NorthMet Mining Project and Land Exchange

Preliminary Supplemental Draft Environmental Impact Statement

DRAFT WORK IN PROGRESS 1.0

May 10, 2013

EXECUTIVE SUMMARY

Prepared by

Minnesota Department of Natural Resources
United States Army Corps of Engineers
United States Forest Service

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INTRODUCTION

PolyMet Mining, Inc. (PolyMet) is proposing to develop the NorthMet copper-nickel-platinum group metals (PGM) mine and associated processing facilities (the NorthMet Project Proposed Action) in northeastern Minnesota. The NorthMet Project Proposed Action would represent the first copper-nickel-PGM mine in Minnesota where most of the ore and waste rock contain sulfide minerals. Figure 1 shows the general location of the NorthMet Project Proposed Action and its relationship within the northeast Minnesota region.

The mine requires a Section 404 Wetland Permit from the United States Army Corps of Engineers (USACE). In addition, the State of Minnesota's environmental review process requires information collection and a disclosure tool for state agencies. It informs the subsequent permitting and approval processes and describes mitigation measures that may be available. The Minnesota Department of Natural Resources (MDNR) serves as the State's Responsible Government Unit for this process.

The NorthMet Deposit containing copper-nickel-PGM minerals is located on surface lands within the Superior National Forest administered by the United States Forest Service (USFS). As such, these particular federal lands are not available for surface mining. Therefore, to mine the NorthMet Deposit, PolyMet must acquire ownership of the property from the USFS for an equal value of other lands in the region. PolyMet has proposed a land exchange with the USFS to achieve this (the Land Exchange Proposed Action) (Figure 1). For this reason, the Land Exchange is a connected Action to the NorthMet Project.

Together as "Co-lead Agencies", the MDNR, USACE, and USFS have jointly prepared this Supplemental Draft Environmental Impact Statement (SDEIS) under the National Environmental Policy Act (NEPA) for the two federal agencies and the Minnesota Environmental Policy Act (MEPA) for the MDNR. The SDEIS describes the process the Co-lead Agencies undertook to develop the NorthMet Project Proposed Action, the Land Exchange Proposed Action, and the alternatives, and to identify the effects under each of the alternatives.

This Executive Summary provides an overview of the SDEIS, including the issues and predicted effects of the NorthMet Project Proposed Action and Land Exchange Proposed Action and alternatives. It does not contain a comprehensive explanation of the issues and effects. For complete discussions and analyses, please refer to the SDEIS.

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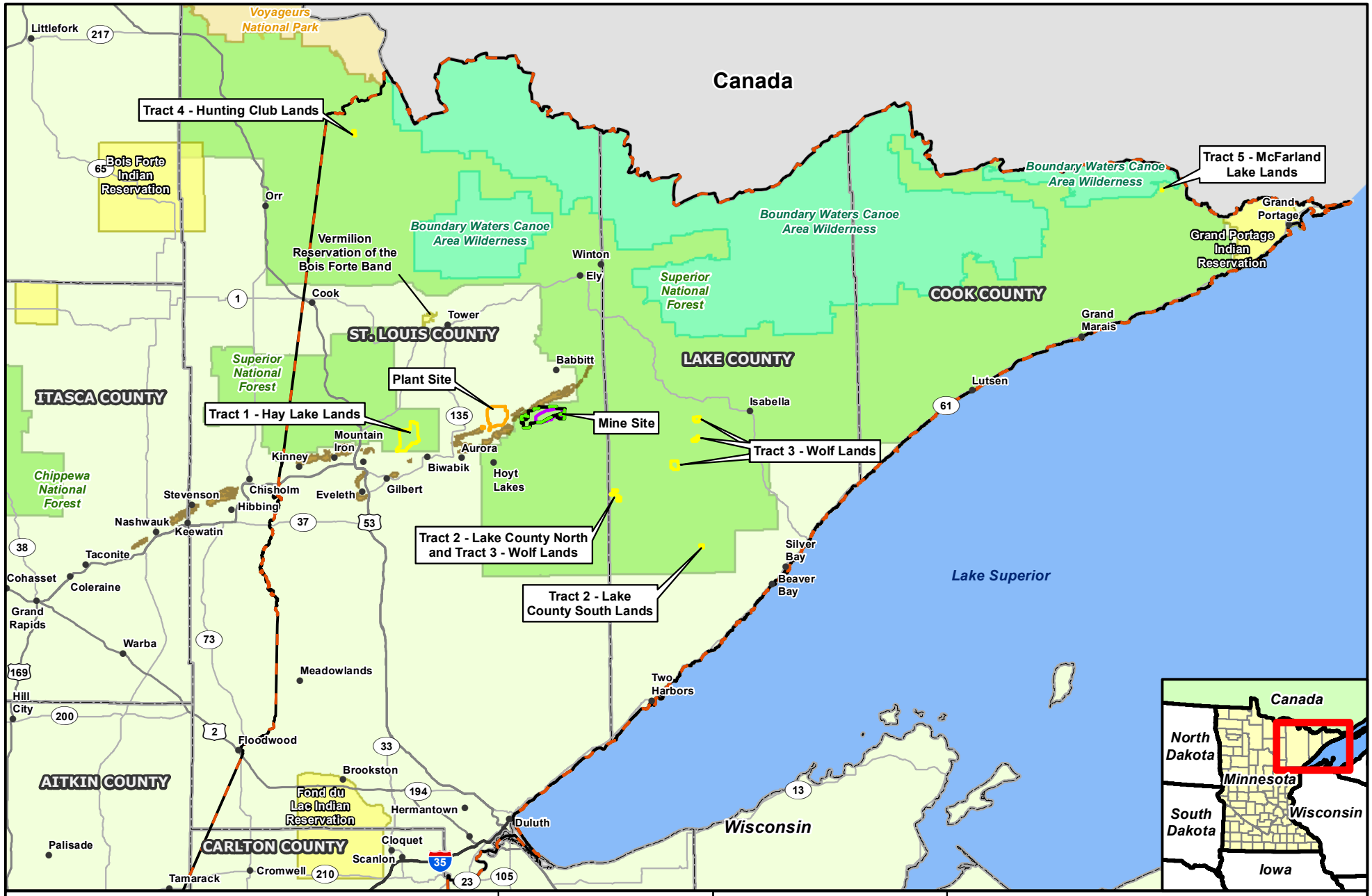

Figure 1

NorthMet Project and Land Exchange Area

NorthMet Mining Project and Land Exchange PSDEIS
Minnesota

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NEPA AND MEPA PROCESS

Development of the SDEIS

As described above, the NorthMet Project and Land Exchange triggers the need for an EIS under NEPA and MEPA. The EIS informs the public and decision makers of the proposed action, its alternatives, and their environmental consequences. The NEPA/MEPA process provides for consultation and solicitation of comments from federal and state agencies, Native American Tribes, interest groups, and the general public.

Over the past eight years, the Co-lead Agencies have engaged in a joint federal-state process to consider PolyMet's project proposals as they have evolved over time based on external input and agency reviews of draft designs (See Figure 2).

Between 2005 and 2009, the USACE and MDNR developed the original NorthMet Project Proposed Action. This process culminated in October 2009, with the publication of the NorthMet Project Draft EIS (DEIS) that analyzed the project as it was then designed. After issuing the DEIS, the Co-lead Agencies, responding to public, other federal and state agency and Tribal comments and concerns, developed an alternative design that sought to resolve several major environmental concerns and permitting barriers. This alternative was subsequently adopted by PolyMet and became the NorthMet Project Proposed Action. In 2010, the USFS joined as a third Co-lead Agency for the purposes of the Land Exchange as a connected action. The revised NorthMet Project Proposed Action and the need for the Land Exchange prompted the Co-lead Agencies' decision to prepare a SDEIS. Key issues addressed in the SDEIS include the effects of the Proposed Action on water resources, air quality, wetlands, geotechnical stability, cultural resources and socioeconomics. Additionally, the SDEIS will be used to solicit public comment and help the MDNR, USACE, and USFS (the Co-lead Agencies) develop the Final EIS (FEIS).

Structure of the SDEIS

This Executive Summary summarizes the SDEIS which provides a full description and analysis of the NorthMet Project, Land Exchange, and alternatives and outlined below:

- Chapter 1.0 (Introduction) describes the purpose of and need for the Proposed Action, regulatory framework, and agency roles and responsibilities.
- Chapter 2.0 (EIS Development) describes the development process for SDEIS, proposed NorthMet Project and Land Exchange actions, and alternatives.
- Chapter 3.0 (Proposed Action and Project Alternatives) describes the Proposed Action and alternatives including the No Action Alternative and Alternatives Considered yet Eliminated from detailed consideration for both the NorthMet Project and the Land Exchange.
- Chapter 4.0 (Affected Environment) summarizes the existing conditions of the NorthMet Project and the surrounding environment and the Land Exchange parcels including the land and its physical, biological, cultural, socioeconomic, and recreational resources.
- Chapter 5.0 (Environmental Consequences) presents the direct and indirect environmental consequences of the Proposed Action and associated alternatives for the NorthMet Project and the direct and indirect environmental consequences of the Proposed Action and

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associated alternatives for the Land Exchange.

- Chapter 6.0 (Cumulative Effects) describes the cumulative effects on the surrounding environment and uniquely affected communities with regard to the Proposed Action for the NorthMet Project and the alternatives for the Land Exchange.
- Chapter 7.0 (Comparison of Alternatives and Other Considerations) contains the comparison of the Proposed Action and alternatives.
- Appendices and other information are provided with the SDEIS including the list of preparers for the production of the SDEIS, response to thematic DEIS comments, index, references, acronyms and abbreviations, and definitions.

