



E N G I N E E R S & A R C H I T E C T S

**CN DULUTH DOCK 6
STABILIZATION AND MATERIALS
STOCKPILE EXPANSION PROJECT**
Duluth, Minnesota

**ENVIRONMENTAL ASSESSMENT WORKSHEET
MARCH 2013**

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TABLE OF CONTENTS

1.0 EAW Document

Item 1. Project Title 1

Item 2. Proposer 1

Item 3. RGU..... 1

Item 4. Reasons for EAW preparation 1

Item 5. Project Location 1

Item 6. Description 2-5

Item 7. Project Magnitude Data 6

Item 8. Permits and Approvals Required..... 6

Item 9. Land Use..... 6-7

Item 10. Cover Types 7

Item 11. Fish, Wildlife, and Ecologically Sensitive Resources 8-10

Item 12. Physical Impacts on Water Resources..... 10-15

Item 13. Water Use..... 15-16

Item 14. Water-related land use management districts 16

Item 15. Water Surface Use 16-17

Item 16. Erosion and Sedimentation..... 17-19

Item 17. Water Quality: Surface Water Runoff 20

Item 18. Water Quality: Wastewaters 21

Item 19. Geologic Hazards and Soil Conditions 21

Item 20. Solid Waste, Hazardous Waste, Storage Tanks..... 22

Item 21. Traffic..... 22-23

Item 22. Vehicle-Related Air Emissions..... 23

Item 23. Stationary Source Air Emissions..... 23-25

Item 24. Odors, Noise, and Dust..... 25

Item 25. Nearby Resources 25-28

Item 26. Visual Impacts 28

Item 27. Compatibility with Plans and Land Use Regulations 28-29

Item 28. Infrastructure and Public Services..... 29

Item 29. Cumulative Impacts 29

Item 30. Other Potential Environmental Impacts..... 29

Item 31. Summary of Issues..... 30

Item 32. RGU Certifications..... 30

2.0 EXHIBITS

1.0 County Map

2.0 USGS Topographic Map

3.0 Land Use Map

4.0 Existing Conditions

5.0 Bathymetric Mapping

6.0 Site Plan

7.0 Erosion Control Plan

8.0 Grading Plan

9.0 Stormwater Treatment Cell

3.0 ATTACHMENTS

1.0 Minnesota DNR Natural Heritage Review, ERDB 20130187

2.0 Archaeological/Historical Description of Nearby Resources for
Environmental Assessment Worksheet on the CN Dock 6 Stabilization
and Materials Stockpile Expansion Project, February 2013

3.0 Letters from Regulatory Agencies and Public Comments

4.0 Sediment Sample Table and Locations

ENVIRONMENTAL ASSESSMENT WORKSHEET

Note to preparers: This form and EAW Guidelines are available at the Environmental Quality Board's website at: <http://www.eqb.state.mn.us/EnvRevGuidanceDocuments.htm>.

The Environmental Assessment Worksheet provides information about a project that may have the potential for significant environmental effects. The EAW is prepared by the Responsible Governmental Unit or its agents to determine whether an Environmental Impact Statement should be prepared. The project proposer must supply any reasonably accessible data for — but should not complete — the final worksheet. The complete question as well as the answer must be included if the EAW is prepared electronically.

Note to reviewers: Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the *EQB Monitor*. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation and the need for an EIS.

1. **Project title:** CN Duluth Dock 6 Stabilization and Materials Stockpile Expansion

2. **Proposer**

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3. **RGU**

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4. **Reason for EAW preparation** (check one)

EIS scoping *Mandatory EAW* *Citizen petition* *RGU discretion*
 Proposer volunteered

*If EAW or EIS is mandatory give EQB rule category subpart number: 27
and subpart name: Wetlands and public waters*

5. **Project location** St. Louis County, City of Duluth, Minnesota

SE ¼ Section 4 Township 49 N Range 14 W
SW ¼ Section 5 Township 49 N Range 14 W
NE ¼ Section 8 Township 49 N Range 14 W
NW ¼ Section 9 Township 49 N Range 14 W

GPS Coordinates N 46° 45' 04" W 92° 08' 02"
Tax Parcel Number 010-3190-04880

Attach each of the following to the EAW:

- *County map showing the general location of the project; (See Exhibit 1.0)*
- *U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable); (See Exhibit 2.0)*
- *Site plan showing all significant project and natural features. (See Exhibit 4.0)*

6. Description

a. *Provide a project summary of 50 words or less to be published in the EQB Monitor.*

The proposed project includes filling 24.3 acres of St. Louis Bay with 288,400 cubic yards of fill to provide additional space for materials storage; stormwater collection and management for the facility; and stabilization of Dock 6 with sheetpile, all of which will increase the efficiency and capacity of the facility.

b. *Give a complete description of the proposed project and related new construction. Attach additional sheets as necessary. Emphasize construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes. Include modifications to existing equipment or industrial processes and significant demolition, removal or remodeling of existing structures. Indicate the timing and duration of construction activities.*

The CN Railway's Duluth Docks and Lakehead Storage Facility are located in Duluth, Minnesota along the St. Louis Bay and is considered part of the Duluth Harbor. The Duluth Docks and Lakehead Storage facility handles various products, which currently include taconite pellets and limestone products and allows for rail car loading/unloading, ship loading/unloading, and temporary materials stockpiling. The Duluth docks and Lakehead Storage Facility lie along a USACE maintained channel. CN has direct rail access to this facility and the property is adjacent to BNSF property and rail lines. The site includes Dock 6 which is used for rail car dumping and vessel loading, a conveyor network, rail spurs, and acreage for stockpile space. The dock itself was built in the early 1900's and stockpile space for the facility was created by filling of waters, conducted primarily in the 1960's. The easterly side of the filled area was part of a coal loading dock area that projected into the harbor. Fill was originally placed within the harbor as well, although not entirely to the surface, leaving the proposed fill area for stockpile space with a water depth of 2 - 4 feet.

The annual closure of the Soo Locks, from approximately January 15 through March 25 (stockpile season) each year requires temporary storage of both in-bound (received via lake going vessels and transloaded to rail) and out-bound (received by rail and transloaded to lake going vessels) products. Limestone, an inbound product, must be stockpiled during shipping season (mid-March to mid-January) to allow sufficient inventory to accumulate for production of pellets at the mine sites during stockpile season. Limestone requires different grades of product to be segregated into piles to allow individual customers to be supplied with a clean source of raw material. Taconite pellets produced must be stockpiled temporarily during stockpiling season, when no lake going vessels can transport product to the end user. Pellets must also be segregated into their own piles to avoid product contamination. Taconite producing facilities have constraints on stockpile capacity at their sites due to both equipment and environmental permit limitations.

The CN Railway proposes to make improvements to their facility that includes stabilizing the existing dock and expanding the materials stockpile area to accommodate material handling requirements. The proposed type of work includes work in both the deep water slip at Dock 6, and expansion of fill lakeward to the south and west of the existing stockpile area to allow for additional raw material and product storage. See the project location map and project site plan. The existing stockpile area was previously filled under an existing permit number P.A.65-741 dated July, 1965. The project will include placement of fill toward the existing harbor line to the south and west to the existing deep water channel. The existing earthen berm material will be placed first and is anticipated that clean borrow will be needed to be imported to the site to supplement the total fill needed. The project impact will be filling 24.3 acres of shallow

aquatic habitat with an approximate volume of fill required to complete the project is 288,400 cubic yards. The work to be completed has been divided into two workable phases as follows: Phase I, Dock Stabilization & Stormwater Retention/Partial Fill Lakeward from Existing Stockpile Area; Phase II, Completion of South Wall. The description of each phase is as follows:

Phase I - Dock Stabilization & Storm Water Retention Area/ Partial Fill Lakeward from Existing Stockpile Area

Work in the deep water slip of Dock 6 will include installation of sheet pile and backfill to stabilize Dock 6. The dock stabilization portion will include filling approximately 0.3 acres of the deep water slip to provide structural stability for Dock 6 and an extended fender. The area to be filled behind the sheet pile wall ranges in depth from 12 to 36 feet. The proposed stormwater system includes capturing flows from the site and directing them into a stormwater pump vault, with flows then pumped to a proposed stormwater treatment cell on the north side of the property. The stormwater collection and containment area will be designed and constructed to allow stormwater to be treated to meet regulatory permit discharge criteria.

The partial filling lakeward from the existing stockpile area includes grading out an existing earthen berm at the southern extent of the existing land fill area. The area to be filled is approximately 14 acres. Redistribution of the material within the berm by earthmoving equipment from the landward side into the water will be the material placement method. Flotation silt curtains will be installed to prevent sedimentation away from the proposed work area. Grading this area will provide additional materials storage area needed for the facility.

Phase II - Completion of South Wall

This phase includes filling of approximately 10 acres lakeward to increase the size of the available material stockpile area. A retaining structure will be constructed of sheet pile and/or rock to provide a dock face and support for placement of the fill. Fill for the stockpile area is expected to be with materials transferred from harbor channel maintenance dredging and/or from land based sources. Once the final elevation of fill is complete, construction of site amenities can commence with construction of new track, conveyor systems, materials handling equipment, and utilities to serve the expanded facility.

The current facility currently operates under regulatory requirements including surface water, air permits, federal safety regulations, and local regulations. The proposed project will include obtaining permits as necessary and all anticipated processes will be designed and implemented to meet all regulatory requirements. The facility will not impact adjacent facilities and infrastructure. The project is compatible with the existing and adjacent land use and will provide a large economic impact on the region.

Schedule:

The project is anticipated to begin upon issuance of permits. The project goals are to begin the stabilization of Dock 6 in early summer 2013, followed by the expansion of the materials stockpile area. Completion of the project is anticipated by the end of 2014. Completion of the stormwater treatment cell will be completed during Phase I to allow it to be used for temporary construction and permanent stormwater treatment of surface water runoff. Once the filling portion of Phase I is completed, Phase II filling will commence while site amenities related Phase I, such as rail and materials handling equipment, will continue. Once Phase II fill is completed, the final site amenities will be completed.

- c. *Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.*

This facility provides product for the domestic steel producers in the United States, and competes in the international market for providing the raw materials for steelmaking. If product can't be efficiently handled, steelmakers may find alternate sources of raw material. The projects impact will be to provide stable employment for the region, ensure product can be handled efficiently well into the future, and ensure the stability of this important port. The current site does not have the stockpile capacity to provide adequate storage for current requirements and future growth of the industrial users. The proposed project will address limestone handling concerns, allow greater utilization of the capacity of the dock and conveyor network, provide additional materials storage space, provide additional stormwater management, stabilize Dock 6 and continue to provide economic stability to the area. The project will be carried out by CN Railway but will follow all regulatory framework and permits required. The economy of the port and the region will be impacted with the facility being able to compete globally for supplying raw materials for steelmaking. A summary of the project needs and purposes are as follows:

Provide greater utilization of capacity of the dock and conveyors.

The current conveyor belt system for moving materials currently allows the main yard belt to be utilized for one activity at a time, either moving product to the stockpiles or moving product from the stockpiles (reclaiming), resulting in delays to handling of products and final transportation of materials. These delays include, but are not limited to, dumping of trains, loading of vessels, offloading of vessels, which affect the annual through put of the facility. Furthermore, moving the limestone handling from the conveyor network to the proposed stockpile space, in the filled waters, will allow greater efficiency in material handling by allowing, concurrently, limestone to be discharged from vessels and taconite to either be stockpiled or reclaimed for vessel loading. The proposed project will provide the space required to improve the conveyor network and processes to improve efficiency of material handling on the property. The filled area will provide the platform of fill required to install the proposed conveyor network and segregate limestone handling from the taconite handling systems.

Improve limestone handling mechanism.

Limestone is currently handled on the same conveyor system as other materials, which slows the materials handling due to the time it takes to clean the conveyor following contact with limestone. No other materials can be handled on the conveyor network until it is cleaned. This is very difficult to accomplish during the months with below freezing temperatures. The proposed project will include constructing a southerly dock face where ships can self-unload limestone. Sheet pile or a rock berm will be constructed to hold the fill material within the expanded stockpile area. Two rail spurs would be realigned and constructed running parallel to the stockpiles to provide access for front end loaders to load the railcars for transport of limestone via rail to the end user.

Stabilize Dock 6.

The sheet pile wall on the face of Dock 6 is experiencing several modes of structural failure, including toe failure, tie rod failure due to deterioration of the rods, and localized deterioration and loss of section due to water environment within the harbor, and bending of sheet pile. The proposed project will stabilize Dock 6 through construction of a sheet pile wall on the easterly face to retain fill behind the sheeting. Stabilization of the face of Dock 6 will be accomplished

by driving replacement sheeting of sufficient length and installed with appropriate tie-backs to provide the required resistance to the forces exerted by Dock 6. This will allow the utilization of the deep water slip. An extended concrete fender would be designed to allow mobile maintenance equipment to access the face of Dock 6.

Provide stormwater management.

Currently, the handling of stormwater at the CN materials storage facility has been re-evaluated due to concerns regarding the current practice of stormwater management at the site. Currently, stormwater is allowed to pool, infiltrate and evaporate with no stormwater discharge allowed. The pooling of water causes treacherous conditions on the site during times of high precipitation periods and during periods of freezing weather and with no capacity to control discharges. A stormwater treatment system to collect and treat flows prior to discharge will minimize the amount of water pooling on surfaces contributing to the unsuitable conditions and provide management of the discharges. A new stormwater treatment facility is needed to ensure adequate treatment of stormwater into the future, as well as to accommodate any expansions of the site. An area for stormwater management would be constructed on CN property on the north side of Interstate 35. Stormwater will be collected and pumped to the stormwater treatment cell. Backup pumps will be provided in case of pump failure, as well as backup power supply. The design of the stormwater treatment system is underway and will meet regulatory requirements.

Provide additional stockpile space.

Additional stockpile area is required to accommodate existing and potential customers of the CN at the Lakehead storage facility. The existing and projected stockpile demands are listed in Table 1. The existing footprint can accommodate the existing throughput, but the existing site constraints limit the facility from meeting projected demand. A major site constraint includes the large berm that borders the site on the south side at the edge of the water.

Table 1: EXISTING & PROPOSED STORAGE REQUIREMENTS

Product	Existing Storage Capacity (MTons)	Future Storage Capacity (MTons)	Capacity Increase (MTons)
Taconite Pellets	2.287	4.357	2.070
Limestone	0	0.852	0.852

The proposed project will fill approximately 24 acres to expand the materials stockpiling capacity at the site. Filling of waters to create a footprint for a proposed stockpile area will be performed in Phase I by dozing the existing berm lakeward from the existing stockpile area. Fill for Phase II will be through placement of dredged material from the USACE ongoing harbor maintenance dredging program. A sheet pile wall will be constructed to retain the fill material within the expanded stockpile area.

d. Are future stages of this development including development on any other property planned or likely to happen? Yes X No

If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.

e. Is this project a subsequent stage of an earlier project? Yes X No

If yes, briefly describe the past development, timeline and any past environmental review.

7. Project magnitude data

Total project acreage: 129 acres

Number of residential units: unattached 0 attached 0 maximum units per building

Commercial, industrial or institutional building area (gross floor space): 0 total square feet

Indicate areas of specific uses (in square feet):

Office 0

Manufacturing 0

Retail 0

Other industrial 5,619,240 sq.ft.

Warehouse 0

Institutional 0

Light industrial 0

Agricultural 0

Other commercial (specify) 0

Building height 0

If over 2 stories, compare to heights of nearby buildings

8. Permits and approvals required. List all known local, state and federal permits, approvals and financial assistance for the project. Include modifications of any existing permits, governmental review of plans and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure. All of these final decisions are prohibited until all appropriate environmental review has been completed. See Minnesota Rules, Chapter 4410.3100.

