

**Minnesota Steel Industries Taconite Mine, Concentrator, Pellet Plant,
Direct Reduced Iron Plant, and Steel Mill Project
Final Scoping Decision Document**

1.0 INTRODUCTION AND PURPOSE

1.1 BACKGROUND

The Minnesota Department of Natural Resources (DNR) in co-operation with the United States Army Corps of Engineers (USACE) will prepare a joint state and federal Environmental Impact Statement (EIS) for the Minnesota Steel Industries, LLC (Minnesota Steel) Taconite Mine, Concentrator, Pellet Plant, Direct Reduced Iron (DRI) Plant, and Steel Mill project to produce sheet steel from taconite ore. The joint EIS will allow evaluation of the Minnesota Steel project in accordance with the National Environmental Policy Act (NEPA; 42 U.S.C. §§ 4321-4347), and the Minnesota Environmental Policy Act (MEPA; Minn. Stat. Ch. 116D). The proposed Minnesota Steel project is located near the town of Nashwauk, in Itasca County, Minnesota.

Minnesota Steel proposes to reactivate the former Butler Taconite mine and tailings basin near Nashwauk, Minnesota. The proposed project includes the dewatering of existing mine pits in the area and open pit mining operations to remove ore and waste rock. Waste rock would be stockpiled near the mine pit and ore would be hauled to the proposed crusher, concentrator, and pellet plant. Tailings from the concentrator are proposed to be discharged to the existing Butler Taconite Stage I Tailings Basin. Taconite pellets would be delivered to the DRI plant and the DRI product would be delivered to the proposed steel mill that would consist of two electric arc furnaces, two ladle furnaces, two thin slab casters, and a hot strip rolling mill to produce sheet steel.

The Scoping Decision Document is a companion to the Scoping EAW prepared for the project. The purpose of the Scoping Decision Document is to identify those project alternatives and environmental impact issues that will be addressed in the EIS. The Scoping Decision Document also presents a tentative schedule of the environmental review process.

1.2 SELECTION OF APPROPRIATE ENVIRONMENTAL REVIEW DOCUMENT

The EIS is mandatory for this project pursuant to Minnesota Rules part 4410.2000, subpart 2; the rule directs that an EIS shall be prepared if the project meets or exceeds the thresholds of any of the EIS categories listed in part 4410.4400. Minnesota Rules part 4410.4400, subparts 8B and 8C (Metallic Mineral Mining and Processing) indicate mandatory preparation of an EIS for construction of a new facility for mining metallic minerals or for the disposal of tailings from a metallic mineral mine and construction of a new metallic mineral processing facility. The EIS will meet applicable requirements of Minnesota Rules part 4410.0200 to 4410.7800 (Minnesota Environmental Quality Board [MEQB] Rules) that govern the Minnesota Environmental Review Program. The DNR is the responsible governmental unit (RGU) under Minnesota Rules part 4410.4400, subpart 8C. The DNR will engage the services of a consultant to assist in EIS preparation; however, the DNR will retain responsibility for EIS content.

The USACE is serving as co-lead agency in preparation of the EIS with the DNR. The USACE received an application from Minnesota Steel to discharge fill material in waters of the U.S., including wetlands, to develop the Minnesota Steel project. The USACE has determined that its action on the permit would be a major federal action that could significantly affect the quality of the human environment, requiring the preparation of a Federal EIS pursuant to the National Environmental Policy Act (NEPA) (42 U.S.C. §§ 4321-4347) and its implementing regulations (40 C.F.R. parts 1500-1508).

1.3 PURPOSE AND NEED OF THE PROJECT

The purpose and need of the taconite mine and steel mill is to provide increased supplies of steel to the domestic and world markets.

2.0 PROJECT ALTERNATIVES

The MEQB rules require that an EIS include at least one alternative of each of the following types, or provide an explanation of why no alternative is included in the EIS (Minnesota Rules part 4410.2300, subpart G): alternative sites, alternative technologies, modified designs or layouts, modified scale or magnitude, and alternatives incorporating reasonable mitigation measures identified through comments received during the EIS scoping and draft EIS comment periods. The alternative of no action shall also be addressed.