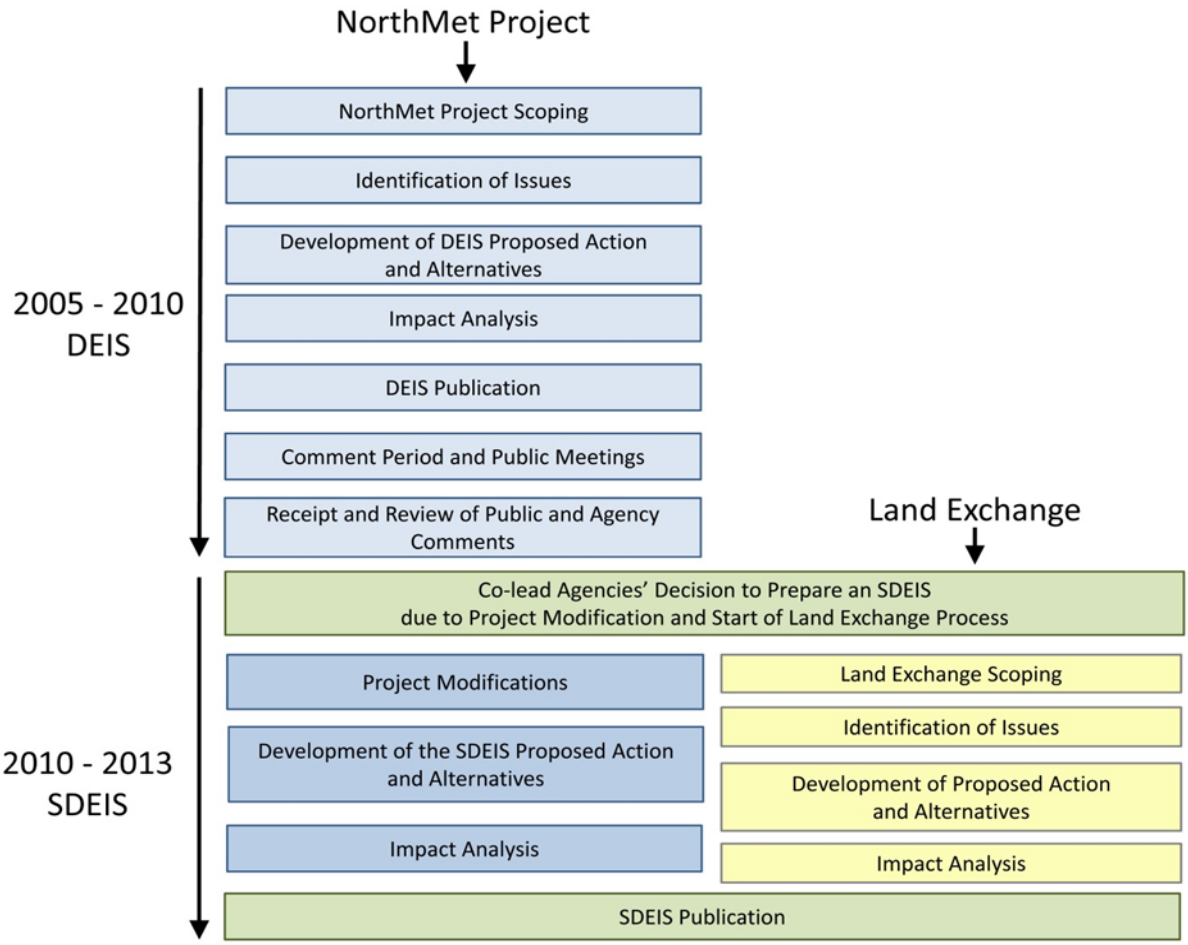

Figure 2: NEPA/MEPA Process 2005 to Present

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Agency Roles in the SDEIS

Co-lead Agencies

The MDNR, USACE, and USFS are Co-lead Agencies for the joint state-federal EIS and, therefore, are responsible for the content of the SDEIS and FEIS and have final authority over the language used in the document.

Cooperating Agencies

Under the Clean Air Act, and under shared authority with the USACE for the Clean Water Act, the United States Environmental Protection Agency (USEPA) has the authority and obligation to review all federal EIS documents and publish its review in the public record.

Along with the USEPA, the Bois Forte Band of Chippewa, Grand Portage Band of Lake Superior Chippewa, and the Fond du Lac Band of Lake Superior Chippewa (the Bands) have been invited by the Co-lead Agencies to participate as Cooperating Agencies. The NorthMet Project area and Land Exchange parcels are located within the 1854 Ceded Territory, within which the Bands reserve hunting, fishing, and gathering (usufructary) rights. The Great Lakes Indian Fishing and Wildlife Commission and the 1854 Treaty Authority have assisted the Bands in addressing issues with the NorthMet Project Proposed Action.

Other Agencies

Other federal and state agencies will review the SDEIS to ensure that it can support their respective decision-making for future permitting and other approvals. These agencies include, but are not limited to: the Minnesota Pollution Control Agency, (MPCA), the Minnesota Department of Health, and the United States Fish and Wildlife Service.

PURPOSE OF THE NORTHMET PROJECT AND LAND EXCHANGE

The purpose of the NorthMet Project and Land Exchange is multifaceted:

- PolyMet: The NorthMet Project would allow it to exercise its mineral lease rights to mine the NorthMet Deposit.
- USACE: The NorthMet Project would produce base and precious metals precipitates and flotation concentrates from ore mined at the NorthMet Deposit by uninterrupted operation of the former LTV Steel Mining Company (LTVSMC) processing plant. The processed resources would help meet domestic and global demand by sale of these products to domestic and world markets.
- USFS: The Land Exchange would resolve the conflict between the surface tract owned by the United States and the private mineral estate.
- MDNR: The NorthMet Project would be consistent with state policy that provides for the diversification of the state's mineral economy through long-term support of mineral exploration, evaluation, environmental research, development, production, and commercialization.

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COMBINED PROPOSED ACTION

The combined Proposed Action includes the NorthMet Project Proposed Action and the Land Exchange Proposed Action as described below.

NorthMet Project Proposed Action

Located on the eastern flank of the Mesabi Iron Range, the proposed NorthMet Mine would be located 6 miles south of the City of Babbitt and the Plant would be 6 miles north of the City of Hoyt Lakes, St. Louis County, Minnesota. The Mesabi Iron Range region has been mined for iron ore and lower grade iron ore, called taconite, for over 100 years (Figure 3). The entire Mine Site is within the municipal boundaries of the City of Babbitt and the Plant Site is mostly located within the municipal boundaries of the City of Hoyt Lakes (see Figure 4). Several other communities, including Aurora, Virginia, Ely, Hibbing, Eveleth, and Biwabik, which are located within St. Louis, Cook, and Lake counties, are within 50 miles of the NorthMet Project area. In addition, the project is about 50 miles southeast of Voyageurs National Park and 19 miles south of the Boundary Waters Canoe and Wilderness Area (BWCAW).

A substantial portion of the NorthMet Project Proposal Action would reuse a former mining plant site (LTVSMC Plant) for processing. Mining would take place on relatively undisturbed but previously logged land nearby and would be connected to the processing facilities by an existing, but upgraded Transportation and Utility Corridor. The active Northshore Mine (taconite iron ore mine) is located about a mile north of the Mine Site.

The NorthMet Project Proposed Action has three major components: a Mine Site, a Transportation and Utility Corridor, and a Plant Site. There would be three distinct phases to the NorthMet Project Proposed Action:

- Construction would last for approximately 18 months and would include land clearing, building renovation and construction, and utility upgrades.
- Operations would last approximately 20 years, would include ore mining and processing, continued construction, and progressive reclamation.
- Closure and post-closure maintenance would occur after mining and would include infrastructure removal and final land reclamation, maintenance, monitoring, and transitioning from mechanical to passive water treatment.

An overview of the NorthMet Project Proposed Action construction, operations, closure, and post-closure maintenance is discussed below.

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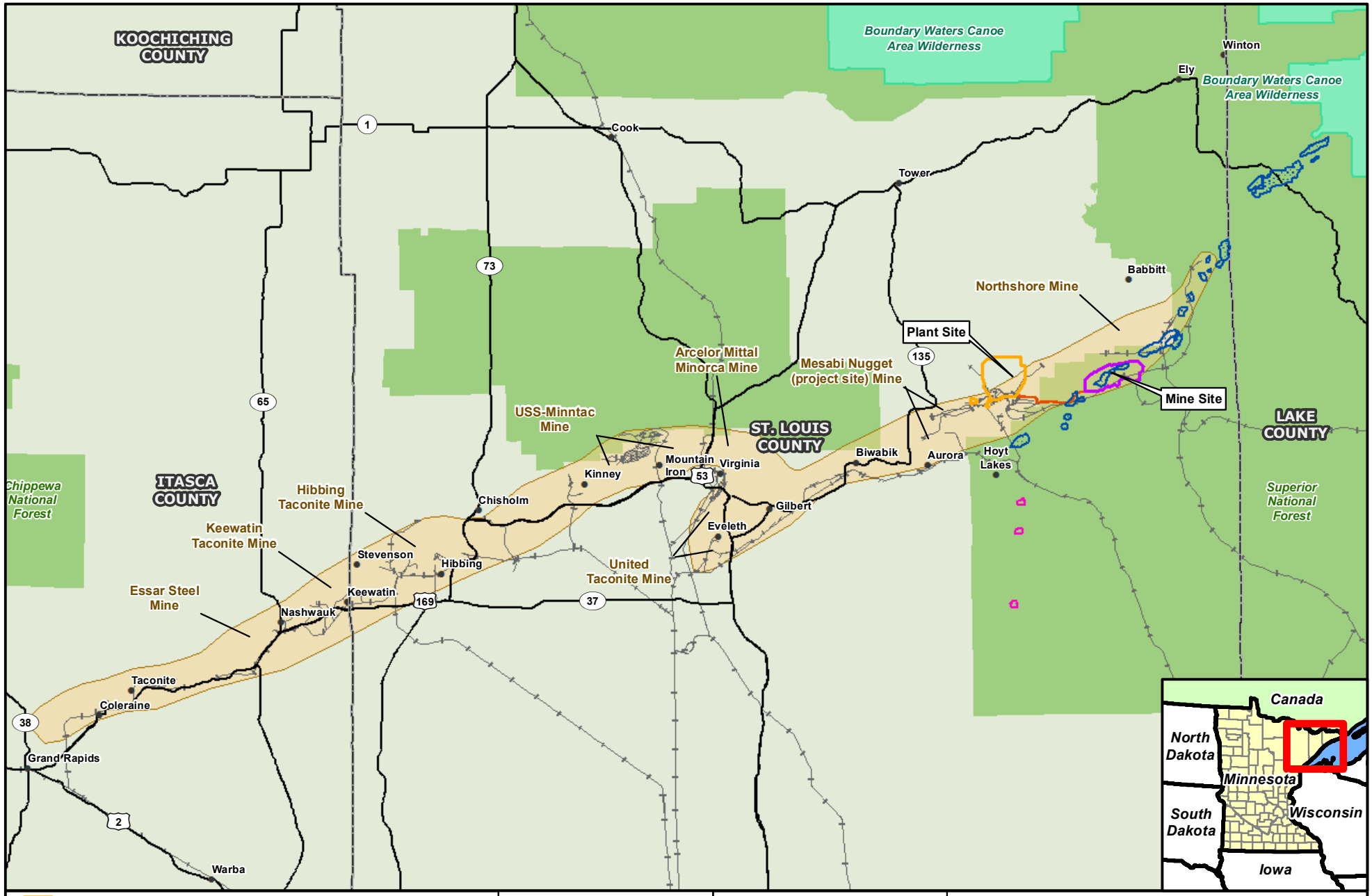

Plant Site
Mine Site
Transportation and Utility Corridor
Boundary Waters Canoe Area Wilderness
National Forest
Mesabi Iron Range - Historic Mining
Duluth Complex Copper-Nickel Deposits
Duluth Complex Titanium-Iron Deposits
City/Town
Existing Road
Existing Railroad

