2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

The proposed action consists of the construction and operation of a rail line approximately 9 miles in length extending from Taconite, Minnesota to the Minnesota Steel plant site west of Nashwauk, Minnesota. An existing mainline track passes through the town of Taconite, extending from Grand Rapids to Forbes, Minnesota. This line is co-operated by BNSF Railway, Inc. (BNSF) and the Canadian National Railway Company (CN)[3]. The proposed Itasca County Regional Rail Authority (ICRRA) rail line would connect to the mainline track near Highway 7 in Taconite. ICRRA would construct an interchange yard near the mainline track to allow rail access from the Minnesota Steel plant to both BNSF and CN railroads. The rail alignment would extend to the northeast, passing south of Big Diamond Lake and then along the north side of the iron formation (Figure 2-1). The proposed rail line would continue northeast, north of Hill Annex State Park, and enter the Minnesota Steel mine permit area. The proposed rail line would turn north and terminate at the Minnesota Steel plant site. A small rail yard, proposed within the plant site, would be used for storage, staging, and repair of rail cars and locomotives. This rail line and yard would also serve to deliver a small amount of materials to the plant.

Trains connecting to the BNSF-operated section of line would be able to travel east or west along the line, due to a BNSF-CN interchange at the western connection point. Connections made on the CN section of rail line would only be able to travel east, due to current track agreements between BNSF and CN prohibiting originating or delivering cars on rail line owned by the other railroad.

[3] The existing BNSF and CN rail line originally consisted of two separate lines, with BNSF and CN each owning and operating a line. These two lines were merged into one line, with selected sections of each track being retained to form the existing track. Subsequently, BNSF and CN have ownership of only those sections of track under their former ownership. Although each carrier may use the entire track, current track agreements restrict the railroads from originating or delivering cars off of sections of the existing rail line under ownership of the other rail carrier. Therefore, the proposed rail line must connect to a section of the existing rail line owned by each carrier to enable dual rail carrier access to the steel mill facilities.

Little Sucker Lake
MSI Site
Ox Hide Lake
Dunning Lake
Arcturus Mine Pit
Snowball Lake
Big Diamond Lake
Little Diamond Lake
Mud Lake
Swan Lake
Upper Panaca Lake
Twin Lakes
Holman Lake
60
7
15
80
69
84
12
83
65
169

LEGEND

- Minnesota Steel Site Boundary
- Project Area Boundary
- Existing Railroad
- Iron Formation

Rail Line Alternatives

- Alternative 1
- Alternative 2
- Alternative 3
- Alternative 4
- Alternative 5

Mining Features

- Stockpiles
- Ore/Taconite Pits
- Tailings/Settling Basins

3,500 0 3,500
Feet

NORTH

Figure 2 - 1

Itasca County
Regional Railroad Authority

Rail Line Alternatives Map

R:\Itasca County\44941\GIS\DataFiles\ArcDocs\Figure_02_Original.mxd aolmos 7/18/2007

Source: AMEC; Minnesota DNR - Division of Fish & Wildlife and Lands & Minerals.