Minnesota Rules part 4410.2300, subpart G directs that an alternative may be excluded from analysis in the EIS if “it would not meet the underlying need for or purpose of the project, it would likely not have any significant environmental benefit compared to the project as proposed, or another alternative, of any type, that will be analyzed in the EIS would likely have similar environmental benefits but substantially less adverse economic, employment, or sociological impacts.” Selection or dismissal of alternatives will be documented in the EIS.

2.1 PROPOSED ALTERNATIVE

The EIS will describe the proposed project and the potential environmental and socioeconomic effects outlined in Section 3.0.

2.2 NO ACTION ALTERNATIVE

The EIS will describe the expected condition if the proposed project is not developed, with respect to the potential environmental and socioeconomic effects outlined in Section 3.0.

2.3 SITE ALTERNATIVES

The MEQB rules allow the RGU to exclude alternative sites if other sites do not have any significant environmental benefit compared to the project as proposed, or if other sites do not meet the underlying need and purpose of the project. The MEQB’s Guide to Minnesota Environmental Review Rules lists a number of factors for the RGU to consider when deciding whether alternative sites would meet the underlying need for or purpose of the project.

The DNR and USACE do not propose to evaluate alternative mine pit or processing plant sites for this project. An alternative mine site would not meet the underlying need or purpose of the project. The mineralization of the desired elements within a geologic deposit dictates the location of the mine. An alternative processing plant site would either not have significant environmental benefits over the proposed project or would not meet the underlying need and purpose of the project which includes integrated value added process steps to produce sheet steel.

2.3.1 Alternative Tailings Basin

The EIS will evaluate the benefits, feasibility and impacts of locating a tailings basin to the northwest of the mine site. The location of this tailings basin has been identified as a potential site by Minnesota Steel. Unlike the proposed Existing Stage I Tailings Basin, this location has not been previously disturbed by mining activities.

2.4 TECHNOLOGY ALTERNATIVES

The DNR and USACE do not propose to evaluate alternative mining technologies. The proposed project uses conventional open pit mining technology that has been used in other mining operations. The deposit is not suitable for underground mining. Other mining technologies applicable to the Minnesota Steel deposit would likely have no significant environmental benefit over the proposed technologies.

The DNR and USACE do not propose to evaluate alternative technologies for steel production. Other technologies for steel production would not have significant environmental benefits over the proposed modern steel production technology.

2.4.1 Ore Processing

There are currently two available pellet induration processes that are commercially available – straight grate furnaces and grate kiln furnaces. The EIS will evaluate fuel use and air emissions for both types of indurating furnaces to determine which type will have the least impact on the environment.

2.4.2 Air Pollution Control Technology

The EIS will evaluate alternative air pollution control technologies for both ore processing and the steel mill.

2.5 MODIFIED DESIGNS OR LAYOUTS

The DNR and USACE do propose to evaluate alternative designs and layouts for the processing plant, waste rock stockpiles, and on-site sanitary wastewater treatment.

2.5.1 Processing Plant

The general site of the processing plant has been proposed to minimize transportation and maximize efficiency of the mining/processing operations. However, slight modifications to the overall footprint of the processing plant could result in reduced impacts to wetlands in the area. These modifications will be evaluated for feasibility, benefits, and impacts.

2.5.2 Waste Rock Stockpiles

Alternative design and location of stockpiles will be evaluated for feasibility, benefits, and impacts. Alternative designs could include in-pit stockpiling to create shallow water aquatic habitat or other designs that could have significant environmental benefits.

2.5.3 On-Site Sanitary Wastewater Treatment

The EIS will evaluate the feasibility and environmental benefits associated with an on-site sanitary wastewater treatment system/plant and the potential to reduce nutrient loading to Swan Lake.

2.6 SCALE OR MAGNITUDE ALTERNATIVES

The DNR and USACE do not propose to evaluate alternative scale or magnitude of the project. The infrastructure requirements to mine and process the ore are such that alternative scale/magnitude would not meet the underlying need for or purpose of the project or would likely not have any significant environmental benefit compared to the project as proposed.

2.7 INCORPORATION OF MITIGATION MEASURES IDENTIFIED THROUGH PUBLIC COMMENTS

The EIS will consider all mitigation measures suggested through public comment. Those mitigation measures that were identified but not carried forward for analysis will be discussed briefly as well as the reasons for their elimination.

