Final Environmental Assessment

Minnesota Power - Mesabi Nugget Project High Voltage Transmission Line (HVTL)

Hoyt Lakes, Minnesota

SEH No. HOYTL 102285

July 3, 2008

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Final Environmental Assessment

Minnesota Power - Mesabi Nugget Project High Voltage Transmission Line (HVTL)

Prepared for the City of Hoyt Lakes

1.0 Introduction

Minnesota Power proposes to construct, own, operate, and maintain a new 138 kV High Voltage Transmission Line (HVTL) to serve the Mesabi nugget iron nugget plant in the city of Hoyt lakes, Minnesota (See Figure 1). Because the Project is entirely within the jurisdiction of Hoyt Lakes and is on land owned by a single entity, the Project has been deemed eligible for local review under Minnesota Statute 216E.05 and Minnesota Rules 7849.6200.

This Environmental Assessment (EA) has been prepared on behalf of the City of Hoyt Lakes to identify, to the extent feasible, the potential for significant environmental impact from the proposed project through site visits, analysis of existing information on the site and project and by the provision of a public participation and scoping process to identify unique site factors which might otherwise not be made known. The EA has been prepared in general accordance with the standard practices and requirements of the Minnesota Public Utilities Commission, Office of Energy Security, Energy Facilities Permitting section.

1.1 Project Description

Minnesota Power (the "Applicant" or "MP") proposes to construct, operate, maintain, and own a new 138 kV HVTL and Substation to be located in Sections 18,19 and 20, T59N, R14W, Saint Louis County, Minnesota. This Project is approximately 4 to 5 miles due north of the City of Hoyt Lakes, Minnesota. The proposed Substation and HVTL would connect and extend the existing Minnesota Power transmission system to energize operations at the Mesabi Nugget facility. The HVTL, which would require a new right-of-way, would be approximately 2.2 miles in length. Construction of the Mesabi Nugget Substation and HVTL, (all together, the Project), are expected to be completed by December 2008. The Project is shown on Figure 1 and 2 at the end of this EA.

1.1.1 HVTL

The proposed new single-circuit 138 kV HVTL would be approximately 2.2 miles in length. The HVTL would begin at an existing 3-way switch located just south of the former LTV administration building and extend approximately 3,000 feet due west along the existing mine dump road. From there it would extend north and northwest for 4,600 feet along an elevated haul road and then northwest for 3,000 more feet to a point near the old LTV area 1 shops. The final segment extends westerly for another 800 feet to a proposed substation site east of the Mesabi Nugget iron nugget plant. The substation would be located in the SW ¼ of the SW ¼ of Section 18, T. 59 N., R. 14 W., Saint Louis

County. The proposed route is shown at two resolutions on USGS topographic maps on Figures 1 and 2. Figure 3 shows the project location on a recent air photo

Transmission line right-of-way (ROW) easements would be 100 feet in width and would be adjacent to an existing mine dump road for most of the route. Mesabi Nugget owns the entire property where the HVTL would be located and has sufficient surface rights to grant the Applicant the complete ROW necessary for the Project. The proposed HVTL and substation would be designed and constructed to meet or exceed all National Electric Safety Code (NESC) standards and to address any additional safety concerns specific to Mesabi Nugget's operations. The HVTL would be strung on single-pole and double-pole structures spanning distances of 600 to 1000 feet. Two-thirds of the line would be strung approximately 70 feet above the ground surface. One-third of the line would need to be strung 90 feet above ground surface to permit safe passage of mining equipment.

1.1.2 Mesabi Nugget Substation

The HVTL would terminate at the proposed substation to be built on the site. This Substation would occupy approximately 1.5 acres of land and the footprint of the building and associated facilities would be approximately 200 by 300 feet. The Substation would include a 15 by 20 foot steel electrical equipment enclosure, a 138/13.8 kV transformer and miscellaneous 15 kV and 138 kV switching and related apparatus.

1.2 Project Purpose

The proposed 138 kV HVTL is intended to connect power produced by Minnesota Power to the Mesabi Nugget Substation and then transmit the power to the Mesabi Nugget iron nugget plant and associated facilities.

1.3 Alternative Routes

No alternate routes were designated for this Project due to the short length and existing site configuration. Planned mining operations and infrastructure, land ownership, constructability, and environmental protection factors all influenced the selection of the proposed route.

1.4 Project Cost Estimate

The estimated cost for MP's transmission system and substation facilities is between $3.9 and 5.0 million, including site acquisition, site preparation, equipment, construction.

1.5 Sources of Information

Much of the information contained in this document was provided by the applicants or the applicant's representatives (Minnesota Power) in the form of the Application for a Route Permit for the Mesabi Nugget 138 kV High Voltage Transmission Line. Additional sources of information are listed below:

- National Institute of Environmental Health Sciences. 2002. *EMF. Electric and Magnetic Fields Associated with the Use of Electric Power.* National Institutes of Health.
- Minnesota Department of Health. 2002. *EMF White Paper on Electric and Magnetic Field (EMF) Policy and Mitigation Options.*
- City of Hoyt Lakes 2005 Zoning Map
- City of Hoyt Lakes Zoning Ordinance
- Minnesota Department of Natural Resources, various data sources

2.0 Regulatory Framework

Minnesota Power notified the Minnesota Public Utilities Commission (MPUC) of its intent to permit the Project using the local review process in a letter dated April 17, 2008. In a letter dated April 25, 2008, the Minnesota Department of Commerce, Office of Energy Security, on behalf of the MPUC, indicated its concurrence that the Project is eligible for local review under Minnesota Statute 216E.05 and Minnesota Rules 7849.6200.

2.1 Conditional Use Permit Requirement

The City of Hoyt Lakes has been advised that this Project meets the eligibility requirements of local review provided under Minnesota Statutes 216E.05. The local review process is appropriate for this situation, since the Project is entirely within the jurisdiction of Hoyt Lakes and on land owned by a single entity (Mesabi Nugget). To ensure that the permit and environmental assessment is given full public review and the legally mandated opportunity for citizen participation under the Power Plant Siting Act, the City of Hoyt Lakes decided to hold a public hearing on the matter at the Planning Commission meeting. Pending the recommendation of the Planning Commission and any modifications made in response to public comment, the City Council can then approve, modify with conditions or reject the route permit, as they deem appropriate.

City of Hoyt Lakes Planning Commission will hold a Public Hearing on May 20, 2008 at 5:00 p.m. to receive input on proposed scope and content of the draft EA for the Project. A Notice of Public Hearing was published prior to the hearing date, inviting the public to provide oral or written comments for consideration by the Commission. Any persons may provide input at the Public Hearing. This matter will be acted on and forwarded to the City Council for final decision.

2.2 Saint Louis County Utility Corridor Zoning

According to the St. Louis County Planning and Development department, utility corridors are not regulated in the St. Louis County Zoning Ordinance. However, electrical substations and other similar utility facilities are regulated under the performance and administrative standards portion of the zoning ordinance (Sect.4). This ordinance is not binding on the City of Hoyt Lakes, but illustrates the zoning and land use considerations applied in a surrounding jurisdiction to these types of projects.