2.1.1 Construction

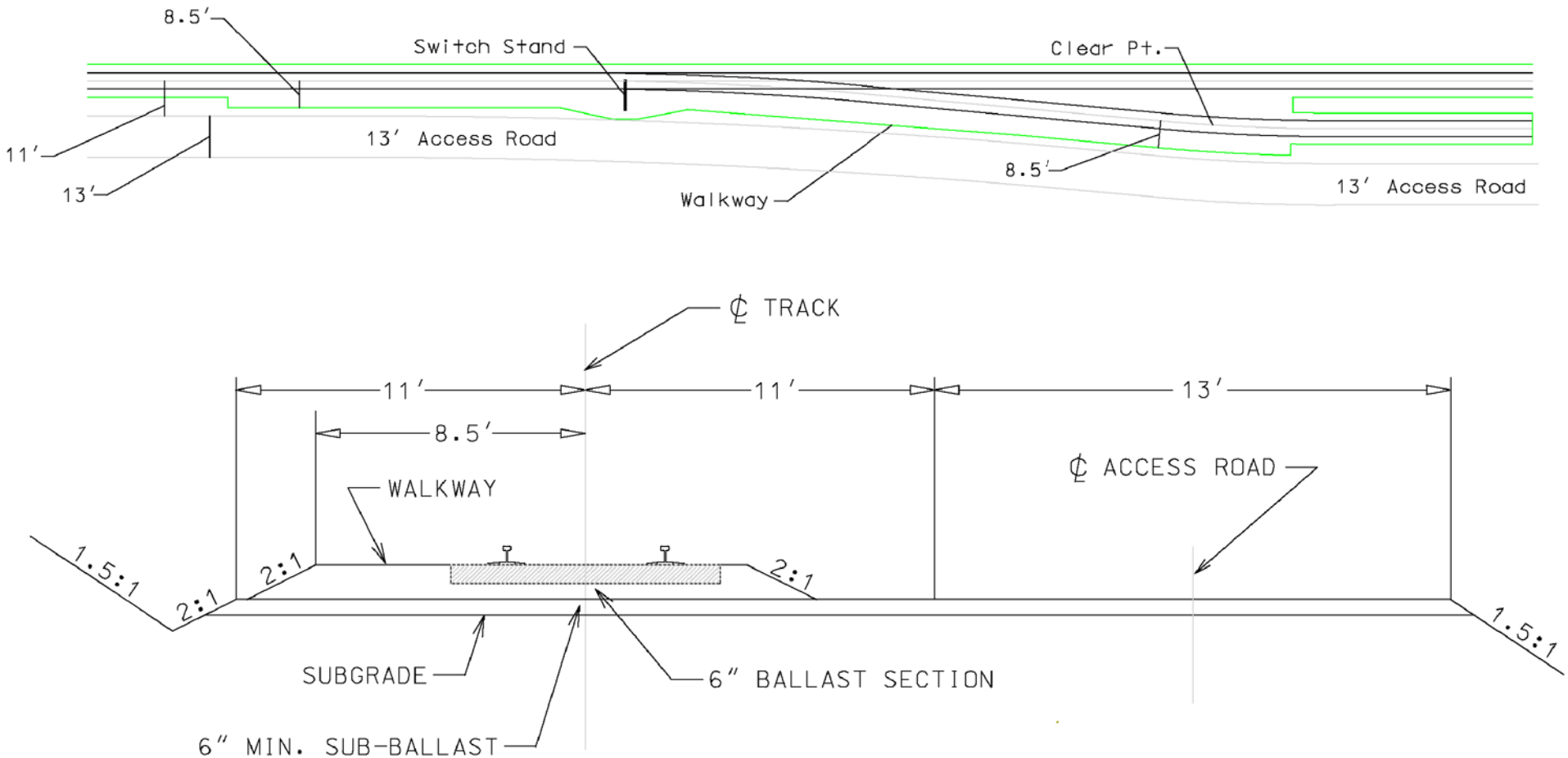
The proposed rail line construction would connect at two points along an existing line near Taconite, Minnesota and form one line at an interchange yard located just to the southeast of Big Diamond Lake, near the points of origin (MNDNR and USACE 2007, Chapter 6, page 6-45). The new rail line would terminate at the Minnesota Steel plant site, approximately 9 miles to the northeast (MNDNR and USACE 2007, Chapter 3, Section 3.1, page 3-1). Construction of the rail line and rail bed would follow methods approved by the American Railway Engineering and Maintenance-of-Way Association (AREMA) and the U.S. Department of Transportation, Federal Railroad Administration (FRA). Figure 2-2 shows BNSF industry standards for the typical railroad and ballast sections to be used for the mainline track, along with the section for the maintenance access road. Figure 2-3 shows typical rail sections for both the east and west "Wye" tracks extending from the mainline track at the interchange yard.

The entire length of the rail line would involve new construction. Both new and relay[4] material would be considered, and subgrade, subballast, and ballast materials would be brought in for the new rail bed.