US Army Corps of Engineers
St. Paul District

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N W E S

0 2.5 5 10 Miles

Figure 3
Mesabi Iron Range Region
NorthMet Mining Project and Land Exchange PSDEIS
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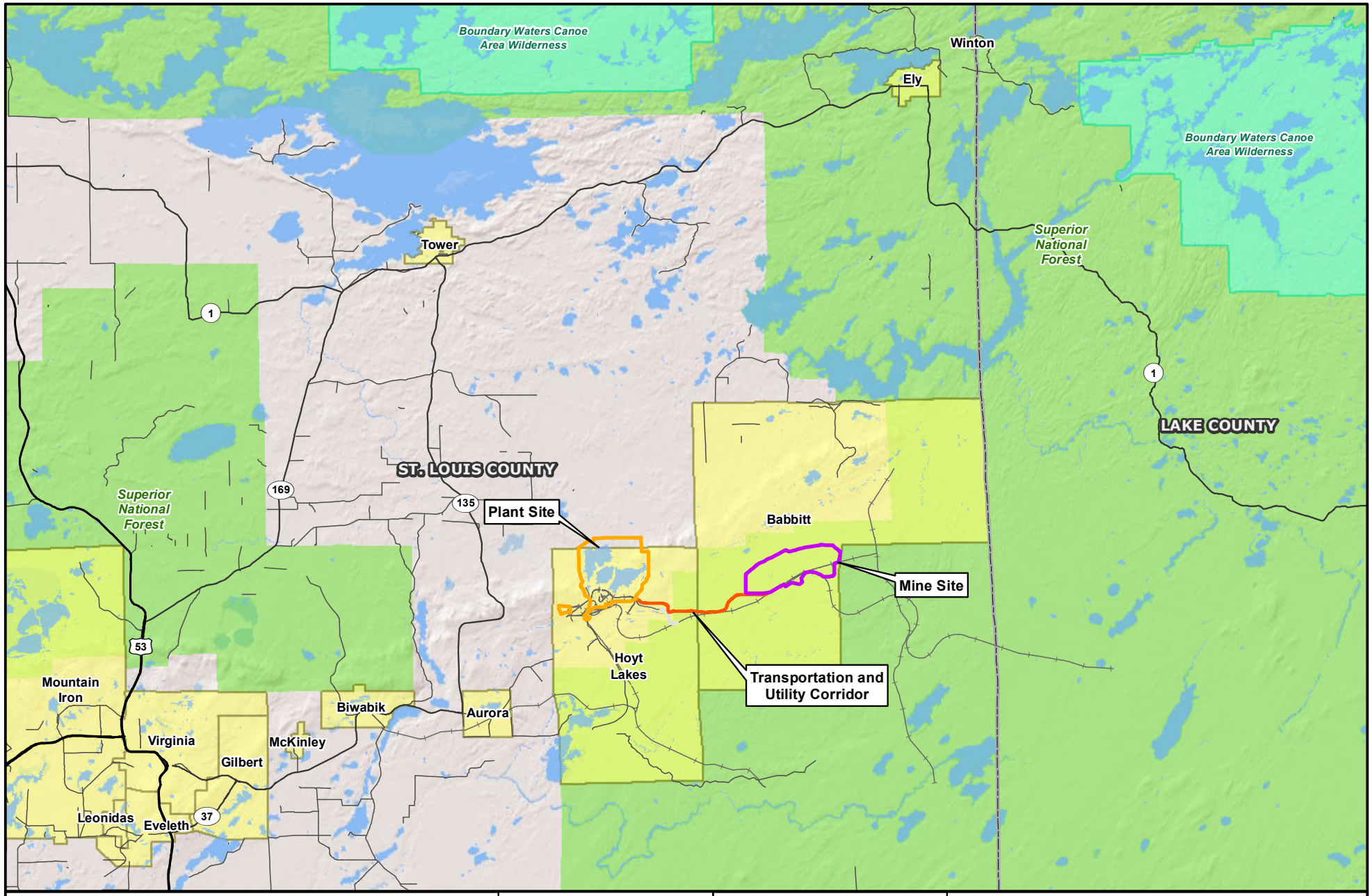

Plant Site
Mine Site
Transportation and Utility Corridor
Railroad Connection
Municipal Boundary
Boundary Waters Canoe Area Wilderness
National Forest
Existing Road
Existing Railroad

US Army Corps of Engineers
St. Paul District

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0 1.5 3 6 Miles

Figure 4
Area Municipalities
NorthMet Mining Project and Land Exchange PSDEIS
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Construction

Construction would begin about 18 months before mining and processing. In preparation for mining, existing vegetation would be cleared and overburden (soils and rock) would be removed, and Mine Site buildings and infrastructure would be constructed.

Minor upgrades to an existing road, railroad, and utilities would be constructed. These transportation and utilities would connect the Mine Site to the Plant Site, which are about 8 miles apart.

At the Plant Site, existing buildings would be refurbished and new buildings would be constructed. The existing LTVSMC Tailings Basin would be used as the base for a new NorthMet Project Tailings Basin. A seepage containment system would be installed around the northern and western sides of the Tailings Basin. A separate double-lined facility would be constructed to contain residue from hydrometallurgical process. A mechanical wastewater treatment plant (including reverse osmosis) would be constructed.

Mining Operations

The mining operations would involve the use of conventional open-pit surface mining methods such as blasting and excavating rock from the NorthMet Deposit. The NorthMet Deposit is a low to medium quality copper-nickel-PGM deposit with a low sulfide content. The Life of Mine (duration of mining operations) would be 20 years, over which time approximately 533 million tons of waste rock and ore would be removed from the NorthMet Deposit. This includes a total of 225 million tons of ore and 308 million tons of waste rock. The average ore processing rate would be up to 32,000 tpd.

Mining would be conducted in three open pits. The East Pit and West Pit would be mined simultaneously through the first 11 years of the mine life (Figure 5). Mining would cease at the East Pit at approximately year 11 and continue at the West Pit until year 20 (Figure 6). The Central Pit would be mined between mine years 11 and 16 and would ultimately combine with the East Pit. The maximum depths of the pits below the original surface level would be 630 feet (ft) for the East Pit (at year 11), 356 ft for the Central Pit (at year 16), and 696 ft for the West Pit (at year 20).

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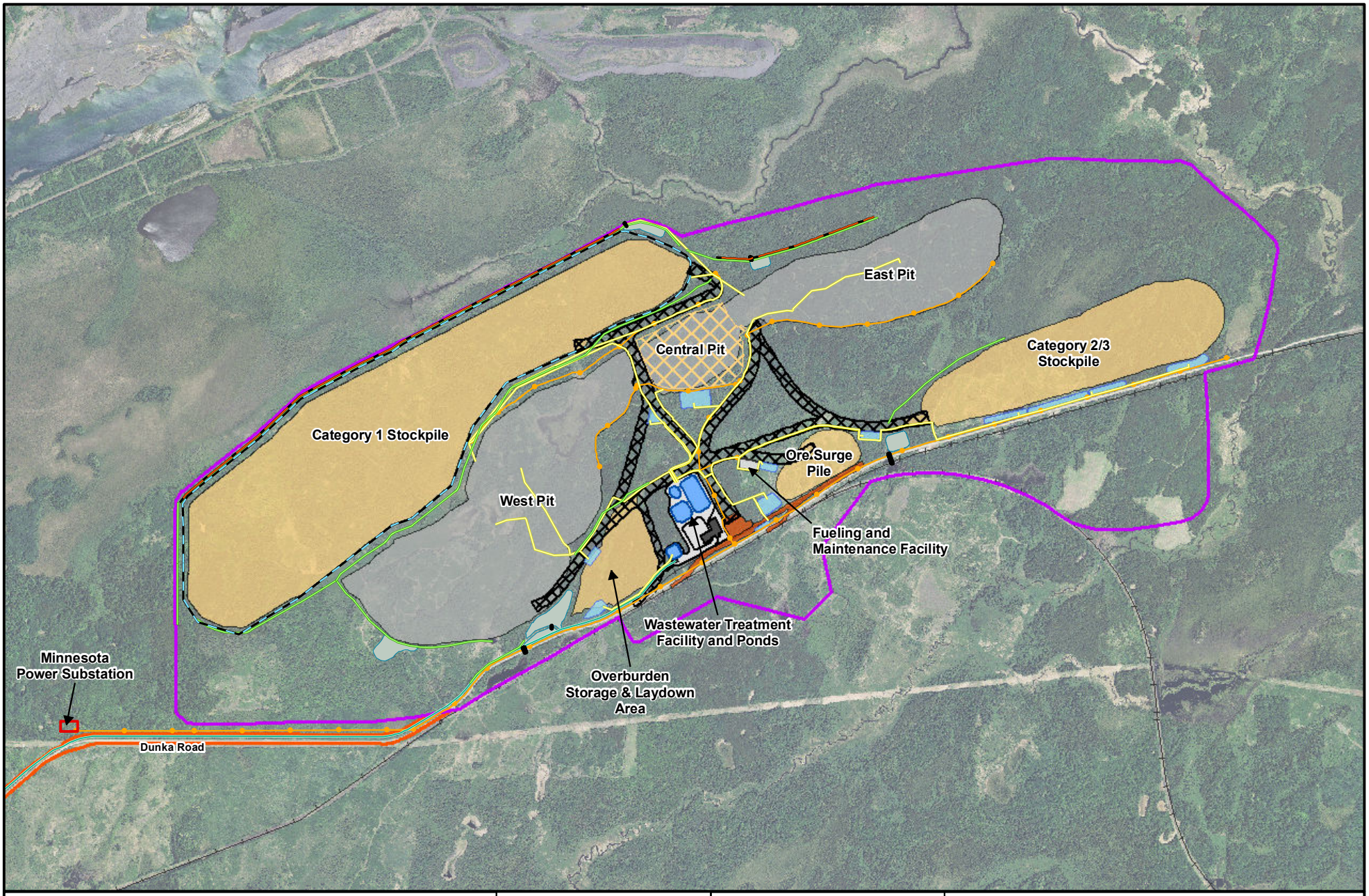

Mine Site
Active Stockpile
Category 4 Stockpile Removed
Mine Pit
Haul Road
Transportation and Utility Corridor
Rail Transfer Hopper and New Railroad Spur
Groundwater Containment System
Perimeter Dike
Transmission Line
Culvert
Stormwater Collection Ditch
Process Water Pipes
Treated Water Pipeline
Ponds and Sumps
Stormwater Pond