The mitigation measure of an on-site sanitary wastewater treatment received through public comment was added as a modified design or layout alternative in Section 2.5.

3.0 EIS ISSUES

Issues have been identified and described in the Scoping EAW and are categorized below by significance and amount of additional analysis required in the EIS. Mitigation measures that could reasonably be applied to eliminate or minimize adverse environmental effects will be identified in the EIS.

3.1 TOPIC HAS BEEN ADEQUATELY ANALYZED IN THE SCOPING EAW (*Topic is not relevant or so minor that it will not be addressed in the EIS. The Scoping EAW will be appended to the EIS for reference; the relevant EAW number is provided in parents () after each topic*).

Water Surface Use (Item 15)

Compatibility with Plans and Land Use Regulations (Item 27)

3.2 SIGNIFICANT IMPACTS ARE NOT EXPECTED (*Information beyond that in the Scoping EAW will be included in the EIS*).

3.2.1 Land Use (Item 9)

The EIS will discuss potential land use conflicts to nearby residences, water bodies and the cemetery.

These potential conflicts will be addressed with respect to other environmental considerations of the project, including physical alteration of water resources, noise/blasting impacts, traffic, access/haul roads, railroads, natural gas pipelines, and electric transmission lines. The EIS will discuss the compatibility of plans and all required rezoning and variances as they pertain to the Itasca County Land Use Plan.

A proposed mine plan will be available for the use in the EIS. The plan will describe pit geometry and show plans for phasing of pit development. It will also describe necessary mine facilities such as haul roads and ramps.

3.2.2 Cover Types (Item 10)

Specific mining and plant site development details will be developed prior to or during EIS preparation; the EIS will include updated cover type information and "before and after" cover type maps, and will describe the conversion of existing land cover types that will result from project implementation and reclamation.

3.2.3 Threatened and Endangered Species (Item 11b)

The EIS will include the results of the rare plant survey and database search results, describe potential impacts to listed species and suggest mitigation, if warranted. The EIS will evaluate potential impacts to federally threatened and endangered species. Existing information will be evaluated and additional information collected, if necessary, to support federal regulatory requirements for threatened and endangered species (e.g. Canada Lynx). Potential mitigation strategies and alternatives will be evaluated to prevent and minimize any identified impacts.

3.2.4 Water-Related Land Use Management District (Item 14)

The projects relationship to water-related land use management districts will be discussed briefly in the EIS. Itasca County's Shoreland Zoning Ordinance will be reviewed and compared to the project. The status of the project with respect to shoreland zoning of Pickerel Creek will be investigated, and if a variance is needed the feasibility of receiving a variance will also be investigated. Mining in proximity to Snowball Lake has the potential to affect lake water levels; this will be analyzed in the EIS along with other potential surface and groundwater impacts.

3.2.5 Erosion and Sedimentation (Item 16)

The EIS will address runoff from erosion-prone areas of the site, including downstream sensitive areas of Oxhide Creek as part of the larger issue of surface water runoff and overall water quality impacts of the project.

3.2.6 Geologic Hazards and Soil Conditions (Item 19)

The EIS will include a discussion of the potential for groundwater contamination from process chemicals and hazardous materials used or stored at the project site and seepage from tailings basins. Measures to prevent and contain spills from processing materials and maintenance/repair of mining equipment will be identified in the EIS.

3.2.7 Traffic (Item 21)

The EIS will evaluate the proposed road access to the plant site and evaluate any potential traffic impacts and mitigation as appropriate. Itasca County has prepared a traffic model of the roads in the area under existing conditions and with the proposed project. The study includes proposed roadway design improvements to mitigate impacts at Highway 169 and Highway 65. Using this study the traffic impacts will be evaluated with respect to change in the level of service provided by the roadway, additional noise and dust, and safety implications.

3.2.8 Vehicle Related Air Emissions (Item 22)

The EIS will include a qualitative discussion of the effects of mine haul truck emissions on air quality at receptor sites near the mining operation, including carbon monoxide, nitrogen oxides and particulate emissions. The EIS will discuss the effects of mitigation measures on the projected air quality impacts. If the qualitative analysis shows anything other than insignificant impacts, further evaluation will be required.

