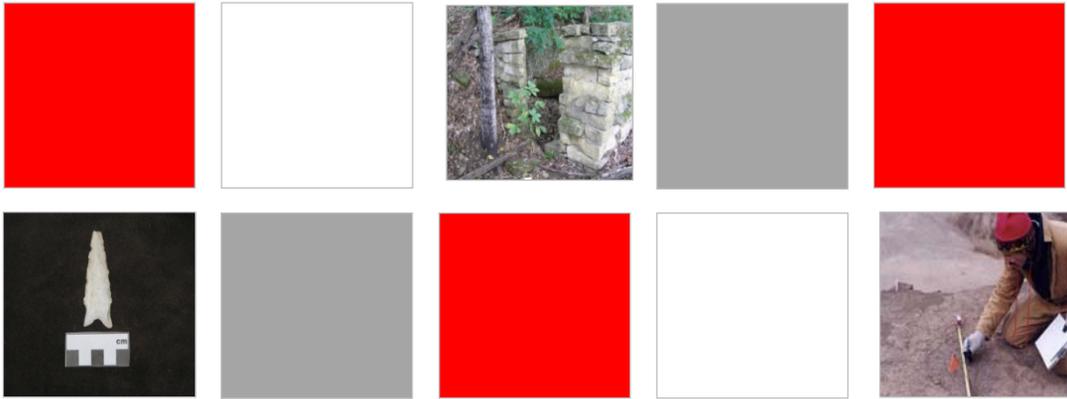


APPENDIX E

Cultural Resources Literature Review Report



**Cultural Resources Assessment and
Recommendations for the
Minnesota Power
Proposed 39 Line Project, St. Louis County,
Minnesota**

October 2012

Report Title: Cultural Resources Assessment and Recommendations for the Minnesota Power Proposed 39 Line Project, St. Louis County, Minnesota

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INTRODUCTION

Project Description

Minnesota Power proposes to construct an approximate 3-mile-long, 115 kilovolt (kV) high voltage transmission line in St. Louis County near the City of Eveleth, Minnesota (**Figure 1**). The project is referred to as the 39 Line Project (Project). The Project is needed to provide a new source of power to the surrounding area as a result of United Taconite's plans to expand its mining operation west of the City of Eveleth.

The project involves:

- constructing approximately 2.8-miles of new 115 kV transmission line from Minnesota Power's existing 39 Line along the western edge of the City of Eveleth, around United Taconite's existing north pit, west through the City of Leonidas, and connecting with Minnesota Power's existing 37 Line; and
- removal of approximately 1.9-miles of its existing 39 Line that runs through United Taconite's north pit.

Ground disturbance associated with this Project will generally be limited to excavation necessary for the removal of existing structures and the construction of new structures on drilled foundations. Minnesota Power is using a 500-foot-wide route planning corridor, or area of potential effect (APE), centered on the new proposed line. The proposed transmission line will occupy a 100-foot-wide right-of-way located within the 500-foot-wide planning corridor. The existing 39 Line that will be removed as part of this Project is located within a 100-foot-wide right-of-way; no additional temporary workspace will be required.

As part of the environmental review for the proposed Project, Merjent, Inc. (Merjent) is assessing the potential Project impacts on cultural resources. This report presents the methods and findings of a cultural resources literature review for the project area. The primary goal of a literature review is to identify all known previously recorded archaeological sites and historic standing structures for a given location, as well as the previously completed site inventories. The additional goals are to define the cultural background and determine the potential for the presence of unrecorded cultural sites.

Kari Krause, MS, RPA of Merjent conducted the research and wrote the literature review report. Dr. Peggy Boden served as the Principal Investigator for the Project. Merjent's Geographic Information System department prepared the project maps.

Jurisdiction

At this time, there are no federal regulatory triggers that would require compliance with federal historic preservation laws, notably Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. However, the Project may require water resource approval from the U.S. Army Corps of Engineers under its Regional General Permit (RGP-3-MN) or Letter of Permission (LOP-05-MN) permitting program. Minnesota Power is in the process of determining permitting requirements.