Section 4 of the zoning ordinance states Utility Structures …

> *are permitted in all zone districts on lots or leased parcels as small as 20,000 square feet provided the following standards are met. All commercial communication towers and electrical substations will require a conditional use permit unless they meet the requirements for exemption. A performance standard permit may be issued for other utility structures, camouflaged towers 100 feet or less in height or other incidental towers not meeting the standards for an exemption if all of the following provisions are followed:*
>
> 1. *All property owners within one quarter mile of the utility site sign a petition.*
> 2. *The utility structure … does not encroach within the shore or road setback standards for the zone district in which it is located. Encroachment onto a side yard setback is permitted when authorized by the adjacent property owner. A variance is required when these setback standards cannot be implemented; and*
> 3. *Lighting for other utility structures shall not be directed towards roads, public waters or adjacent properties; and*
> 4. *All state and federal regulations relating to the facility are being implemented.*

Utility structures not meeting the above requirements may apply for a conditional use permit. It appears that the HVTL requested by the Applicant will meet or exceed all applicable provisions of this code, so no variance would be required for the Project. As noted above, Minnesota Power is requesting a special conditional use permit from the City of Hoyt Lakes to ensure that all local land use concerns are raised and satisfactorily addressed.

2.3 Environmental Assessment Requirement

In accordance with Minnesota Rule 7849.6200 Subp. 5, an EA must be prepared for the Project. The purpose of the EA is to ensure that a local unit of government that maintains jurisdiction over a qualifying project shall prepare an EA on the project. Upon completion of the EA, the local unit of government shall publish notice in the EQB Monitor that the EA available for review, describe how a copy of the document may be reviewed, indicate that the public may comment on the document, and define the procedure for submitting comments to the local unit of government. The local unit of government shall provide a copy of the EA to the Minnesota PUC upon completion of the document. The local unit of government shall not make a final decision on the permit until at least ten days after the notice appears in the Environmental Quality Board (EQB) Monitor.

The EA contains information on the human and environmental impacts of the proposed substation and HVTL route. The EA addresses any mitigating measures for potential impacts from the Project. In accordance with the rule, Hoyt Lakes will provide the general public an opportunity to comment on the scope and content of the environmental assessment. The City will notice the meeting in local newspapers and provide copies of the draft scope to any interested citizens, and members of the Hoyt Lakes Planning Commission. The scope and draft EA will be presented at the Planning Commission meeting on May 20, 2008. This meeting will offer the public the opportunity to learn about the Project, to suggest alternative routes, and to contribute to the EA by identifying issues that need to be addressed. Any member of the public is permitted to raise concerns and comments about the scope and content of the draft EA.

When the EA is complete, the City of Hoyt Lakes will publish a notice in the EQB Monitor that the EA is available for review, how a copy of the document may be reviewed, that the public may comment on the document, and the procedure for submitting comments to the City. A final decision on the project will not be made until at least ten days after the notice appears in the EQB Monitor.

2.4 Certificate of Need Requirement

No Certificate of Need (CON) is required for this Project. Since the proposed HVTL is less than 200 kV, less than ten miles in length, designed to serve the needs of a single large customer and does not cross a state line, the Project is exempt from a CON under Minnesota Statute 216B.2421 Subd. 2.

2.5 Other Permits and Approvals Required

A list of permits and approvals required for the construction of the Project is included in Table 1 below.

Table 1
Required Permits and Approvals

(*These permits are assumed to be necessary, but may not be required at the discretion of the Permit Agency)

Agency	Permit or Approval	Regulated Activity	Status
City of Hoyt Lakes	Local Review	Construction of 138 kV Transmission Line	Currently in process
Minnesota Department of Natural Resources (MNDNR)	License for Utility Crossings of Public Lands and Waters	Utility crossings of public lands and designated Public Waters	To be obtained after Local Review process is completed
Minnesota Pollution Control Agency (MPCA)	National Pollutant Discharge Elimination System (NPDES)	Review of Project Impacts - Water Quality and Erosion Control	To be obtained after Local Review process is completed
MN Dept. of Transportation (MNDOT)	Utility Permit	Construction Within Trunk Highway Right-Of-Way	No Permit required
(*These permits are assumed to be necessary, but may not be required at the discretion of the Permit Agency)			
Data Needs			
MN Dept. of Natural Resources (MNDNR)	Minnesota Natural Heritage Information System (NHIS) Database Review	Review of Project Impacts	No effect on any known NHIS occurrences of rare species or features
MN Historical Society State Historic Preservation Office (SHPO)	Review of Nationally Registered Historic Places and State of Minnesota Archeological Resources	Historic Properties and Archeological Resources	No historic properties affected by project – report from Mesabi Nugget research
US Fish and Wildlife Service	Environmental Review –Federal Threatened and Endangered Species	Review of Project Impacts	No environmental concerns anticipated – awaiting response

3.0 Assessment of Environmental Consequences and Mitigation

This is a small project located in an industrial area previously used for mining and mineland reclamation. Impacts to the environment are expected to be minimal and short-term, therefore little mitigation will be required. MP will minimize negative environmental impacts during construction of the project through the use of Best Management Practices (BMP).

3.1 Project Location

Hoyt Lakes is a city in St. Louis County, Minnesota located at coordinates **: (47°31′17″North, 92°8′14″West).** The elevation is 1,473 ft (449 m) above mean sea level. According to the United States Census Bureau, the city has a total area of 58.1 square miles (150.5 km²), of which, 56.0 square miles (145.2 km²) of it is land and 2.0 square miles (5.3 km²) of it (3.51%) is water. County Road 110 serves as a main arterial route in the community. Like many cities in northeastern Minnesota, Hoyt Lakes has a large area within its city limits, but the residential area is miles away from the Project site.

3.2 Socioeconomics

3.2.1 Affected Environment

The Project is located entirely in the city of Hoyt Lakes, Saint Louis County, in northeastern Minnesota. Major industries include timber production, mining and tourism. At one time, surface mining of low-grade iron-ore was a major part of the local economy. The mining industry is presently in a recovery phase. Mining in the area has been showing steady improvement in recent years.

The Minnesota State Demography Office predicts that the Arrowhead Region will continue to gain in population over the next fifteen years, increasing by another 18% by 2030. The Demography Office expects the population of St. Louis County to increase by about 9% by 2030. During the summer, the regional population increases because of the large number of temporary residents and tourists that move into the area. These seasonal increases are not reflected in census data, but they are taken into account when evaluating housing availability and transportation impacts of new projects.

Hoyt Lakes Population Trends

The population trend for the City of Hoyt Lakes is shown below in Table 2. These data show that Hoyt Lakes has declined by nearly 40% since 1980, from 3,186 to 1,961.