3.2.9 Archeology (Item 25)

The EIS will include a discussion of archeological, historical, and cultural resources using information presented in the EAW. The EIS will discuss the schedule and requirements for cultural resource investigations (archeological and historical resource studies) through the permitting and construction period.

The EIS will include a map of the snowmobile trails and the Mesabi Trail and will discuss the impacts of the proposed project on their use.

3.2.10 Visual Impacts (Item 26)

Visual impacts are not anticipated to be significant, however limited information beyond what is provided in the EAW will be used to identify potential lighting impacts, visual impacts from proposed facility structures, and mitigation options.

3.2.11 Infrastructure (Item 28)

The EIS will include information on design and potential impacts of constructing a gas pipeline, water/sewer lines, auxiliary road access, and additional railroad lines. The EIS will also include information on conceptual design and the technical and regulatory processes for routing of electric transmission lines. Final design and location of the transmission line will be determined by the Minnesota Public Utilities Commission's site selection process. This process will be described in the EIS as well as potential impacts from the currently proposed location and design.

3.2.12 Socioeconomics

The general social and economic impacts of the project will be studied in the EIS. This will include the direct and indirect effects on local economic development, tax base and demand for public services.

3.2.13 Mineland Reclamation

The EIS will discuss the draft mineland reclamation plans and evaluate practical and reasonable reclamation options as they pertain to identified impacts and mitigation strategies.

3.2.14 Other – 1855 Ceded Territory Treaty

The EIS will include a description of tribal rights reserved as part of the 1855 Ceded Territory Treaty. Impacts to the tribal rights as a result of the project will be evaluated and mitigation proposed as needed.

3.3 POTENTIALLY SIGNIFICANT IMPACTS MAY RESULT *(Information beyond what was in the EAW will be included in the EIS.)*

3.3.1 Physical Impacts on Water Resources (Item 12)

The proposed project has the potential to significantly affect surface and groundwater resources in the project area both during and after mining. A detailed project water balance and watershed yield will be conducted to help quantify impacts on streamflow and lake water levels throughout mining and after closure. The EIS will include a discussion of this topic including:

- Impacts to open water areas and wetlands throughout the project;
- Surface water flows in O'Brien Creek, Pickerel Creek, Snowball Creek, and Sucker Brook;
- Modifications to Oxhide Creek;
- Upper Oxhide Creek diversion;
- Patrick "B" Tailings Basin diversion;
- Potential water level impacts to Little Sucker Lake, Snowball Lake, Swan Lake, Little McCarthy Lake, O'Brien Lake, and Oxhide Lake; and
- Dam safety issues.

A Level 1 Rosgen analysis of Oxhide Creek, Snowball Creek, Pickerel Creek, and O'Brien Creek stream geomorphology will be completed to identify any potential stream reaches that may be sensitive to changes in stream flow. This information will be compared with stream flow change information to identify any stream reaches that require further evaluation for impacts. If this further evaluation identifies any significant adverse impacts due to changes in water flow, monitoring and mitigation will be developed.

Wetland delineations, mitigation sites, and feasibility of wetland mitigation will be evaluated in the EIS. A wetland delineation report with a functional analysis and wetland mitigation plan will be included as part of the EIS. The potential for indirect and secondary impacts (loss, degradation, and change) to wetlands, including changes in wetland hydrology from the proposed project will be addressed in the EIS.

The EIS will suggest monitoring and mitigation where necessary to better define potential impacts and avoid or minimize known impacts to water resources.

3.3.2 Water Appropriations (Item 13)

The EIS will include a detailed water balance for the project including processing plant needs, mine pit dewatering, lake/stream augmentation and tailings basin seepage/discharge. Additional sources of water to supply the processing plant will be identified if the balance indicates a water deficit for the processing plant. The water balance will also consider wastewater discharges from the tailings basin to prevent build up of dissolved solids or other water quality concerns.

This information will be used to model how affected watershed yield and lake water levels would change both during and after mining. Impacts to water bodies will be identified and mitigation/monitoring will be developed to minimize impacts.

Potential quality and quantity impacts to nearby wells due to mine pit dewatering will be evaluated in the EIS by examination of regional stratigraphy and proposed water levels in pits and nearby lakes. The EIS will also evaluate the potential for blasting to adversely impact nearby drinking water wells.