Environmental review of the Project falls under the jurisdiction of the Public Utilities Commission (PUC). Specifically, the Minnesota PUC will review the Project for effects on archaeological and historical resources under Minnesota Statutes (MS) 138.31 – 138.42. Also, Minnesota state laws protect burials of all types (Minnesota Private Cemeteries Act [MS 307.08]), and archaeological and historic sites that are listed on the National Register of Historic Places (NRHP) or the State Register of Historic Places and the State Historic Sites Network (MS 138.661 – 138.669). The NHPA and its enacting regulations have become standards for identifying cultural resources and evaluating their significance, and served as a general guide to researching and writing the literature review.

Project Location

The Project passes through the municipalities of Mountain Iron, Leonidas, and Eveleth, in St. Louis County in northeastern Minnesota (**Figure 1**). The legal township, range, and section description of the Project location is listed in **Table 1**. The APE for direct impacts to cultural resources is the 500-foot-wide route planning corridor for the proposed transmission line. An additional 100-foot-wide right-of-way APE will be utilized for the portion of the exiting 39 Line that will be removed.

Table 1. Legal Description of Project Area of Potential Effect

Township	Range	Sections	County
T58N	R18W	25, 35, 36	St. Louis
T57N	R17W	6	St. Louis
T58N	R17W	31	St. Louis

Minnesota Power’s existing 39 Line is located northwest of Cleveland Street in the City of Eveleth. This extant line currently extends west-northwest across United Taconite’s north pit and will be removed as part of this project. At the intersection of the dirt mine road and the existing 39 Line, the new 39 Line will extend south, parallel to the dirt mine road that runs along the western edge of the City of Eveleth, around the southern and western edges of United Taconite’s existing north pit before turning due west, north of the City of Leonidas, for 1.4 miles. The new 39 Line will connect with Minnesota Power’s existing 37 Line.

The majority of the new 39 Line APE parallels existing County Road 101 and mining roads; less than one-third of the Project will be defined as a greenfield route. Approximately one-third of the Project is characterized as agricultural land, marshes, and wetlands. The remaining two-thirds cross heavily disturbed areas composed of open pit mining, tailing dumps, and road and railroad infrastructure. There are also residential/commercial properties with some light manufacturing. All of the existing 39 Line right-of-way crosses historic and current mine pit and dumps.

Environmental Setting

The proposed Project is located in northeastern Minnesota, near the Cities of Eveleth and Leonidas in St. Louis County. The climate of the project area is characteristic of the North American mid-continent, that is, subject to temperature extremes in winter and summer. The Project location is situated along the Mesabi Iron Range which was formed in the middle Precambrian period and eroded by the retreat of the glaciers (Mining Artifacts & History). The area it is characterized by terminal and ground moraines and flat lacustrine plains. Prior to Euro-American settlement, the vegetation was predominantly cedar and spruce swamp.

A wetland and waterbody survey conducted in September 2012 by Midwest Natural Resources, Inc. confirmed that the western half of the project is largely characterized by hydric soils which formed under saturated conditions (Clay 2012). **Figure 2** identifies two large areas that have been delineated as wetlands. Area A is composed of forested peatland mixed with wet meadow; its dominant floral species are represented by white cedar, slender willow, Canada bluejoint, and reed canary grass (Clay 2012:4). Historically the peatland was likely a conifer dominated swamp but has since been logged with no regrowth. Area B is characterized by a shallow marsh largely composed of narrow-leaved cattail. The wetland additionally includes a shrub component dominated by willow and glossy buckthorn, and a wet forest dominated by aspen, dogwood, and alder (Clay 2012:4). Both areas range from seasonally inundated and perennially saturated at their wettest to merely seasonally sub-irrigated at their dry extreme. The remaining area's parent material has been modified due to mining operations (see **Figure 2**).

Cultural Resources Study Area Background

To provide the briefest cultural background for the project area, the earliest occupants of the region were Late Paleo-Indians (10,000-6,000 B.C.), known mostly through chance discovery of their large lithic tools and weapons. Occupation by Archaic period groups followed (8,000-500 B.C.), recognized by their technically improved lithic tools and exploitation of more diverse resources. The bow and arrow and pottery were widely used by the Woodland period (500 B.C.-1500 A.D.) which co-existed with the Mississippian/Oneota (900-1500 A.D.) who developed distinctive tribal customs and practices while expressing their beliefs through decorative material culture. Prehistorically, the region was a favored location for the Late Woodland period groups. They lived near waterbodies and utilized the many associated resources such as lake rushes and water lilies, wild rice, fish, and waterfowl.