Table 2
Population Trends Since 1980 for Hoyt Lakes

Municipality	1980	1990	2000	2004
Hoyt Lakes	3186	2348	2082	1,961

The area near the City experiences a large influx of temporary residents and visitors at lake cabins, resorts and campgrounds in the summer. These temporary residents are not considered in these population statistics, but they do affect the capacity of local government services to meet local needs.

Demographics and Environmental Justice

According to the 2000 census, there were 200,528 people, 82,619 households, and 51,389 families residing in Saint Louis County (U.S. Bureau of the Census, 2005). The population density was 32 people per square mile (12/km²). There were 95,800 housing units at an average density of 15 per square mile (6/km²). The racial makeup of the county was 94.86% White, 0.85% Black or African American, 2.03% Native American, 0.66% Asian, 0.03% Pacific Islander, 0.22% from other races, and 1.35% from two or more races. 0.80% of the population were Hispanic or Latino of any race. 17.0% were of German, 13.7% Norwegian, 12.1% Finnish, 9.7% Swedish, 6.0% Irish and 5.3% Italian ancestry according to Census 2000.

The Hoyt Lakes city population was 2,082 at the 2000 census and there were 916 households, and 649 families residing in the city. The population density was 37.1 people per square mile (14.3/km²). There were 995 housing units at an average density of 17.8/sq mi (6.9/km²). The racial makeup of the city was 99.14% White, 0.29% African American, 0.19% Native American, 0.10% Asian, 0.05% from other races, and 0.24% from two or more races. Hispanic or Latino of any race were 0.19% of the population.

There were 916 households out of which 24.1% had children under the age of 18 living with them, 61.6% were married couples living together, 7.3% had a female householder with no husband present, and 29.1% were non-families. 26.3% of all households were made up of individuals and 13.3% had someone living alone who was 65 years of age or older. The average household size was 2.27 and the average family size was 2.71.

In the city the population was spread out with 19.8% under the age of 18, 6.6% from 18 to 24, 22.6% from 25 to 44, 29.6% from 45 to 64, and 21.3% who were 65 years of age or older. The median age was 46 years. For every 100 females there were 99.6 males. For every 100 females age 18 and over, there were 96.4 males.

The median income for a household in the city was $39,493, and the median income for a family was $45,603. Males had a median income of $42,000 versus $24,052 for females. The per capita income for the city was $18,882. About 6.6% of families and 8.9% of the population were below the poverty line, including 19.5% of those under age 18 and 5.7% of those aged 65 or over.

To help determine whether the Project could disproportionately impact minority or low-income residents, demographic data was evaluated for the region and local site areas (Demographer, 2008). The population in the region is relatively homogenous, with few concentrations of minority or low-income areas. The largest minority concentrations in the region are in central Duluth and on tribal reservations relatively distant from the Project Site. Hoyt Lakes is more than 97% white. For reference the overall population of Minnesota is 89.4% white.

Employment

Northeastern Minnesota has historically relied on the mining and forestry industries for well-paying jobs and economic base. But since 1970, job loss in these two industries, population loss and recovery and other changes has forced a diversification in employment. Between 2000 and 2003, jobs in mining declined by 36%. Although the mining and forestry industries have stabilized recently, both industries are now producing more output with fewer employees. These changes and the general economic crisis of the 1980's and earlier this decade have forced the region to adopt economic diversification as a long-term strategy.

The Department of Employment and Economic Development (DEED) collects employment data for the state of Minnesota. The 2003 data show that, as in the rest of the country, employment in the service sector is an increasingly large percentage of total employment in the Arrowhead Region. Mining now accounts for only 3% of the employment in the region, but accounts for 5% of wages paid. This indicates that mining and manufacturing jobs, while no longer a large percentage of regional employment, pay significantly higher wages than most service jobs in the area. Mining and paper production are still the two highest output industries in the region on a dollar value basis. And, although mining and forestry jobs account for only a small percentage of regional jobs, these industries still account for over 15% of the jobs in Hoyt Lakes, which is located in historic mining areas of the Iron Range.

Unemployment

Since both temporary construction and permanent employment for the Project would be drawn from throughout the region, this section emphasizes regional unemployment rates. The average unemployment rate in the seven-county region averaged about 5.1% for 2005, but dropped to about 4.0% over the last four months of the year. Unemployment in the region has gradually declined over the last several years, and even more in recent months, due to a slow recovery from the 2001 recession. But since 1990, the regional unemployment rate has ranged from about under 5% to over 8% annually. Since 1980, the unemployment rate in the Arrowhead Region has been consistently about 2% higher than the state average, and about 1% higher than the state average for the last five years. Unemployment has also dropped statewide; therefore, continued economic expansion in other areas of the state will likely put new strains on the available state workforce supply in those areas.

3.2.2 Environmental Consequences

Economic impacts are described as the amount of money and/or employment that the Project may deliver in terms of:

- Employment
- Income
- Government costs and tax revenues

Construction of the Project is anticipated to cost several million dollars for labor and equipment and be complete within four months following beginning of construction. During construction and operation, the Project would function as a "basic industry" in Saint Louis County, in the northeastern region and the State of Minnesota. Basic industries are those business and government activities which bring outside income into an area economy. Income from sources outside the area that is received as paychecks and spent generates more income and employment in the area. This is called the multiplier effect.

Construction employment accounts for less than four percent of the Saint Louis County workforce. If local contractors were employed for portions of the construction, total wages and salaries paid to contractors and workers in Saint Louis and adjacent counties would contribute to the total personal income of the region. Additional personal income would be generated in the local, regional, and state economies due to the multiplier effect of each dollar paid in salaries and wages. Multipliers used for basic industries are estimated to be between one and three times the original salary and wages. This multiplier effect occurs as earners buy goods and services locally with the money earned and contribute to local, state and national taxes. Purchase of goods such as energy, fuel, operating supplies, and equipment also generate sales tax revenues.

Long-term impacts to the Saint Louis County tax base, as a result of the construction and operation of the Project, would contribute to the local economy in northeastern Minnesota. Development of energy projects in this region is important in diversifying and strengthening the economic base and encouraging economic growth of the region and the local counties where energy projects are located. County government expenses are not expected to increase because of the Project. Industries in Saint Louis County do not expect negative impacts during construction or operation of the Project. The Nugget Plant would contribute to maintaining and increasing the number of jobs in the Hoyt Lakes area.

3.2.3 Mitigation

Socioeconomic impacts associated with the Project would be primarily positive. These positive environmental consequences result from the influx of wages and purchases made at local businesses during Project construction and an increase in the county's tax basis from the construction and operation of the Project. Since the environmental consequences resulting from the Project are expected to be beneficial to the local community rather than detrimental, specific mitigation is not required.