The topography in the project area is uneven and has been periodically disturbed by mining activities over the course of the last 100 years. The terrain, originally relatively flat, consists of deep mine pits, large overburden piles left by previous mining operations, and tailings piles. The project area is criss-crossed by mine service roads and former rail line beds. Although the area has been previously logged and mined, some sections are heavily forested. It is anticipated that some cut and fill activity would be required during the grading process for the rail bed. Most grading is expected to require less than 20 feet of cut and fill, although there may be a few areas requiring cut and fill in excess of 50 feet.

[4] Relay material is used material that is within 1/8-inch tolerance of new material.

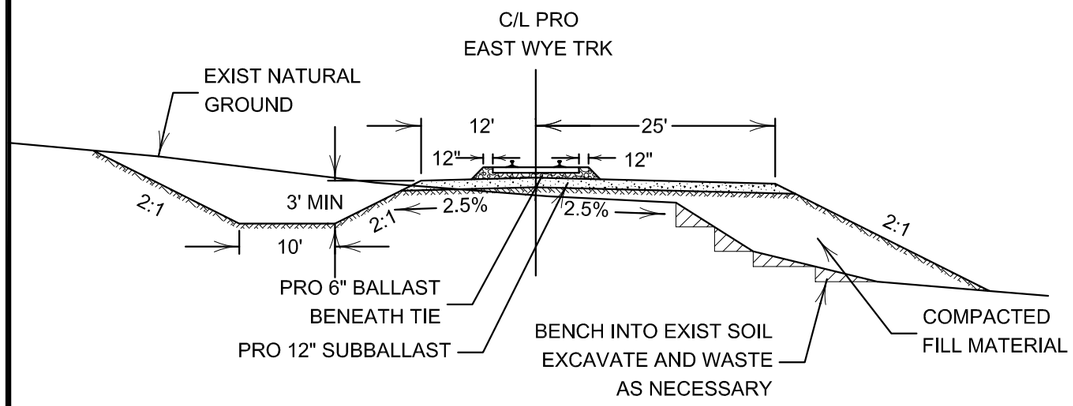
R:\Itasca County\44941\GIS\DataFiles\CAD\Figure2-2_typical_rail_ballast_section.dwg aolmos 9/12/2007



INDUSTRY TRACK STD SECTION
WITH 13' ACCESS ROAD

Figure 2 - 2
Itasca County
Regional Railroad Authority
Standard Plan - Industrial Tracks
Typical Railroad and Ballast Section

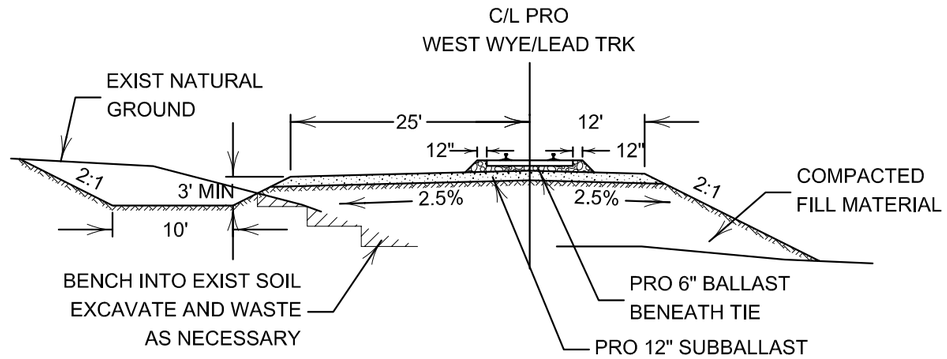
Source: BNSF Engineering Services 04-02-04 (BNSF Industry Standards)



CUT SECTION FILL SECTION

TYPICAL SECTION EAST LEG OF WYE SINGLE TRACK WITH ACCESS ROAD

NOT TO SCALE



CUT SECTION FILL SECTION

TYPICAL SECTION WEST LEG OF WYE/LEAD SINGLE TRACK WITH ACCESS ROAD

NOT TO SCALE

Source: AMEC Infrastructure, Inc. 15933 Clayton Road, Suite 215, Ballwin, MO

Figure 2 - 3
Itasca County
Regional Railroad Authority
Typical Rail Sections of Wye Tracks

R:\Itasca County\449411\GIS\DataFiles\CAD\Figure2-3_typical_rail_section.dwg aolmos 9/12/2007

Right-of-way width would generally be 100 feet, 50 feet on either side of the centerline. There are no public road crossings for the entire length of the proposed rail line, and no large waterways would be crossed by the proposed rail line.