<u>Unit of government</u>	<u>Type of application</u>	<u>Status</u>
MDNR/USACE	Environmental Assessment (EAW)	In process
USACE	Section 404 (JPA)	(Applied; File No. 2012-000719-WMS)
MPCA	Section 401 Water Quality Certification	(Applied, File No. 2012-000719-WMS)
MDNR	Minnesota Public Waters Work Permit	(Applied, File No. 2012-000719-WMS)
USACE	Section 10	Applied (July 17, 2012)
City of Duluth	Obstruction to Watercourses	Not yet applied for
City of Duluth	General Flood Plain Special Use Permit	Not yet applied for
City of Duluth	MS4 Statement of Compliance	Not yet submitted
MPCA	NPDES/SDS Construction Stormwater Permit	Not yet applied for (includes SWPPP)
MDNR	Hydraulics and Hydrology Analysis	Need not yet determined

The CN Railway is in the active stage of obtaining permits to begin construction of the proposed project. In July, 2012, a joint permit application was submitted to the US Army Corps of Engineers (USACE) office in Hayward, Wisconsin. The permit application was reviewed, with additional information requested. Additional information was provided to the USACE, and the permit application was put on a 30-day public notice period which ended November 30, 2012. Public comments were received along with concerns expressed from the Minnesota DNR, the MPCA, the EPA, and other concerned entities. The regulatory letters received are attached. The CN Railway has since been refining the scope of the project, identifying mitigation projects, and refining the project alternatives. Further steps required for the Section 401/404 process includes providing additional information regarding project alternatives, specific detail design as requested, and providing a mitigation plan. The CN Railway continues to coordinate with regulatory agencies regarding this process. Other permits to be obtained will consist of construction stormwater permits through the MPCA, obtaining a General Flood Plain Special Use Permit from the City of Duluth, and revision of the existing MPCA Air and NPDES/SDS Industrial Stormwater permits as required to expand the existing facility.

9. Land use. Describe current and recent past land use and development on the site and on adjacent lands. Discuss project compatibility with adjacent and nearby land uses. Indicate whether any potential conflicts involve environmental matters. Identify any potential environmental hazards due to past site uses, such as soil contamination or abandoned storage tanks, or proximity to nearby hazardous liquid or gas pipelines.

The CN Dock facility is considered a Maritime facility as identified in the Duluth Port Land Use Plan. All adjacent land uses are Industrial or Maritime. The project is located in an area which has been utilized for industrial purposes for over 150 years. See Exhibit 3.0 for adjacent and nearby land use delineations. The site includes Dock 6 which is used for rail car dumping and vessel loading, a conveyor network, rail spurs, and acreage for stockpile space. The Duluth Docks and Lakehead Storage facility handles various products, which currently include taconite pellets and limestone products and allows for rail car loading/unloading, ship loading/unloading, and temporary materials stockpiling. The Duluth docks and Lakehead Storage Facility lie along a USACE maintained channel. CN has direct rail access to this facility and the property is adjacent to BNSF property and rail lines.

The dock itself was built in the early 1900's with the land created by filling of waters for stockpile space conducted primarily in the 1960's. The easterly side of the filled area was part of a coal loading dock area that projected into the harbor. Fill was originally placed within the harbor as well, although not entirely to the surface, leaving the proposed stockpile area with a depth of 2-4 feet. Recent work has included temporarily stabilizing Dock 6 by driving vertical steel pile to pin the sheets in place and a whaler system clipped in and tied back to the concrete fender of the dock to temporarily stem the failure of the sheeting. This was considered a temporary improvement with permanent stabilization still required. Also, the West face of Dock 6 was re-sheeted in 2009 to address sheet pile concerns on that face of the dock and start to address the overall stability of Dock 6.

The proposed improvements are consistent with past work and land use for the property. There are no known potential conflicts of the project with adjacent lands.

10. Cover types.

Estimate the acreage of the site with each of the following cover types before and after development:

	Before	After			
<i>Types 1-8 wetlands</i>	24	0	<i>Lawn/landscaping</i>	0	0
<i>Wooded/forest</i>	0	0	<i>Impervious surfaces</i>	3.5	3.5
<i>Brush/Grassland</i>	23	3	<i>Stormwater Pond</i>	0	2.4
<i>Cropland</i>	0	0	<i>Other:</i>		
			Deep Water Slip	10	9.7
			Material Storage Area	52	93
			Dock	6.5	6.8
			Roads/Rail	10	10.6
			TOTAL	129	129

If Before and After totals are not equal, explain why:

The proposed project will fill approximately 24 acres of existing waters, creating an additional 24 acres of materials storage area. The existing brushland on the easterly side of the property will remain to provide a natural buffer to the harbor.

11. Fish, wildlife and ecologically sensitive resources

a. Identify fish and wildlife resources and habitats on or near the site and describe how they would be affected by the project. Describe any measures to be taken to minimize or avoid impacts.

The site is located in the lower portion of the St. Louis River estuary within the Lower St. Louis River Area of Concern (AOC). According to the Lower St. Louis River Habitat Plan, the project area is considered an industrial-influenced bay (i.e., Half Moon Bay) with industrial slips. The bay consists of approximately 24 acres of shallow water ranging between approximately 2 to 4 feet deep with some aquatic vegetation, while the slip consists of approximately 9 ½ acres of deep water up to approximately 27 feet deep. Limited sediment evaluation has indicated the bottom of the bay is covered by sandy sediment with a relatively low occurrence of debris such as wood, rock and metal items. Sediment in the bay has been at least partially characterized by sampling and analysis. Results of the analysis has indicated the sediment is not impacted by hazardous substances or contaminants above MPCA Level 1 or Level 2 criteria for dredge material (i.e., it is suitable for use or reuse on properties with a residential, recreational and/or industrial use category). Results of the sediment analysis are presented in the attached laboratory report.

Although no specific habitat studies have been conducted at the proposed project site, information obtained from the Lower St. Louis River Habitat Plan indicates aquatic vegetation in the shallow bay areas of the lower estuary typically includes, but is not limited to, Canadian Waterweed, Water Celery and filamentous algae. cursory visual evaluation indicates the shallow bay consists of “inland open fresh water wetland” or “inland deep fresh marshes” as classified in the US Fish and Wildlife Service, Circular 39, Wetlands of the United States (i.e., a “Type 5” or “Type 4” wetland, respectively, as included in Appendix B of the EAW Guidelines provided by the Environmental Quality Board at Minnesota Planning). The shallow water, relatively loose substrate, and submerged vegetation in the bay provide a productive habitat for aquatic invertebrates, larval and juvenile fishes, and for all life stages of forage fish species. The bay likely provides spawning, nursery, and foraging habitat for fish species as well as foraging and refuge habitat for waterfowl. Filling the bay in Phase I would result in the loss of approximately 14.3 acres of productive, open water wetland habitat. Filling the bay in Phase II would result in the loss of approximately an additional 10 acres of productive, open water wetland habitat.

The deeper slip would likely have sparse vegetation due to the depth. The slip is part of an active industrial facility and as such, is subject to frequent disturbance from shipping use. The deeper water is likely used by various fish species for foraging and refuge. Its use by waterfowl is limited to foraging at the surface and some refuge from wind and waves. The proposed activity will result in the filling of approximately 0.3 out of a total of approximately 10 acres of deep water habitat. The dredging/maintenance of the remaining slip is consistent with historic use and will not be a loss of deep water habitat.

To minimize the potential for impacts to fish and wildlife, work will be timed to avoid dredging and filling activities during typical fish spawning periods unless the area has been properly cordoned off and/or the work approved by the MDNR. In-water work restrictions will be followed. Measures to minimize impacts will also include the use of best management practices (BMPs) in the design and construction of the proposed improvements. The project will require a NPDES/SDS Construction Stormwater Permit. Implementation of the BMPs will reduce the potential for deleterious sedimentation in potential spawning areas and areas of productive benthic habitat.

To protect against the spread of aquatic invasive species, BMPs will be followed to ensure that all equipment being transported on roads or placed in St. Louis Bay will be free of prohibited and regulated invasive species and unlisted non-native species. BMPs include draining all water from equipment and removing all visible aquatic remnants, drying out equipment prior to use and inspecting equipment for invasive species prior to placing into any waters.

To protect small reptiles and amphibians that are likely to be present next to lakes, watercourses or rock outcrops, the use of erosion control methods that contain open plastic mesh to will be prohibited.

b. Are any state-listed (endangered, threatened or special concern) species, rare plant communities or other sensitive ecological resources on or near the site? Yes No
If yes, describe the resource and how it would be affected by the project. Describe any measures that will be taken to minimize or avoid adverse impacts. Provide the license agreement number (LA-____) and/or Division of Ecological Resources contact number (ERDB 20130187) from which the data were obtained and attach the response letter from the DNR Division of Ecological Resources. Indicate if any additional survey work has been conducted within the site and describe the results.

A request was made to the MDNR Natural Heritage Information System (NHIS) to inquire about the presence of any rare plants, animals, native plant communities and/or other rare features known or suspected to occur in the area. A letter from their office dated February 15, 2013 (i.e., ERDB 20130187) indicated the common tern (*Sterna hirundo*), peregrine falcon (*Falco peregrinus*) and lake sturgeon (*Acipenser fulvescens*) have been documented or known to occur within one mile of the project site. A copy of the letter from the MDNR is attached.

The following summary of habitat preferred and typically utilized by these species was obtained from the MDNR Rare Species Guide (<http://www.dnr.state.mn.us/rsg/index.html>) and other readily accessible sources. The common term typically select isolated, sparsely vegetated islands in large lakes for nesting. Open edges of sandy or gravelly beaches or dredge spoil areas may also be used. Optimal breeding sites are isolated from predators by natural barriers, have a constant, nearby source of food, have stable or falling water levels during the nesting season and have topography that allows nesting terns to see and hear their neighbors. They do not typically nest along areas prone to seasonal flooding or high water level fluctuations.

Peregrine falcons prefer to nest in historic eyries on cliffs along Lake Superior and the Mississippi River in southeastern Minnesota. However, in urban settings, such as that which is present in the immediate vicinity of the project site, peregrine falcons commonly use artificial structures as nesting sites such as buildings and bridges. Peregrine falcons specialize in direct aerial pursuit of avian prey and prefer open, non-forested areas for hunting.

Lake sturgeon prefer moderately clear, large rivers and lakes. They are most often found over firm sand, gravel or rubble bottoms. Lake sturgeon are generally bottom dwelling (i.e., benthic) and occur in large rivers and shallow areas of large lakes where small benthic organisms that serve as food are abundant. They are most often associated with deep run and pool habitats of rivers (i.e., greater than five feet deep) and generally avoid aquatic vegetation. However, they have been known to occur in relatively shallow water along lake edges to forage for food, particularly crayfish, insect larvae and other invertebrates, snails, leeches, small mussels and small fish. Deep water habitats serve as important overwintering areas for lake sturgeon.

At this time, no specific studies have been conducted to confirm the presence or absence these species or critical habitat on the site. Based on visual evaluation of conditions present at the site and typically preferred by these species, it does not appear the common tern or peregrine falcon would be directly impacted by the project, though it is possible one or more specimens of either species may be present in the area during work. Indirect impacts to the common tern would include the loss of habitat conducive to the production of small fish typically hunted by the tern. Indirect impacts to the falcon may include a decrease in the presence of avian prey species that may be attracted to the food produced in the shallow water areas (e.g., common terns).

It is possible that lake sturgeon are present and utilize the shallow bay for foraging and the slip for foraging and deep water refuge. However, habitat within these areas is not typically preferred or utilized for spawning or foraging and direct impact to individual specimens is not likely. Indirect impacts include the loss of habitat conducive to the production of food for the sturgeon. However, the shallow water habitat in the bay is not a preferred foraging area and indirect impacts are expected to be minimal.

Measures to avoid direct impacts to these species will include a hard-target site evaluation to confirm the absence of nesting tern or peregrine falcon on the site before construction activities begin and timing of proposed activities to avoid potential impacts to spawning sturgeon (and other fish species). Measures to minimize indirect impacts will include mitigation as part of a MDNR/USACE-approved mitigation plan (to be submitted).

12. **Physical impacts on water resources.** *Will the project involve the physical or hydrologic alteration — dredging, filling, stream diversion, outfall structure, diking, and impoundment of any surface waters such as a lake, pond, wetland, stream or drainage ditch? Yes No*
*If yes, identify water resource affected and give the DNR Public Waters Inventory number(s) if the water resources affected are on the PWI: **Lake Superior, 16-1P***
Describe alternatives considered and proposed mitigation measures to minimize impacts.

The project will involve the dredging of zero acres of deep water habitat (slip), the filling of approximately 0.3 acres of deep water habitat (slip) and the filling of approximately 24 acres of open fresh water wetlands (Half Moon Bay). These areas are considered “public waters” as defined in Minnesota Statutes, Section 103G.005, subd.15 and are identified on the MDNR Public Waters Inventory map as protected waters (i.e., Lake Superior Protected Water 16-1P).

The filling of approximately 0.3 acres of deep water habitat will include the installation of sheet pile along and placement of fill (approximately 2,200 cubic yards below the OHWM and 10,000 cubic yards above the OHWM) in the deep water area at the north end of the existing slip. Fill will be raised to a point several feet above the existing water surface to match existing grades adjoining the slip.

The filling of approximately 24 acres of open fresh water wetlands will take place in two phases (14 acres in Phase 1 and 10 acres in Phase 2). Each phase will include the installation of a retaining wall along the outer limits of proposed fill areas and placement of several feet of fill (227,000 cubic yards) in the bay. Fill will be raised to match existing grades of historically built up areas adjacent to the bay.

Work will be timed to avoid activities that require work in deep water and wetlands areas during the typical fish spawning season (to be determined by the MDNR). Fill will begin by installing silt curtain and cordoning off specific fill areas with sheet piling. Silt curtain and

sheet piling will be installed from watercraft and work barges staged in the open water areas. Once the sheet piling has been installed, fill will be imported to the site and placed in the fill areas by combination of barge and trucking. Material used to fill the open water areas will consist of clean sand obtained from maintenance dredging in other parts of the St. Louis Bay and Lake Superior and other soil (clean sand and/or clay) obtained from inland borrow areas. All fill material will be appropriately characterized for the presence of contaminants. No material will be placed in the fill areas if the concentration of contaminants exceeds MPCA Level 2 criteria for dredge material (i.e., it is suitable for use or reuse on industrial properties).

Measures taken to prevent erosion and sedimentation will include the use of BMPs in the design and construction of the proposed improvements. The project will require a NPDES/SDS Construction Stormwater Permit. The permit will include provisions for actions to be taken during construction to minimize impacts to waters of the United States. These measures will include the installation of silt curtains around proposed work areas and staging of proposed activities to reduce opportunities for the inadvertent release of sediment into the harbor. Proposed fill areas will be cordoned off with sheet pile before fill is placed. Silt fence and soil erosion control fabric will be used at the limits of filling activities where appropriate to prevent soil from being released into the water. If dust blowing from the site into the water becomes an issue, disturbed work areas will be wetted or otherwise temporarily covered with erosion fabric or relatively dust-free material to reduce the potential for sediment blowing into the water. During construction, stormwater will not be directly discharged into the open water areas beyond the fill limits and/or silt curtain. When project activities are complete and fill/work areas stabilized to prevent soil/sediment movement, silt curtain and other temporary erosion/turbidity controls will be removed. Permanent practices to minimize impacts will include stormwater detention/retention and treatment basins and on-going monitoring and maintenance in accordance with the facility's NPDES operating permit.

The alternatives analysis for the project will identify the Least Environmentally Damaging Practicable Alternative by first identifying the alternatives that avoid impact, followed by alternatives that minimize impact to the greatest extent practicable. Cost will be considered; however, an amalgamation of other factors such as time constraints, construction limitations, environmental impact, access concerns, site availability, and compatibility with the existing infrastructure will be considered in determining which alternative is the most feasible and prudent in light of all limiting factors. Justification will be provided for the alternatives that meet project needs. The alternatives considered are described as follows:

Option 1. Do nothing. To do nothing at the facility would have the impact of the facility having to curtail shipping and potential closure, due to the developing structural deficiencies with Dock 6. A temporary repair to maintain the use of Dock 6 was completed in 2000 which was considered a 5-year repair. The repair fixed pinning of the sheets and failure of the tie-back system at the top of the sheeting. The repair did not address the deterioration of the sheets which allow fill to escape from the interior of the dock. The fill on the interior of the dock provides lateral support to the forest of piles that provide vertical support. A permanent repair to the dock is needed for continued operations. The facility could not serve as a taconite facility without the use of the dock. The estimated throughput of materials is expected to grow. The current footprint will not accommodate the growth potential. If materials can't be stockpiled, customers will find an alternate port. Customers would have to utilize other facilities which may not have the capacity to meet demands of the higher throughput brought on by eliminating an iron ore port facility. This scenario would have a significant impact on the local population and municipality through loss of quality jobs and tax base. This alternative does not meet the needs of the project.

Option 2. Utilize temporary stockpiling at mine site. Stockpiling materials at the mine site is an alternative to be considered. Temporarily storing materials at the mine site is an inefficient method of materials handling in the industry. In addition, product stored at the mine site would need to be delivered to the dock for vessel loading. Vessels hold 30,000 to 65,000 tons of product, which equates to 3 trains on the low end to 6 ½ trains for larger vessels. Delivery of this number of trains in a ‘just in time’ scenario for one vessel is prohibitive due to track capacities and the logistics of dumping this number of trains to meet vessel schedules. Also, the mine sites are limited in the amount of temporarily stored product on site. Temporarily storing materials at the mine site would not address the limestone handling concerns as discussed in the project purpose. Therefore, this alternative was eliminated from consideration.