3.3 Noise

3.3.1 Affected Environment

The Project is located in a rural, predominantly forested mining area. Sources of background noise audible to rural residents and visitors to the area include wind, mining activity, recreation (primarily hunting), and vehicles. Relatively low background noise levels are generally representative of the site. Higher levels exist in mining areas, near roads and other areas of human activity. Standard levels of noise associated with heavy construction equipment operation would occur during construction. These impacts are expected to be minimal, and would be similar in nature to the noise levels produced by

normal mining operations along County Road 110.The high voltage transmission line and substation will both be operated within the Minnesota Pollution Control Agency (MPCA) Noise Pollution Control Rules, Chapter 7030.

Minnesota Pollution Control Noise Guidelines

The Minnesota Pollution Control Agency (MPCA) has guidelines for both residential and industrial zones and acceptable SPL maximums for both. These guidelines, measured in decibels, (dBA), are stipulated in the form of $\mathbf{L}_{10}$ and $\mathbf{L}_{50}$. Simply stated, $\mathbf{L}_{10}$ means that the measured SPL (in dBA) must not exceed a certain threshold more than 10% of the time (for a one hour survey), and $\mathbf{L}_{50}$, being a level that must not be exceeded more than 50% of the time (for a one hour survey). These thresholds are listed as SPL (dBA) maximums by the MPCA for **Residential** areas, as follows:

Table 3
7030.0050 Noise Area Classification (NAC)
Household Units including Farm Houses

	$\mathbf{L}_{50}$	$\mathbf{L}_{10}$
Daytime	60dBA	65dBA
Nighttime (10:00PM-7:00AM)	50dBA	55dBA

Noise Loss Over Distance

Hoyt Lakes does not have any local noise ordinance that would regulate this Project beyond MPCA requirements.

Local Noise Ordinances

Hoyt Lakes does not have any local noise ordinance that would regulate this Project beyond MPCA requirements.

Sound and Noise Descriptions

Sound is described as varying pressures, from low to high, which are induced by disturbances in the air. These pressures present themselves in the form of periodic waveforms and are measured in cycles per second. When these varying pressures reach the human ear, they are converted by our eardrums and brain into sound. Sound, either low or high in nature, travels at a relative speed of 1130 feet per second. This varies slightly due to humidity, and relative temperature. Sound also has a loudness component. This is scientifically expressed as Amplitude. In describing how humans hear variances in amplitude (or pressure), we use a measure known as a decibel (dB).

Decibels, in their logarithmic function, can then be broken down accordingly:

- +/-1dB change in loudness= no noticeable change in loudness
- +/-3dB change in loudness= just perceptible threshold difference in loudness
- +/-6dB change in loudness= a clearly noticeable difference in loudness
- +/-10dB change in loudness= twice (or half) change in loudness
- +/-20dB change in loudness= a fourfold (4x) change in loudness

Below is a decibel scale, A-weighted, of common sound and noise sources:

Table 4
Sound Pressure Level (dBA)

140dBA	Jet Engine (at 25 meters)
130dBA	Jet Aircraft (at 100 meters)
120dBA	Rock and Roll Concert
110dBA	Pneumatic Chipper
100dBA	Jointer/Planer
90dBA	Chainsaw
80dBA	Heavy Truck Traffic
70dBA	Business Office
60dBA	Conversational Speech
50dBA	Library
40dBA	Bedroom
30dBA	Secluded Woods
20dBA	Whisper

Noise Loss Over Distance

Sound travel over distance is acted upon by many factors. Temperature, humidity, wind direction, barriers and absorbent materials such as soft ground and light snow are all factors in how sound will be perceived at various distances. In addition, there is significant loss of sound over distances due to the ever-expanding radius of the sound "sphere". In a free field, one that is free from reflective materials and barriers, a single noise source will expand outward from its location in a spherical wave front spreading its energy over a continuously expanding sphere.

3.3.2 Environmental Consequences

Noise is defined as any unwanted sound. Noise can have such subjective effects as annoyance, nuisance, and dissatisfaction, and can also interfere with activities such as speech, sleep, and learning. Physiological effects such as anxiety, tinnitus, or hearing loss can also occur as a result of noise exposure. Contribution to hearing loss can begin at levels as low as 70 dB(A).

The State of Minnesota noise standards require an L50 level of 50 dBA or less at night for residential receptors (Minn. Rule 7030.0040). The National Safety Council (NSC) recommends no more than 85 dB(A) for eight hours of exposure as the safe limit for mining operations. Industrial standards of the Occupational Safety and Health Administration (OSHA) regulations would apply during construction, operation and maintenance of the facility. Short-term noise issues would be related to construction of the Project; long-term issues would be related to operation of the facility. Noise generated by construction activities would occur intermittently over the construction period during daytime hours and would be generated by an increase in traffic on local roads, as well as heavy equipment operation. Available estimates from other construction projects indicate that the maximum noise levels from heavy equipment would be 85 to 88 dB(A) at a distance of 50 feet (Western 2003)..

During operation of the Project, noise will be emitted by the HVTL and the Substation, located at the north end of the proposed HVTL. Corona-generated audible noise from HVTL operation is generally characterized as a crackling, hissing noise. The noise is most noticeable during wet-conductor conditions such as rain, snow, or fog. The average noise-level during wet weather at the edge of the ROW for the proposed HVTL is expected to be less than 45 dB(A). The noise (L_{50}) standard is 50 dB(A) for nighttime (Minn. Rule 7030.0040). The closest residence to the Substation is approximately 3.0 miles. No other residences are within a mile of the substation or transmission line. Given the distance of residences from the HVTL and the substation, it is anticipated that the noise standards will be met.

3.3.3 Mitigation

Noise impacts to nearby residents and other potentially affected parties were taken into consideration as part of the siting of the HVTL route. Because there are no anticipated exceedances of the Minnesota noise standards at sensitive receptors, no mitigation measures are required.

3.4 Visual Resources

3.4.1 Affected Environment

Scenic quality is determined by evaluating the overall character and diversity of landform, vegetation, color, water, and cultural or manmade features in a landscape. Typically, more complex or diverse landscapes have higher scenic quality than those landscapes with less complex or diverse landscape features. The Project lies in a rural location with mining and forestry as the primary land uses (see Figure 4). Forest cover, lakes and watercourses, wetlands, and exposed rock formations visually dominate the area surrounding the Project. The topography is atypical, from past and present mining activities. The landscape can be classified as rural open space where the visual resources of the area are neither unique to the region nor entirely natural. Structure and color features in the visual region of influence include those associated with wetlands, forested zones and additional manmade features from mining activities. Colors are seasonally variable from vegetation. There are no settlements in the vicinity of the Project. Currently, there are no distinctive landscape features in the Project Area that would require specific protection from visual impairment.

3.4.2 Environmental Consequences

The HVTL would bisect the mining areas from the Substation and continue southwest to the existing switch near County Road 110 and the Duluth Mesabi and Iron Range railroad tracks. The HVTL towers would be 70 to 90 feet tall and would be visible from one local road and no residences. The appearance of the HVTL would result in minor changes to the aesthetics of the landscape. The vicinity of the Project Area does not contain any highly distinctive or important landscape features, registered cultural resources, or unique viewsheds.