3.3.3 Surface Water Runoff (Item 17)

The EIS will include a watershed balance developed from the project water balance. A model will be developed to predict changes in watershed runoff, watershed yield and changes to affected water bodies. This information will be used to identify potential impacts, mitigation and monitoring to minimize impacts to area water bodies. Potential sources of sediment and pollutant discharges from the site will be assessed and mitigation measures discussed.

3.3.4 Wastewater (Item 18)

The EIS will include a water chemistry balance for processing water and tailings basin seepage/discharges. In addition, the EIS will discuss categorical effluent standards as they pertain to discharges of mixed wastewater. This information will be used to identify potential impacts to receiving waters including increased methylation of mercury due to increased sulfate concentrations. The EIS will include and discuss the Pilot Plant Study data on chemical concentrations in the process water and solids including the impact that the flotation chemicals identified in the EAW (Amine collector (DA-16 or similar) and methyl isobutyl carbinol) will have on the environment.

The EIS will also include an evaluation of nutrient loading changes to Swan Lake resulting from changes to inflow, tailings basin discharge/seepage and increased sewage flow through the Nashwauk sewage treatment plant through a nutrient budget analysis.

The EIS will evaluate the water quality of Snowball Lake, Oxhide Lake, and Swan Lake as it relates to lake productivity, trophic status and potential augmentation needs/requirements.

3.3.5 Solid Waste (Item 20)

The EIS will include design information and engineering studies that will evaluate the tailings basin design for the proposed Expanded Stage I Tailings Basin and the Alternative Tailings Basin to ensure structural stability and safety of the tailings dams.

A development plan will provide a final outline for the basin, geotechnical data, typical cross-sections and preliminary analyses of seepage and slope stability. It will describe initial dike construction, basin phasing and reclaim water management. The EIS will evaluate the feasibility, benefits, and impacts of the proposed tailings basin designs.

A detailed stockpile plan will be available for use in preparing the EIS that will include development plans for stockpiles including geometry, volumes, and locations for placement of waste rock, lean ore, and overburden.

The EIS will discuss process wastes and solid wastes (emission control dust and slag) generated from the entire project including characterization, quantity, storage, handling, treatment & disposal, and best management practices.

3.3.6 Stationary Source Air Emissions (Item 23)

Air emissions and the potential impacts will be a major topic. The following studies will evaluate project related air quality issues and will be included in the EIS.

The EIS will include an emission inventory that lists all possible sources of air emissions from the plant (stack and fugitive). It includes detailed calculations of quantities of emissions of various types, using EPA- and state-approved procedures.

A Best Available Control Technology (BACT) Review will be included in the air permit application and available for use in the EIS to demonstrate that the project will use best available control technology for each source that emits pollutants in quantities exceeding the Prevention of Significant Deterioration (PSD) thresholds. The Minnesota Steel project will evaluate controls for NO_x, SO₂, CO, VOC and particulates.

Compliance with standards requiring Maximum Achievable Control Technology (MACT) for control of hazardous air pollutants such as metals and volatile organic compounds will be incorporated into the air permit application and included in the EIS.

The EIS will include a Class I Area Impacts Analysis using the CALPUFF model to simulate the long-range transport of project emissions. The model will be used to determine the impact of project-related air emissions on visibility and other air quality-related values (AQRVs) for Voyageurs National Park, the Boundary Waters Canoe Area (BWCA), Isle Royale, and Rainbow Lake Wilderness Area. Emission rate inputs to the model are developed in the emission inventory.

The EIS will include a Class II Area Impacts Analysis that will evaluate air quality effects of the project at the project boundary. Dispersion modeling must demonstrate that the increases will not exceed the ambient air quality standards nor the applicable allowable increase above the area baseline concentration (i.e., the PSD increment). An EPA-approved dispersion model will be used for this analysis. Emission rates used by the model are provided by the emission inventory.

The EIS will review estimates of potential mercury emissions (mercury balance) from the project and will also include an evaluation of possible mercury emission reduction alternatives.

A human health and ecological risk assessment of impacts from air emissions and water discharges from the project will be included in the EIS. The risk assessment model evaluates human health impact via inhalation, ingestion, dermal contact, and ecological impact (plant and wildlife) via discharge to or deposition of potential emissions on watersheds, lakes and identified sensitive receptors.