US Army Corps of Engineers
St. Paul District

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N W E S

0 500 1,000 2,000 3,000 Feet

Figure 5
Mine Site Plan - Year 11
NorthMet Mining Project and Land Exchange PSDEIS
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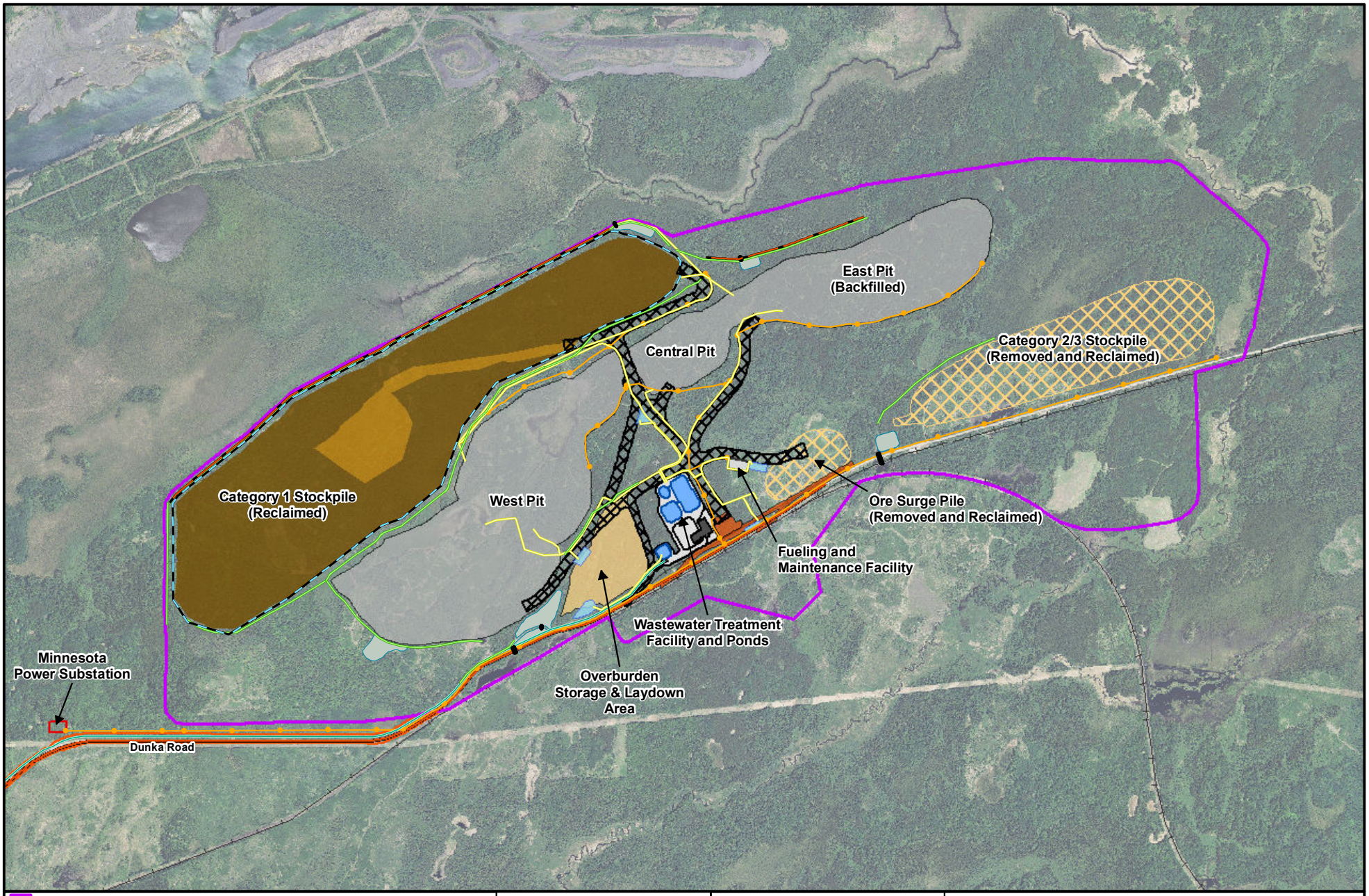

Mine Site
Mine Pit
Covered in Previous Years
Covered Upon Mine Closure
Active Stockpile
Removed and Reclaimed Stockpile
Haul Road
Transportation and Utility Corridor
Rail Transfer Hopper and New Railroad Spur
Groundwater Containment System
Perimeter Dike
Transmission Line
Culvert
Stormwater Collection Ditch
Process Water Pipes
Treated Water Pipeline
Ponds and Sumps
Stormwater Pond

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N W E S

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Figure 6
Mine Site Plan - Year 20
NorthMet Mining Project and Land Exchange PSDEIS
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The waste rock would be sorted into four categories based on its potential to contaminate water—Category 1 waste rock would have a low potential and Category 4 waste rock would have a high potential.

Until the completion of mining in the East Pit (approximately year 11), waste rock would be hauled to one of the following stockpiles at the Mine Site:

- permanent Category 1 Stockpile,
- temporary Category 2/3 Stockpile, or
- temporary Category 4 Stockpile.

After year 11, the waste rock in the Category 2/3 and 4 temporary stockpiles would be moved into the East Pit (mining at the East Pit is planned to end by year 11). This option is the preferred method of disposal for the more reactive waste rock. Waste rock generated from ongoing mining in the West Pit and Central Pit after year 11 would be directly disposed of in the East Pit. Some Category 1 waste rock would continue to be placed on the Category 1 Stockpile until year 13. Mining operations would continue in the West Pit until year 20, while backfilling the East Pit with waste rock.

Water control systems would be constructed to capture water that has contacted surfaces disturbed by mining operations, as well as water collected on stockpile liners (i.e., process water). Process water would be treated at a mechanical wastewater treatment facility located at the Mine Site and either pumped to the Plant Site Tailings Basin for use as process make up water or to supplement flooding of the East Pit after backfilling with waste rock.

Processing Operations

Ore would be transported to the Plant Site (Figure 7) by rail, for crushing and processing. Processing would involve concentration using a flotation method to separate metallic sulfide minerals (ore concentrate) from feldspar and other non-ore minerals (tailings).

Ore concentrate would either be dewatered and shipped off-site as copper and nickel concentrate final products, or the nickel concentrate would be processed in an autoclave (oxidation and leaching method) at the Hydrometallurgical Plant and base/precious metal precipitates would be produced. These precipitates would be shipped off-site and sold as final products. Based on the anticipated rate of mining, mineral processing of up to 32,000 tons per day of ore would yield annual production of about 113,000 short tons of copper concentrate, 18,000 short tons of mixed (nickel/copper) hydroxide, and 500 short tons of PGM precipitate.

After passing through a secondary flotation cycle to remove as many sulfide minerals as possible, the tailings would be transferred as slurry to the NorthMet Tailings Basin. Bentonite clay would be incorporated into the exposed outer side-slopes of the Tailings Basin as it is built up to create a barrier that would limit oxidation of sulfide minerals. This limiting of oxygen transfer would reduce pollutants generated from the Tailings Basin.

Water seepage from the Tailings Basin would be collected by the groundwater containment system and sent to either the Tailings Basin pond or the Plant Site mechanical wastewater treatment plant. Treated water would be used to augment flows in the streams that would be impeded by the Tailings Basin groundwater containment system.

Closure and Post-closure Maintenance

In general, Mine Site facilities have been designed and would be operated to allow for concurrent reclamation. An example of this is waste rock management. The Category 1

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Stockpile would be covered with geomembrane (plastic) and soils, and the temporary Category 2/3 and 4 stockpiles (containing the most reactive waste rock) would be removed and placed into the East Pit during operations. Eventually, all of the Category 2/3 and 4 waste rock would be moved to the combined East and Central Pit and flooded with water to minimize oxidation to reduce the generation of pollutants. During post-closure, the West Pit would fill with ground and surface water to become a pit lake (Figure 8). The mechanical wastewater treatment facility would be upgraded to include reverse-osmosis and would be maintained to treat pit lake water quality, with a goal of transitioning to a non-mechanical (biological and requiring less maintenance) water treatment technology for the long term.

The Plant Site would be closed by removing unnecessary buildings and infrastructure, capping the Hydrometallurgical Residue Facility (double cap), and adding bentonite amendment and vegetation to the top surfaces of the Tailings Basin. The seepage collection system and mechanical WWTF (reverse osmosis) would remain active with a goal of transitioning to a non-mechanical (biological) water treatment technology for the long term.

Water, wetland, vegetation, and other monitoring and maintenance activities would continue. Adaptive mitigation would be implemented if necessary to protect the environment for the long term.

Monitoring, Adaptive Management and Mitigation

One of the key elements of the NorthMet Project Proposed Action is the inclusion of several management plans that identify how PolyMet would monitor environmental conditions to ensure that it meets all applicable environmental goals set in the permits. Key among these plans is the Adaptive Water Management Plan, which describes Mine Site and Plant Site water management and under what circumstances would design changes be triggered to the following:

- Category 1 Stockpile cover system,
- water containment system,
- water containment non-mechanical treatment system,
- WWTF lead and antimony treatment in closure,
- West Pit overflow non-mechanical treatment system,
- Tailings Basin groundwater containment system,
- Tailings Basin pond cover system, and
- Tailings Basin non-mechanical treatment system design.

Other proposed mitigation measures are also included in the SDEIS and would be a part of the NorthMet Project. These include mitigation to reduce effects from fugitive dust, noise, and water quality; and to cultural resources and historic properties, health and safety, and other resources. The SDEIS describes these proposed measures and when they would be employed during construction, operations, and closure of the NorthMet Project. Monitoring would be used to determine whether any of these proposed measures would be required. A final list of mitigation measures will be included in the Record of Decisions for respective Co-lead Agencies.

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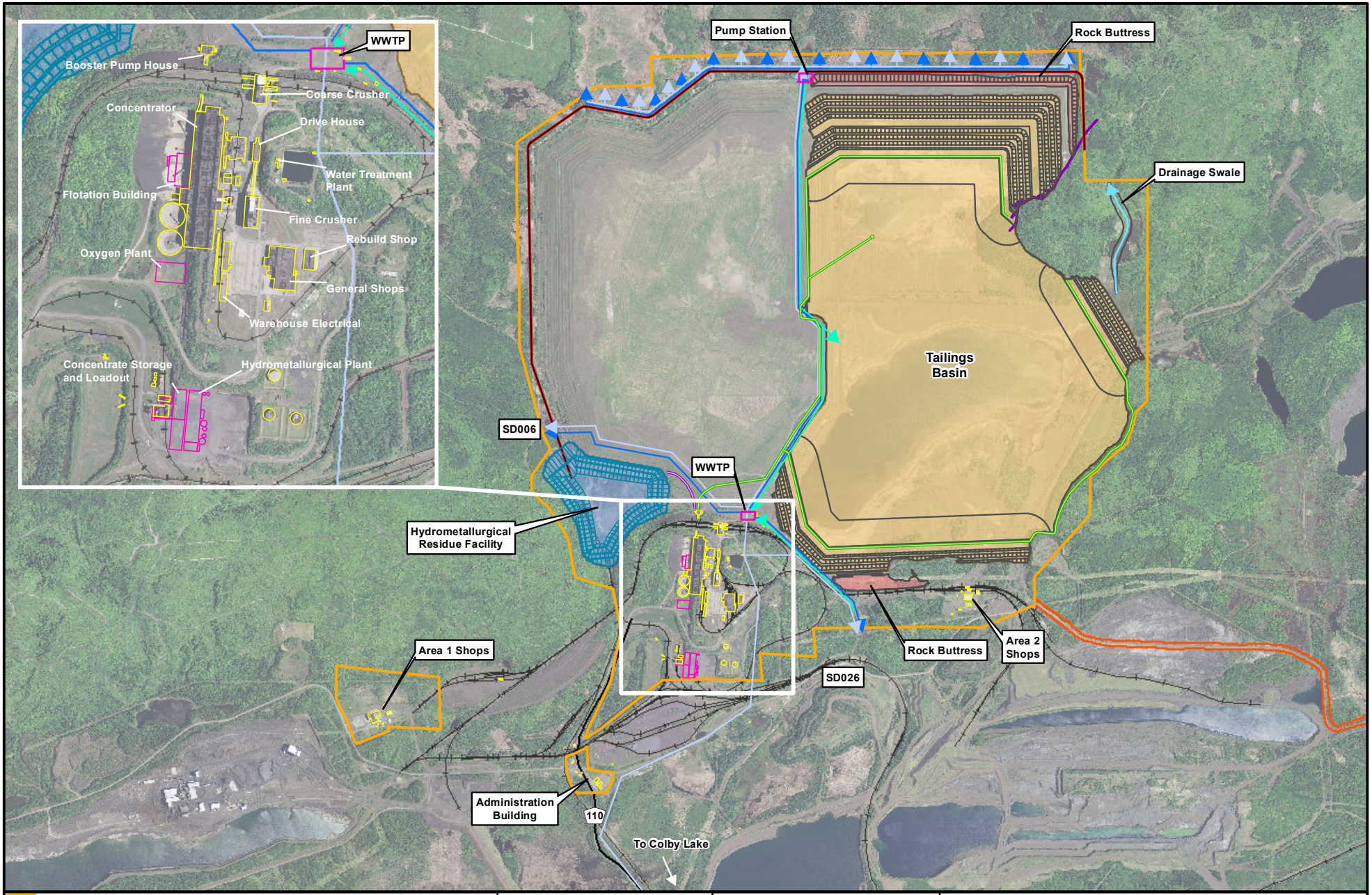