3.4.3 Mitigation

The following are proposed measures to mitigate visual impacts:

- Existing roads will be used for construction and maintenance where possible, minimizing the need for new roads;
- Temporarily disturbed areas will be converted back to cropland or otherwise reseeded to blend in with existing vegetation.

3.5 Public Services, Infrastructure, and Traffic

3.5.1 Affected Environment

The Project is located in a lightly populated, rural area in northeastern Minnesota. There is an established transportation and utility network that provides access and necessary services to the industry, existing near the Project Area. The city of Hoyt Lakes is the only town near the Project Area as shown in Figure 2. Limited county and township roads characterize the existing roadway infrastructure adjacent to much of the Project Area.

3.5.2 Environmental Consequences

The Project is expected to have a minimal effect on the existing infrastructure. The following is a brief description of the impacts that may occur during the construction and operation of the Project:

Electrical Service

Local electric service would not be disrupted by the project.

Roads & Traffic

Access easement agreements with Mesabi Nugget would be obtained prior to construction and would be maintained to allow for access to transmission facilities during the operation of the Project. Motor vehicle traffic in the vicinity of the Project Area would temporarily increase during the construction phase.

Water Supply

Construction and operation of the Project would not impact the water supply, nor require appropriation of surface water or dewatering of underground aquifers. The installation or abandonment of wells is not required.

Telephone and Fiber Optic

Construction and operation of the Project would not impact telephone and/or fiber optic service in the vicinity of the Project Area.

Police, Fire, and Emergency Services

Hoyt Lakes operates a volunteer emergency response and fire department with 25 EMT and fire fighters, paid by service run. Hoyt Lakes operates this service cooperatively with the surrounding communities of Aurora, Hoyt Lakes and White Township, all of which contribute "cooperative" payments to cover administrative expenses, keep cost of service low and build up reserves for capital purchases. Hoyt Lakes has mutual aid agreements with different combinations of these communities for police, fire and ambulance. The nearest hospital is the White Community Hospital in Aurora (9 miles) and in Eveleth (27 miles) or Virginia (28 miles).

The St. Louis County Sheriff is the appointed emergency management director for the county, including the Project area. St. Louis County assists its municipalities when emergency response exceeds their local capabilities. Likewise, state government may supplement county resources as needed. The St. Louis County Sheriff Office Emergency Management Division, coordinates emergency management plans and has jurisdiction throughout the county outside of cities who establish their own emergency management organizations.

Hoyt Lakes has its own emergency operations plan appoints a civil defense director who is responsible for maintaining the plan.

3.5.3 Mitigation

Construction and operation of the proposed project would be in accordance with all associated federal and state permits and laws, as well as electrical and mining industry material specification and requirements, an all construction and operation standards. No infrastructure Environmental Consequences are expected during project construction and operation, therefore mitigation measures are not anticipated.

3.6 Archaeological and Historical Resources

Archaeological and historic resources are regulated federally under the National Historic Preservation Act (36 CFR Part 18) and under the Minnesota Field Archaeology Act (MS Sect. 138.31 – 138.42) at the state level. The State Historic Preservation Office (SHPO) administers the state statutory requirements and provides coordination with federal agencies for federal requirements. Similarly, Minnesota's Tribes and the 1898 Treaty Office have Tribal Historic Preservation Offices (THPOs) to administer tribal interest in cultural resources and archaeological sites

3.6.1 Affected Environment

The Phase 1 Archaeological Survey prepared for the Mesabi Nugget Phase II Impact Area project (Soils Consulting, 2008) was referenced to identify potential archaeological and historic resources in the

project area. No evidence of archaeological resources was identified in the vicinity of the existing haul road where the proposed HVTL route will be located. No properties that would be considered eligible under the National Register of Historic Places were documented within the Project Area.

3.6.2 Environmental Consequences

No known archaeological sites or potential historic properties that are eligible under the National Historic Preservation Act are documented or expected the Project Area.

3.6.3 Mitigation

If archaeological sites are found during construction, the Minnesota Historic Society (MHS) would be notified.

3.7 Recreational Resources

3.7.1 Affected Environment

Regulated and managed recreational resources to consider include designated non-motorized recreational trails, motorized all terrain vehicle and snowmobile trails, public parks and ballfields, designated canoe routes, and public boat access areas. None of these resources are present in the project area.

3.7.2 Environmental Consequences

No impacts on recreational resources are anticipated as a result of the project. The proposed HVTL route will be constructed on an existing mine haul road and will not conflict with any recreational uses or resources.

3.8 Public Health and Safety

3.8.1 Affected Environment

All transmission line and substation facilities would be constructed in accordance with the National Electric Safety Code (NESC) and other relevant industry standards to insure that adequate safety clearances and provisions are provided. Safety measures including fencing, warning signs, and equipment grounding would be provided per code requirements. All construction personnel would be required to follow Occupational Safety and Health Administration (OSHA) regulations throughout project construction.

Air Quality

Since high voltage electric transmission lines and substations do not produce significant air emissions, there would be no environmental impacts to air quality from the operation of the Project. A small amount of emissions well below standard thresholds would occur during construction due to normal construction vehicles and equipment traffic. This impact is localized and would be mitigated by dust control measures.

Electromagnetic Fields

Extremely low-frequency electric and electromagnetic fields (ELF-EMF) may currently exist near the Project where electric conductors exist with an electrical current flow. EMFs result from electrically charged particles which may cause effects some distance from the line. The electrical effects relating to a HVTL would be characterized as “corona effect” or “field effect”. Examples of conductors to be used in the Project include an HVTL, distribution (feeder) lines, substation transformers, house wiring, and electrical appliances. HVTLs are not fundamentally different from other electrical conductors and also exhibit ELF-EMFs.

Since 1979, there has been considerable attention focused on understanding the effects of electric and magnetic fields (EMF) on humans. The question of whether exposure to power-frequency (60 Hz)

magnetic fields can cause biological responses or even health effects has been the subject of considerable research for the past three decades. There is presently no Minnesota statute or rule that pertains to magnetic field exposure. The most recent and exhaustive reviews of the health effects from power-frequency fields conclude that the evidence of health risk is minimal. The National Institute of Environmental Health Sciences (NIEHS) issued its final report, "NIEHS Report on Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields" on June 15, 1999, following six years of intensive research. NIEHS concluded that there is little scientific evidence correlating ELF-EMF exposures with health risk.

The Minnesota State Interagency Working Group on EMF Issues, consisting of members from the Minnesota Department of Health (MDH), Department of Commerce, Public Utilities Commission, Pollution Control Agency, and Environmental Quality Board conducted research related to EMF, which resulted in similar findings to the NIEHS report. The group issued "A White Paper on Electric and Magnetic Field (EMF) Policy and Mitigation Options" in September of 2002 wherein it concluded:

"Research on the health effects of EMF has been carried out since the 1970s. Epidemiological studies have mixed results – some have shown no statistically significant association between exposure to EMF and health effects, and some have shown a weak association. More recently, laboratory studies have failed to show such an association, or to establish a biological mechanism for how magnetic fields may cause cancer."