2.1.2 Operation

ICRRA would own the new rail line and lease operating rights to an experienced, existing short-line operator to provide common carrier rail service over the line to the Minnesota Steel site. The rail line would transport shipments of steel slabs and taconite pellets associated with the Minnesota Steel plant, and would carry approximately 30,000 carloads, approximately three million tons of product, annually. The rail line would operate 7 days per week based on one train making daily roundtrips, or two trains making one-way trips at 70-90 carloads per trip. Minnesota Steel would initially be the only customer using the rail line. ICRRA hopes that the construction of the rail line with connection to both BNSF and CN lines would promote additional economic growth and attract new rail customers to locate along the proposed line.

2.1.3 Maintenance

The rail line would be inspected for safety as required by FRA track standards. Additional inspections would be carried out, as necessary, when warranted by weather or other operating conditions. Inspections and maintenance work would be performed by the short-line operator. Inspections would focus on the condition of the following:

- runoff drainage
- vegetation growth
- rail line alignment
- rail line surface
- track gauge
- rail and turnouts
- cross ties
- culverts/bridges

2.2 ALTERNATIVES

Five alternatives were originally considered for potential rail line routes to the Minnesota Steel plant site (Figure 2-1). These alternatives included alignments developed by ICRRA for this project as well as alignments considered previously as part of other mining plans and operations which were never implemented.

Alternative 5 was an alignment initially developed from another mining plan. Alternative 5 crosses 10.6 acres of iron ore resource, and does so in an area that Minnesota Steel intends to mine. Minnesota Steel would be unable to mine this area if Alternative 5 was selected, or the rail line would need to be removed and reconstructed elsewhere in the future to allow the area to be mined. In addition, this route does not provide access to CN, and therefore would provide Minnesota Steel only single non-competitive rail access. For the above reasons, Alternative 5 was removed from further consideration.

Alternative 3 was also initially considered as a possible alignment for the proposed rail line. Alternative 3 crosses 59.2 acres of iron ore resource that Minnesota Steel intends to mine, which would likely require the rail line to be relocated in the future, resulting in additional environmental impacts. Additionally, the selection of Alternative 3 would require the rail line to be located near the towns of Calumet and Marble. This alignment would pass close to several residences located in northern Marble, and would also pass through the northern section of Calumet, within 350 feet of approximately 46 noise-sensitive receptors[5] that could require the acquisition of residential and commercial property. For the above reasons, Alternative 3 was also removed from further consideration.

This section discusses the remaining three alternatives as well as the no-build alternative. The number of acres impacted for each alternative is based on the length of the line multiplied by the anticipated right-of-way width, which is approximately 100

[5] Noise-sensitive receptors within 350 feet were identified using 2006 NAIP aerial photography of Itasca County, Minnesota, and USGS 7.5 minute Calumet Quadrangle map.

feet. Each alternative is discussed with the rationale for selection of the environmentally preferable route. Table 2-1 provides a summary of some environmental characteristics used in comparison of the alternative routes, as discussed in greater detail below.