Option 3. Change configuration of existing stockpile site. No alternative configurations of the site will provide the space required to meet the facilities anticipated throughput. Elevating the piles to allow greater storage capability on the existing footprint has been considered. Increasing the height of the stockpiles will create a larger footprint of each pile which is not compatible with existing equipment and space constraints or meet the stockpile quantity demand. A fraction of the estimated demand would be met by this option. The existing handling equipment was designed to produce the maximum height pile currently used, increasing the boom length to produce a taller pile, would require redesign and strengthening of the entire stacker. Another option to increase pile heights would be to elevate the stacker, allowing higher pile heights. The geometry of the existing berm is designed to coincide with the existing stacker, changing this geometry would necessitate significant cost and downtime to affect the changes. The downtime required to perform any of these modifications is prohibitive to the material handling operations of this facility and present an estimated period of months to effect these changes. This option also does not address the limestone handling concerns as discussed in the project needs. Due to the existing site constraints, prohibitive cost of redesign and modifications to equipment and the downtime that modification would require, this alternative was eliminated from further consideration.

Option 4. Utilize Dock 5 to handle materials loading, unloading. Alternative layouts considered for the project included refurbishing Dock 5 to be utilized as a limestone handling facility with surge storage in an area adjacent to Dock 5. This option would have minimized the size of the new materials storage area needed for limestone but not for taconite pellet storage. Utilization of Dock 5 does not eliminate the need to collect and treat stormwater at the site. The dock was taken out of service in 1984 as it was determined the dock had reached the end of its service life and further use would have presented an immediate safety concern. Major deficiencies with the dock that were the primary reasons to take it out of service were:

- Cracked and spalling concrete column pedestals
- Loss of concrete pier cap thickness
- Loss of concrete pier cap contact with timber piles
- Ultimate pile capacity factor of safety below guidelines at the time of the inspections

Due to the cost and constraints with refurbishing Dock 5 and the overall questionable integrity of the dock itself, this alternative was eliminated from consideration.

Option 5. Filling waters to construct materials storage area. This alternative would provide additional material stockpile space to meet current and future demand while providing the space for the most efficient configuration of materials handling for the site. See the

attached site plan for the proposed layout of the site. This alternative allows for off-loading of limestone independently of taconite handling equipment which is a primary project goal. Stormwater management will be constructed to improve surface water flow and provide treatment of flows prior to discharge. The additional area would allow configuration of the site to improve materials handling and upgrade equipment. The project would include stabilizing Dock 6. This alternative meets the project needs with the least environmental impact, therefore is the preferred alternative.

Option 6. Construct a new facility at a new location with new port facility and rail line.

This alternative would include constructing a new dock, rail, and materials storage facility at a new location. This alternative would provide the materials storage required, would include the most efficient conveyors and material handling equipment, would provide limestone handling separately, and provide the capacity required to support the industry well into the future. The impacts related to the construction of a new port and rail line are anticipated to be substantial due to the new footprint required. Therefore, this alternative has been eliminated from consideration.

Table 2: SUMMARY OF OPTIONS

Option	Description of Alternative	Meets Project Purpose	Impact (Acres, Wetland Type)	Least Environmentally Damaging Practicable Alternative
1	Do nothing	No	0 Acres	No
2	Stockpile at mine site and stabilize Dock 6	No	0.3 Acres, Deep Water	No
3	Modify current configuration and stabilize Dock 6	No	0.3 Acres, Deep Water	No
4	Utilize Dock 5 and stabilize Dock 6	No	0.3 Acres, Deep Water	No
5	Fill for expanded stockpile area and stabilize Dock 6	Yes	24.3 Acres, Type 5 and Deep Water	Yes
6	Construct new port at new location	Yes	Likely substantial undetermined environmental impacts	No

Measures taken to minimize impacts will include the use of BMPs in the design and construction of the proposed improvements. The project will require a NPDES/SDS Construction Stormwater Permit. The permit will include provisions for actions to be taken during construction to minimize impacts to waters of the United States. These measures will include the installation of silt curtains around proposed work areas and staging of proposed activities to reduce opportunities for the inadvertent release of sediment into the harbor. Proposed fill areas will be cordoned off with sheet pile before fill is placed. Silt fence and soil erosion control fabric will be used at the limits of filling activities where appropriate to prevent soil from being released into the water. Fill will consist of clean material with no hazardous chemicals or debris. When project activities are complete and fill/work areas stabilized to prevent soil/sediment movement, silt curtain and other temporary erosion/turbidity controls will be removed. Permanent practices to minimize impacts will include stormwater detention/retention and treatment basins and on-going monitoring and maintenance in accordance with the facility’s NPDES operating permit.

No specific mitigation plan has been prepared to address the loss of deep water habitat or open fresh water wetlands. At this time, the desired option for mitigation includes participation in the restoration of one or more areas of habitat targeted for restoration and consistent with goals of the Lower St. Louis River Habitat Plan prepared by the St. Louis River Citizens Action Committee or from options provided by MPCA after previous consultation with that agency.

The CN Railway will implement actions to minimize adverse effects of the discharge on the aquatic ecosystem of the St. Louis Bay. BMPs will be implemented throughout the project stages including planning, design, and construction to minimize the impacts to the greatest extent practicable. The following items will be implemented through the project to minimize impacts.

Location of discharge. The proposed discharge sites have been selected adjacent to a previously filled area under high industrial influence. The project is located within industrial land use and port facility land use. Therefore, the proposed project is consistent with adjacent land use. The discharge of materials will be confined with the use of sheet pile to avoid sloughing of material outside the project area. The sheet pile walls will provide a project boundary that cannot be encroached. This will minimize impacts to aquatic habitat adjacent to the project. Barriers will be placed on-site on the landward side of the project to eliminate the possibility of filling or discharging to areas outside of the delineated boundary.

Material to be discharged. The type of material to be discharged will meet all regulations regarding the Clean Water Act to minimize the impact of the materials placed. All fill material will be appropriately characterized for the presence of contaminants. No material will be placed in the fill areas if the concentration of contaminants exceeds MPCA Level 2 criteria for dredge material (i.e., it is suitable for use or reuse on industrial properties). The placement of fill will not result in a significant release of hazardous materials to the waters.

Controlling material after discharge. The material shall be placed outside the fish spawning season to minimize impacts to the reproduction of fish. Placement of materials will be limited to timeframes that are least affected by water movement through the harbor. The current patterns in St. Louis Bay are not likely to cause significant dispersion of material as it is being placed. Sound engineering design will be utilized to assess the impact of wind, waves, and currents to develop the best wall construction to withstand those elements. Wall construction will include sheet pile driven to sufficient depth to be determined through thorough geotechnical investigations to provide a wall which will withstand the actions of wind, waves, and currents. The termination point of the permanent wall is expected to be in deep water adjacent to the shipping channel.

Method of dispersion. The material will be placed widely in a thin layer at the disposal site to maintain natural contours where possible until the final walls can be constructed. Silt screens will be utilized to confine suspended particulate/turbidity to a small area where settling or removal can occur. The placement of material will be limited to a size and rate that will not overload the silt screen and settling capabilities. Where possible, material will be placed in a submerged condition to release materials near the bottom to minimize turbidity.

Equipment to place the material shall be the least intrusive in relation to disturbing soils, aquatic resources, vibrations, and stirring of materials. All personnel shall have experience working near waters and placing materials. Work within waters will not be allowed during times of fluctuating water levels. Although habitat will be displaced, the project will be designed and implemented to provide for a favorable re-establishment of habitat adjacent to

the project. Docks 5 and 6 will continue to be a habitat for deep-water species.

Effects on human use. Adverse effects on human use potential will be minimized by development of this project at a site which has already been developed. No new visual obstructions will be created. The proposed project is located adjacent to the shipping channel which already sees a large amount of vessel movement to and from the facility. Little increase in ship traffic is expected with the proposed project. Areas adjacent to the project which see high recreational use will continue to see high recreational use. The proposed project is consistent with a policy of maintaining and re-using historically developed “brownfield” sites as opposed to new development in “greenfield” areas.

Other actions. A major component of the project purpose, stormwater treatment, will be possible with the proposed project which will allow shaping of the land area to direct surface water runoff to designated stormwater treatment cells. The exact footprint and layout of the treatment system is in development but will ensure water is controlled appropriately. The treatment of stormwater will minimize the effects of the project on the adjacent aquatic habitat. Also during project design development, a Stormwater Pollution Prevention Plan (SWPPP) will be developed to address project implementation and provide guidance for the contractor during the construction phases of the project and provide a long term maintenance plan. BMPs will be implemented for placement of fill and project construction. See Exhibit 7.0, Erosion Control Plan for erosion and sediment control measures to be implemented.

Mitigation. Mitigation to offset the effects of this aquatic resource will be through assistance with projects within the AOC which intend to establish shallow-water aquatic habitat.

The AOC team has identified a number of projects to be implemented which will progress the AOC toward delisting. Mitigation for this project will include engagement in a project or projects that will benefit the AOC delisting goal and a project that will mitigate the impact of 24.3 acres of shallow open water habitat. It is proposed that the CN will establish a trust or escrow to fund the development of details for a project or multiple projects that meet the requirements of the mitigation goal. A project or group of projects will be participated in to meet the mitigation requirements. Potential projects include, but are not limited to: WLSSD/21st Avenue West, Grassy Point, and Kingsbury Bay. Areas to be remedied will provide habitat for aquatic life, waterfowl, a variety of fish species, and will provide a recreational benefit as well. The implementation of the AOC projects will mitigate the 24.3-acre habitat loss associated with the Dock 6 and Materials Storage Expansion project. The goal of the CN Railway is to provide resources to facilitate implementation of the project in an expeditious manner. The CN Railway will enter into agreement as required to ensure their involvement in the most effective manner. This mitigation plan is a commitment to offset the impacts of 24.3 acres of open water habitat. The projects are in the development stages at this time. The CN Railway will continue to investigate participation with these very important projects for the Lower St. Louis River estuary.

13. **Water use.** *Will the project involve installation or abandonment of any water wells, connection to or changes in any public water supply or appropriation of any ground or surface water (including dewatering)?* X Yes No
*If yes, as applicable, give location and purpose of any new wells; public supply affected, changes to be made, and water quantities to be used; the source, duration, quantity and purpose of any appropriations; and unique well numbers and DNR appropriation permit numbers, if known. Identify any existing and new wells on the site map.
If there are no wells known on site, explain methodology used to determine.*

A search on the Minnesota Department of Health County Well Index database did not find any wells within the project area. A water connection and extension will be made on the private waterline within the property limits to provide a source of water for dust control along the proposed conveyor system. No other expansion of water demand is expected with the project.

Currently, the CN has a Water Appropriations permit through the Minnesota DNR to withdraw water from the harbor to be used for deluging of rail cars. It is possible the project will eliminate the need for the withdrawal if the proposed stormwater treatment cell can be utilized for this purpose. The detail design of the stormwater treatment cell is in progress with the storage capacity to be evaluated to provide this function.

14. **Water-related land use management district.** *Does any part of the project involve a shoreland zoning district, a delineated 100-year flood plain, or a state or federally designated wild or scenic river land use district? Yes No*
If yes, identify the district and discuss project compatibility with district land use restrictions.

The CN Railway's Duluth Docks and Lakehead Storage Facility are located in Duluth, Minnesota along St. Louis Bay and is considered part of the Duluth Harbor. The CN Dock facility is considered a Maritime facility as identified in the Duluth Port Land Use Plan. According to the Unified Development Chapter of the City of Duluth Legislative Code (UDC), the majority of the portions of the site adjacent to the harbor are classified as shoreland general development waters. Within the shoreland, permits are required for certain activities, with standards designed to control runoff and erosion. Vegetative buffers are required, and no impervious surface is allowed within the "shore impact zone", which is 50 feet for this site. The project would not change the facility type and would still be compatible with an industrial, maritime facility. The CN Railway will follow all regulations regarding the shoreland regulations.

Based on review of the FEMA Flood Insurance Rate Map (FIRM) obtained from the FEMA Map Service Center, the 100-year flood elevation of the St. Louis in the vicinity of the site is 605 (NGVD 1929). The final elevation of the land expansion will be two feet above the 100-year flood elevation or 607 feet.

15. **Water surface use.** *Will the project change the number or type of watercraft on any water body? Yes No*
If yes, indicate the current and projected watercraft usage and discuss any potential overcrowding or conflicts with other uses.

Currently, the facility loads one vessel with ore at the dock every 32 hours. Shiploading may only occur on the west side of the dock at this time, as the deep water slip is out of service due to unsafe sheet pile conditions. The project is anticipated to increase pellet throughput by 4 MT/year, and will allow for shiploading in the deep water slip as well as the south face of the site, for a potential of loading one vessel every 21½ hours during vessel season. (March through January of each year).

In the Duluth-Superior port, the federally authorized shipping channel is maintained by the USACE at a charted depth of 27 feet from the Duluth and Superior entries upstream to, and including the north channel eastern section, which is the site's access to the shipping channel. The channel along the proposed south face of the project is not maintained at this time, and

would be required to be dredged, by the USACE, along that portion of the channel to 27 feet to allow vessels to use that dock. The project will not contribute to overcrowding or conflicts with other users of the port. The vessels will continue to use the current pattern of navigation through the harbor to and from the dock.

16. Erosion and sedimentation.

Give the acreage to be graded or excavated and the cubic yards of soil to be moved:

45.6 acres; 288,400 cubic yards

Describe any steep slopes or highly erodible soils and identify them on the site map. Describe any erosion and sedimentation control measures to be used during and after project construction.

The proposed project includes grading and filling of approximately 45 acres of both land and water. See the Erosion Control Plan. Steep slopes at the site include the existing earthen berm on the southerly portion of the existing land mass and near the shorelines of the harbor. The project includes filling in both the deep slip of Dock 6 behind a proposed sheet pile wall, placement of fill to expand the current stockpile area to the extent of a new sheet pile wall providing a new southerly dock face, grading of site to provide additional materials handling equipment, grading to direct stormwater to a new stormwater pump vault, and construction of a stormwater cell north of the project area to provide stormwater treatment. Utilities will be extended to the new materials handling equipment including water for dust control and electricity for operation of the equipment.

Erosion and sediment control measures will be implemented both during construction and installed for permanent control. Temporary erosion and sediment control measures will be placed in phases to accommodate the phases of the proposed project. During Phase I, silt curtains will be installed alongside Dock 6 to contain any sediment during sheet pile construction and filling behind the new wall. Erosion control during Phase I will also include silt curtains within the harbor during placement of fill material for expansion of the materials stockpile area. The stormwater pump vault, forcemain connection, and the stormwater treatment cell will be constructed during Phase I to provide stormwater treatment throughout the project implementation. Grading of the land mass will be limited to what can be stabilized in a short time to minimize the length of time exposed for erosion. Earthen berms will be constructed to prevent stormwater runoff from the site. The earthen berms will be stabilized with topsoil and seed to minimize erosion. The proposed project includes grading to allow all stormwater to be captured and treated at the new stormwater treatment cell. The grading of the existing berm into the harbor will be performed with implementation of BMPs to reduce the occurrence of sedimentation away from the project site. All erosion and sedimentation control devices shall be installed, inspected, and maintained throughout the project.

Phase II construction includes completion of the expansion of the materials stockpile area, construction of site amenities including the materials handling equipment, and construction of the southerly sheet pile wall. All temporary erosion and sedimentation control devices shall remain in place until the project is stabilized.

Permanent erosion and sediment control measures include the new stormwater treatment cell, ditching, and berms which will prevent sedimentation into the harbor. The permanent devices will be sized to prevent any breach of water beyond the project boundaries. The stormwater treatment cell will be designed to minimize the discharge of pollutants and sediments.

Pollutants that result from clearing, grading and excavation and have the potential to be present in stormwater runoff are listed in Table 3. This table includes information regarding material type, chemical and physical description, and the specific regulated stormwater pollutants associated with each material.

Table 3: POTENTIAL CONSTRUCTION SITE STORMWATER POLLUTANTS

Trade Name Material	Chemical/Physical Description ⁽¹⁾	Stormwater Pollutants ⁽¹⁾
Wastewater from construction	Water	Soil, oil & grease, solids
Hydraulic oil/fluids	Brown oily petroleum hydrocarbon	Mineral oil
Gasoline	Colorless, pale brown or pink petroleum hydrocarbon	Benzene, ethyl benzene, toluene, xylene, MTBE
Diesel fuel	Clear, blue-green to yellow liquid	Petroleum distillate, oil & grease, naphthalene, xylenes
Antifreeze/coolant	Clear green/yellow liquid	Ethylene glycol, propylene glycol, heavy metals (copper, lead, zinc)
Erosion	Solid particles	Soil, sediment

¹ Data obtained from MSDSs when available

Potential Areas for Source of Pollution

Areas prone to soil erosion need to be protected, and the soil kept out of the stormwater discharge. The following potential source areas of stormwater contamination were identified and evaluated, although they are point sources normally associated with construction activity and will be controlled with the use of construction phasing and BMPs.