Plant Site
Tailings Basin
Proposed Building
Existing Building
Hydrometallurgical Residue Facility
Transportation and Utility Corridor
Rock Buttress
Containment System
Treated Water Discharge Pipe
Seepage Water Pipe
Colby Lake Transfer
Drainage Flow Direction
Hydrometallurgical Residue Pipeline
Flotation Tailings Pipeline
Tailings Basin Emergency Overflow
Existing Railroad

US Army Corps of Engineers
St. Paul District

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N W E S

0 1,000 2,000 4,000 Feet

Figure 7
Plant Site Layout
NorthMet Mining Project and Land Exchange PSDEIS
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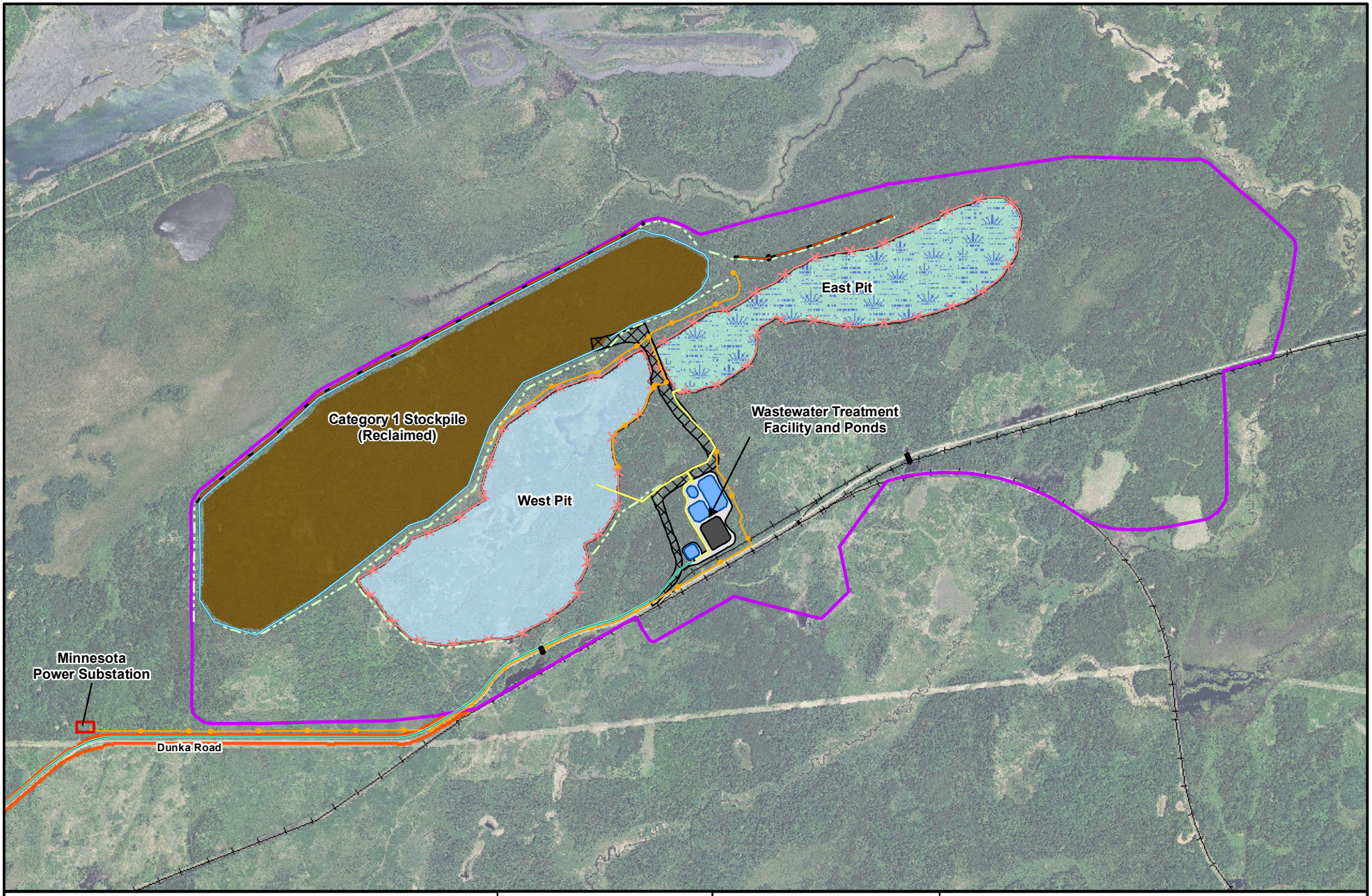

Mine Site
Pit with Backfill and Surface Wetland
Pit Lake
Covered in Previous Years
Haul Road
Transportation and Utility Corridor
Groundwater Containment System
Transmission Line
Stormwater Collection Ditch
Perimeter Dike
Process Water Pipes
Treated Water Pipeline
Fence
Culvert

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N W E S

0 500 1,000 2,000 3,000 Feet

Figure 8
Mine Site Plan - Long Term Closure
NorthMet Mining Project and Land Exchange PSDEIS
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Land Exchange Proposed Action

Under the Land Exchange Proposed Action, ownership of the 6,650-acre surface tract overlying the NorthMet Deposit would be transferred from the USFS to PolyMet in exchange for up to five privately-owned tracts encompassing 6,722 acres within the Superior National Forest (See Figure 9).

Federal Lands

The lands proposed for transfer include a large portion of the One Hundred Mile Swamp, a large black spruce, tamarack, and cedar wetland, and also contain Mud Lake. Yelp Creek and the Partridge River also flow through the property. These federal lands lie immediately south of the Superior National Forest proclamation boundary and are bounded on the south by the former LTVSMC railroad and the private Dunka Road, which are NorthMet Project roads. Access to the federal lands is primarily via Dunka Road and the former LTVSMC railroad. Privately owned properties to the north and west of the federal lands have been extensively impacted over the years by surface mining, including mine pits, waste rock stockpiles, tailings basins, processing facilities, railroad grades, and other general mining activities. A 115-acre privately-owned in-holding within the exterior boundaries of the northwestern portion of the federal lands is not included in the Land Exchange.

Non-Federal Lands

All of the lands proposed for exchange are located within the 1854 Ceded Territory of northeastern Minnesota (Figure 1). For more information regarding the 1854 Ceded Territory, please refer to the following Potential Environmental Consequences section below.

PolyMet currently owns a portion of the non-federal lands proposed for exchange; however, all rights, titles, and interests of the remaining non-federal lands proposed for exchange have been assigned to PolyMet. The acquired tracts would become part of the Superior National Forest and would be managed under the 2004 Superior National Forest Land and Resource Management Plan (Forest Plan).

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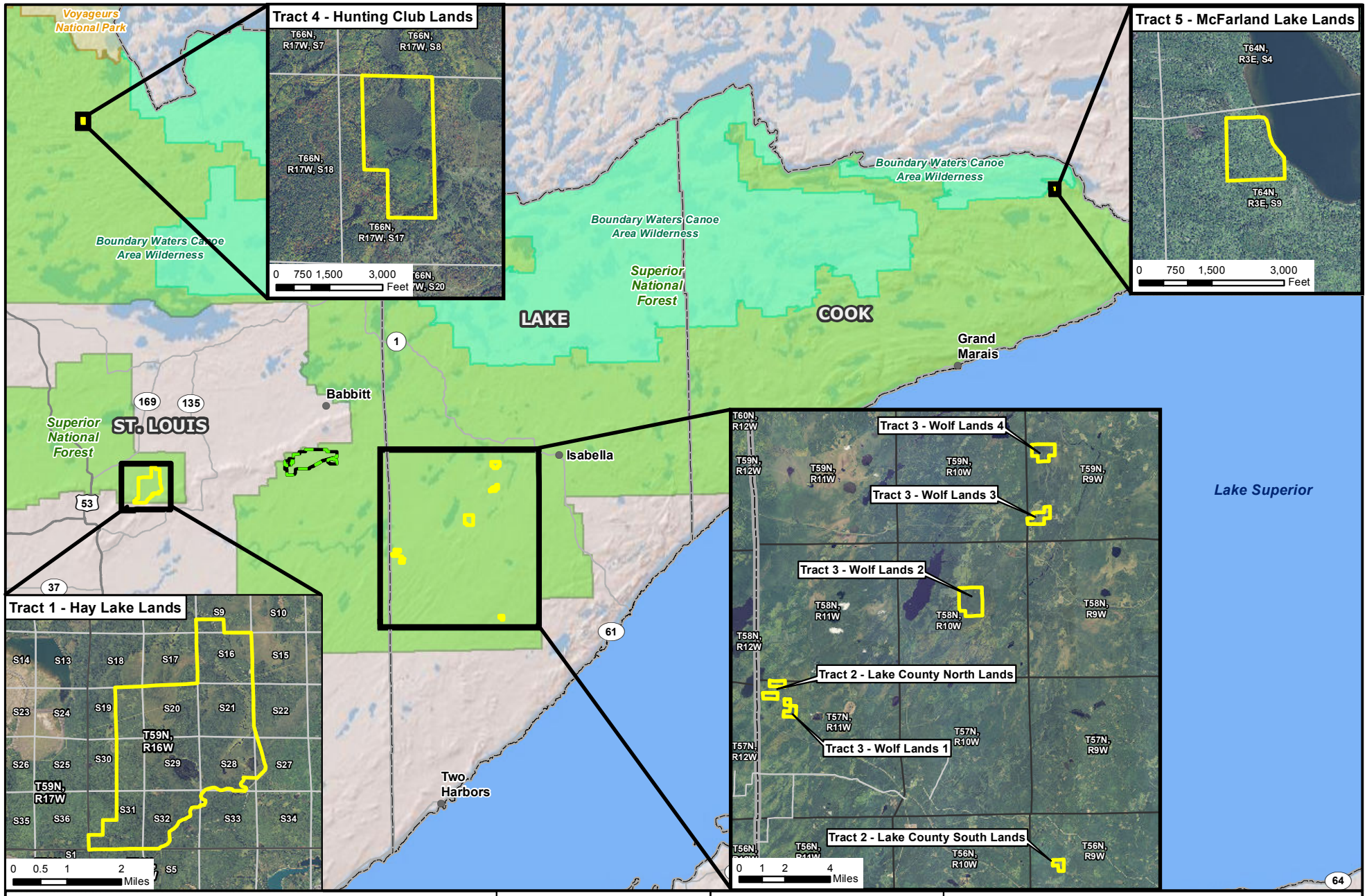

Figure 9

Land Exchange Proposed Action Parcels

NorthMet Mining Project and Land Exchange PSDEIS

Minnesota

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PREDICTED ENVIRONMENTAL CONSEQUENCES OF THE COMBINED PROPOSED ACTION

Although the NorthMet Project Proposed Action would take place in an area that has been heavily mined and used for timber production for over a 100 years, it also contains many important recreational, cultural, and natural resource values. The SDEIS describes in detail those elements of the natural and human environment that would be affected by the NorthMet Project and Land Exchange. Based on the results of modeling and impact analysis, the NorthMet Project Proposed Action would not exceed applicable environmental evaluation criteria. The following section briefly describes some of the critical environmental effects predicted for the NorthMet Project Proposed Action and Land Exchange Proposed Action.