Table 2-1 Alternative Route Comparison Data

Feature	Unit	Alternative				
		1	**2**	**3****	**4**	**5****
Total Length	Miles	9.4	9.2	10.4	9.5	6.0
Right-of-Way	Acres	114	111	126	115	73
Open Water Bodies Crossed	Number	0	0	0	1	0
Minnesota Steel Iron Ore Resource Crossed	Acres	0	0	59.2	0	10.6
Streams Crossed	Number	1	1	1	1	1
Wetlands Crossed*	PEM	2.6	2.6	3.8	2.1	2.5
	PSS	1.1	2.0	1.8	1.4	0.6
	PUB	3.2	5.2	2.7	3.2	2.2
	LUB	0.9	0.2	0.0	3.3	0.0
	PFO	2.2	0.1	0.9	0.0	0.0
	Total Acres	**10.0**	**10.1**	**9.2**	**10.0**	**5.3**
Woodlands Crossed	Acres	60.5	58	48.2	42.8	27
Noise-Sensitive Receptors Within 350 Feet	Number	0	0	46	0	0
Length through Floodplain	Feet	0	0	0	0	0
Road Crossings	Number	0	0	2	0	2
Cultural Resources within ROW	Number	0	0	1	0	0

* Based on NWI data.

**Alternatives 3 and 5 were dropped from further consideration due to not meeting the project purpose and need or because of conflicts with Minnesota Steel's mining plan. Comparison data from alternatives 3 and 5 is not included in further discussions.

No-Action Alternative

Under the no-action alternative, ICRRA would not construct a common carrier rail line to serve the Minnesota Steel plant and facilities. Environmental impacts associated with a rail line would not occur if the no-action alternative was selected. However, it is likely that Minnesota Steel would find other ways to ship its products and haul materials onto the site.

One option would be for Minnesota Steel to construct a private rail line. A private rail line would not promote economic growth in the area as it would not be available to serve additional customers. Another option would be to expand and upgrade the existing road system to allow movement of mining materials and product from the mines and steel plant that would otherwise be shipped via rail. This might be necessary if the existing local road system were unable to accommodate the increased truck traffic.

Increased truck traffic resulting from the no-build alternative could have negative environmental impacts in the area. There would likely be greater air and noise emissions associated with the use of additional trucks on local roads than with the use of diesel locomotives. Damage to wetlands could occur from road construction associated with road or bridge upgrades. The no-action alternative would result in fewer employment opportunities than would result from the rail line construction and additional industry that might eventually locate along the line.

Alternative 1

Alternative 1 is approximately 9.4 miles in length and provides access to both BNSF and CN rail lines (Figure 2-1). Right-of-way requirements for this alignment would be approximately 114.0 acres. The CN connection would be located near Itasca County Highway 7 near the town of Taconite, and the BNSF connection would be located approximately 1.3 miles to the east. These connections converge just to the southeast of Big Diamond Lake at the site of a proposed interchange yard. Alternative 1 continues to head northeast before turning generally north approximately 2.0 miles north of U.S.

Highway 169, east of Calumet. From that point, Alternative 1 heads into the Minnesota Steel plant site.

Alternative 1 crosses one unnamed tributary of Holman Lake and no open bodies of water. It also crosses 10.0 acres (within the right-of-way) of wetland and 60.5 acres (within the right-of-way) of woodland. Alternative 1 is not within any floodplains, crosses no public roads, and contains no identified cultural resources within the right-of-way. There are no noise-sensitive receptors within 350 feet[6] of the centerline of Alternative 1. This alternative avoids much of the disturbed area from previous mining and therefore would largely affect previously undisturbed areas.

Alternative 1 would cross a large retired tailings basin east of Big Diamond Lake. It was not practicable to route Alternative 1 to the west of this tailings basin because of potential environmental impacts associated with proximity to Big Diamond and Dunning lakes. This tailings basin presents a significant engineering obstacle for the rail line in terms of track alignment and grade. The crest of the tailings basin is close to 1500 feet while the rail line elevation would be in the low 1400 foot range. This difference in elevation would require a very deep cut (approximately 100 feet). With the unknown stability of the tailings fill, it is questionable from a construction standpoint whether the cut could be safely accomplished without creating ongoing maintenance concerns. At a minimum, a much wider right-of-way would likely be required, increasing the area disturbed and adding associated environmental impacts for construction.