Table 4: LOCATIONS OF POTENTIAL SOURCES OF STORMWATER CONTAMINATION

Potential Stormwater Contamination Point	Potential Pollutants	Potential Problems
Excavated Areas	Total Suspended Solids, Total Dissolved Solids	Erosion of exposed soils from construction areas creates the potential to discharge pollutants to surface waters.
Fill Areas	Total Suspended Solids, Total Dissolved Solids	Suspended solids have the potential to enter surface water during fill activities.
Undisturbed Areas	None	No stormwater related issues with undisturbed areas.

Practices to Minimize Stormwater Contamination

BMP's will be implemented on site to reduce the amount of pollutants in stormwater discharged from the project during construction:

Time Frames

The staging of construction and placement of proper erosion and sediment control devices is critical to the prevention of a prohibited discharge of sediment from the project site.

Prior to beginning any construction activities, the following must occur:

- Install silt fence and silt curtain around the perimeter of the site, to remain in place until final site stabilization.

- All down-gradient sediment control devices must be established before any up-gradient land disturbance activities begin.
- The location of areas not to be disturbed must be delineated with flags, stakes, signs or silt fence.

During construction, all exposed soil areas must be stabilized as soon as possible to limit soil erosion but in no case later than 3 days after the construction activity in that portion of the site has temporarily or permanently ceased.

Erosion Control Practices

Construction phasing and other construction practices that minimize erosion must be planned for and implemented. The erosion control practices that will be implemented throughout the site are stated below:

- Minimize the amount of area disturbed to the maximum extent practical by utilizing construction staging practices;
- Dust on the site will be controlled by spraying water on the dry areas of the site.

Sediment Control Practices

Sediment may still exist in stormwater runoff after the erosion control BMP's have been implemented and may exist in the stormwater runoff from the exposed areas actively being worked. To capture sediment in stormwater runoff, the following sediment control practices will be employed:

- Heavy duty silt fence will be installed around the perimeter of the site as shown on the erosion control plan, and down gradient of all other areas disturbed due to construction;
- All storm sewer inlets and catch basins will be protected by appropriate BMPs during construction and maintained until all sources with potential for discharging to the inlet have been stabilized;
- Pipe outlets must be provided with temporary or permanent energy dissipation within 24 hours after connection to a surface water (when/where applicable);
- The normal wetted perimeter of any temporary or permanent drainage ditch or swale that drains water from any portion of the construction site, or diverts water around the site, must be stabilized within 200 lineal feet from the property edge, or from the point of discharge into any surface water. Stabilization of the last 200 lineal feet must be completed within 24 hours after connecting to any surface water;
- Stabilization of the remaining portions of any temporary or permanent ditches or swales must be complete within 3 days after connecting to any surface water and construction in that portion of the ditch has temporarily or permanently ceased;
- Dewatering of areas will be allowed by approved methods, such as the installation of a sediment basin where its discharge is pumped to a lined container and treated with a flocculent, allowing particles to settle prior to discharging to a stormwater inlet;
- Vehicle tracking of sediment from the construction site will be minimized by only allowing construction vehicles to utilize one stabilized entrance to enter and exit the site. Street sweeping will be used as required by the project's erosion control supervisor.

17. Water quality: surface water runoff

a. Compare the quantity and quality of site runoff before and after the project. Describe permanent controls to manage or treat runoff. Describe any stormwater pollution prevention plans.

Although the quantity of contact surface water (stormwater) will increase, the quality will remain consistent with current conditions and any stormwater will be controlled and managed by the facility as required by their stormwater permit.

CN currently manages stormwater at the Duluth Docks facility under a National Pollutant Discharge Elimination System (NPDES) State Disposal System (SDS) permit under the direction of the Minnesota Pollution Control Agency (MPCA). The MPCA issued NPDES/SDS permit number MN0053384 on December 2, 2004 and a permit modification on September 21, 2007. CN submitted a permit renewal application in May, 2009 for a permit that was scheduled to expire on October 31, 2009. A new permit has not been received to date and the facility continues to operate under permit MN0053384.

Under the existing permit, the CN Duluth Docks does not have a permitted discharge point to release site impacted stormwater, but instead infiltrates stormwater generated on the facility.

As part of the site expansion project, CN is proposing a facility stormwater collection and treatment system. A stormwater treatment system and permitted discharge point are being designed to fit the site. The stormwater collection system will collect stormwater from the facility stockpile area and pump the stormwater to a treatment pond on CN property north of Interstate Highway 35. Stormwater will be passively treated and discharged. The discharge point and route is still to be determined. An MPCA NPDES/SDS permit modification request will be submitted and permit conditions will be established by the MPCA once preliminary design is completed which is anticipated within the next couple of months. At that point, the treatment system design will be finalized to meet the discharge requirements. Stormwater will not be discharged off of the facility property unless it meets NPDES/SDS permit requirements.

CN is currently managing and operating their stormwater controls under a Stormwater Pollution Prevention Plan (SWPPP), Duluth Ore Dock, prepared in April 2011. The document will be revised as needed to incorporate changes to the site.

b. Identify routes and receiving water bodies for runoff from the site; include major downstream water bodies as well as the immediate receiving waters. Estimate impact runoff on the quality of receiving waters.

As discussed in Item 17(a), CN does not have permitted discharge and does not impact any receiving waters. A stormwater collection and treatment system is being designed to control stormwater generated on the facility.

18. Water quality: wastewaters

a. Describe sources, composition and quantities of all sanitary, municipal and industrial wastewater produced or treated at the site.

No additional sources of sanitary, municipal and/or industrial wastewater will be produced by the project. All sanitary and municipal wastewater is currently routed to WLSSD for treatment. Only one non-stormwater (industrial wastewater) component is generated at the facility, and consist of non-contact cooling water. The non-contact cooling water is regulated by the NPDES/SDS permit.

b. Describe waste treatment methods or pollution prevention efforts and give estimates of composition after treatment. Identify receiving waters, including major downstream water bodies (identifying any impaired waters), and estimate the discharge impact on the quality of receiving waters. If the project involves on-site sewage systems, discuss the suitability of site conditions for such systems.

No waste treatment or on-site sewage systems are part of this project.

c. If wastes will be discharged into a publicly owned treatment facility, identify the facility, describe any pretreatment provisions and discuss the facility's ability to handle the volume and composition of wastes, identifying any improvements necessary.

CN is served by WLSSD, a publicly owned treatment facility. No pretreatment provisions are required and there will be no change to the quantity or quality of the waste stream.

19. Geologic hazards and soil conditions

*a. Approximate depth (in feet) to ground water: 5 ft minimum 5 ft average;
to bedrock: >125 minimum >125 average.*

Describe any of the following geologic site hazards to ground water and also identify them on the site map: sinkholes, shallow limestone formations or karst conditions. Describe measures to avoid or minimize environmental problems due to any of these hazards.

There are no geologic site hazards located on the facility. There are no measures needed to avoid or minimize environmental problems.

b. Describe the soils on the site, giving NRCS (SCS) classifications, if known. Discuss soil texture and potential for groundwater contamination from wastes or chemicals spread or spilled onto the soils. Discuss any mitigation measures to prevent such contamination.

Based on the soil borings advanced at the facility, the local geology consists of sand, silty sand, and clayey sand. Silty sands and clayey sands are present in the higher areas of the site. Clean sand was encountered in the borings in the flat lying (stockpile storage) areas immediately adjacent to St. Louis Bay.

Due to the shallow groundwater depth there is a potential for groundwater contamination if materials are mishandled and improperly stored. CN has a strict environmental policy for providing containment, clean-up and preventive measures for protecting the environment. No additional sources of chemicals or petroleum products are planned as part of this project.

20. Solid wastes, hazardous wastes, storage tanks

a. Describe types, amounts and compositions of solid or hazardous wastes, including solid animal manure, sludge and ash, produced during construction and operation. Identify method and location of disposal. For projects generating municipal solid waste, indicate if there is a source separation plan; describe how the project will be modified for recycling. If hazardous waste is generated, indicate if there is a hazardous waste minimization plan and routine hazardous waste reduction assessments.

No additional solid wastes will be generated as part of this project. Solid waste is currently placed in covered dumpsters and collected by Waste Management on a regular schedule. According to the MPCA this facility is listed as very small quantity generator (VSQG) of waste materials. This status will not change due to any part of this project.

b. Identify any toxic or hazardous materials to be used or present at the site and identify measures to be used to prevent them from contaminating groundwater. If the use of toxic or hazardous materials will lead to a regulated waste, discharge or emission, discuss any alternatives considered to minimize or eliminate the waste, discharge or emission.

No toxic or hazardous wastes will be used as part of this project.

c. Indicate the number, location, size and use of any above or below ground tanks to store petroleum products or other materials, except water. Describe any emergency response containment plans.

The facility currently has three above ground storage tanks used to store petroleum products. The products are contained in double walled tanks, with secondary containment provided for fuel truck and equipment loading/unloading. The tanks are regulated by federal SPCC guidelines and a site specific SPCC Plan has been prepared for this facility. As part of the SPCC requirement, operational staff is trained yearly on its content and emergency response procedures.

No additional tanks or storage containers will be used are planned for use during this project.

21. Traffic.

Parking spaces added: 0

Existing spaces (if project involves expansion): 0

Estimated total average daily traffic generated: 80 vehicles per day

Estimated maximum peak hour traffic generated and time of occurrence: 40 vehicles per hour

Indicate source of trip generation rates used in the estimates.

The source of trip generation rates was estimated by counting the total number of employee vehicles, which is the largest source of vehicle traffic for this site. It is estimated that the increase in the number of employees will be approximately 11-15 per day which would increase traffic by that number as well. Because the peak hour traffic generated by this site is less than 250 vehicles and the total daily trips is less than 2,500, a traffic impact study is not required. Construction traffic is estimated to be the most intensive during material hauling for fill if land based sources are required. Based on a fill quantity of approximately 200,000 cubic yards, approximately 11,000 truckloads would be required which could be

accomplished in a two to three month timeframe. Once filling and grading is complete, construction traffic will be limited to construction employees, delivery of materials, and concrete trucks as needed for foundations. The proposed schedule is to complete the project by the end of 2014. Haul routes will be designated prior to commencing construction and followed until completion.

22. **Vehicle-related air emissions.** *Estimate the effect of the project's traffic generation on air quality, including carbon monoxide levels. Discuss the effect of traffic improvements or other mitigation measures on air quality impacts.*

The scale of this operation will be very small. Given the type and number of vehicles associated with the project, the short duration and the fact that there are few nearby residences, significant impacts due to vehicle exhaust emissions are not anticipated. Typical on-site vehicular traffic includes service trucks, delivery vehicles, employee vehicles, front end loaders, and other small construction equipment as needed. Other sources of emissions include ship exhaust and diesel trains in the yard.

23. **Stationary source air emissions.** *Describe the type, sources, quantities and compositions of any emissions from stationary sources of air emissions such as boilers, exhaust stacks or fugitive dust sources. Include any hazardous air pollutants (consult EAW Guidelines for a listing) and any greenhouse gases (such as carbon dioxide, methane, nitrous oxide) and ozone-depleting chemicals (chloro-fluorocarbons, hydrofluorocarbons, perfluorocarbons or sulfur hexafluoride). Also describe any proposed pollution prevention techniques and proposed air pollution control devices. Describe the impacts on air quality.*

The proposed project will generate fugitive dust emissions during both the construction and operating phases. Construction phase fugitive dust is discussed in Item 24. The only pollutant that will be emitted from the proposed project is particulate matter, including particulate matter less than 30 microns (PM), particulate matter less than 10 microns (PM10), and particulate matter less than 2.5 microns (PM2.5). The emission of particulate matter will be due to fugitive dust emitted from the movement of material and wind erosion from additional taconite storage piles located outdoors. The project does not include stationary sources (e.g. boilers, fuel combustion equipment) or stacks. The project will not emit hazardous air pollutants or greenhouse gasses. The proposed project will not emit any biological particulates such as molds or endotoxins. The facility currently operates under MPCA air permit number 13700043-001.

The increase in particulate matter emissions will be due to the increased number of ships and/or trains to the facility. The increase in traffic will result in an increase in taconite throughput which will result in more storage piles and increased material movement due to unloading, handling and loading.

CN already has several control measures in place to control particulate emission including:

- Wind gauges on the dock structure.
- Emergency deluge (water suppression) system on the track system.
- Mobile water truck and three stationary water cannons to water stockpiles and stacker equipment. Reports must be submitted documenting periods during which the mobile water cannon is not available by CN Railway staff.
- Use of chemical dust suppressants on unpaved roads and stockpiles.

The wind gauges allow CN to assess when conditions are too windy to unload. The permit prohibits operating of the reclaim/stacker equipment and loading of railcars with a front end loader when steady wind speeds exceed 30 miles per hour or wind gusts exceed 45 miles per hour. Restricting material movement to times that do not exceed the specified wind speeds minimizes the amount of fugitive dust emitted due to wind erosion.

The air permit requires that CN observe railcar unloading and do so in a manner that prevents excessive fugitive dust from being emitted. The emergency water suppression system on the track unloading operation must be used to control a situation that has the potential to emit excess fugitive dust.

A mobile water truck and three stationary water cannons are available to control fugitive dust by wetting the surface of the stockpiles and exposed surfaces. This action reduces the particulate emission due to wind erosion acting on the surface of the stockpile.

The use of chemical dust suppressants controls the fugitive emission due to truck traffic on unpaved surfaces as well as stockpiles.

CN proposes using similar fugitive emission control measures as discussed above for the new sources of emission. CN Railway staff will incorporate the permit into their operating procedures for monitoring, reporting, and controlling fugitive dust. CN Railway staff oversee the existing permit and will continue to do so for the expanded facility.

The current air permit imposes the following restrictions to reduce fugitive particulate emissions:

- Pre-1969 Industrial Process Equipment is limited to less than or equal to 20 % opacity except for one six-minute period per hour not more than 60%. Exhaust gas is limited to 0.3 grains per dry standard cubic foot of exhaust gas.
- Post-1969 Industrial Process Equipment is limited to less than or equal to 20 % opacity at all times and less than 0.3 grains per dry standard cubic foot of exhaust gas.
- Certain material transfers are limited to 20% opacity.
- The facility-wide emission limits are 235 tons per year of PM and 95 tons per year of PM10.
- Vehicular traffic is limited to 20 mph.

The current air permit requires the following testing and recordkeeping pertaining to fugitive emissions:

- An annual compliance test must be conducted on four loading/transfer operations that shows compliance with the 20% opacity limit.
- CN must report when wind speeds exceed permit thresholds and verify that operations are shut down.
- Reports must be submitted that indicate the hours during which pellets or natural ore are handled without the wet suppression systems operating.
- Reports must be submitted documenting periods during which the mobile water cannon is not available by CN Railway staff.

Given the requirements of the current air permit and existing control measures, it is anticipated that proposed emission control measures will provide adequate control so that the new emission activities will not result in a significant change to the air quality in the area.

CN has not conducted any air monitoring or air dispersion modeling for the proposed project.

24. **Odors, noise and dust.** *Will the project generate odors, noise or dust during construction or during operation?* Yes No

If yes, describe sources, characteristics, duration, quantities or intensity and any proposed measures to mitigate adverse impacts. Also identify locations of nearby sensitive receptors and estimate impacts on them. Discuss potential impacts on human health or quality of life. (Note: fugitive dust generated by operations may be discussed at item 23 instead of here.)

Fugitive dust during operation is discussed in Item 23. The construction phase of the proposed project will generate fugitive dust due to typical construction activities such as movement of soils and pouring concrete pads. Fugitive dust during construction will be controlled using standard work practices normally associated with construction, such as watering of unpaved roads.

The proposed project will not generate odor during construction or operation phases that could be expected to be a nuisance to the surrounding area.

The proposed project will result in increased noise during both construction and operation.

The increase in noise during construction will be due to the installation of conveyors and associated equipment, earth moving equipment and other similar construction activities. The project will involve sheet pile driving at the water line, which generates noise. It is not expected that construction noise will be more pronounced than most typical construction noise and therefore, the specific sources of noise during construction are not discussed further.