NorthMet Project Effects on Water Resources

The NorthMet Project Mine Site lies upstream from the Partridge River and the Plant Site is upstream of the Embarrass River. Both rivers are tributaries to the St. Louis River, which flows to Lake Superior.

While current operating mines in the region are subject to environmental rules, historic mining has resulted in higher ambient pollution levels, the effects of which continue today. Of particular concern are sulfates, mercury, and other metals and chemicals.

The SDEIS used several analytical models to predict effects to groundwater and surface water use and quality. These analysis tools, along with the GoldSim water quality model, were linked to predict the hydrologic and water quality effects of the NorthMet Project Proposed Action. The models predicted that water discharges from the NorthMet Project Proposed Action would meet all applicable groundwater and surface water quality evaluation criteria at the 90th percentile confidence level. In addition, these designs and engineering controls would result in decreases in concentrations for a few solutes that exceed the criteria under existing conditions, for all of the 28 solutes modeled at all of the 26 evaluation locations over the 200-year (Mine Site) to 500-year (Plant Site) model duration. The engineering controls, such as water containment systems and mechanical wastewater treatment, would maintain sulfate concentrations in the Partridge River wild rice beds and would significantly reduce sulfate loadings to the Embarrass River wild rice beds. The NorthMet Project Proposed Action is also predicted to not result in any significant effects on groundwater or surface water hydrology. Furthermore, the engineering controls provide a higher degree or reliability that the evaluation criteria would continue to be met in the future.

Mercury is another constituent of concern, primarily because many of the lakes and rivers in the area are classified as “impaired waters” by MPCA from elevated mercury content in fish. The NorthMet Project Proposed Action is located within the Lake Superior Basin and would be subject to the Great Lakes Initiative (GLI) mercury discharge standard of 1.3 nanograms per liter (ng/L). The NorthMet ore and waste rock contain trace amounts of mercury, but mass balance modeling and analog data

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from other natural lakes and mine pit lakes in northeastern Minnesota suggest that the mercury concentration in the West Pit Lake, the only surface water discharge at the Mine Site, would stabilize at approximately 0.5 ng/L, below the GLI standard. There would also be mercury in the tailings, although about 92 percent of the mercury in the ore is predicted to remain in the ore concentrate. Research by MDNR has found that taconite tailings serve as a sink for mercury. Further, a small-scale bench study found that mercury also adsorbs to NorthMet tailings. For these reasons, the mercury concentration in seepage from the Tailings Basin is expected to be below the standard.

The BWCAW and Voyageurs National Park are located in a different watershed to the NorthMet Project Proposed Action. They lie 19 miles and 49 miles away from the NorthMet Project Proposed Action, respectively. The SDEIS determined that the NorthMet Project Proposed Action would not directly, indirectly, or cumulatively affect the water quality of these areas.

NorthMet Project Effects on Biological Resources

Direct and indirect effects to wetlands would result from mining operations. The NorthMet Project Proposed Action would directly affect 912.5 acres of wetlands located within the NorthMet Project area, mostly within the Mine Site, as a result of activities such as filling, excavation, and installation of a containment system within the wetland boundary. Direct effects would occur on the following wetland types: coniferous bog, shrub swamp, coniferous swamp, shallow marsh, deep marsh, sedge/wet meadow, hardwood swamp, and open bog.

The overall wetland mitigation strategy for the NorthMet Project Proposed Action is to replace unavoidable wetland effects in-kind where possible and in advance of effects when feasible. Compensatory mitigation is required for the 912.5 acres of wetlands that would be directly affected. A combination of off-site and on-site wetland mitigation projects would be implemented to fulfill the requirements for compensatory mitigation. Approximately 101.8 acres of wetlands would be established on-site, most likely during reclamation of the Mine Site.

Off-site wetland compensation of 1,631.4 acres would provide 1,568.0 wetland mitigation credits. In addition, a total of 225.0 acres of upland buffer areas are proposed to be established with native vegetation around the wetland restoration areas. In accordance with USACE guidelines, credit for the upland buffer areas would be at a 4:1 ratio, resulting in an additional 56.3 credits. The total off-site mitigation could provide 1,624.3 wetland mitigation credits. Actual compensatory ratios determined during permitting may vary from these assumptions. The determination of final mitigation credits suitable for USACE, MPCA, and MDNR purposes that would be acceptable for offsetting effects due to the NorthMet Project Proposed Action would be determined by the agencies during wetland permitting.

Indirect wetland effects from the NorthMet Project Proposed Action would result from one of the following six factors: 1) wetland fragmentation, 2) change in wetland hydrology from changes in watershed area, 3) changes in wetland hydrology from groundwater drawdown, 4) water quality changes related to deposition of dust, 5) water quality changes related to ore spillage along the Transportation and Utility Corridor, and 6) changes in water quality related to leakage from stockpiles/mine features and seepage from mine pits. On-going indirect wetland effects would be monitored as required by the Section 401

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Clean Water Act Water Quality Certification tool, the Clean Water Act Section 404 permit, and Wetland Conservation Act approval. It is possible that that monitoring results may identify the need for additional compensation. The monitoring plan would be based on those wetlands that have a high likelihood of indirect effects as a result of groundwater drawdown. Permit conditions would likely include an adaptive management plan to account for any additional effects that may be identified during the annual reporting.

Regarding affects to vegetation, up to 1,741.1 acres of Minnesota Biological Survey Sites of High Biodiversity Significance, 698.2 acres of "imperiled" or "vulnerable" native plant communities, and two acres of "widespread and secure" native plant communities would be directly affected. Reclamation activities could introduce invasive non-native species to the otherwise relatively undisturbed area around the Mine Site, depending on which species are chosen, but preference would be given to the establishment of native plant communities. The Plant Site itself is already heavily disturbed, but the area around the Plant Site could be affected by the introduction of additional invasive non-native species.

There are no federally listed plant species at the NorthMet Project area. There are 11 state-listed plant species, all at the Mine Site; 9 species would be directly affected and 2 would be indirectly affected by the NorthMet Project Proposed Action.

There are no federally or state-listed threatened or endangered fish or macroinvertebrate species known to occur in the NorthMet Project area. The NorthMet Project Proposed Action could affect aquatic physical habitat via changes in streamflow, affect riparian and aquatic connectivity by construction activities within the riparian zone, affect water quality by increasing solute concentrations above Class 2 standards, and as a result of these changes, potentially affect special status species (i.e., federal or state listed threatened and endangered species, Regional Forester Sensitive Species and MDNR Species of Greatest Conservation Need.

The NorthMet Project Proposed Action would reduce water flows in the Partridge and Embarrass rivers' tributary streams within the range of annual natural variability in terms of precipitation. Therefore, effects to flows are not anticipated to result in any measurable impact to available aquatic habitat in any streams downstream of the NorthMet Project area.

Overall, the NorthMet Project Proposed Action is not expected to result in any increased loading and/or exceedances of Class 2 (aquatic life) water quality standards relative to current conditions. Ambient aluminum levels already exceed the Class 2 standard in both the Partridge and Embarrass rivers. In the Partridge River, aluminum concentrations relative to current conditions would not measurably increase. In the Embarrass River, the increase in concentration relative to current conditions would be due to capturing relatively low concentration seepage from the Tailings Basin and increasing the relative contribution of higher concentration ambient groundwater and surface waters.

One federally listed wildlife species, the Canada lynx, may be affected by localized direct decrease and fragmentation of designated critical habitat. The Canada Lynx may also be affected by the increased, but low, potential for incidental take resulting from vehicular collisions due to increased project-related traffic. Restoration of disturbed areas as part of mine closure would eventually create a complex of upland forest, wetlands, and open water at the Mine

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Site, which would likely serve as lynx habitat, although this successional process could take decades. The state-listed bald eagle, which is also protected under federal law (although not a federally listed threatened or endangered species) would not be affected. Four additional state-listed species, which include the gray wolf, the eastern heather vole, the wood turtle, and the yellow rail, may be affected by the NorthMet Project Proposed Action. The state-listed threatened Laurentian tiger beetle would not be affected. Regional Forester Sensitive Species, and MDNR Species of Greatest Conservation Need and other wildlife species, including those considered tribally or culturally significant, may be affected by increased human activity, noise and vibration, rail and vehicle traffic, and decrease of habitat.

NorthMet Project Effects on Cultural and Socioeconomic Resources

The federal lands are a part of the territory ceded by the Chippewa of Lake Superior to the United States in 1854. The Chippewa reserve rights to hunt, fish, and gather on lands in the 1854 Ceded Territory. Harvest levels and other activities are governed by either individual tribal entities (in the case of the Fond du Lac Band) or the 1854 General Codes and subsequent Amendments under the 1854 Treaty Authority (in the case of the Grand Portage and Bois Forte Bands).

The federal Co-lead Agencies identified several historic properties in consultation with the State Historic Preservation Office (SHPO) and the Bands. The federal Co-lead Agencies have consulted with SHPO and the Bands concerning the eligibility of the Sugarbush, *Messabe Widjiu* (or Laurentian Divide, which is regarded as a sacred place to the Bands, possessing cultural significance for the Ojibwe), Vermilion to Beaver Bay Trail, Erie Mining Company Railroad Mine and Plant Track, and Erie Mining Company Concentrator Building. All other cultural resources identified as part of the project were determined to be not eligible for inclusion in the National Register of Historic Places, and therefore will not be affected by the project. The federal Co-lead Agencies, SHPO, and the Bands concur with these eligibility determinations. The federal Co-lead Agencies are currently refining statements of significance and boundaries for these properties.

Preliminary effect determinations have been drafted by the federal Co-lead Agencies for review and comment by the Bands and SHPO. The federal Co-lead Agencies have determined that there will be no effect to the Sugarbush and the Erie Mining Company Railroad Mine and Plant Track. The *Messabe Widjiu*, Vermillion to Beaver Bay Trail, and Erie Mining Company Concentrator Building, however, will be adversely affected by the project. These preliminary determinations will be used to facilitate ongoing consultation with the Bands and SHPO pertaining to the application of adverse effect criteria to these properties. Mitigation measures to resolve adverse effects would be developed after consultation on the effects determinations and consideration of any measures to avoid or minimize adverse effect.