When the first Europeans came to the region to trade for animal pelts (Contact period, 1650-1820), they encountered the Dakota Indians. The Ojibwe migrated to Minnesota in the early 1700s, displacing the Dakota to southern and western territories. The Assiniboine may also have been present in the region prior to the appearance of European explorers. The Native Americans tended to settle near forests and sheltered river valleys in the winter. They were hunters and fishers, focusing on big and small game, water fowl, fish, and harvesting wild rice.

In 1849 the Minnesota Territory was carved out of the remaining lands from the Iowa and Wisconsin Territories and later became a separate state in 1858. St. Louis County was established in 1855 but went through a series of name changes including Doty, Newton, and Lake. Modern-day St. Louis County

was formed from parts of Carlton and Pine Counties in 1856. Today, St. Louis County has a diverse economic base including taconite mining, pulpwood production, recreation, service industry businesses, and one of the largest fresh water shipping ports at Duluth.

The early entrepreneurs of the region were the timber cruisers, including the firm Robinson & Finn who owned all the land in the surrounding area looking to log the white pine forest (Arrowhead Regional Development Commission 2009). They reserved the mineral rights after the timber was sold because they realized there was iron on the land. Iron ore was found in the project area in 1892 by David Adams, who established the Adams and Fayal Mines with a workforce of 45 men (Lakenwoods.com 2012). Platted in 1893 and founded in 1894, the Village of Eveleth took its name from Erwin Eveleth, an employee of the Robinson & Finn timber company.

In August 1894, the first shipment of 5,628 tons of ore was hauled to Two Harbors (Lakenwoods.com 2012). The original platted village was moved northeast about one-mile in 1900 after iron ore was discovered under the town site (**Figure 3**). The new community was incorporated as a city in 1913 (City of Eveleth 1992). From 1900 to 1910, the city's population increased from 2,752 to 7,036 largely due to the mining industry, and was composed of immigrants of various nationalities including the Slovene (City of Eveleth 1992). The largest influx of Slovene emigrants to the United States was from 1870 to 1924. Many settled in the Iron Range region and large communities can be found in Ely, Tower, Eveleth, Hibbing, and Chisholm (Klemencic 2012). The Spruce and Adams Mines were bought out by the Oliver Iron Mining Company, then controlled by Andrew Carnegie, sometime between 1906 and 1912 (EDR 2012a). The Oliver Iron Mining Company, in 1925, had an underground auditorium, which seated 200 people, at the bottom of Spruce Number 4's shaft and was rented out for private receptions (LakenWoods.com). Eventually several nearby mining companies consolidated into the Eveleth Taconite Mine, including Cloquet Mine, Vega Mine, Cloquet No. 2 Mine, Adams Mine, Eveleth Taconite Company, and Dolebay Norton Company Agt. (mindat.org 2012). The Eveleth Taconite Mine closed its doors in the summer of 2003 due to financial difficulties but was reopened in December of that year with new ownership under the name United Taconite Company (Lampra 2004).

Two railroads serviced the project area. The Duluth, Missabe and Northern (DM&N) Railway was organized in 1891 by the Merritt brothers to transport iron ore from the Mountain Iron region to Duluth. The Adams Branch into Eveleth opened in 1895 under the Rockefeller ownership of the railway. The Duluth and Iron Range (D&IR) Railroad was formed in 1882 by the Towers family to ship ore from the Vermilion Range to Two Harbors. In 1895, they extended operations to Eveleth, Biwabik, and Virginia. In 1901 the United States Steel Company acquired ownership of both railroads. In 1930, the DM&N Railway leased the D&IR, and in 1937, the two railroads were consolidated to form the Duluth, Missabe and Iron Range (DM&IR) Railway (LakenWoods.com).

METHODS

In order to study the cultural background and better understand the potential for impacts on cultural resources for the Project APE (i.e., 500-foot-wide route planning corridor and the 100-foot-wide right-of-way associated with the portion of the exiting line that will be removed), an one-mile radius around the APE was used to gather information. The APE plus the one-mile buffer is defined as the cultural resources study area (or study area). Within this report, phrases such as “project area” or “project location” refer to the general geographical location of the Project, not the specific APE or study area. **Table 2** provides the legal township, range and sections designations for the cultural resources study area. **Figure 1** shows the study area and the results of the literature review.