The increase in noise during operation will be due to additional conveyor belts and generally more material movement due to increased storage capacity. The increased storage capacity will also result in more train and ship traffic.

The area surrounding the site is largely industrial. St. Louis Bay bounds the site on the southern, eastern, and northern sides. To the west, there are railroad tracks, Interstate 35, and warehouses. Based on available information, the closest residential receptors appear to be approximately 2,000 feet to the northwest of the site and there does not appear to be any other sensitive receptors (e.g. hospitals, nursing homes, schools) within that distance. The existing operations are located at the west side of the site and therefore the industrial receptors to the west of the site are not likely to notice a significant increase in noise due to the new stockpiles. Any increase in noise to the west of the site will likely be buffered by Interstate 35 which is approximately 500 feet to the west. Noise emitted to the north, south, or east will be buffered by the St. Louis Bay and other industrial activities that exist around the bay.

Existing operations currently operate 24 hours a day, 7 days a week. The proposed project has the same operating schedule; therefore there will not be an increase in noise due to operating schedule changes.

CN has not conducted noise monitoring or modeling as part of this proposed project.

25. **Nearby resources.** *Are any of the following resources on or in proximity to the site? Archaeological, historical or architectural resources?* Yes No

Prime or unique farmlands or land within an agricultural preserve? Yes No

Designated parks, recreation areas or trails? Yes No

Scenic views and vistas? Yes No

Other unique resources? Yes No

If yes, describe the resource and identify any project-related impacts on the resource.
Describe any measures to minimize or avoid adverse impacts.

An Archaeological and Historical survey of nearby resources was conducted in February 2013 by Lawrence J. Sommer of Duluth Archaeology Center. The survey found that there are no recorded archeological resources in proximity to the proposed project. Nearly all the property along the waterfront near the proposed project location is made land or has been repeatedly disturbed during the last 150 years. The existing materials storage area is made land so there is no potential for archaeological sites in it. However, remnants of historic archaeological materials from the DM&IR docks 1-4 may still be present adjacent to the project. Pilings from Dock 1 are reportedly still present in the existing "limestone dock" between CN Dock 6 and the main materials storage area; this location will receive effects from the proposed project. Pilings from Docks 2-4 may be present underwater adjacent to and between CN Docks 5 and 6.

The survey does not identify any designated parks or trails in proximity to the project. Wade Memorial Stadium is located approximately 0.6 miles west of and on the opposite side of Interstate Highway 35 from CN Dock 6. Wade Stadium has existed in this location for over 70 years. The proposed project will not affect Wade Stadium. Several blocks west of Wade Stadium is the City of Duluth's Wheeler Athletic Complex (approximately 0.75 miles from CN Dock 6). This facility will not be affected by the proposed project.

The following sites and /or structures have been identified in the vicinity of the proposed project. Except as noted, superstructural components of these properties no longer exist. Subsurface historic archaeological evidence associated with some of these sites possibly still exists. Field investigations would be required to verify any potential evidence that might still exist as foundations or subsurface deposits.

SAWMILLS

Oneota Lumber Company sawmill, 1855-1870 (destroyed)

Duncan, Brewer & Company sawmill, 1891-1902 (destroyed)

C.S. Murray & Company sawmill, 1899-1910 (destroyed)

Red Cliff Lumber Company sawmill, 1902-1913 (destroyed)

PIERS and WHARVES

Boston, New York, Philadelphia, Pittsburgh, Ontario, St. Marie, Superior, Marquette

Piers, 1890s-1900s (all destroyed)

Duncan & Brewer lumber wharf, 1883-1918 (destroyed)

Erie Pier, 1890s-present (extant and altered)

Duluth-Superior Dredging Company wharf, 1909-1940s (destroyed)

Oneota Lumber Company wharf, 1855-1870 (destroyed)

Great Lakes Dredge & Dock Company wharf, 1908-1940 (destroyed)

Hallett Dock No. 5, 1892-present (extant and altered)

DM & IR log dock, 1897-1942 (destroyed)

DM & IR coal dock, 1907-1964 (dismantled in 1968 to make way for development of new taconite storage facility)

IRON ORE DOCKS

DM & IR ore dock No. 1, 1893-1905 (destroyed in 1910)
DM & IR ore dock No. 2, 1896-1916 (destroyed in 1918)
DM & IR ore dock No. 3, 1900-1918 (destroyed in 1919)
DM & IR ore dock No. 4, 1906-1927 (destroyed in 1927)
DM & IR (now CN) ore dock No. 5, 1918-present (extant)
DM & IR (now CN) ore dock No. 6, 1918-present (extant and altered)

MISCELLANEOUS SITES

Site of Bright's trading post, 1857- ? (destroyed)
Site of Oneota post office, 1856 (destroyed)
Site of Oneota school, 1860 (destroyed)
Oneota townsite street remnants are visible in the vicinity of Michigan and Superior
Streets between 40th and 46th Avenues West

The proposed project will not affect most of the nearby resources discussed in this report. Only two of the former DM & IR iron ore docks (no. 1 and 6) will potentially receive direct impacts from the proposed activities; dock 5 and possible remnants of docks 2-4 are adjacent to the project on the west but not directly affected by the proposed activities. These structures, particularly docks 1 and 6, have been recommended as eligible to the National Register of Historic Places several times (see below). None of the other nearby resources listed above and discussed in this study is listed in the National Register of Historic Places (NRHP) or have been determined eligible for listing in the NRHP.

The CN dock 6 (originally DM & IR no. 6) is an extant complete structure that is an architectural resource. It was constructed in 1918 and modified in 1981-1983; it is still in active use for loading ore onto ships. The CN dock 6 has been recommended as eligible to the NRHP under Criteria A, C, and D in several studies of the Duluth Harbor (Walker and Hall 1976:116; Sommer 1984:48, 79; Kelly 1993; Ward and McCarthy 1996:20 [as #95SL11]). It is proposed to be stabilized by the placement of sheetpiling on the easterly face of the dock. Reconfiguration of the handling conveyors and machinery could extend onto the dock itself.

Former DM & IR dock 1 is not a complete structure, as it was dismantled in 1964. After 1913, this dock was used to ship limestone and it is now identified as the "limestone dock." However, remnants of the original structure, particularly the wooden pilings and other structural elements, were described as an archaeological resource (Ward and McCarthy 1996:20 [#95SL10]). The structure was considered to be important in the harbor development (Walker and Hall 1976:147) and was recommended as eligible to the NRHP under Criteria A, C, and D (Ward and McCarthy 1996:20). The CN existing main materials storage area extends to the northern part of the eastern edge of the "limestone dock" (see discussion below), already partially obscuring this resource. The proposed 24-acre expansion of this filled area will be to the south end of the eastern edge of this resource, obscuring the entire east side.

The status of all of the former DM & IR ore docks as historic structures is anomalous. Although recommended as eligible to the NRHP, no formal Determination of Eligibility has been recorded for any of the six docks. In addition, none of the ore docks are recorded in the SHPO structures database. Similarly, status as archaeological sites is not confirmed. Archaeological state site forms were completed for docks 1, 6, and 5 as it was felt that the structural components indicated that archaeological deposits were likely present (Ward and McCarthy

1996: Appendix C). However, no state site numbers were assigned by the Office of the State Archaeologist in consultation with the SHPO. This decision was based on the lack of direct evidence of an archaeological component associated with structures that are still in use.

The proposed stabilization of CN dock 6 is considered to be an impact of the project that will enhance the preservation of the resource by providing needed structural support. Strengthening the structure will add to the lifespan of the resource during the planned period of continued use. Expansion of the existing main materials storage area is considered to be an impact of the project on former DM & IR dock 1 remnants contained in the “limestone dock”; although that is consistent with the previous formation of the storage area, the expansion will obscure additional portions of this resource. Reconfiguration of the existing machinery in the storage area and across dock 1 to dock 6 is consistent with the continued active use of these resources for loading iron ore.

The following additional recommendations are made:

1. Before any actual construction work is started, the remnants of former DM & IR dock 1 (“the limestone dock”) should be photographed for archival purposes.
 2. The company may wish to prepare a formal Determination of Eligibility for listing the Duluth ore docks in the National Register of Historic Places.
26. **Visual impacts.** *Will the project create adverse visual impacts during construction or operation? Such as glare from intense lights, lights visible in wilderness areas and large visible plumes from cooling towers or exhaust stacks? Yes No*
If yes, explain.
27. **Compatibility with plans and land use regulations.** *Is the project subject to an adopted local comprehensive plan, land use plan or regulation, or other applicable land use, water, or resource management plan of a local, regional, state or federal agency? Yes No.*
If yes, describe the plan, discuss its compatibility with the project and explain how any conflicts will be resolved. If no, explain.

The city of Duluth classifies this site as Industrial-Waterfront (I-W) according to the city’s Unified Development Code (UDC). The I-W zoning district is “intended to provide for water-dependent and port-dependent industrial uses”. The project does not include the construction or alteration of any structures; therefore none of the I-W zoning regulations apply. Adjacent properties are either zoned I-W or Industrial-General.

The UDC also defines areas included in a Natural Resource Overlay (NR-O) district, which is purposed to promote, preserve and enhance the water resources and environment within the city and protect them from adverse effects caused by poorly sited or incompatible development. The project site is included in stormwater rate control Zone B, in the General Flood Plain, and in the General Development Shoreland Management Zone. Since the city does not allow structures, fill, obstructions, excavations or storage of materials or equipment in the General Flood Plain, a special use permit is required. Section 50-18.C.2.b defines the standards for special use permits that must be met prior to allowing non-permitted uses within the NRO. The project will meet the applicable standards and will apply for a Special Use Permit.

The shoreland overlay applies to land within 1,000 feet of Lake Superior. Grading, filling and excavating; construction of impervious surfaces; and removal of natural vegetation are all activities within the shoreland overlay that require a Shoreland Permit from the city of Duluth. UDC section 50-18.D.2 lists the standards for Shoreland Permits. The CN Railway

will meet the applicable standards and will apply for a Shoreland Permit.

28. **Impact on infrastructure and public services.** *Will new or expanded utilities, roads, other infrastructure or public services be required to serve the project? ___Yes XNo.*
If yes, describe the new or additional infrastructure or services needed. (Note: any infrastructure that is a connected action with respect to the project must be assessed in the EAW; see EAW Guidelines for details.)

Any expansion of services will be within the CN Railway property. Power will be supplied to the new equipment and the private water will be extended along the new conveyor system for dust control. Rail and roadway modifications will be within the CN Railway property and will not impact adjacent facilities. Discharge of treated stormwater will be to the City of Duluth storm sewer system as required.

29. **Cumulative potential effects.** *Minnesota Rule part 4410.1700, subpart 7, item B requires that the RGU consider the "cumulative potential effects of related or anticipated future projects" when determining the need for an environmental impact statement. Identify any past, present or reasonably foreseeable future projects that may interact with the project described in this EAW in such a way as to cause cumulative potential effects. (Such future projects would be those that are actually planned or for which a basis of expectation has been laid.) Describe the nature of the cumulative potential effects and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to these cumulative effects (or discuss each cumulative potential effect under appropriate item(s) elsewhere on this form).*

The proposed Canadian National Dock 6 Stabilization and Materials Stockpile Expansion project is not expected to contribute to the cumulative potential effects of projects that have been performed within the estuary. The existing site has been utilized as a materials handling/shipping dock for over 100 years. The proposed project is compatible with past and existing land use. The largest immediate impact will be the displacement of aquatic habitat where filling will occur. This will negatively affect the Beneficial Use Impairments, including additional loss to the estuary increasing the 7,700 acres impacted since settlement. This will be mitigated with the participation in one or more AOC habitat creation projects including WLSSD/21st Avenue West, Grassy Point, and Kingbury Bay which will provide better habitat in areas where aquatic habitat will be less affected by adjacent land uses. The project will ensure that surface water runoff is managed without impacting nearby receiving waters. The withdrawal of water from St. Louis Bay for use as rail car deluge may be eliminated with the proposed project. The project will ensure the continued operation and use of historic Dock 6 without major modifications to the superstructure. The project will positively impact the economy of the region by providing a facility that is able to serve customers of the steel industry well into the future.

30. **Other potential environmental impacts.** *If the project may cause any adverse environmental impacts not addressed by items 1 to 28, identify and discuss them here, along with any proposed mitigation.*

There are no other known potential environmental impacts beyond those discussed in this document.

31. Summary of issues. Do not complete this section if the EAW is being done for EIS scoping; instead, address relevant issues in the draft Scoping Decision document, which must accompany the EAW.

List any impacts and issues identified above that may require further investigation before the project is begun. Discuss any alternatives or mitigative measures that have been or may be considered for these impacts and issues, including those that have been or may be ordered as permit conditions.

A major component of the project purpose, stormwater treatment, will be incorporated with the proposed project which will allow shaping of the land area to direct surface water runoff to designated stormwater treatment cells. The exact footprint and layout of the treatment system is in development but will ensure water is controlled appropriately. The treatment of stormwater will minimize the effects of the project on the adjacent aquatic habitat. Also during project design development, a Construction Stormwater Pollution Prevention Plan (SWPPP) will be developed to address project implementation and provide guidance for the contractor during the construction phases of the project and provide CN with a long term maintenance plan. BMPs will be implemented during each phase of construction.

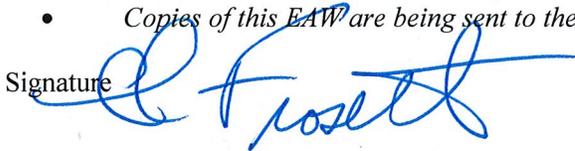
Mitigation to offset the effects of this aquatic resource will be through the assistance with projects within the AOC which intend to establish shallow-water aquatic habitat. The formation of the mitigation piece will be according to regulatory requirements.

RGU CERTIFICATION. (The Environmental Quality Board will only accept **SIGNED** Environmental Assessment Worksheets for public notice in the EQB Monitor.)

I hereby certify that:

- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9b and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Signature



Date

3-8-2013

Title

Land Use Supervisor

Environmental Assessment Worksheet was prepared by the staff of the Environmental Quality Board at the Minnesota Department of Administration, Office of Geographic and Demographic Analysis. For additional information, worksheets or for EAW Guidelines, contact: Environmental Quality Board, 658 Cedar St., St. Paul, MN 55155, 651-201-2492, or <http://www.eqb.state.mn.us>

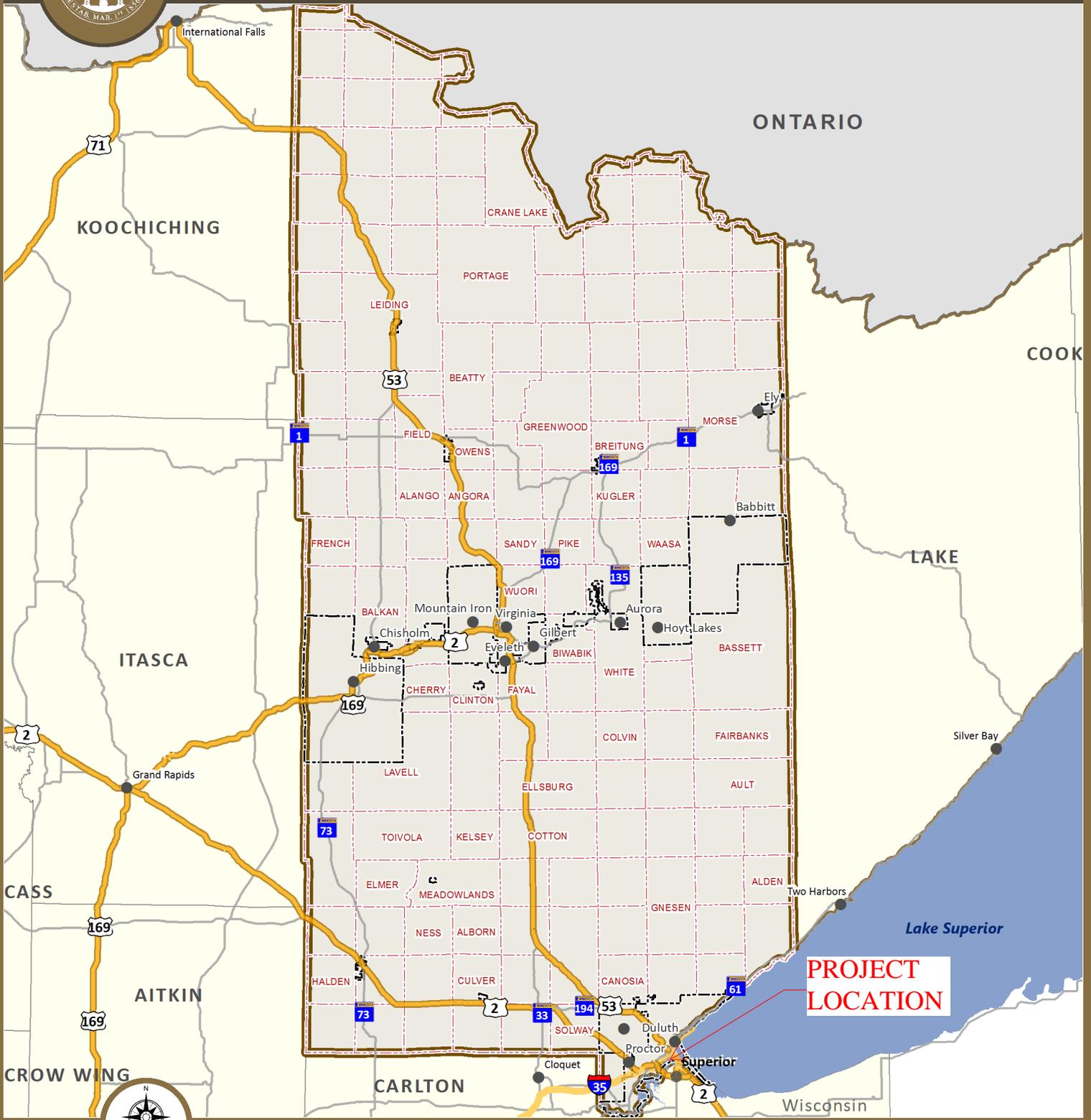
References:

Duluth Port Land Use Plan, October 2005
Lower St. Louis River Habitat Plan, May 2002
City of Duluth, Unified Development Code, May 14, 2012

2.0 EXHIBITS



St. Louis County



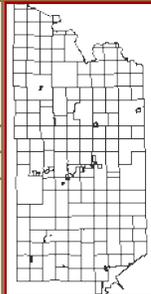
Prepared By: St. Louis County
Planning & Community Development

Source: St. Louis County, Minnesota

Map Created: 1/22/2013

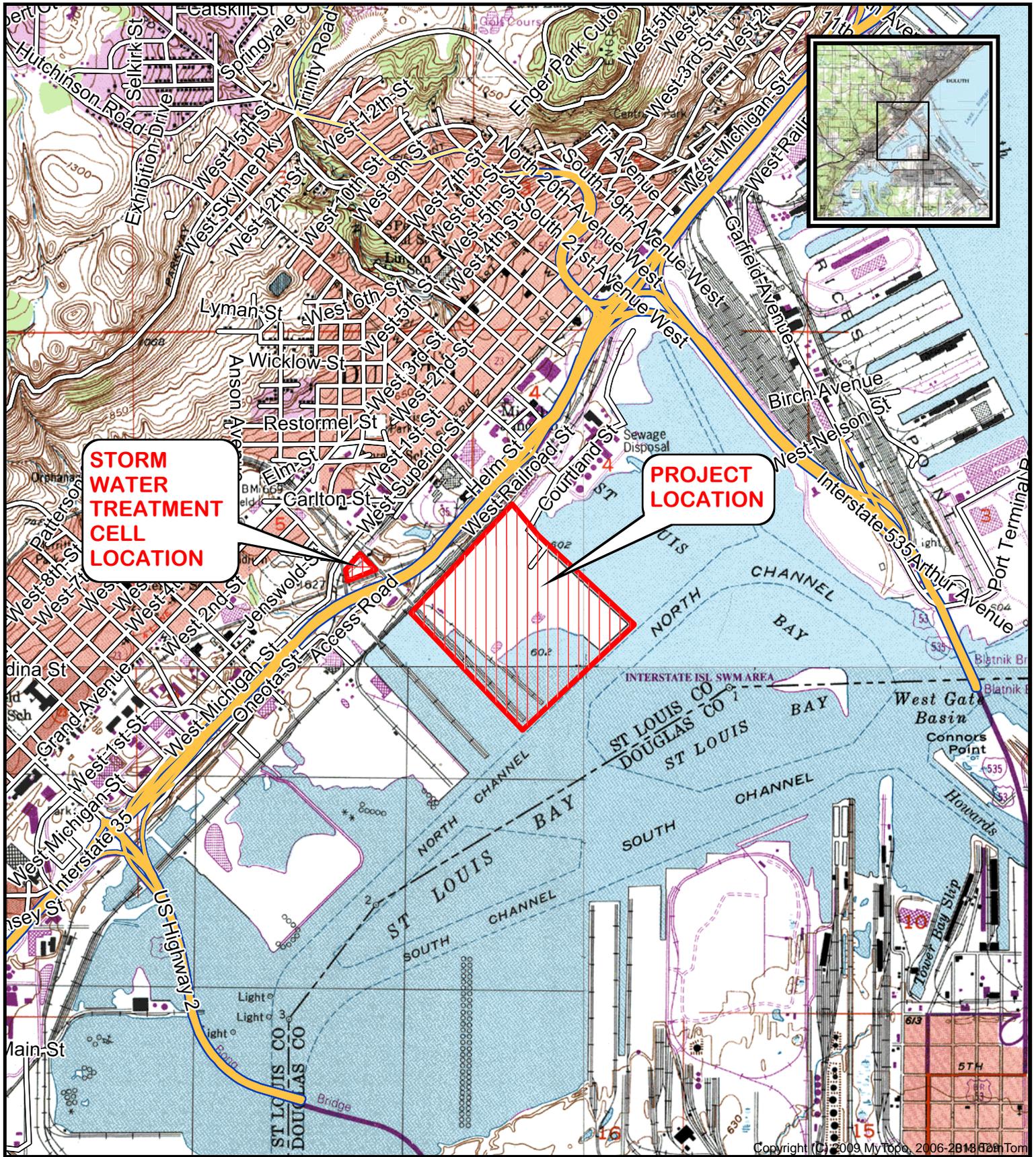
Disclaimer: This is a compilation of records as they appear in the St. Louis County Offices affecting the area shown. This drawing is to be used only for reference purposes and the County is not responsible for any inaccuracies herein contained.

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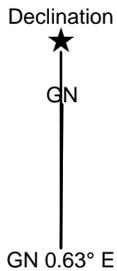
-  Townships
-  Cities
-  Interstate
-  State Hwy
-  US Hwy

EXHIBIT 1.0 COUNTY MAP



**STORM
WATER
TREATMENT
CELL
LOCATION**

**PROJECT
LOCATION**



Map Name: DULUTH HEIGHTS
 Print Date: 02/27/13
 Scale: 1 inch = 2,000 ft.
 Map Center: 046° 45' 13.36" N 092° 07' 44.88"
 Horizontal Datum: NAD27

SCALE 1:24000

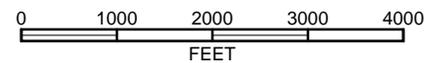
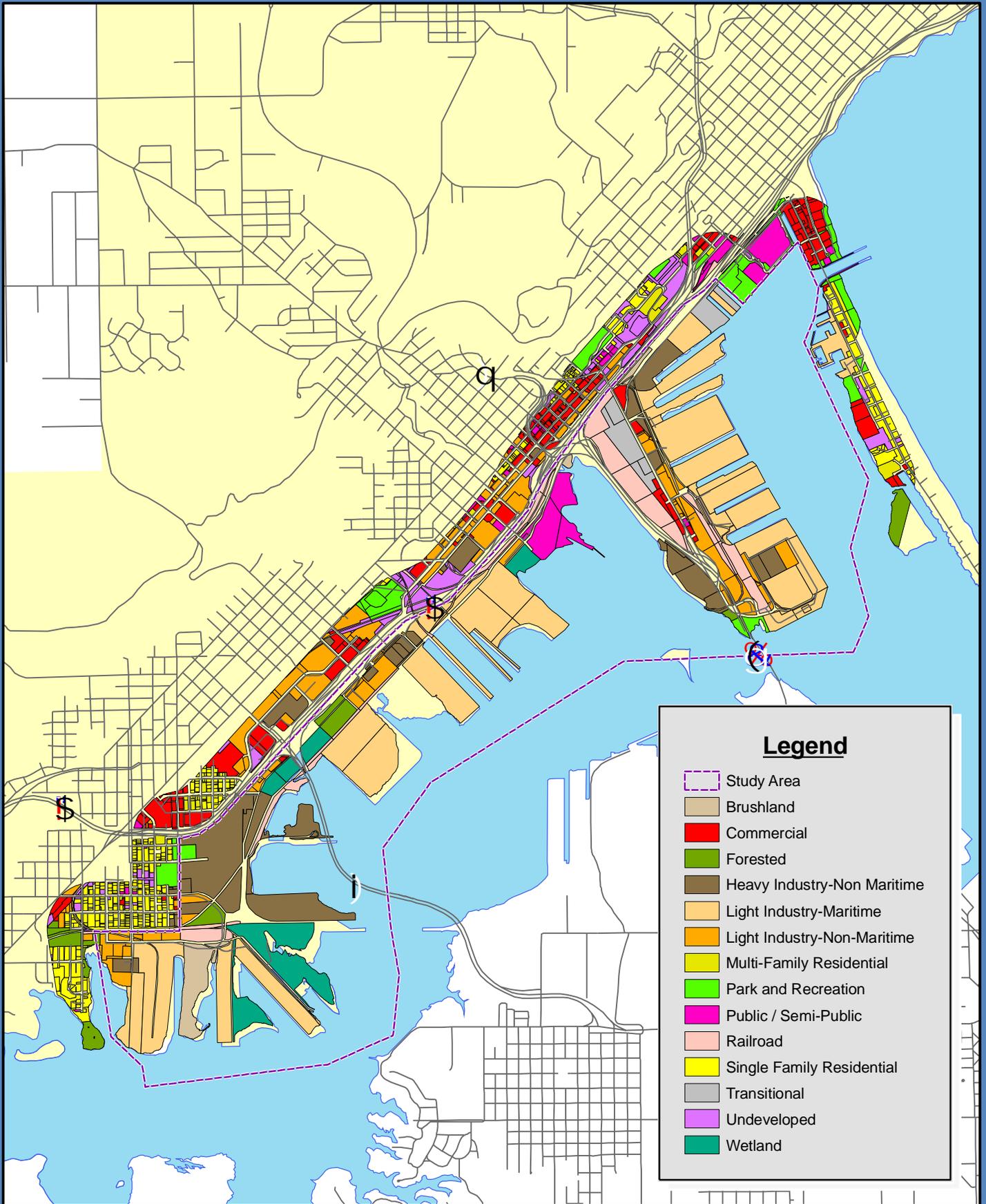


EXHIBIT 2.0

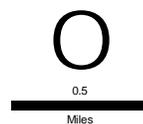


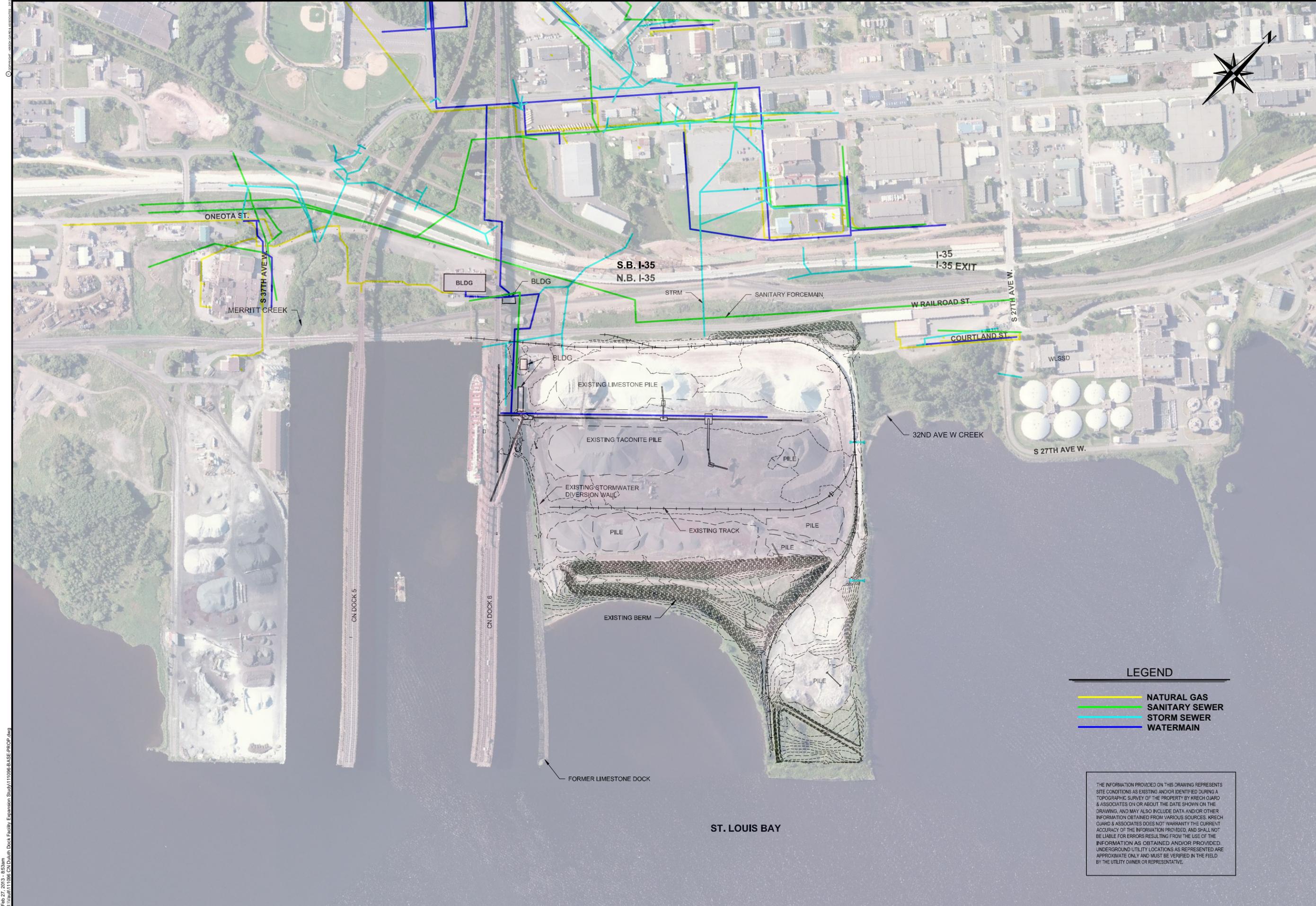
Legend

- Study Area
- Brushland
- Commercial
- Forested
- Heavy Industry-Non Maritime
- Light Industry-Maritime
- Light Industry-Non-Maritime
- Multi-Family Residential
- Park and Recreation
- Public / Semi-Public
- Railroad
- Single Family Residential
- Transitional
- Undeveloped
- Wetland

Map 4

EXHIBIT 3.0
Duluth Port Land Use Plan
Current Land Use





LEGEND

—	NATURAL GAS
—	SANITARY SEWER
—	STORM SEWER
—	WATERMAIN

THE INFORMATION PROVIDED ON THIS DRAWING REPRESENTS SITE CONDITIONS AS EXISTING AND/OR IDENTIFIED DURING A TOPOGRAPHIC SURVEY OF THE PROPERTY BY KRECH OJARD & ASSOCIATES ON OR ABOUT THE DATE SHOWN ON THE DRAWING, AND MAY ALSO INCLUDE DATA AND/OR OTHER INFORMATION OBTAINED FROM VARIOUS SOURCES. KRECH OJARD & ASSOCIATES DOES NOT WARRANT THE CURRENT ACCURACY OF THE INFORMATION PROVIDED, AND SHALL NOT BE LIABLE FOR ERRORS RESULTING FROM THE USE OF THE INFORMATION AS OBTAINED AND/OR PROVIDED. UNDERGROUND UTILITY LOCATIONS AS REPRESENTED ARE APPROXIMATE ONLY AND MUST BE VERIFIED IN THE FIELD BY THE UTILITY OWNER OR REPRESENTATIVE.