The EIS will include a summary of existing mineralogical data and studies for the west end of the Mesabi Range from Minnesota state agencies, research institutions, and Butler Taconite files. The EIS will also present an analysis of the existing mineralogy and petrology data for the ore body to be mined and identify the presence/absence of amphibole minerals. In addition, samples will be obtained from Minnesota Steel's ore bulk sample and analyzed to confirm the presence/absence of asbestos minerals (Method for bulk sample analysis: EPA/600/R-93-116; Polarized Light Microscopy). Further evaluation will be required if deposits of asbestos or fine mineral fiber bearing materials are discovered.

3.3.7 Cumulative Effects (Item 29)

The following cumulative impact issues, as identified in the scoping EAW, will be addressed in the EIS:

- Potential impacts to air quality in Class I areas within 250 kilometers of the proposed project.
- Acid deposition and ecosystem acidification in Class I areas within 250 kilometers of the proposed project.
- Mercury emissions, deposition, and bioaccumulation
- Visibility impairment or "regional haze"
- Loss of threatened and endangered plant species
- Loss of wetlands
- Wildlife habitat loss/fragmentation and travel corridor obstruction

The cumulative impacts analysis will address the combined environmental effects of the proposed project and of past, present and reasonably foreseeable future actions as they relate to each of the above mentioned issues. These effects are analyzed by evaluating whether the affected resource, ecosystem or human community has the capacity to accommodate additional effects. These include both direct and indirect effects on a given resource, ecosystem and human community and include actions by private and governmental bodies.

The "project impact zone" and the "extent of the resource beyond the zone of direct impact" can be different for each resource. Therefore, the approach to evaluation for each identified resource and the potential for cumulative impacts will be unique and is described in the response to question 29 of the Scoping EAW. The cumulative impacts analysis will only focus on truly meaningful effects to each individual resource.

The cumulative effects analysis for wildlife habitat described in the Scoping EAW has been refined for the scoping decision document. The evaluation of habitat loss/fragmentation and travel corridor obstruction/landscape barriers have been separated and will be evaluated individually. The approach to evaluation for habitat loss fragmentation will assess changes to habitat type and what effect it may have on wildlife species utilizing that habitat type rather than focusing on the specific threatened species.

The geographic scope will include select ecological subsections of the Arrowhead Region instead of counties. The approach to evaluation for travel corridor obstruction/landscape barriers will evaluate the effects on large mammals only, as they are most sensitive to landscape barriers due to the size of the potential barriers (mining operations) and the magnitude of large mammal movement. The small and medium sized mammals previously considered would be greater affected by habitat loss/fragmentation. The geographic scope for this analysis will be smaller than the habitat loss/fragmentation analysis; focusing only on the limits of the Iron Range.

The issues of water quality, loss of aquatic habitat and fisheries, and streamflow and lake level changes have been removed from the cumulative effects analysis. The potential for project specific impacts to water quality, aquatic habitat/fisheries, and streamflow lake level changes will be addressed in Sections 3.3.1 to 3.3.4 and 3.3.8. There are however, no foreseeable significant cumulative impacts that were identified for these issues.

The purpose of the scoping process as provided in Minnesota Rules part 4410.2100, subpart 1 states that, “*The scoping process shall be used before the preparation of an EIS to reduce the scope and bulk of an EIS, identify only those potentially significant issues relevant to the proposed project, define the form, level of detail, content, alternatives, time table for preparation, and preparers of the EIS, and to determine the permits for which information will be developed concurrently with the EIS.*” Therefore, it is appropriate that these items be removed from the cumulative impacts section of the scoping decision document.

3.3.8 Fish and Wildlife Resources (Item 11a)

The EIS will include a qualitative description of fisheries resources and angling activity in the former Butler tailings basin (Big and Little O’Brien Lakes), Swan Lake, Snowball Lake, Oxhide Lake, Little Sucker Lake, Big Sucker Lake, Snowball Lake, O’Brien Creek, Sucker Brook, and Pickerel Creek. The EIS will discuss the potential impacts to fisheries and angling that could result from varying water levels and flows. The EIS will evaluate the feasibility of restoring the O’Brien watershed and the potential benefits to fisheries resources.