Table 2. Legal Description of Project Cultural Resources Study Area

Township	Range	Sections	County
T58N	R17W	19, 29, 30, 31, 32	St. Louis
T58N	R18W	24, 25, 26, 27, 34, 35, 36	St. Louis
T57N	R17W	5, 6, 7, 8	St. Louis
T57N	R18W	1, 2, 3, 12	St. Louis

The main objective in reviewing the cultural resources literature is to identify the recorded cultural sites and assess the potential for unrecorded sites within the study area. The standard for considering a cultural property significant is whether it meets the criteria for listing on the NRHP. The initial criterion for such listing is an age of 50 or more years. Beyond age, a property must retain integrity and be associated with significant historic trends, historic persons, building styles and craftsmanship, or the property must have the potential to provide significant information about the past (National Park Service 1995).

Merjent reviewed and followed the published guidelines for conducting cultural resources literature reviews in Minnesota (Anfinson 2011). The Minnesota State Historic Preservation Office (SHPO), located in the Minnesota History Center in St. Paul, is the record keeper for the state’s prehistoric and historic archaeological site files, historic standing structure inventory files, and field survey reports. The Office of the State Archaeologist (OSA), located at Fort Snelling History Center in St. Paul, maintains the records for burial sites within the State. Merjent requested a SHPO file search of their database by email, and after receiving the results, reviewed the files for information on the Project study area.

Ms. Krause examined the current topographic and aerial photo-based maps to understand the modern land use of the study area and to provide a baseline for examining the historic maps and documents. Several online resources were used to gather information. Ms. Krause looked up general information online about St. Louis County and the cities of Eveleth and Leonidas. She also examined primary sources that have been digitized and made available online, such as the original land survey maps and the original land patent records. Historic aerial photos, topographic quadrangles, and Sanborn maps were provided by Environmental Data Resources, Inc. (EDR).

Many cities in Minnesota have established a Certified Local Government (CLG) that is charged with creating policies that promote historic preservation. CLGs may have policies regarding historic preservation for construction on new or existing structures, and may conduct property inventories. No CLGs have been established in the project area; however, the City of Eveleth has recommended appointing a Historic Preservation Commission to develop a preservation plan to preserve and rehabilitate the city's historic buildings (Arrowhead Regional Development Commission 2009). The nearest active historical society is located in Virginia, Minnesota, while the Minnesota Museum of Mining in Chisholm, Minnesota gathers and preserves historical items and provides educational programming about the iron mining industry in the State.

LITERATURE REVIEW RESULTS

National Register of Historic Places/Minnesota Historic Sites

A search of the National Register of Historic Places (NRHP) website and the records on file at the Minnesota SHPO revealed that there are five properties in the City of Eveleth listed on the NRHP (**Table 3**; see **Figure 1**). The listed properties include a single family house and four public buildings. The period of significance for these properties dates from 1900 to 1924. Each property has direct ties to the mining industry including the residence of W. Bailey, manager of the mining-rights fee office, a church, vocational school and gym built for workers in the iron mining industry, and one of the region's leading hotels built on a major stop on Mesaba Railway's interurban trolley line.

Table 3. National Register of Historic Places Listed Properties in the Project's Cultural Resources Study Area.

NRHP Property Name	Address	Civil Town	Significance / Theme	Date Listed
W. Bailey House	705 Pierce St.	Eveleth	Local / Architecture	8/27/1980
Church of the Holy Family	307 Adams Ave.	Eveleth	Local / Religion, Social History	8/27/1980
Eveleth Manual Training School	Roosevelt Ave. between Jones and Jackson Streets	Eveleth	Local / Architecture, Education, Industry	8/18/1980
Eveleth Recreation Building	Garfield St. and Adams Ave.	Eveleth	State / Industry, Social History	11/25/1980
Hotel Glode	222 Adams Ave.	Eveleth	Local / Commerce, Transportation	11/25/1980

These NRHP-listed properties are located between 0.3-mile and 0.6-mile east of the study area; it is unlikely that their historic character or the landscape and surroundings will be affected by the construction of the transmission line.