Alternative 2

Alternative 2, like Alternative 1, originates near Itasca County Highway 7 and uses the same connection points to the CN and BNSF railroads as Alternative 1. The two connections converge near the proposed interchange yard just to the east of Big Diamond Lake. Alternative 2 travels generally northeast, south of Alternative 1, and passes close

[6] The Federal Aviation Administration (FAA) and the Department of Housing and Urban Development consider noise levels up to 65 decibels to be acceptable for most noise-sensitive receptors. For two trains per day, the distance (contour) at which the average daily noise level (Ldn) would be equal to 65 decibels (dB) would be 50 feet for wayside noise and 350 feet for horn noise.

to the northern edge of several mine pits. It was not practicable to route Alternative 2 further north, possibly joining Alternative 1 at some point, due to several large wetland areas, stockpiles, and tailings basins located between Alternatives 1 and 2. Alternative 2 also passes close to the northern boundary of the Hill Annex Mine State Park. Just to the northeast of the state park, Alternative 2 turns north and heads toward the Minnesota Steel plant site.

Alternative 2 would be approximately 9.2 miles in length and is the shortest of the three alternative routes considered. This alignment would require approximately 111.0 acres for the right-of-way, the least of the considered alternatives. Alternative 2 would cross one unnamed tributary of Holman Lake and no open water bodies. It crosses 10.1 acres of wetlands (approximately the same as Alternatives 1 and 4) and 58.0 acres of woodland. Alternative 2 does not pass through any floodplains and does not cross any roads. It does not have any noise-sensitive receptors within 350 feet of the rail line, and there are no known cultural resources located within the right-of-way. Although Alternative 2 crosses areas of iron-ore resource, it does so along the northern edge of the iron-ore resource in areas that Minnesota Steel does not plan on mining. Rail line grade and alignment issues associated with rail line construction are minimal for this route, and no major engineering obstacles to construction and operation were identified by ICRRA.

Alternative 4

Alternative 4 uses the same western (CN) connection as Alternatives 1 and 2, but the eastern (BNSF) connection to the existing rail line is located approximately 2.0 miles further east from where Alternatives 1 and 2 connect. The route continues northeast, and passes through an area of iron ore resource that does not impact Minnesota Steel's mining plan. Alternative 4 continues northeast before following the alignment used by Alternatives 1 and 2 heading north to the Minnesota Steel plant site.

Alternative 4 is approximately 9.5 miles long, and would require 115.0 acres for the right-of-way. This alternative crosses one unnamed tributary of Holman Lake and the Arcturus Mine Pit. Alternative 4 crosses 42.8 acres of woodland and 10.0 acres of

wetlands. It is the longest of the alternatives considered. This alternative crosses no roads, and there are no noise-sensitive receptors within 350 feet of the route. No cultural resources are located within the right-of-way for Alternative 4, and no floodplain areas are crossed. However, portions of this alternative fall within the Wellhead Protection Area (WHPA) and Drinking Water Supply Management Area (DWSMA) for the town of Marble, as determined by the Minnesota Department of Health (MDH) (Walsh 2007). These areas are sensitive to groundwater contamination, which could affect the water supply for Marble. Alternative 4 would also require spanning the Arcturus Mine pit by a bridge or trestle structure. This structure, approximately 2,000 feet in length, would be difficult to construct due to its length and the depth of the mine pit.

Selection of the Preferred Alignment

The primary purpose of the project is to provide an efficient means of transporting finished product from the Minnesota Steel plant site by rail, connecting to an existing rail line that provides dual rail-line access. Dual rail-line access is an important component of the project due to the competitive transportation opportunities it provides. The no-build alternative could result in the construction of a private rail line or the use of trucks to ship finished product associated with the plant. The no-build alternative would not meet the purpose and need for the project and would likely result in environmental impacts associated with road improvements and truck traffic.

Five alternatives were originally considered for the proposed rail line. Alternative 5 was dropped from consideration because it did not provide competitive access to both mainline railroads and it conflicted with Minnesota Steel's mining plan. Alternative 3 was dropped from consideration because it conflicted with Minnesota Steel's mining plan and had greater impacts on the towns of Marble and Calumet by passing within 350 feet of 46 noise-sensitive receptors. The remaining alternatives were evaluated to determine which minimized the environmental impacts associated with the construction of the line while providing the best overall rail option for ICRRA. Minnesota Steel initially intends to mine a large area of iron ore located north of Snowball Lake, and impacts to the recovery of the iron ore from a rail line passing through the area were considered during

evaluation of the alternatives. Environmental impacts to wetlands, woodlands, and streams were considered when evaluating the alternative routes, as was total length of the line (Table 2-1). Engineering and constructability of the line were also considered when evaluating the alternative routes, as were impacts to the towns of Marble and Calumet.