The Arrowhead region of northeastern Minnesota is home to communities that are economically dependent on the natural environment for their existence. Given its location in an historic mining district, many towns and cities have provided in the past and continue to provide workers and services to the local mines. Other communities, closer to the BWCAW and Voyageurs National Park, primarily serve the needs of recreational users (Figure 1).

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The NorthMet Project Proposed Action would create up to 500 direct jobs during peak construction and 360 direct jobs during operations. These direct jobs would generate additional indirect and induced employment, estimated to be 332 additional construction-phase jobs and 631 additional operations-phase jobs. While some skilled workers would be involved only temporarily and would possibly relocate from outside the region, the majority of the NorthMet Project Proposed Action-related jobs are expected to be filled by those currently residing in the Arrowhead region.

Federal, state, and local taxes would total an estimated $16 million annually. During operations, there would be approximately $231 million per year in direct value added through wages and rents and $332 million per year in direct output related to the value of the extracted minerals. As with employment, these direct economic contributions would create indirect and induced contributions estimated at $99 million in value added and $182 million in output.

Other Environmental Consequences of the NorthMet Project

In addition to the effects discussed above, the NorthMet Project Proposed Action would also affect other resources to a lesser degree. For instance, although the NorthMet Project would not be subject to a New Source Review, it would contribute criteria air pollutants during construction, mining, and processing activities below applicable Clean Air Act thresholds. Additionally, the NorthMet Project Proposed Action would not exceed any haze thresholds affecting Class I areas, such as the BWCAW or Voyageurs National Park. The Proposed Action would cause noise, affecting some sensitive receptors. Nearby residences or other permanent sensitive receptors would not be affected and some wildlife may avoid the area at times.

Environmental Consequences of the Land Exchange

The Land Exchange parcels are largely undisturbed tracts that would be managed under the Forest Plan, which would allow for some timber harvesting under varying rotation periods. For the most part, however, the acquired lands would be left undeveloped and would be open for public use and enjoyment.

The surface estate of the federal lands acquired by PolyMet would largely be used for mining, and would eventually be restored in accordance with the NorthMet Project Reclamation Plan. No legal public access exists to the federal lands, so any current public use and exercise of usufructory rights require approval of adjacent landowners.Cumulative Effects

Cumulative Effects

In accordance with NEPA and MEPA, the NorthMet Project SDEIS contains an analysis of the cumulative effects of the project. Cumulative effects are defined by the United States Council on Environmental Quality (CEQ) NEPA regulations as:

> the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other action. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (40 CFR § 1508.7)

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The Minnesota Environmental Quality Board's regulation at *Minnesota Rules*, Chapter 4410.0200, subparts 11 and 11a, mirror the CEQ cumulative effects definition and regulation.

To assess cumulative effects, the Co-lead Agencies identified other past, present, and reasonably foreseeable future projects and activities in the region, which may, when combined with those of the NorthMet Project Proposed Action, trigger effects that are larger than their sum. Given the geographic and temporal scale of effects, each component of the NorthMet Project Proposed Action was analyzed. For example, construction and mining operations would require stripping and excavation of the surface. These activities require heavy equipment and explosives, which would emit air pollutants and noise. The cumulative effects assessment focused on how air emissions travel and may interact with other sources. Air emissions can travel many miles before they are not detectable. Hence, the analysis includes the emissions from other projects and activities well beyond the boundaries of the NorthMet Project area. Noise effects from the NorthMet Project activities, on the other hand, would dissipate much closer to their source and not interact with other activities elsewhere in the area. For an effect to be considered cumulative it must overlap in time or space with another effect to produce a larger, synergistic effect.

The SDEIS identified few cumulative effects from the NorthMet Project Proposed Action and none that exceed their respective evaluation criteria. These resources included water quality and hydrography (use), air quality, wetlands, and vegetation. No Endangered, Threatened, or Special Concern plant or animal species would be cumulatively affected. While the NorthMet Project Proposed Action could affect other resources, notably wildlife, aquatics, socioeconomics, and cultural resources, it was determined that it would not constitute cumulative effects because the impacts would not be measurable, or that legal protections and mitigation measures would reduce their magnitude to negligible levels.

ALTERNATIVES

Both federal and state law require agencies to consider alternatives as part of their respective responsibilities for an EIS. In addition to the Proposed Action, alternatives allow for the consideration of other alternative means to achieve the project Purpose and Need that could have improved environmental and/or socioeconomic benefits. Alternatives offer decision makers and the public options to the proposal and include a No Action Alternative that considers the effects that would occur if the project is not approved.

Alternatives were identified and screened in accordance with the requirements of NEPA (40 Code of Federal Regulations 1505.1(e)) and/or Minnesota Environmental Quality Board Rules for MEPA (Minnesota Statutes, sections 116D.04 and 116D.045, and *Minnesota Rules*, parts 4410.0200–4410.7500) to determine whether they met prescribed criteria to warrant further consideration in the SDEIS. Screening criteria were developed to account for technical and economic feasibility and consistency with the project's Purpose and Need. The alternatives that satisfied the screening criteria were evaluated in detail as part of the SDEIS. A number of other alternatives were screened throughout the NEPA/MEPA process and have either been incorporated into the Proposed Action by

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PolyMet or have been eliminated from detailed analysis because they did not meet the screening criteria. Incorporation of prior alternatives into the NorthMet Proposed Action included enhanced waste management at the Mine Site, where but the most reactive waste would now be ultimately backfilled and covered with water in the East Pit, and enhanced engineering design to capture and treat affected water from the Mine Site and Tailings Basin.

Alternatives considered but eliminated included alternative wet and dry closure options for the Tailings Basin; backfilling the West Pit with Category 1 waste rock;, and underground mining.

Two alternatives to the combined Proposed Action are analyzed in detail in the SDEIS:

- Combined Alternative B, which would involve the NorthMet Project Proposed Action and a smaller Land Exchange.
- No Action Alternative, under which the NorthMet Project and Land Exchange would not occur.

Combined Alternative B

Combined Alternative B would involve the NorthMet Project Proposed Action as described above, and a land exchange involving a smaller federal parcel (Figure 10). Compared to the Land Exchange Proposed Action, Land Exchange Alternative B would convey fewer federal lands, approximately 4,901 acres, for fewer acres of non-federal land, approximately 4,652 acres contained within a single tract.

No Action Alternative

Under the No Action alternative, the NorthMet Project would not be approved and no land exchange would take place. The federal government would not exchange lands to PolyMet, and the USFS would continue to manage these lands it as has in accordance with the Forest Plan and would not acquire private lands in exchange for its property at the Mine Site.

At the Mine Site, PolyMet would be required under exploration approvals to reclaim surface disturbance associated with exploratory and development drilling activities. No further upgrades or new segments would be constructed along the existing power transmission line, railroad, and Dunka Road, which would continue to be used by their private owners. At the former LTVSMC Processing Plant, the land owner, Cliffs Erie would be required to complete closure and reclamation activities required under an existing MDNR- and MPCA-approved reclamation program.

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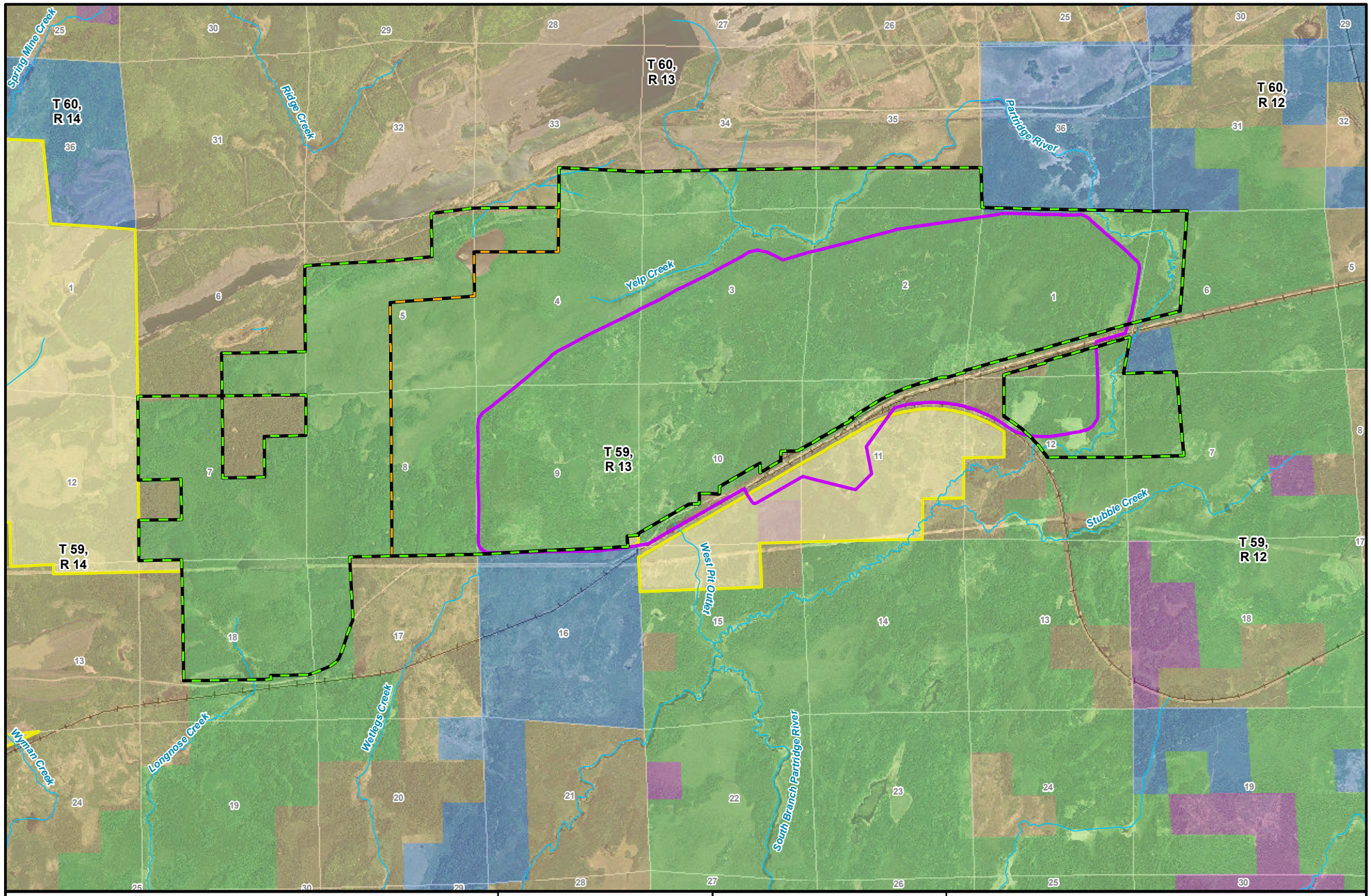

Federal Lands
Alternative B
Mine Site
Stream/River
Section Label
National Forest Land
County Land
State of Minnesota Land
Other Land
PolyMet Owned/Leased Area

US Army Corps of Engineers
St. Paul District

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Figure 10
Land Exchange Alternative B
NorthMet Mining Project and Land Exchange PSDEIS
Minnesota

DRAFT SUBJECT TO REVISION

April 2013

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Comparison of Effects by Alternative

Table 1 provides a comparison of the effects to resources from the NorthMet Project Combined Proposed Action (NorthMet Project Proposed Action and Land Exchange Proposed Action), Combined Alternative B, and the No Action Alternatives. It is intended to be a brief description of the major effects under the alternatives and not an exhaustive list or in-depth analysis. Chapters 5 and 6 of the SDEIS provide detailed explanations of the predicted direct, indirect, and cumulative effects under these alternatives.