Minnesota State Site Files

Previously Recorded Archaeological Sites and Cemeteries

The background records review conducted at the SHPO did not identify any previously recorded archaeological sites, and there are no unmarked prehistoric or historic burials recorded at the OSA in the study area. Prehistoric mounds are not known in the immediate area, although there are mounds in other parts of St. Louis County (personal communication, Koenen 2012). The Eveleth Cemetery is located 0.8-mile northeast of the Project APE, north of the City of Eveleth.

Previously Recorded Standing Structures

A total of 24 historic above-ground structures have been recorded within the study area that meets the initial criteria of being at least 50 years old (**Table 4**). Very little information is available for these

Table 4. Previously Recorded Standing Structures in the Project’s Cultural Resources Study Area.

Inventory Number	Property Name	Address	City/Township	Date Built	NRHP Status
SL-EVC-001	Eveleth High School	xxx Jones St.	Eveleth		Not assessed
SL-EVC-002	houses	xxx Jones St.	Eveleth		Not assessed
SL-EVC-003	houses	xxx Adams Ave.	Eveleth		Not assessed
SL-EVC-004	houses	xxx Adams Ave.	Eveleth		Not assessed
SL-EVC-005	commercial building	SE corner Grant Ave. & Monroe St.	Eveleth		Not assessed
SL-EVC-006	commercial building	xxx Grant Ave.	Eveleth	1923	Not assessed
SL-EVC-007	commercial buildings	Grant Ave. streetscape	Eveleth		Not assessed
SL-EVC-008	Eveleth City Hall	413 Pierce St.	Eveleth	1906	Considered eligible
SL-EVC-009	commercial buildings	Grant Ave. streetscape	Eveleth		Not assessed
SL-EVC-010	commercial buildings	Grant Ave. streetscape	Eveleth		Not assessed
SL-EVC-011	Miners National Bank	NE corner Grant Ave. & Jones St.	Eveleth		Not assessed
SL-EVC-012	commercial buildings	xxx Grant Ave.	Eveleth		Not assessed
SL-EVC-013	Eveleth Public Library	600 Pierce St.	Eveleth	1914	Considered eligible
SL-EVC-014	Eveleth Post Office	421 Jones St.	Eveleth	1936	Not assessed
SL-EVC-015	auditorium	419-423 Jackson St.	Eveleth	1912	Not assessed
SL-EVC-016	fire station	NW corner Jackson St. & Adams Ave.	Eveleth		Not assessed
SL-EVC-017	Italian American Social Club	227 Adams Ave.	Eveleth	1923	Considered eligible
SL-EVC-023	John T. Bernard House	715 Hayes St.	Eveleth		Not assessed
SL-EVC-024	Slovenian Meeting Hall	420 Grant St.	Eveleth	1905	Not eligible
SL-EVC-025	Uranian Hall	520 Grant St.	Eveleth	1900	Not eligible
SL-EVC-026	Eveleth Hippodrome	SW corner Hayes St. & Douglas Ave.	Eveleth	1935	Not assessed
SL-EVC-027	Bridge No. L8537	Adams Ave. over a small stream	Eveleth	1921	Not eligible
SL-FAY-003	Bridge No. 5697	CSAH 132 under DM&IR Railroad	Fayal Twp.	1937	Not assessed
SL-MIC-010	Bridge No. 7759	CSAH 101 over east Two River	Mountain Iron	1928	Not eligible

historic above-ground structures at the Minnesota SHPO; the data is presented on short forms and is often limited to a photo of the structure and the address. Rarely are additional comments provided concerning age of structure or NRHP status. While none of these recorded historic structures are within the project area, three are considered eligible to the NRHP and represent the Eveleth City Hall, Public

Library, and the Italian American Social Club (see Figure 1). Another two buildings and two bridges have been determined not eligible for the NRHP. The remaining 17 structures have not been assessed for their eligibility for listing on the NRHP.

None of these recorded properties are located within the Project APE. In fact, the nearest building is the Eveleth Hippodrome (SL-EVC-26) that was built in 1935 and renovated in the 1980s and 1990s. Located within 600 feet of the APE, it is unlikely that the historic character or the landscape and surroundings will be affected by construction of the transmission line, especially since the APE is partially obstructed by a separate building and the area has been heavily modified by mining operations.

