to aid in this development project.

ANNEX 19 Contains further details on Provincial and Federal programs and support.

SECTION SUMMARY

Sault Ste. Marie provides the path forward to the successful construction and operation of an FPF including the best overall operating costs:

- generations of well-trained and experienced personnel with:
 - a rich steel making and manufacturing heritage
 - largest concentration of industrial/manufacturing workers
- training programs that feature:
 - the largest delivery agent (Sault College) of apprenticeship training in Northern Ontario
 - established partnerships with area post secondary institutions to ensure the continued training and provision of qualified personnel
- large, skilled and varied supply chain with industrial knowledge
- robust community services including policing, fire response and healthcare
- low cost utility and services costs:
 - one of the lowest cost cities for water and waste water charges in the province
 - third lowest distribution rates in Ontario
 - efficient waste management:
 - 3 commercial firms to provide services
- lowest per square foot cost in taxes of competing cities and provide further incentives from:
 - an Economic Development fund of \$500,000 per year
 - a Community Improvement Plan available to Noront: reduced taxes over 3 years
 - strong Provincial and federal support programs to complement funding.



CONCLUSION

Through the preparation of this submission, Sault Ste. Marie undertook a thorough evaluation of its capability to host a major industrial project and determined that it has a compelling and sound business case to offer. The analysis undertaken by the Project Team clearly demonstrates that Sault Ste. Marie has the infrastructure, capacity and community amenities to meet and exceed the requirements put forward by Noront.

The brownfield site in Sault Ste. Marie is an ideal location for the FPF and offers a number of competitive advantages through synergies with Algoma. The opportunity to share the existing, permitted anthracite coal storage along with other common services is unique to this specific site and unmatched in Northern Ontario.

The site offers direct marine access and therefore reduced shipping and receiving costs. This is a significant business advantage. Further, the site offers direct access to existing natural gas, water and rail with a unique solution to meet the energy needs of the FPF. The site requires no significant road or infrastructure construction and all zoning is in place to begin operations. From our analysis, our location advantages are also unmatched in Northern Ontario.

The heart of any business is its workforce and Sault Ste. Marie can point to a long and proud history of industrial production. A skilled labour force, experienced supply sector and knowledgeable industry consultants are excited at the opportunity to serve Noront and make the FPF project a success. The community also has the amenities and services required to attract and retain external skilled professionals with dedicated support from the City to assist in these efforts.

This submission demonstrates Sault Ste. Marie's commitment to working with Noront on the FPF project. Noront will have a competent and dependable partner in Sault Ste. Marie that will work with it to build a positive and mutually beneficial relationship.

We appreciate the opportunity to make this submission, look forward to the answering any questions Noront may have and welcome the opportunity to continue working together.

If any further information and material is required, we stand by to provide the same at your request. The City and the SSMEDC will be available to Noront and its staff on a go forward basis at any time. Moving this project forward is our priority.



ANNEXES

1. Site Map
2. Heavy Industrial Zoning
3. City Council Resolution Supporting Noront FPF
4. Support Letters
5. Indigenous Engagement
6. Truck Routes in Community
7. Community Rail Connectivity
8. Port of Algoma - Map
9. Electrical Assessment
10. Community Services and Amenities
11. Construction Association Members and Services
12. Engineering Services
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