SEA selected Alternative 2 as the least environmentally damaging practicable (environmentally preferred) alignment for the project. All the alternatives considered have comparable environmental impacts. Constructability (engineering considerations) and operation of the line, in conjunction with accomplishing Minnesota Steel's mining plan, were important considerations when selecting an alignment. SEA determined that Alternative 2 would have minimal environmental impacts, accomplishes Minnesota Steel's mining plan, and is feasible from a construction standpoint.

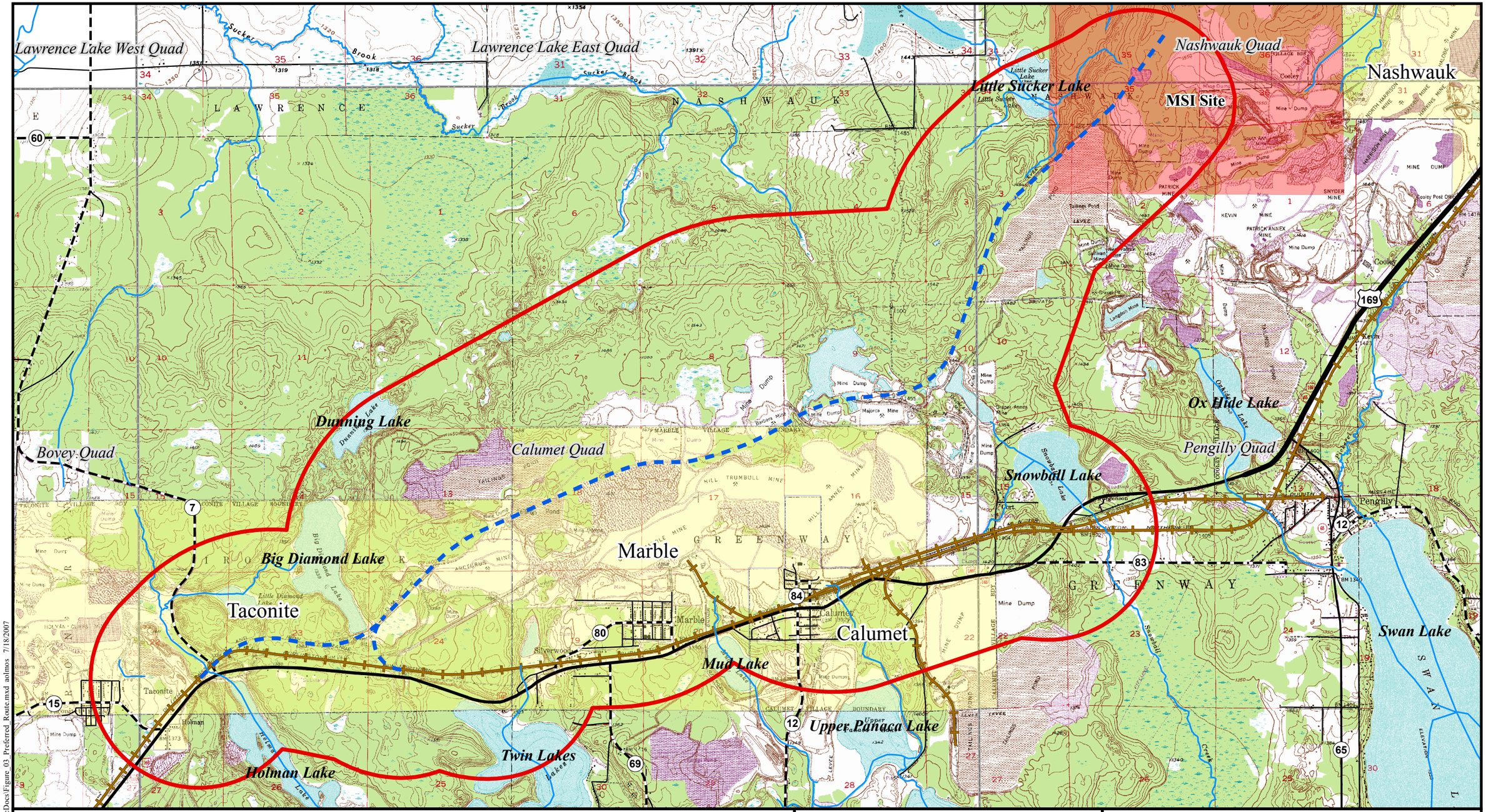
As shown in Table 2-1, the differences in environmental impacts between the route alternatives are generally small. Wetlands crossed would range from 10.0 (Alternatives 1 and 4) to 10.1 (Alternative 2) acres. The difference between the smallest amount of wetlands crossed (Alternatives 1 and 4) compared with that of the selected alternative (Alternative 2) is 0.1 acre. Woodland crossed would range from 42.8 (Alternative 4) to 60.5 (Alternative 1) acres, a 17 acre difference among all alternatives. The difference between the smallest amount of woodland crossed (Alternative 4) compared with that of the selected alignment (Alternative 2) is approximately 15 acres. Total length of the proposed rail line alternatives ranges from 9.2 (Alternative 2) to 9.5 (Alternative 4) miles. Because the alternatives have relatively similar potential environmental impacts, further evaluation of the route alternatives focuses on engineering and constructability differences.