Previously Conducted Cultural Resources Surveys

A single architectural inventory has been completed within the study area; no archaeological surveys have been conducted. Roberts and Roberts (1987) completed a reconnaissance survey of northern St. Louis County, including the City of Eveleth for above-ground structures that may be eligible for listing on the NRHP. They recorded 4 streetscapes and 23 buildings (see Table 4). None of these properties are within the Project APE.

Other Resources

Other historical documents relevant to the study area were reviewed in order to identify possible unrecorded historic sites that might be affected by the Project.

General Land Office Survey Maps

The General Land Office (GLO) Survey maps, representing the original township surveying of St. Louis County in 1881, were viewed online through the U.S. Department of the Interior, Bureau of Land Management (2012) website. The GLO maps show that the western half of the Project was a large cedar and spruce swamp, while two waterways traverse the eastern half. No trails, roads, or settlements are depicted on these early maps.

Historic Plat Maps

Historic Sanborn maps and USGS topographic maps were reviewed to determine if any historic features such as early trails, homesteads, or settlements were recorded in the Project APE or study area. Sanborn maps dating in range from 1897 to 1950 provide a distinctive picture of how the mines and associated residential areas evolved over the decades (EDR 2012a). The USGS topographic maps range in date from 1951 to 1983 and show the changes in transportation infrastructure and the expansion of the United Taconite Mine (EDR 2012b).

David T. Adams sunk the first iron ore test pits in the project area in October 1892, which became Adams Mine No. 1; it was located one-third mile north of the original town site at the northern extent of the Project APE (**Figure 4, inset 1**). During the first year of operation only 45 men were employed (LakenWoods.com 2012). Additional testing in 1893 resulting in the opening of the Fayal Mine (closed in 1951); it was located south of the modern city limits and outside of this study area (**Figure 4, inset 2**). A

third mine, the Cloquet Mine was located west of Jones Street and was defunct by 1897 (**Figure 4, inset 3**). **Figure 3** shows the 1897 town layout prior to its relocation in 1900; the Cloquet Mine was located in what today is an area of mine fill. **Figure 5** depicts the Adams Mine No. 1 (1892 – c. 1906) and Adams Mine No. 6 (c. 1900 – c. 1912) during its heyday in 1906; they are not present on the 1912 and 1928 Sanborn Maps, respectively. Adams Mine No. 1 had 21 buildings and a water tower, several narrow gage track bringing ore to the DM&IR railway spurs. Adams Mine No. 6 had six buildings and a water tower adjacent to narrow gage track. Given the approximate scale depicted on the Sanborn Maps, it is estimated that Adams Mine No. 1 was located at the northern extent of the Project APE (i.e., Township 58 North, Range 17 West, Section 31), and Adams Mine No. 6 was situated northwest of Fayal Road; today the areas are characterized by mine fill and trucking roads.

The historic locations of Spruce Mines No. 1 and No. 4 are also both in the Project APE; i.e., southwest of Eveleth along historic Fayal Road (see **Figure 5**). Spruce Mine No. 1 (c. 1900 to c. 1912) was located at the intersection of Monroe Street and Kimberly Avenue (i.e., Township 58 North, Range 17 West, Section 31). Sanborn maps from this period show an underground shaft entrance and other infrastructure; however, by 1928 the location was limited to the main headquarters building as the rest of the workings were destroyed with the expansion of the open pit mine (**Figure 6**). The Sanborn maps also show the development and loss of buildings south of the mine. In 1906 there were five dwellings and a boarding house or the Finlander Hall. Three more dwellings were built on the block by 1912, but by 1950, the Sanborn map only depicts six buildings in addition to the mine headquarters. The outline of the headquarters building is barely visible in a 1991 aerial, but it is completely absent in a 2005 aerial of the project area (EDR 2012c). This aerial also shows the number of buildings have been further reduced to the two residences that are currently standing within the Project APE (see **Figure 6**).