In comparison to the combined Proposed Action, the combined Alternative B (NorthMet Project Proposed Action and Land Exchange Alternative B) would have the same direct impacts from the NorthMet Project Proposed Action, but would convey fewer lands through the land exchange resulting in smaller net gains in environmental resources.

The No Action Alternative would not directly affect the existing environment and management of these lands would continue in accordance with their current conditions. Compared to the combined Proposed Action and combined Alternative B, the No Action Alternative would likely result in active but slower and potentially less comprehensive management of water from the existing LTVSMC Tailings Basin. There would be no other measurable effects on other resources compared to their existing conditions.

The CEQ regulations require that the federal agencies identify a Preferred Alternative in the DEIS, if one exists. At this time, neither federal Co-lead Agency has chosen a preferred alternative. There is no similar requirement for the MDNR.

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Table 1: Comparison of Effects by Alternative

Resource	Combined Proposed Action	Combined Alternative B	No Action Alternative
Land Use	• No effects on land use that would require changes in ordinances or comprehensive forest plans • Decrease in federal land within the NorthMet Project would reduce 1854 Ceded Territory at the NorthMet Project area, but would be replaced with equal acreage through land exchange	• Mostly similar effects as Combined Proposed Action with fewer federal acres removed from the 1854 Ceded Territory at Mine Site from the smaller land exchange	• No effect
Water Resources	• Mercury: Discharge 0.5 ng/L (Great Lakes Initiative discharge standard = 1.3 ng/L) • Sulfate: Discharge below MPCA wild rice standard • Other parameters • 99.9% water discharge would be treated to below standards • Water use: Water would be taken from Colby Lake to augment flows to streams and wetlands outside of the Tailings Basin containment system	• Same as Combined Proposed Action	• Continuation of sulfate discharge from former LTVSMC site (subject to Consent Decree) • Continuation of elevated sulfate levels from existing discharges • Seepage water quality from the LTVSMC tailings basin would be expected to improve over time as a result of the Consent Decree and natural attenuation of contaminants

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Resource	Combined Proposed Action	Combined Alternative B	No Action Alternative
Wetlands (includes floodplains)	• 912.5 acres: Direct loss of wetlands at NorthMet Project area • 7,228.1 acres: Indirect effects on wetlands at NorthMet Project • 1,629.4 acres of compensatory off-site wetlands • 511.1 acres: Net gain of federal administered wetlands (acquired land exchange tracts plus off-site mitigation minus federal lands transferred at NorthMet Project) • 1,401.0 acres: Direct loss of floodplains (through land exchange)	• Same direct and indirect effects of on- and off-site mitigation as Combined Proposed Action • 74.0 acres: Gain of wetlands from fewer lands acquired through land exchange • 1,036.7 acres: Loss of floodplains from fewer acres transferred out of federal ownership at NorthMet Project	• No change in wetland or floodplain acreage
Vegetation (includes habitat and Special Status Species)	• 4,016.3 acres: Loss of vegetation • 579.6 acres: Net gain of vegetation through added federally-administered wetlands through compensatory mitigation	• Same direct loss of vegetation as Combined Proposed Action • 173.6 acres: Net gain of vegetation through added federally-administered wetlands through compensatory mitigation	• No effect to vegetation

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Resource	Combined Proposed Action	Combined Alternative B	No Action Alternative
Wildlife (includes Special Status Species)	• 4,016.3 acres: Loss of wildlife habitat • 579.6 acres: Net gain of wetland habitat (see Vegetation above) • Localized population decrease and fragmentation of critical habitat to the Canada lynx • Low potential for incidental take resulting from vehicular collisions due to increased NorthMet Project Proposed Action-related traffic	• Same as Combined Proposed Action • 173.6 acres: Net gain of vegetation through added federally-administered wetlands through compensatory mitigation	• No effect on wildlife
Aquatic Species	• Decrease in mercury loading (varies by modeled location)	• Same as Combined Proposed Action	• Mercury loading at current levels

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Resource	Combined Proposed Action	Combined Alternative B	No Action Alternative
Air Quality (includes GHGs and Global Climate Change)	• Increased emissions of criteria air pollutants, but below NAAQS standards • 77,379 tpy emissions of GHGs • Amphibole Mineral Fibers: Below USEPA PSD standards through use of BACT-like design • The NorthMet Project does not affect Class I visibility or regional haze	• Same as Combined Proposed Action	• Continued air (fugitive dust) effects at LTVSMC site until remediation occurs under Consent Decree
Noise and Vibration	• Added noise emissions and vibration; however, effects on nearest receptors would be below applicable standards	• Same as Combined Proposed Action	• No effects

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Resource	Combined Proposed Action	Combined Alternative B	No Action Alternative
Cultural Resources	• Adverse effects on *Messabe Widjiu* (Laurentian Divide) • Effects, but no adverse effects, on Sugarbush • Adverse effects on Indian Trail from Lake Vermilion to Beaver Bay Corridor • Adverse effects on Erie Mining Company Concentrator Building • Effects, but no adverse effects, on Erie Mining Company Railroad Mine and Plant Track • Potential to affect 1854 Treaty resources, but unknown	• Same as Combined Proposed Action	• No effects

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Resource	Combined Proposed Action	Combined Alternative B	No Action Alternative
Socioeconomics (includes Environmental Justice)	• Up to 500 new direct jobs (maximum during construction), plus additional indirect and induced jobs • Millions of dollars revenue for State of Minnesota and federal taxes • Environmental Justice (Native American populations) affected by changes in subsistence uses and potential increased living costs	• Same as Combined Proposed Action	• No effects
Recreation and Visual Resources	• Net gain of recreational land on acquired tracts through land exchange • Visual effects would occur, but would not exceed USFS standards	• Fewer federal lands disposed at NorthMet Project Mine Site • Remaining federal lands at Mine site would not have public access • Fewer acres acquired through land exchange • Same visual resources effects as Combined Proposed Action	• No effects

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Resource	Combined Proposed Action	Combined Alternative B	No Action Alternative
Wilderness and Special Designation Areas	• No effects on Wilderness or Special Designation Areas • The air quality of the BWCAW is unaffected by the project	• Same as Combined Proposed Action	• No effects
Hazardous Materials	• Potential effects from spills and use of explosives during operations	• Same as Combined Proposed Action	• No effects
Geotechnical Stability	• Waste rock stockpiles, Tailings Basin, and Hydrometallurgical Residue Facility would be constructed in accordance with applicable State of Minnesota standards • Monitoring and adaptive management would maintain geotechnical stability	• Same as Combined Proposed Action	• No effects

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NEXT STEPS

SDEIS Public Review and FEIS

The SDEIS will be issued for public comment for <Note to Co-leads: insert duration of the public comment period> days and public meetings will be held in < Note to Co-leads: insert locations of public meetings> to solicit additional comments. Notices will be published in newspapers of general circulation in the area of the meeting and on the NorthMet Project EIS Website at: http://www.dnr.state.mn.us/input/environmentalreview/polymet/index.html at least 15 days prior to the meetings.

The Co-lead Agencies will review these comments, continue to coordinate and consult with the Cooperating Agencies, and issue a FEIS for public review and comment.

Agency Use of the Final EIS in Decision Making

Ultimately, the USACE will use the FEIS to base its Record of Decision whether to issue a Section 404 Wetland Permit. Similarly, the USFS will use the FEIS to base its Record of Decision for the Land Exchange. MDNR will determine if the FEIS sufficiently provides the necessary analysis for State and local agencies to issue their respective permits and actions.

Permits and Approvals

PolyMet must obtain the required federal, state, and local permits and approvals summarized below (Table 2).

State law requires that PolyMet provide financial assurance before a Permit to Mine can be granted. Financial assurance instruments, such as bonds or trust funds managed by the State, would pay the estimated cost of reclamation, should the mine be required to close for any reason at any time.

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Table 2: Key Government Permits

Agency	Permit/Approval	Reason Permit or Action is (or May be) Needed
Federal		
USACE	Section 404 Individual Permit	For affected wetlands within the jurisdiction of the USACE under the Clean Water Act, 40 CFR Part 230: Section 404(b)(1)
	Section 106 Consultation (Minnesota Historic Preservation Office)	Necessary due to the NorthMet Project and Land Exchange being a federal undertaking, 36 CFR Part 800
USFWS	Section 7 Endangered Species Act (ESA) Consultation	Necessary due to the NorthMet Project and Land Exchange being a federal undertaking, 50 CFR 402
USFS	Land Exchange	If there will be surface disturbance on federal land holdings
State		
MDNR	Permit to Mine	Required for all nonferrous metallic mining operations, *Minnesota Rules,* chapter 6132
	Endangered Species Taking Permit (if required)	If there are state-listed species that may be taken by the NorthMet Project, *Minnesota Rules,* parts 6212.1800-6212.2300 and 6134
	Water Appropriations Permit for plant make-up water	For withdrawal of water from Colby Lake for plant make-up water; For mine dewatering
	Dam Safety Permit	For the Tailing Basin, Hydrometallurgical Residue Facility, and potentially the water retention dikes at the Mine Site (e.g., water treatment plant pond dikes), *Minnesota Rules,* parts 6115.0300-6115.0520
	Permit for Work in Public Waters	For possible modifications and diversions of local streams in constructing the West Pit outfall
	Wetland Replacement Plan approval under WCA	For affected wetlands within the scope of the WCA or that constitute "public wetlands"
	Burning Permit (if required)	If vegetative material would need to be burned on-site during times with no snow cover
MPCA	Section 401 Water Quality Certification/Waiver	State permit required in conjunction with the USACE Section 404 Permit Application

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Agency	Permit/Approval	Reason Permit or Action is (or May be) Needed
	National Pollutant Discharge Elimination System and State Disposal System (NPDES/SDS) Permits	For construction and industrial activity that would disturb one acre or more of land, the management of construction and industrial stormwater and the discharge to surface or groundwater
	Solid Waste Permit	For construction debris
	Air Emissions Permit	For emissions of regulated air pollutants
	Waste Tire Storage Permit	For storage of waste tires generated from NorthMet Project-related vehicles (if required)
	General Storage Tank Permit	For multiple NorthMet Project above-ground storage tanks (ASTs)
MDH	Radioactive Material Registration	For measuring instruments
	Permit for Non-Community Public Water Supply System and a Wellhead Protection Plan (if proposed)	Existing Plant Site potable water treatment plant to be refurbished
	Permit for Public On-site Sewage Disposal System	For sewage waste generated during construction and operation that would be disposed on-site
Local		
City of Hoyt Lakes	Zoning Permit	To acknowledge NorthMet Project is an allowable use within the zoned Mining District
City of Babbitt	Building Permit	New construction would occur on areas of the NorthMet Project within the incorporated limits of the City of Babbitt
St. Louis County	Zoning Permit	To acknowledge NorthMet Project is an allowable use within the zoned district

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