The MDH concludes that the current body of evidence is insufficient to establish a cause and effect relationship between EMF and adverse health effects. However, as with many other environmental health issues, the possibility of health risk from EMF cannot be dismissed. The conclusions of the Minnesota State Interagency Working Group are also consistent with those reached by the MDH in 2000 and the 1999 Final Report by the NIEHS.

Security and Safety

The Project is located in a rural area with relatively low population. Construction and operation of the Project would have minimal cnvironmental consequences on the security and safety of the local populace.

Traffic

Traffic impacts from this Project are deemed to be insignificant. The majority of traffic permitted on the private controlled access site is due to the limited coming and going of employees and movements of mining equipment along the mine dump road.

3.8.2 Environmental Consequences

Air Traffic

The Project would have no significant environmental consequences on air traffic in the region because there are no airports in the vicinity of the Project Area. The height of the HVTL would be similar to other HVTLs in the area and would restrict low level aircraft use to a similar extent.

Electromagnetic Fields

While the general consensus is that electric fields pose no risk to humans, the question of whether exposure to magnetic fields potentially can cause biological responses or even health effects continues to be the subject of research and debate. Based on the most current research on electromagnetic fields, facilities such as those comprising the Project are not expected to have significant impact to public health and safety due to ELF-EMF. The addition of these transmission facilities is not expected to add significantly to the presence of ELF-EMF exposure in the vicinity.

Security and Safety

Project construction and operation would have no significant impact on the security and safety of the local community. Some additional risk for worker or public injury would exist during the construction phase, as it would for any large construction project. Work plans and specifications would be prepared to address worker safety during Project construction and all work completed on the Project would be OSHA compliant.

Traffic

Motor vehicle traffic in the vicinity of the Project Area would temporarily increase during the construction phase. The potential for a traffic fatality is low; consequently, an increase in risk to local residents or increase in injuries and fatalities related to traffic is not anticipated.

3.8.3 Mitigation

Air Traffic

The Project would have no significant environmental consequences on air traffic in the region because there are no airports in the Project Area.

Electromagnetic Fields

No Environmental Consequences due to ELF-EMF are anticipated and therefore no mitigation is necessary.

Traffic

The traffic projections for construction would not significantly impact public health and safety. No mitigation is necessary.

3.9 Hazardous Materials

3.9.1 Affected Environment

The past use of the site for mining generally limits the likelihood of hazardous waste disposal at the location. A regulatory database search for hazardous waste sites was not conducted for the Project Area. No Phase 1 Site Assessment was done for the Project Site.

3.9.2 Environmental Consequences

The Applicant does not anticipate encountering any hazardous waste sites on the Project Site.

3.10 Effects on Land Use and Land Based Economies

3.10.1 Affected Environment

The project area is located within the Mesabi Mining Land Use District which is zoned for industry and is considered an industrial land use (Zoning Map). The district defines compatible and appropriate land uses and maintains the intended use. The project is a proposed infrastructure improvement intended to service Mesabi Nugget, the primary land based economic use within the district. Local zoning and district land use oversight within the project area is implemented by the City of Hoyt Lakes.

3.10.2 Environmental Consequences

The project is not anticipated to result in conflicts with land uses and is intended to be an infrastructure improvement for the primary land based economic use of the project area.

3.11 Tourism and Community Benefits

3.11.1 Affected Environment

There are no recreational areas or uses within the project area and the project area is not a focus of tourism. The project is an infrastructure improvement for a local employer for the surrounding communities.

3.11.2 Environmental Consequences

No project related effects on tourism are anticipated the project will provide a net benefit to the local communities by providing an infrastructure improvement to a local employer.

3.12 Soil Resources

Soil resources are regulated under federal and state statutes regarding farmland including the federal Farmland Policy Act (7 USC 4202) as regulated by the Natural Resource Conservation Service (NRCS) and the Minnesota Agricultural Preservation and Conservation Act (M.S. 17.80 – 17.84). These statutes include sections that require proposed actions to identify any impacts on soils that are mapped as Prime, Unique, or of Statewide Importance. When mapped farmland soils are present, a Farmland Conversion Rating Form is prepared and sent to the NRCS for completion and filing in the records. There is no mitigation required for impacts to soils that are mapped as Prime, Unique or of Statewide Importance. Soils are also addressed to determine site suitability and identify any project constraints related to soils. The Soil Survey Saint Louis County (eFOTG, NRCS 2008) was reviewed to obtain soils data including farmland soils. Soil erosion is regulated under the federal Clean Water Act National Pollutant Discharge Elimination System (NPDES) permit process.

3.12.1 Affected Environment

The project is entirely located on former and existing minelands where surficial soils have been removed and highly altered. The soils are mapped in the Soil Survey as “udorthents” which is classified as soils that have been highly disturbed by anthropogenic activities and are no longer structured naturally. There are no soils that are mapped as Prime, Unique, or of Statewide Importance farmlands located within the project area.

3.12.2 Environmental Consequences

No environmental consequences to site soils are anticipated from the Project.

3.12.3 Mitigation

Project construction activities would include road construction and HVTL tower pad excavations resulting in small surface disturbances in the Project Area. Soil compaction would be minimized by salvaging topsoil prior to construction and limiting vehicle traffic over temporarily exposed soils within the project construction limits Salvaged topsoil would be restored after construction and required erosion control Best Management Practices (BMPs) would be implemented in accordance with the requirements of the National Pollutant Discharge Elimination System (NPDES) permit that will be obtained. There are no mapped farmland soils in the project area and no impacts are anticipated to Prime, Unique, or Statewide Important farmland soils.

3.13 Geologic and Groundwater Resources

3.13.1 Affected Environment

The Project is located within the Superior Upland Section of the Laurentian Upland of the Canadian Shield physiographic province (Morey, 1972). The physical landscape of the region is typified with shallow glacial till over bedrock embedded with lakes, drainages and wetland basins. The surface geology at the site consists of Quaternary outwash and brown silty till. Exposed bedrock is also widely distributed where the surficial glacial till dissipates. Mining and reclamation has completely modified surficial features with tailings and overburden placement and there is little or no undisturbed soils

remaining in the project area. The extent of mining disturbance near the Project is shown in Figure 6. The surface geology at the project area is undifferentiated mine spoil.

The predominate geophysical setting for the project is the Iron Range, a narrow band of iron-rich strata, one-fourth to three miles wide, has had a major impact on the economy and settlement of the region for over 100 years. The Iron Range extends for 120 mile axis from eastern Cass County through Itasca County to Birch Lake near the eastern boundary of St. Louis County. Since the resource was discovered in 1890, the Mesabi Range has supplied over 2.8 billion tons of iron ore.