Spruce Mine No. 4 (c. 1906 to c. 1954) was situated in Township 57 North, Range 17 West, Section 6, south of the mine pit and west of the historic DM&N Railway spur. This mine consisted of one underground shaft, two buildings, one water tower, and a brick chimney in 1906 (**Figure 7**). By 1950 the property had added 12 buildings, elevated tramways, and a waste pile (EDR 2012a), but by 1972 the entire area was gone due to the planned southward expansion of the open mine pit (EDR 2012b). **Figure 7** also depicts a small residential community of over 25 structures on the south side of historic Fayal Road and east of the DM&IR Railroad. This area was demolished in the 1970s due to the mine expansion.

Three Eveleth, MN 7.5-minute topographic maps dating from 1951, 1969, and 1983 show changes in the extent of the open mine pit and tailing dumps (EDR 2012b). The most striking changes occur in Township 57 North, Range 17 West, Section 6, southwest of Eveleth. Between 1951 and 1969 over 25 buildings, possibly associated with the adjacent Spruce Mine No. 4, along Fayal Road (modern-day County Road 101), were removed and the entire area was mined (**Figure 8**). Only one building survived, as shown on the 1969 and 1983 quadrangles, but even this was later demolished when the area was subsequently filled and redeveloped for the Eveleth Water Treatment Plant in early 1990s (EDR 2012b). These maps also show the evolution of the rail lines that serviced the Spruce and Adams Mines on the east side of the Project; **Figure 6** provides details on the rail spurs that were located in the area. Modern aeriels confirm that the railbeds have been removed and some of the routes are being used as truck roads for the open pit mines.

Historic Aerial Photographs

Merjent also compared historic and modern aerial photographs to better define the development of the mine operations, transportation, and settlements of the study area between 1939 and 2010 (EDR 2012c). Some of these changes are clearly evident in the 1939 aerial of the western half of the Project, i.e., Township 58 North, Range 18 West, Section 36, where a residential area once was located on the east side of the DM&IR railroad spurs leading to the Leonidas Mine. **Figure 9** depicts the loss of this early twentieth century planned community with tree-lined boulevards and the expansion of the mine dumps to the east. The 2010 aerial illustrates the extensive changes wrought on the area with the construction of County Road 101 through the center of the former community. Only the outline of the road along the western side of the community (possibly 13th Avenue West from the City of Leonidas) is still visible. These changes are further documented on topographic maps dating from 1951, 1969, and 1983 (see **Figure 8**). A tailings dump also is clearly shown in the 1939 aerial on the west side of the DW&P Railroad but 40 years later this area appears as an excavated depression and wetland (see **Figure 9**). The U.S. Department of Agriculture defines the soil parent material in this area as a spoil dump from ore mining (see **Figure 2**).

The far western extent of the Project APE is located in Township 58 North, Range 18 West, Section 35, between the DM&IR and Duluth, Winnipeg, and Pacific (DW&P) railroads. The 1949 aerial shows the majority of the APE was dominated by farm fields encroaching on forested swampland (**Figure 10**). By 1972 the agricultural fields were shrinking, and by 2010 it appears that most of the cleared farm fields have since reverted to a forested wetland and grassy marsh; this has been verified by Clay (2012). Historically to the present, this portion of the Project APE has a limited infrastructure characterized by the two crossing railroads; no above-ground architectural structures are depicted in either the historic aerials or topographic quadrangle maps.

Figure 12 shows the portion of the existing 39 Line that will be removed as part of this Project. The majority of this area has been impacted by ore mining, open pits, and deposition of spoil. The earliest aerial photo dating from 1939 shows a series of open pit mines and mine dumps associated with the Hull-Nelson and Leonidas Mine on the southeastern half of the route, but the northern section appears to cross wetland and forests. The transmission line was not visible on this aerial. Ten years later this native land was consumed by the expansion of the Leonidas Mine, and by 1953 the transmission line would have crossed a deep open pit. In 2010 the area has been filled with spoil and spotted with inundated pits (EDR 2012c). The U.S. Department of Agriculture defines the soil parent material in this area as a spoil dump from ore mining (see **Figure 2**). Only a small portion situated between the DW&P and DM&IR railroads (i.e., Township 58N, Range 18W, Section 25) doesn't appear to have been impacted by the mining; however, this historically marshy area is traversed by a channelized drainage that was created between 1951 and 1969 (EDR 2012b).