Alternative 4 is the longest alternative at 9.5 miles in length. This alternative crosses 10.0 acres of wetlands and would span the Arcturus Mine Pit. The bridge and/or trestle required would be approximately 2000 feet in length. Alternative 4 was not selected as the environmentally preferred alignment due to the difficulty and cost of designing and constructing a structure over the pit, the greater cost and environmental impact associated

with the length of the line, and the potential adverse impacts to Marble resulting from the alignment passing through WHPA and DWSMA areas.

Alternative 1 is 9.4 miles in length and passes through the greatest amount of woodlands (60.4 acres). This alternative would pass through a large tailings basin east of Big Diamond Lake. Construction of the line in this area would be difficult and costly, requiring extensive, approximately 100-foot deep, cuts and associated fill during construction because of the variances of elevation. Alternative 1 would have slightly less (0.1 acres) but essentially the same amount of wetlands as Alternative 2. Alternative 1 would require more land for right-of-way, more clearance of woodland, and would require extensive earth disturbance due to a 100-foot cut through a potentially unstable tailings pile. Because of these concerns and the questionable constructability and ongoing stability of a rail line along this alignment, Alternative 1 was not selected as the environmentally preferable alternative for the project.

Alternative 2 is the shortest route, at 9.2 miles. Alternative 2 does not impact the least amount of woodlands, nor does it impact the most. Alternative 2 impacts only 0.1 acre more wetlands than Alternatives 1 and 4. Alternative 2 avoids all residential and commercial areas, as do Alternatives 1 and 4. Rail line grade and alignment issues are minimal for Alternative 2, which improves the constructability of the route. Alternative 2 would require the least amount of land for the right-of-way. SEA has determined that this is the environmentally preferable alternative for minimizing potential impacts to the environment while providing an acceptable rail alignment for ICRRA and Minnesota Steel. Alternative 2 is shown in Figure 2-4.



LEGEND

- Minnesota Steel Site Boundary
- Municipality Areas
- Project Area Boundary
- Existing Railroad

Preferred Alternative

- Alternative 2

3,500 0 3,500
Feet

NORTH

Figure 2 - 4

Itasca County
Regional Railroad Authority

Preferred Alternative Map

R:\Itasca County\44941\GIS\DataFiles\ArcDocs\Figure_03_Preferred_Route.mxd aolmos 7/18/2007

Source: AMEC; Minnesota DNR - Division of Fish & Wildlife.