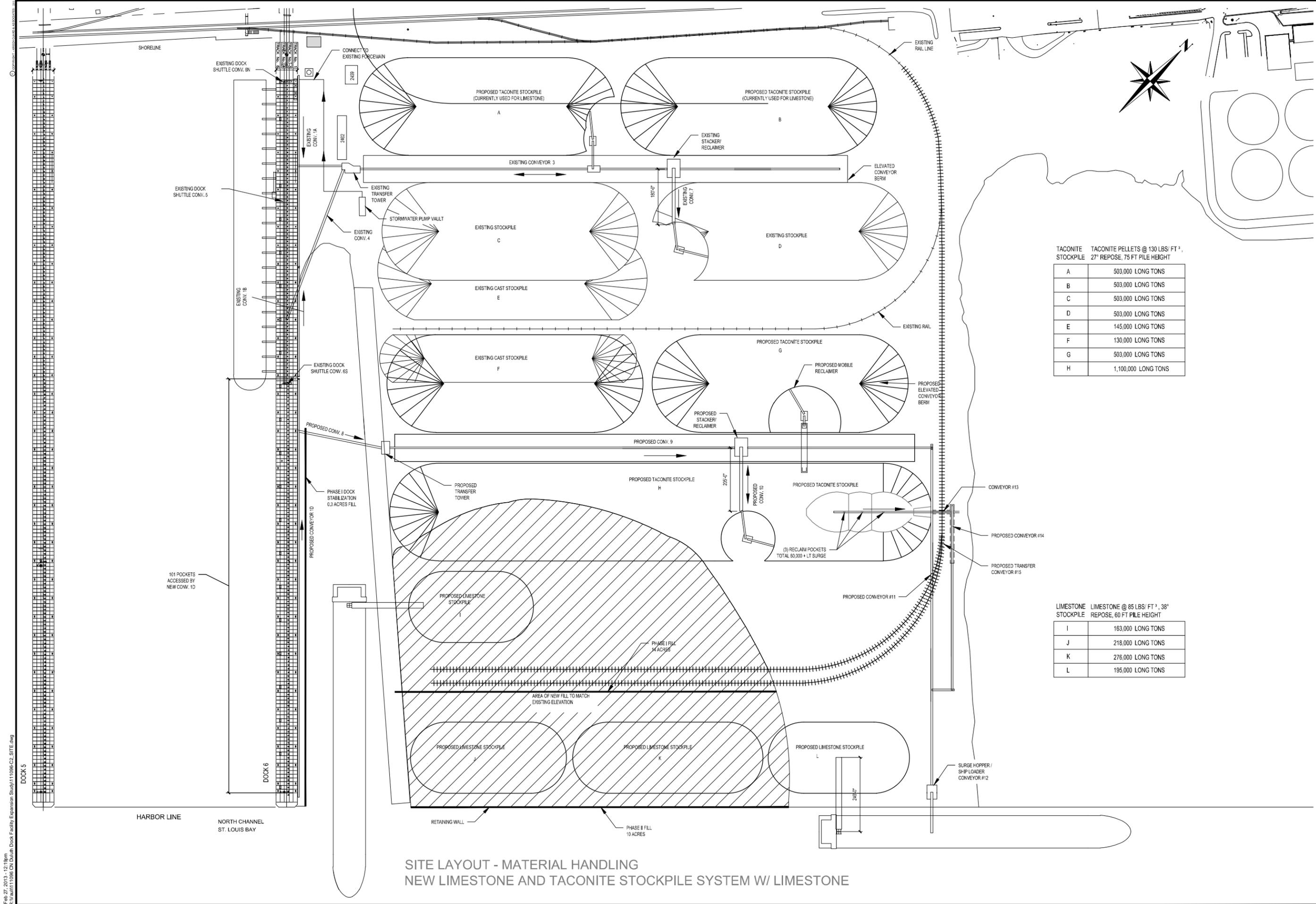
KRECH OJARD
 Engineers & Architects
 & ASSOCIATES, INC.
 MAIN OFFICE REGIONAL OFFICE
 227 WEST FIRST STREET, SUITE 200 916 HAMMOND AVENUE
 DULUTH, MINNESOTA 55802 SUPERIOR, WI 54880
 PH: 218.727.2382 PH: 715.392.4474
 FX: 218.727.1216 WWW.KRECHOJARD.COM FX: 715.592.3538

PRELIMINARY
 NOT FOR CONSTRUCTION

DATE:	REV:	DESCRIPTION	REV. BY:

CN DULUTH DOCK FACILITY EXPANSION PROJECT
 DULUTH, MINNESOTA
 EXISTING CONDITIONS

JOB No: 111096
 DATE: 02/27/13
 DRAWN BY: JDO
 CHECKED BY: RLB
 SHEET:
4.0



TACONITE STOCKPILE @ 130 LBS/ FT³, 27' REPOSE, 75 FT PILE HEIGHT

Stockpile	Capacity
A	503,000 LONG TONS
B	503,000 LONG TONS
C	503,000 LONG TONS
D	503,000 LONG TONS
E	145,000 LONG TONS
F	130,000 LONG TONS
G	503,000 LONG TONS
H	1,100,000 LONG TONS

LIMESTONE STOCKPILE @ 85 LBS/ FT³, 38' REPOSE, 60 FT PILE HEIGHT

Stockpile	Capacity
I	163,000 LONG TONS
J	218,000 LONG TONS
K	276,000 LONG TONS
L	195,000 LONG TONS

SITE LAYOUT - MATERIAL HANDLING
NEW LIMESTONE AND TACONITE STOCKPILE SYSTEM W/ LIMESTONE

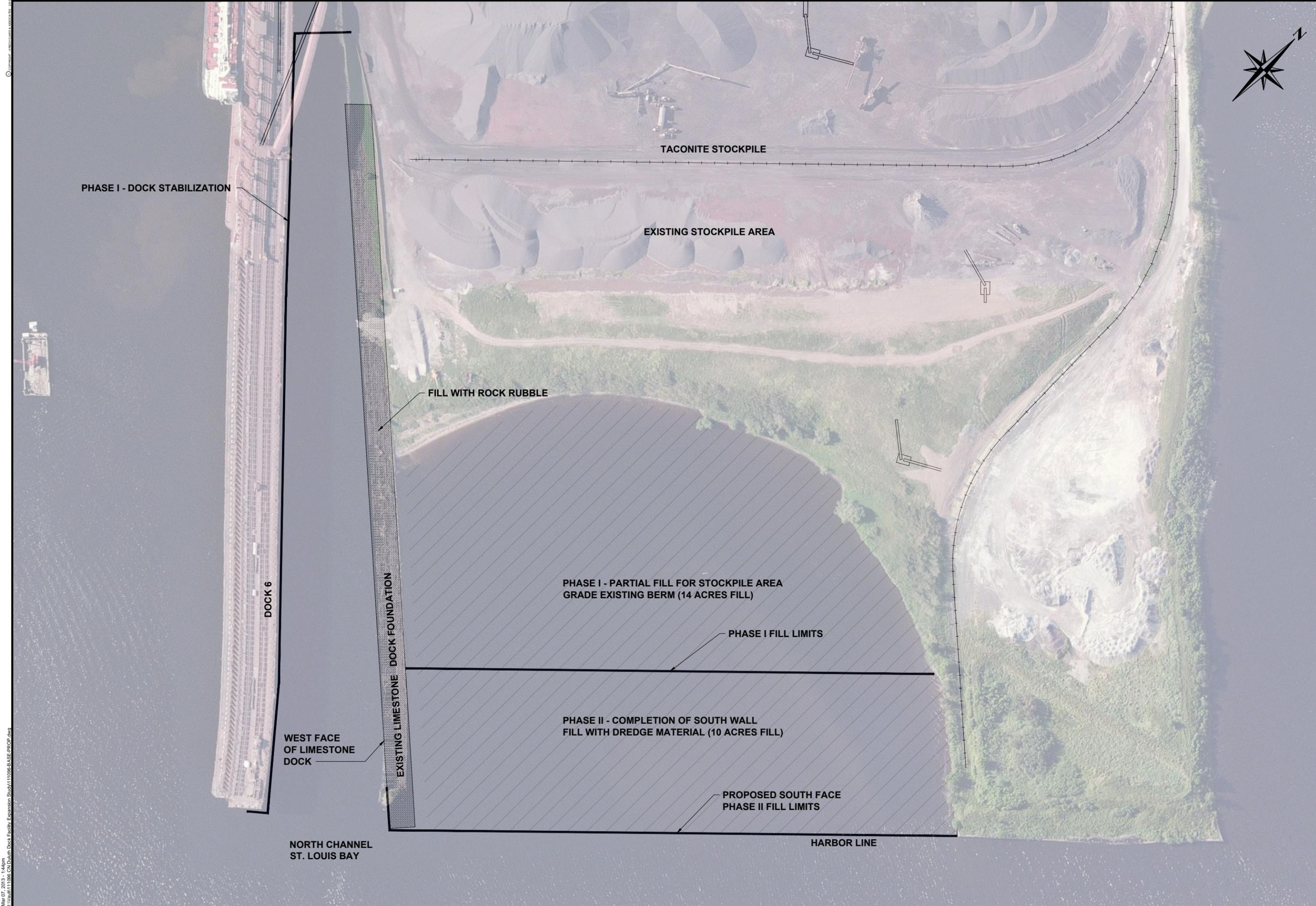
PRELIMINARY
NOT FOR CONSTRUCTION

REV.	DATE	DESCRIPTION

CN DULUTH DOCK FACILITY
EXPANSION PROJECT
DULUTH, MINNESOTA
SITE PLAN

JOB No: 111096
DATE: 02/27/13
DRAWN BY: EDH
CHECKED BY: RKM
SHEET:
6.0

Feb 27, 2013 - 12:15pm
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Mar 07, 2013 - 1:44pm
 C:\Users\jdo\Documents\CN Duluth Dock Facility Expansion Study\11058-BASE-PROP.dwg

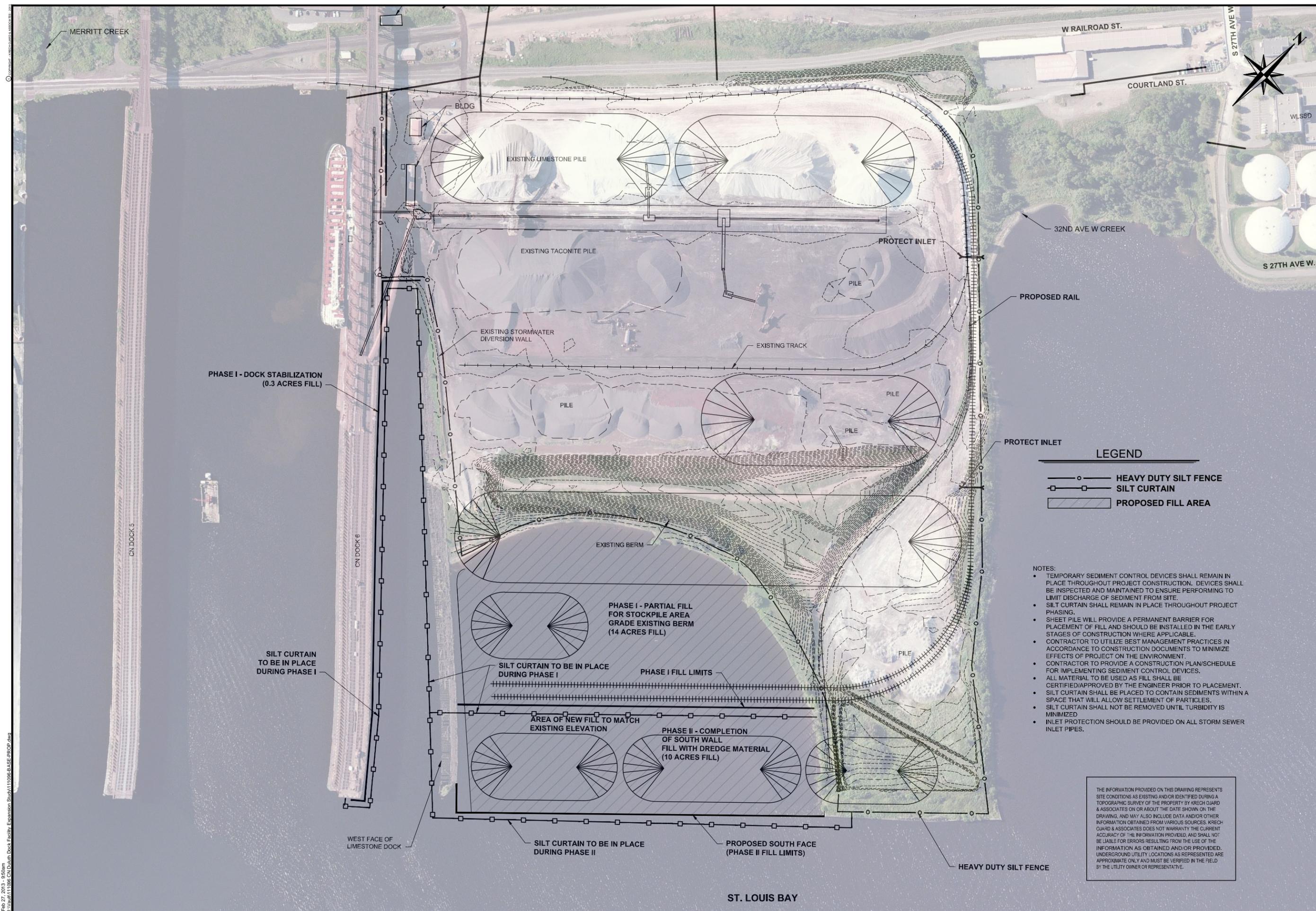
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 & ASSOCIATES, INC.
 REGIONAL OFFICE
 916 HAMMOND AVENUE
 DULUTH, MINNESOTA 55802
 PH: 218.727.2382 FX: 218.727.1216 www.krechoiard.com

PRELIMINARY
 NOT FOR CONSTRUCTION

DATE	REV.	DESCRIPTION	REV. BY

CN DULUTH DOCK FACILITY EXPANSION PROJECT
 DULUTH, MINNESOTA
 PROPOSED WORK

JOB No: 111096
 DATE: 03/07/13
 DRAWN BY: JDO
 CHECKED BY: RLB
 SHEET:
6.1



LEGEND

- HEAVY DUTY SILT FENCE
- SILT CURTAIN
- PROPOSED FILL AREA

- NOTES:**
- TEMPORARY SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE THROUGHOUT PROJECT CONSTRUCTION. DEVICES SHALL BE INSPECTED AND MAINTAINED TO ENSURE PERFORMING TO LIMIT DISCHARGE OF SEDIMENT FROM SITE.
 - SILT CURTAIN SHALL REMAIN IN PLACE THROUGHOUT PROJECT PHASING.
 - SHEET PILE WILL PROVIDE A PERMANENT BARRIER FOR PLACEMENT OF FILL AND SHOULD BE INSTALLED IN THE EARLY STAGES OF CONSTRUCTION WHERE APPLICABLE.
 - CONTRACTOR TO UTILIZE BEST MANAGEMENT PRACTICES IN ACCORDANCE TO CONSTRUCTION DOCUMENTS TO MINIMIZE EFFECTS OF PROJECT ON THE ENVIRONMENT.
 - CONTRACTOR TO PROVIDE A CONSTRUCTION PLAN/SCHEDULE FOR IMPLEMENTING SEDIMENT CONTROL DEVICES.
 - ALL MATERIAL TO BE USED AS FILL SHALL BE CERTIFIED/APPROVED BY THE ENGINEER PRIOR TO PLACEMENT.
 - SILT CURTAIN SHALL BE PLACED TO CONTAIN SEDIMENTS WITHIN A SPACE THAT WILL ALLOW SETTLEMENT OF PARTICLES.
 - SILT CURTAIN SHALL NOT BE REMOVED UNTIL TURBIDITY IS MINIMIZED.
 - INLET PROTECTION SHOULD BE PROVIDED ON ALL STORM SEWER INLET PIPES.

THE INFORMATION PROVIDED ON THIS DRAWING REPRESENTS SITE CONDITIONS AS EXISTING AND/OR IDENTIFIED DURING A TOPOGRAPHIC SURVEY OF THE PROPERTY BY KRECH OJARD & ASSOCIATES ON OR ABOUT THE DATE SHOWN ON THE DRAWING, AND MAY ALSO INCLUDE DATA AND/OR OTHER INFORMATION OBTAINED FROM VARIOUS SOURCES. KRECH OJARD & ASSOCIATES DOES NOT WARRANT THE CURRENT ACCURACY OF THE INFORMATION PROVIDED, AND SHALL NOT BE LIABLE FOR ERRORS RESULTING FROM THE USE OF THE INFORMATION AS OBTAINED AND/OR PROVIDED. UNDERGROUND UTILITY LOCATIONS AS REPRESENTED ARE APPROXIMATE ONLY AND MUST BE VERIFIED IN THE FIELD BY THE UTILITY OWNER OR REPRESENTATIVE.