Groundwater sources in the project area include both bedrock and sources located in overlying Quaternary glacial till deposits. Underlying the Quaternary deposits at the site is the Virginia Formation a bedrock formation ranging in total thickness from 0 to 2,000 feet. The Virginia Formation is typically used in conjuncture with other iron formations as an aquifer for water supplies. Water from the Quaternary drift aquifers is preferred as a potable water source over the bedrock aquifers due to the potential for lower iron content. The project is not within 500 feet of any domestic well or designated wellhead protection area

3.13.2 Environmental Consequences

Project effects on geologic and groundwater resources, domestic wells, and designated wellhead protection areas are not anticipated.

3.14 Surface Water Resources

Surface waters and wetlands are regulated under federal and state regulations. Federal regulations include Section 404 and Section 401 of the Clean Water Act (USC Title 33), Section 10 of the Harbors and Rivers Act, and the National Pollutant Discharge Elimination System (NPDES) permit requirements also under the Clean Water Act. Section 404 and Section 10 permits are issued by the U.S. Army Corps of Engineers (USACE) for activities in U.S. Navigable Waters and wetlands, and the Section 401 and NPDES approvals are issued by the Minnesota Pollution Control Agency (MPCA). Applicable state regulations include the Minnesota Wetland Conservation Act (WCA) and the Public Waters statutes (M.S. 103G.005 subd.15). WCA approvals are issued by the designated Local Governmental Unit (LGU), Saint Louis County for activities in wetlands and the MNDNR issues a permit for activities in designated Public Waters.

3.14.1 Affected Environment

Surface Waters

MNDNR Public Waters in the project area are shown on **Figure 7**. The proposed route transversely crosses Second Creek a MNDNR designated Public Waters. Second Creek is not a MNDNR Designated Trout Stream. Other surface waters in the project area are primarily mine pits and basins modified by mining and are located beyond the project limits. The project is located in the Saint Louis River Major Watershed (Major Watershed #3). The project is located within the Partridge River subwatershed which is the receiving water for Second Creek. Utility crossings over, under, or through MNDNR Protected Waters require Licenses for Utility Crossings of Public Lands and Waters under Minnesota Statutes 84.415 and subsequent Minnesota Rules Chapter 6135. The MNDNR Division of Land and Minerals is the administrative agency issuing 25 and 50-year licenses, which may be renewed at the end of the licensing period if both parties (i.e., the project applicant and the MNDNR) wish to renew these licenses.

Wetlands

The National Wetlands Inventory (NWI) was reviewed to identify potential wetlands in the project area. According to the NWI large portion of the proposed alignment transects mapped Type 6 and Type 7 wetlands. The NWI for the project area is shown on **Figure 5**.

Floodplains

The Federal Emergency Management Agency (FEMA) Flood Insurance Rates Map (FIRM) was reviewed to determine if any designated floodplains are present in the project area. No 100-Year floodplains or floodways are present within the project area or will be crossed by the project.

3.14.2 Environmental Consequences

Surface Waters

No impacts would occur to designated MNDNR Public Waters (Second Creek) as no construction activities will occur below the Ordinary High Water Level (OHWL) of Second Creek. The transmission line pole placement would be adjusted to be located outside of the OHWL and the Public Waters would be transversely crossed by the transmission wires. A MNDNR Public Waters permit would not be required. A MNDNR License for Utility Crossings of Public Lands and Waters will be requested for the crossing of Second Creek by the transmission wires.

A NPDES permit would be obtained to implement appropriate BMPs and erosion control measures during construction.

Wetlands

The project would be entirely constructed on an existing mine haul road at the top of slope of the shoulder. No construction or installation of transmission poles would occur in wetlands and no wetland impacts would be anticipated. Wetland permits would not be required.

Floodplains

No designated FEMA floodplains are present in the project area and no effects on floodplains would be anticipated.

3.15 Vegetation

3.15.1 Affected Environment

The project area vegetative cover has been highly altered by mining and the existing vegetation is comprised second growth forest cover and old field that has naturally recruited after mining related disturbances occurred. The existing vegetative cover includes forest and woodlands comprised of mixed hardwoods and conifers including species of aspens (*Populus spp)*, birches (*Betula spp.*), white spruce (*Picea glauca*), and balsam fir (*Abies balsamea*) in the uplands, and Type 7 forested wetlands dominated with black ash (*Fraxinus nigra*), white cedar (*Thuja occidentalis*), and American tamarack (*Larix larcina*). Type 6 shrub wetlands are dominated with species of alders (*Alnus spp.*) and willows (*Salix spp*). The vegetative cover within the minelands also includes old field vegetative cover with herbaceous grasses and forbs where conditions are poor for the establishment of trees and shrubs due to harsh mine spoil soils.

Nuisance species occurring in the project area are limited to scattered stands of Eurasian and glossy buckthorn (*Rhamnus cathartica* and *R. frangula*) in the uplands and less so in wetlands, and small patches of reed canary grass (*Phalaris arundinacea*), giant reed (*Phragmites phragmites*) and cattail species (*Typha spp.*) in the wetlands especially in wetlands that were disturbed or are in close proximity to roads.

3.15.2 Environmental Consequences

No impacts on vegetative cover would occur as the HVTL would be installed on an existing mine haul road negating any need to remove trees or vegetative cover.

3.16 Fish and Wildlife

Designated and managed fish and wildlife resources include federally designated National Wildlife Refuges, National Preserves, National Forests, and Waterfowl Production Areas (WPAs), and State of Minnesota designated Wildlife Management Areas (WMAs), Scientific and Natural Areas (SNAs), MNDNR Shallow Game Management Lakes, MNDNR Designated Trout Streams, and MNDNR Special Management Fish Habitats. The federal Migratory Bird Treaty Act regulates and provides protection to most species of birds. The federal Bald Eagle and Golden Eagle Protection Act provides protection to bald eagles and their nesting areas since the bald eagle was de-listed as a federally listed Threatened species. State and federally listed Threatened and Endangered Species are addressed in Section 3.17.

3.16.1 Affected Environment

The proposed HVTL route is entirely located within the historic mining district where land uses have been highly impacts by mining and the related infrastructure of roads and rail corridors. Mining has resulted in extensive areas comprised of open exposed mining operations, pits, and spoil piles. Many of the basins in the pits are filled with large expanses of open water and barren rock, talus, and overburden that have not re-vegetated. Occasional patches that were not mined are highly fragmented by mining and transportation corridors, but have served as sources for the natural recruitment of vegetation into disturbed areas. Upland wildlife habitats in the project area are comprised of these mine features, areas where vegetative cover has naturally re-established, and these small patches of remnant vegetative cover. All of the forest cover in the project area is second growth. With the exception of the barren land cover areas severely affected by mining, all of the habitats in the project area are suitable for migratory birds including as breeding habitat.