The EIS will not address impacts to fish in area mine pits. The EIS will suggest impact mitigation strategies where warranted, and will describe long-term mine pit reclamation strategies to provide fisheries habitat when mining ceases.

The EIS will include a qualitative description of wildlife species and habitat present in the project area and describe potential project impacts.

The EIS will include a biological monitoring study. Aquatic invertebrates will be sampled in streams downstream from the mine pits and proposed tailings basin sites to provide background biological information. Sampling will be conducted at sites on O’Brien Creek, Sucker Brook, Snowball Creek, Oxhide Creek, Pickerel Creek, and Hay Creek. General water chemistry parameters (pH, temperature, conductivity, and dissolved oxygen) will also be collected during the sampling. Results of these studies will be compared to regional data and will be used in conjunction with the water balance and watershed yield to determine mitigation options.

3.3.9 Odor and Noise (Item 24)

Blasting vibrations and air overpressure will be discussed and evaluated in the EIS. A limited noise modeling/study for the proposed project will be conducted in accordance with state noise standards and will be included in the EIS. The EIS will also identify mitigation measures to potential noise and blasting impacts.

4.0 IDENTIFICATION OF PHASED OR CONNECTED ACTIONS

There are several connected actions that would be required to meet the infrastructure needs of the project. These actions include construction of a gas line, electrical power lines, public roadway, railroads and water/sewer lines. Section 3.2.10 of this Scoping Decision Document identifies that the EIS will evaluate these connected actions.

The project is proposed with a 20-year project life. The mineral deposit has enough ore to supply 70 years of ore for steel production. Given the extensive resources needed to construct the ore processing plant and steel mill, it can be assumed that Minnesota Steel would want to extend the life of the plant by utilizing this additional ore supply. Connected or phased actions beyond the proposed 20 year project life or a production trigger of 55 million tons of steel whichever comes first, will be addressed in accordance with Minnesota Rules part 4410.1000, subpart 4 as follows, "In connected actions and phased actions where it is not possible to adequately address all the project components or stages at the time of the initial EAW, a new EAW must be completed before approval and construction of each subsequent project component or stage. Each EAW must briefly describe the past and future stages or components to which the subject of the present EAW is related."

5.0 EIS SCHEDULE (TENTATIVE)

August 2005	Scoping EAW Comment Period (includes public meeting)
October 2005	Final Scoping Decision Document
January 2006	EIS Preparation Notice Published
August 2006	Draft EIS Issued for Public Review (includes public meeting)
December 2006	Final EIS Issued
January 2007	EIS Adequacy Determined

6.0 SPECIAL STUDIES OR RESEARCH

Mine Plan - A proposed mine plan has been completed by Minnesota Steel and will be available for the use in the EIS. It describes pit geometry and shows plans for phasing of pit development. It also describes necessary mine facilities such as haul roads and ramps.

Stockpile Plan - A conceptual stockpile plan was included in the EAW. A more detailed stockpile plan will be available for use in preparing the EIS. It will include development plans for stockpiles giving geometry, volumes and locations for placement of waste rock, lean ore and overburden.

Stage I Tailings Basin Plan - A plan for development of the Stage I Tailings Basin will be available for use in the EIS. The plan will provide a final outline for the basin, geotechnical data, typical cross-sections and preliminary analyses of seepage and slope stability. It will describe initial dike construction, basin phasing and reclaim water management.

Pilot Plant Study & Environmental Data - Data on chemical concentrations in the process water and solids of the pilot plant will be supplied for use in preparing the EIS. Water samples were collected at a variety of points in the pilot plant and are being analyzed for major ions, metals, hardness and total dissolved solids (TDS) and flotation chemicals, including amine collector. Solids samples were collected at various points and are being analyzed for a variety of metals and for chloride. The study will also describe composition of unfired and fired pellets (for use in determining exhaust and scrubber water quality) and DRI pellets. The pellet and DRI samples will be analyzed for the following constituents: percent water, chloride and a wide range of metals.