RECOMMENDATIONS

Merjent understands that the Project is under the jurisdiction of the Minnesota PUC and applicable state and local laws. Merjent is making recommendations according to standard predictability models for discovery of archaeological resources in the Upper Midwest, and in accordance with the relevant PUC regulations, the Minnesota Field Archaeology Act, the Minnesota Historic Sites Act, and the Minnesota Private Cemeteries Act. If there is federal involvement in the Project, such as federal permitting, licensing, or funding, the Project should comply with Section 106 of the National Historic Preservation Act of 1966, as amended.

The proposed transmission line will occupy a 100-foot-wide right-of-way located within the 500-foot-wide APE. The majority or east half of the Project route will follow existing roads, crossing areas destroyed by mining operations since the 1890s. The new 39 Line will share these existing transportation corridors and limit new rights-of-way. The historic and recent mining operations within this section of the proposed Project APE inhibit the potential for discovering any intact archaeological deposits (**Figure 11**). The potential for impacting unrecorded archaeological resources within the eastern half of the Project is very low to none.

The greenfield portion or western half of the Project will extend through an area defined as wetlands and disturbed by logging and historic farming. The western half of the project is largely characterized by hydric soils that are composed of seasonally inundated and saturated wetlands (see **Figure 11**). The 100-foot-wide right-of-way will be cleared of vegetation and used as an access road for construction equipment, thereby limiting disturbances to the ground surface. Subsurface ground disturbance would be generally limited to pole structure installations/modifications every 400- to 650-feet along the transmission right-of-way. While these wetland areas provide food and resting areas for migratory birds and wildlife, they are unlikely spots for human habitation and the potential for the presence of intact archaeological material is low to none.

While there are five historic buildings listed on the NRHP within the study area, none are located within the Project APE; the closest NRHP listed building is almost 1,500-feet east of the Project in the City of Eveleth. Additionally, no recorded historic standing structures are located within the Project APE; the closest building is over 600-feet east of the APE, also in the City of Eveleth. Since the proposed project area is too distant to affect the view shed of these historic buildings Merjent proposes a recommendation of no adverse effect to historic standing structures.

This review determined that the far western edge of the City of Eveleth, which borders the east side of the United Taconite Mine and the APE, would have the only potential for unknown historic architectural resources to be affected by the proposed construction of the transmission line. Historic aerials indicate many of the buildings were present as early as 1939. However, their historic character, and indeed, their historic landscape and surroundings have been compromised due to the dynamic changes to the mine pit and its supporting infrastructure over the decades (see **Figure 11**). In addition, the relatively low height of the utility poles (between 50- and 100-feet) minimizes the potential to indirectly affect historic buildings that have not already been subject to mining disturbance or to further directly affect the historic view shed of the known structures.

The western half of the Project crosses, or proposes to cross, the extant DW&P and DM&IR railroads which were constructed in the late nineteenth and early twentieth century. According to the Multiple Property Documentation Form prepared for Minnesota railroads (Schmidt et al., n.d.), these segments do not meet the criteria for a railroad corridor historic district because they do not have associated support buildings and structures. The Project will space the power line poles, and move equipment so that the Project will not cause any direct impacts to the rail lines. As for potential indirect effects such as affecting the view shed, the removal of poles along the existing 39 Line in the vicinity of these railbeds will restore the natural view shed, that is, what hasn't been affected by the surrounding mining operations. Construction of the new 39 Line across the DW&P and DM&IR railroads will not overtly obstruct the historic railroad's view shed; the individual poles will be spaced 400- to 650-feet apart allowing for a largely unobstructed view. It is our recommendation that the railroads will not be adversely affected by the Project.

The proposed new transmission line shares the infrastructure corridor with improved roads for most of its length, which also follows the current extent of the existing mine pit. The portion of the existing 39 Line that will be removed crosses United Taconite's north pit, in an area that has been intensively modified over the last century. The remaining APE for the new 39 Line crosses wetland and drained agricultural fields. While the 100-foot-wide right-of-way will be cleared of vegetation for construction of the new line, actual ground disturbance will be limited to installation of pole foundations. It is our recommendation that no unknown archaeological sites or unrecorded historic structures will be adversely affected by the proposed construction of the new transmission line, or removal of the existing 39 Line. No archaeological field investigation or architectural inventory is recommended for the Minnesota Power 39 Line Project.

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