Habitat conditions at larger scales are important to consider. The project area is comprised of a highly fragmented landscape with lower habitat quality compared to areas outside of the mining district. High quality habitats are found on the landscapes located on both the north and south sides of the Iron Range formation. Despite the high level of disturbance and habitat fragmentation from mining, the MNDNR and recent studies have concluded that the Iron Range formation still provides important habitat connectivity between the higher quality habitats separated by the formation.

Fish and aquatic habitats are restricted to the channel of Second Creek which has also been channelized and highly modified by mining related impacts. Second Creek is not a MNDNR Designated Trout Stream or Special Management Fish Habitat.

There are no regulated or designated federal or state fish and wildlife resources in the project area. There is no known bald eagle or golden eagle nesting areas within a one-mile or less radius from the proposed HVTL route.

3.16.2 Environmental Consequences

The proposed HVTL would be entirely located on an existing mine haul road and would not result in direct impacts on fish and wildlife habitats. No work would occur in the fish habitat of Second Creek. By co-locating the proposed HVTL route on the existing haul road, no new habitat fragmentation or habitat loss would be anticipated. There are no known concentrations of migratory birds in the project area and no land clearing or vegetation required that would potentially affect breeding migratory birds. The transmission towers and lines could potentially pose a small risk for wildlife mortality from collisions and electrocution, but these risks are not anticipated to result in negative impacts on local populations. No negative or measurable impacts on fish and wildlife resources are anticipated as a result of the proposed project.

3.17 Threatened and Endangered Species and Unique Natural Resources

Federally listed Threatened and Endangered species are regulated under Endangered Species Act of 1973 (16 USC .1531 -1544) as administered by the U.S. Fish and Wildlife Service (USFWS). The project county is within the known distribution of the federally Threatened Canada lynx (*Lynx canadensis*). State listed Threatened or Endangered species, and Species of Special Concern (SSC) are regulated by the MNDNR under Minnesota's Endangered Species Statute (M.S. Sec. 84.0895).

3.17.1 Affected Environment

The MNDNR Natural Heritage Information System (NHIS) was contacted and reviewed under the SEH license agreement to review for any occurrences of state listed species and unique natural resources within a one-mile radius of the proposed HVTL route. The MNDNR response (*personal communication, May 14, 2008*) confirmed that no NHIS occurrences are present within the one-mile radius search area.

3.17.2 Environmental Consequences

No project impacts are anticipated on state listed Threatened or Endangered species, SSCs, or unique natural resources.

The project is not located within designated existing or proposed Critical Habitat areas for the federally Threatened Canada lynx. The proposed HVTL route is being constructed on an existing mine haul road that will result in no habitat losses or impacts to forest cover. No project effects are anticipated on federally listed Threatened or Endangered species.

4.0 Feasibility of Alternatives

The proposed route is preferred because it runs along the existing elevated mine dump road and wetlands to the maximum extent practicable. No alternative routes were evaluated for this HVTL.

5.0 Conclusions

- There would be no land use impacts to structures on the preferred site because there are no structures on the preferred site.
- There would be no land use impacts to structures adjacent to the preferred site. The zoning of the adjacent properties would not change, meaning the existing uses or allowable uses would not change because of this project.
- There would be no land use impacts to residential areas on the preferred site, because there are no residential areas on the preferred site.
- There would be no land use impacts to residential uses adjacent to the preferred site. The zoning of the adjacent properties would not change, meaning the existing uses or allowable uses would not change because of this project.
- There are no anticipated land use impacts to recreational areas on the Project site or associated corridors
- There are minimal natural resource impacts anticipated due to the co-location of the proposed HVTL route entirely on an existing mine haul road including; vegetation, fish and wildlife resources, threatened and endangered species, soils, and water resources.

6.0 References

eFOTG. 2008. The Electronic Field Office Technical Guide for the Natural Resource Conservation Service (NRCS). Web site: http://www.nrcs.usda.gov/technical/efotg/

Hohman Caine, C.A. and G.E Goltz. 2008. *Phase 1 Archaeological Survey Mesabi Nugget Phase II Impact Area St. Louis County, Minnesota*. Prepared for Barr Engineering by Soils Consulting.

(MDH 2002) Minnesota Department of Health. 2002. *EMF White Paper on Electric and Magnetic Field (EMF) Policy and Mitigation Options.*

Electric and Magnetic Fields (EMF): Environmental Health in Minnesota. http://www.health.state.mn.us/divs/eh/radiation/emf

(MDNR 2003) *Field Guide to the Native Plant Communities of Minnesota: The Laurentian Mixed Forest Province*

(Demographer, 2008) Minnesota State Demographer Office. *Population and Demographic Data*. www.lmic.state.mn.us/datanetweb/php/census2000, downloaded May 4, 2008.

(Morey, 1972) Morey, G. B., and P.K. Sims, eds. 1972. *Geology of Minnesota a Centennial Volume*. MGS.

(NIEHS, 2002) National Institute of Environmental Health Sciences. 2002. *EMF. Electric and Magnetic Fields Associated with the Use of Electric Power.* National Institutes of Health.

(NRC, 1997) National Research Council. 1997. *Possible Health Effects of Exposure to Residential Electric and Magnetic Fields.*

Personal communication. May 14, 2008. The Minnesota Department of Natural Resources Natural Heritage Information System program. Under the SEH License Agreement for 2008.

(U.S. Bureau of the Census, 2005) Data for Saint Louis County and Hoyt Lakes, Minnesota

Zoning Map, City of Hoyt Lakes, 12/05/2005

Table 5
Terms and Acronyms

- BMPs – Best Management Practices
- CFR – Code of Federal Regulations
- CON – Certificate of Need
- DEED - Department of Employment and Economic Development
- EA – Environmental Assessment
- ECS – Ecological Classification System
- ELF-EMF - Extremely low-frequency electric and electromagnetic fields
- FEMA – Federal Emergency Management Agency
- FIRM – Flood Insurance Rate Map
- HVTL – High Voltage Transmission Line
- SHPO – State Historic Preservation Office
- LGU – Local Governmental Unit
- MDH - Minnesota Department of Health
- MNDNR – Minnesota Department of Natural Resources
- MP – Minnesota Power
- MPCA – Minnesota Pollution Control Agency
- MPUC – Minnesota Public Utilities Commission
- MS – Minnesota Statutes
- NESC – National Electric Safety Code
- NHIS – Natural Heritage Information System (NHIS)
- NIEHS – National Institute of Environmental Health and Safety
- NPDES – National Pollutant Discharge Elimination System
- NRCS – Natural Resource Conservation Service
- NWI – National Wetland Inventory
- NSC - National Safety Council
- OHWL – Ordinary High Water Level
- OSHA – Occupational Safety and Health Administration
- ROW - Right of Way
- SNA – State of Minnesota Scientific and Natural Area
- SSC – Species of Special Concern
- THPO – Tribal Historic Preservation Officer
- USC – United States Codes
- USFWS – U.S Fish and Wildlife Service
- WCA – Minnesota Wetland Conservation Act
- WMA – Wildlife Management Area
- WPA – Waterfowl Production Area

List of Figures

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