Project Water Balance and Watershed Yield Model - The water balance will describe the major consumptive uses of water and the net appropriation required for project operation. The abandoned Buter pit system filled with water and began outflowing into Oxhide Lake in 1993. A watershed yield model for Swan Lake will be calibrated using existing water level data to quantify daily Swan Lake outflow and total watershed inflow for the 1993 to 2005 base period. The model will be used to simulate Minnesota Steel's impact on watershed yield to Swan Lake, Swan Lake outflow, and Swan Lake water level changes from the base period. Sub-models will be developed to quantify Oxhide Creek yield for plant use, Oxhide Lake augmentation, and Snowball Lake augmentation. The model will include a simple groundwater model based on past observations of pit drawdown, pumping and recovery. In addition, the watershed yield model and project water balance will be used to prepare estimates of impacts of the project on the elevation-duration relationships for Swan Lake. This will address the probability of changes in the frequency and duration of periods of low- or high-water conditions.

Conceptual Augmentation Plans - A statistical analysis of annual watershed yield as a function of watershed area will be incorporated into the watershed yield study. Using this information, additional runoff yield estimates and the results of the geomorphological and biological monitoring studies, the EIS will address the need for stream and lake augmentation to maintain the flow and water level of Snowball Lake, Snowball Creek, Oxhide Lake, Oxhide Creek, O'Brien Lake and O'Brien Creek. This will include evaluation of timing of impacts and additional monitoring before and during mining.

Nutrient Budget (Swan Lake) - An estimate of the project's effect on the nutrient budget for Swan Lake will be prepared and available for use in the EIS. This will include estimates of loading changes due to the project and estimates of changes in Swan Lake concentrations of phosphorus, chlorophyll a and in the transparency of the lake.

Stream Geomorphology Study - A Phase I geomorphological evaluation will be performed using Rosgen methods. The study will evaluate changes in bankfull flows and base flows and provide information for assessing probable effects of the project on streams.

Biological Monitoring Study - The biological monitoring data will be used to describe the affected environment and used as a resource for the evaluation of potential impacts from flow or quality changes.

Dissolved Solids Balance and Chemical Mass Balance - A model of dissolved solids accumulation in process water will be prepared and available for use in the EIS. It will estimate concentrations of conservative, highly soluble ions including Ca, Na, Mg, SO₄, and Cl as well as TDS. Concentrations of flotation chemical reagents will also be estimated.

Wetland Delineation Report with Functional Analysis - A report showing delineation of wetlands affected by the project will be available for the EIS. It will include general statistics on wetland type and quality and individual data sheets for wetlands giving general assessments of functions and values using the Minnesota Routine Assessment Methodology (MNRAM) for Evaluating Wetland Functions format.

Wetland Hydrology Monitoring Study - In July, 2005 Minnesota Steel installed shallow monitoring wells in 12 wetlands located adjacent to the proposed pits or pit expansions. Water level readings have been made on a weekly basis since then and will be available for use in the EIS. The hydrology monitoring will provide a baseline for evaluation of future impacts and will help evaluate the current wetland hydrology for prediction of impacts.

Wetland Mitigation Plan - A wetland mitigation plan will be available for use in preparing the EIS. The plan will describe specific areas proposed to be used for mitigation and the conceptual plans for accomplishing the restoration or enhancement of wetlands at the restoration sites.

Limited Noise Modeling Study – Evaluate potential noise and blasting impacts.

Emissions Inventory – See Section 3.3.6

Class I Area Impacts Analysis – See Section 3.3.6

Class II Area Impacts Analysis – See Section 3.3.6

BACT Review – See Section 3.3.6

MACT Compliance – See Section 3.3.6

Mercury Balance – See Section 3.3.6

Human Health & Ecological Risk Assessment – See Section 3.3.6

Mineralogical Analysis – See Section 3.3.6

Canada Lynx Survey – A tracking survey will be conducted to assess potential impacts to Canada Lynx.

Cumulative Effects Analysis – See Section 3.3.7

7.0 GOVERNMENTAL PERMITS OR APPROVALS

The EIS will identify all permits and approvals required for this project. While some permit application review may occur concurrently with EIS preparation, the EIS will not necessarily contain all information required for a decision on those permits. No permits have been designated to have all information developed concurrently with the preparation. The U.S. Army Corps of Engineers will prepare a Record of Decision as part of the Clean Water Act, Section 404 permitting process after the Final EIS is issued.