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**PRELIMINARY
NOT FOR CONSTRUCTION**

DATE	REV.	DESCRIPTION	REV. BY

**CN DULUTH DOCK FACILITY
EXPANSION PROJECT**
DULUTH, MINNESOTA
EROSION CONTROL PLAN

JOB No: 111096
DATE: 02/27/13
DRAWN BY: JDO
CHECKED BY: RLB
SHEET:
7.0



LEGEND

- HEAVY DUTY SILT FENCE
- SILT CURTAIN
- DRAINAGE SWALE
- PROPOSED FILL AREA

- NOTES:**
- TEMPORARY SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE THROUGHOUT PROJECT CONSTRUCTION. DEVICES SHALL BE INSPECTED AND MAINTAINED TO ENSURE PERFORMING TO LIMIT DISCHARGE OF SEDIMENT FROM SITE.
 - SILT CURTAIN SHALL REMAIN IN PLACE THROUGHOUT PROJECT PHASING.
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 - SILT CURTAIN SHALL BE PLACED TO CONTAIN SEDIMENTS WITHIN A SPACE THAT WILL ALLOW SETTLEMENT OF PARTICLES.
 - SILT CURTAIN SHALL NOT BE REMOVED UNTIL TURBIDITY IS MINIMIZED.
 - INLET PROTECTION SHOULD BE PROVIDED ON ALL STORM SEWER INLET PIPES.
 - AREAS NOT TO BE UTILIZED AS STOCKPILE AREAS FOR MATERIALS HANDLING SHALL BE TOPSOILED AND SEEDDED.

THE INFORMATION PROVIDED ON THIS DRAWING REPRESENTS SITE CONDITIONS AS EXISTING AND/OR IDENTIFIED DURING A TOPOGRAPHIC SURVEY OF THE PROPERTY BY KRECH OJARD & ASSOCIATES ON OR ABOUT THE DATE SHOWN ON THE DRAWING, AND MAY ALSO INCLUDE DATA AND/OR OTHER INFORMATION OBTAINED FROM VARIOUS SOURCES. KRECH OJARD & ASSOCIATES DOES NOT WARRANT THE CURRENT ACCURACY OF THE INFORMATION PROVIDED, AND SHALL NOT BE LIABLE FOR ERRORS RESULTING FROM THE USE OF THE INFORMATION AS OBTAINED AND/OR PROVIDED. UNDERGROUND UTILITY LOCATIONS AS REPRESENTED ARE APPROXIMATE ONLY AND MUST BE VERIFIED IN THE FIELD BY THE UTILITY OWNER OR REPRESENTATIVE.

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PRELIMINARY
NOT FOR CONSTRUCTION

DATE	REV.	DESCRIPTION	REV. BY

CN DULUTH DOCK FACILITY EXPANSION PROJECT
DULUTH, MINNESOTA

GRADING PLAN

JOB No: 111096
DATE: 02/27/13
DRAWN BY: JDO
CHECKED BY: RLB

SHEET:
8.0



File 27, 2013 - 8:20am
 C:\Users\rlb\OneDrive\Documents\Drawings\Stormwater\11096-BASE-PROP.dwg

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PRELIMINARY
 NOT FOR CONSTRUCTION

DATE	REV.	DESCRIPTION	REV. BY:

**CN DULUTH DOCK FACILITY
 EXPANSION PROJECT**
 DULUTH, MINNESOTA
 STORMWATER TREATMENT CELL

JOB No: 111096
 DATE: 02/27/13
 DRAWN BY: JDO
 CHECKED BY: RLB
 SHEET:
9.0



3.0 ATTACHMENTS

1.0 Minnesota DNR Natural Heritage Review, ERDB 20130187



Minnesota Department of Natural Resources

Division of Ecological and Water Resources, Box 25

500 Lafayette Road

St. Paul, Minnesota 55155-4025

Phone: (651) 259-5109 E-mail: lisa.joyal@state.mn.us

February 15, 2013

Correspondence # ERDB 20130187

Ms. Ranee Beaumier
Krech Ojard & Associates
2227 W 1st Stree, Suite 200
Duluth, MN 55802

RE: Natural Heritage Review of the proposed CN Dock 6 Stabilization and Stockpile Expansion,
St. Louis County

Dear Ms. Beaumier,

County	Township (N)	Range (W)	Section(s)
69	49	14	4,5,8,9

As requested, the Minnesota Natural Heritage Information System has been queried to determine if any rare species or other significant natural features are known to occur within an approximate one-mile radius of the proposed project. Based on this query the common tern, peregrine falcon, and lake sturgeon have been documented within the search area (for details, see the enclosed database reports; please visit the Rare Species Guide at <http://www.dnr.state.mn.us/rsg/index.html> for more information on the biology, habitat use, and conservation measures of these rare species). The Environmental Assessment Worksheet should address whether the proposed project has the potential to adversely affect these rare features and, if so, any avoidance or mitigation measures that will be implemented.

The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. However, the NHIS is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within the state. Therefore, ecologically significant features for which we have no records may exist within the project area. If additional information becomes available regarding rare features in the vicinity of the project, further review may be necessary.

The enclosed results include an Index Report and a Detailed Report of records in the Rare Features Database, the main database of the NHIS. To control the release of specific location information, which might result in the destruction of a rare feature, both reports are copyrighted.

The Index Report provides rare feature locations only to the nearest section, and may be reprinted, unaltered, in an environmental review document (e.g., EAW or EIS), municipal natural resource plan, or report compiled by your company for the project listed above. If you wish to reproduce the index report for any other purpose, please contact me to request written permission. **The Detailed Report is for your personal use only as it may include specific location information that is considered nonpublic data under Minnesota Statutes, section 84.0872, subd. 2. If you wish to reprint or publish the Detailed Report for any purpose, please contact me to request written permission.**

For environmental review purposes, the Natural Heritage letter and database reports are valid for one year; they are only valid for the project location (noted above) and the project description provided on the NHIS Data Request Form. Please contact me if project details change or if an updated review is

needed.

Please note that locations of the gray wolf (*Canis lupus*), state-listed as special concern, and the Canada lynx (*Lynx canadensis*), federally-listed as threatened, are not currently tracked in the NHIS. As such, the Natural Heritage Review does not address these species.

Furthermore, the Natural Heritage Review does not constitute review or approval by the Department of Natural Resources as a whole. Instead, it identifies issues regarding known occurrences of rare features and potential effects to these rare features. Additional rare features for which we have no data may be present in the project area, or there may be other natural resource concerns associated with the proposed project. For these concerns, please contact your DNR Regional Environmental Assessment Ecologist (contact information available at http://www.dnr.state.mn.us/eco/ereview/erp_regioncontacts.html). Please be aware that additional site assessments or review may be required.

Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources. An invoice will be mailed to you under separate cover.

Sincerely,



Lisa Joyal
Endangered Species Review Coordinator

enc. Rare Features Database: Index Report
Rare Features Database: Detailed Report
Rare Features Database Reports: An Explanation of Fields

cc: Ryan Reed
Maya Hamady
Patricia Fowler

Client ID # 1144
Company ID # 1116

Printed January 2013
Data valid for one year

Minnesota Natural Heritage Information System
Index Report of records within 1 mile radius of:
 ERDB# 20130187 - CN Dock 6 Stabilization & Stockpile Expan.
 T49N R14W Sections 4,5,8,&9
 St. Louis County

Rare Features Database:

Element Name and Occurrence Number	Federal Status	MN Status	Draft Status	SGCN Status	State Rank	Global Rank	Last Obs Date	EO ID #
Vertebrate Animal								
<u>Acipenser fulvescens</u> (Lake Sturgeon) #115 T49N R14W S8; St. Louis County		SPC	no chang	SGCN	S3	G3G4	2002-07-08	23172
<u>Charadrius melodus</u> (Piping Plover) #1 T49N R13W S18, T49N R13W S19, T49N R13W S20, T49N R14W S13, T [...]; St. Louis County	LE,LT	END	no chang	SGCN	S1B	G3	2000	1467
<u>Falco peregrinus</u> (Peregrine Falcon) #60 T49N R14W S10, T49N R14W S3; St. Louis County	No Status	THR	SPC	SGCN	S2B	G4	2006	19016
<u>Sterna hirundo</u> (Common Tern) #1 T49N R14W S10, T49N R14W S11, T49N R14W S2, T49N R14W S3; St. Louis County		THR	no chang	SGCN	S2B	G5	1987	25197
<u>Sterna hirundo</u> (Common Tern) #3 T49N R14W S17, T49N R14W S18, T49N R14W S7, T49N R14W S8; St. Louis County		THR	no chang	SGCN	S2B	G5	1985	25191
<u>Sterna hirundo</u> (Common Tern) #23 T49N R14W S10, T49N R14W S3, T49N R14W S4, T49N R14W S9; St. Louis County		THR	no chang	SGCN	S2B	G5	1997	25205
<u>Sterna hirundo</u> (Common Tern) #24 T49N R14W S17, T49N R14W S18, T49N R14W S7, T49N R14W S8; St. Louis County		THR	no chang	SGCN	S2B	G5	1979	25204
Invertebrate Animal								
<u>Cicindela hirticollis rhodensis</u> (Hairy-necked Tiger Beetle) #2 T49N R14W S3; St. Louis County		SPC	END	SGCN	S3	G5T4	1974-06-23	27961
Animal Assemblage								
<u>Colonial Waterbird Nesting Area</u> (Colonial Waterbird Nesting Site) #617 T49N R14W S10, T49N R14W S3, T49N R14W S4, T49N R14W S9; St. Louis County		N/A			SNR	GNR	1985	871
<u>Colonial Waterbird Nesting Area</u> (Colonial Waterbird Nesting Site) #722 Just outside Minnesota in adjacent jurisdiction(s).; Non-MN County - Located just outside Minnesota in adjacent jurisdiction(s).		N/A			SNR	GNR	1989-06-01	9754
Vascular Plant								
<u>Adoxa moschatellina</u> (Moschatel) #25 T49N R14W S5, T49N R14W S6, T50N R14W S31, T50N R14W S32; St. Louis County		SPC	Watchlist		S3	G5	1939-06-08	3340

Printed January 2013
Data valid for one year

Minnesota Natural Heritage Information System
Index Report of records within 1 mile radius of:
ERDB# 20130187 - CN Dock 6 Stabilization & Stockpile Expan.
T49N R14W Sections 4,5,8,&9
St. Louis County

Rare Features Database:

Element Name and Occurrence Number	Federal Status	MN Status	Draft Status	SGCN Status	State Rank	Global Rank	Last Obs Date	EO ID #
Other (Ecological)								
<u>Igneous unit or sequence (middle proterozoic) #6</u> T50N R14W S28, T50N R14W S29, T50N R14W S32, T50N R14W S33; St. Louis County		N/A			SNR	GNR	1975	187

Records Printed = 12

Minnesota's endangered species law (*Minnesota Statutes*, section 84.0895) and associated rules (*Minnesota Rules*, part 6212.1800 to 6212.2300 and 6134) prohibit the taking of threatened or endangered species without a permit. For plants, taking includes digging or destroying. For animals, taking includes pursuing, capturing, or killing.

An Explanation of Fields:

Element Name and Occurrence Number: The Element is the name of the rare feature. For plant and animal species records, this field holds the scientific name followed by the common name in parentheses; for all other elements it is solely the element name. Native plant community names correspond to Minnesota's Native Plant Community Classification (Version 2.0). The Occurrence Number, in combination with the Element Name, uniquely identifies each record.

Federal Status: The status of the species under the U.S. Endangered Species Act: LE = endangered; LT = threatened; LE,LT = listed endangered in part of its range, listed threatened in another part of its range; LT,PDL = listed threatened, proposed for delisting; C = candidate for listing. If null or 'No Status,' the species has no federal status.

MN Status: The legal status of the plant or animal species under the Minnesota Endangered Species Law: END = endangered; THR = threatened; SPC = special concern; NON = tracked, but no legal status. Native plant communities, geological features, and colonial waterbird nesting sites do not have any legal status under the Endangered Species Law and are represented by a N/A.

Draft Status: Proposed change to the legal status of the plant or animal species under the Minnesota Endangered Species Law: END = endangered; THR = threatened; SPC = special concern; Watchlist = tracked, but no legal status.

SGCN Status: SGCN = The species is a Species in Greatest Conservation Need as identified in Minnesota's State Wildlife Action Plan (<http://www.dnr.state.mn.us/cwcs/index.html>). This designation applies to animals only.

State Rank: Rank that best characterizes the relative rarity or endangerment of the taxon or plant community in Minnesota. The ranks do not represent a legal status. They are used by the Minnesota Department of Natural Resources to set priorities for research, inventory and conservation planning. The state ranks are updated as inventory information becomes available. S1 = Critically imperiled in Minnesota because of extreme rarity or because of some factor(s) making it especially vulnerable to extirpation from the state. S2 = Imperiled in Minnesota because of rarity or because of some factor(s) making it very vulnerable to extirpation from the state. S3 = Vulnerable in Minnesota either because rare or uncommon, or found in a restricted range, or because of other factors making it vulnerable to extirpation. S4 = Apparently secure in Minnesota, usually widespread. S5 = Demonstrably secure in Minnesota, essentially ineradicable under present conditions. SH = Of historical occurrence in the state, perhaps having not been verified in the past 20 years, but suspected to be still extant. An element would become SH without the 20-year delay if the only known occurrences in the state were destroyed or if it had been extensively and unsuccessfully looked for. SNR = Rank not yet assessed. SU = Unable to rank. SX = Presumed extinct in Minnesota. SNA = Rank not applicable. S#S# = Range Rank: a numeric range rank (e.g., S2S3) is used to indicate the range of uncertainty about the exact status of the element. S#B, S#N = Used only for migratory animals, whereby B refers to the breeding population of the element in Minnesota and N refers to the non-breeding population of the element in Minnesota.

Global Rank: The global (i.e., range-wide) assessment of the relative rarity or imperilment of the species or community. Ranges from G1 (critically imperiled due to extreme rarity on a world-wide

Printed January 2013
Data valid for one year

Minnesota Natural Heritage Information System
Index Report of records within 1 mile radius of:
ERDB# 20130187 - CN Dock 6 Stabilization & Stockpile Expan.
T49N R14W Sections 4,5,8,&9
St. Louis County

basis) to G5 (demonstrably secure, though perhaps rare in parts of its range). Global ranks are determined by NatureServe, an international network of natural heritage programs and conservation data centers.

Last Observed Date: Date that the Element Occurrence was last observed to be extant at the site in format YYYY-MM-DD.

EO ID #: Unique identifier for each Element Occurrence record.

Element Occurrence: An area of land and/or water in which an Element (i.e., a rare species or community) is, or was, present, and which has practical conservation value for the Element as evidenced by potential continued (or historical) presence and/or regular recurrence at a given location. Specifications for each species determine whether multiple observations should be considered 1 Element Occurrence or 2, based on minimum separation distance and barriers to movement.

3.0 ATTACHMENTS

2.0 Archaeological/Historical Description of Nearby Resources
for Environmental Assessment Worksheet on the CN Dock 6
Stabilization and Materials Stockpile Expansion Project
February 2013

**ARCHAEOLOGICAL/HISTORICAL DESCRIPTION
OF NEARBY RESOURCES
FOR ENVIRONMENTAL ASSESSMENT WORKSHEET
ON THE CN DOCK 6 STABILIZATION
AND
MATERIALS STOCKPILE EXPANSION PROJECT,
DULUTH, ST. LOUIS COUNTY, MINNESOTA**

Lawrence J. Sommer

Duluth Archaeology Center Report No. 13-01

February 2013

TABLE OF CONTENTS

ARCHAEOLOGICAL AND HISTORIC DESCRIPTION.....	1
Project Description.....	1
Project Location.....	1
Land Use.....	1
Current Zoning.....	1
Study Methodology.....	2
Historical Overview.....	2
Duluth Ore Docks Construction Sequence.....	4
NEARBY RESOURCES.....	6
Archaeological Resources.....	6
Shipwrecks.....	6
Designated Parks.....	6
Designated Trails.....	6
Recreation Areas and Facilities.....	7
Scenic Views and Vistas.....	7
Historical/Architectural Resources.....	7
FINDINGS.....	9
BIBLIOGRAPHY.....	11

List of Figures

Figure 1. Location of the project area. 1:100,000 USGS Topographic Map.....	14
Figure 2. Location of the project area. 1:24,000 USGS Topographic Map.....	15
Figure 3. Project plan of work.....	16
Figure 4. Aerial photograph of the project location.....	17
Figure 5. Location of Cultural Resources in the Duluth-Superior Harbor.....	18
Figure 6. Shoreline Site Locations in the Duluth Harbor.....	19
Figure 7. Map of the Duluth, Missabe, and Iron Range Railroad docks at Duluth, MN.....	20

ARCHAEOLOGICAL AND HISTORIC DESCRIPTION

Project Description

Archaeological and historical description was conducted in advance of a proposed stabilization and expansion project on the Canadian Northern (CN) dock 6 and adjacent area in the City of Duluth, St. Louis County, Minnesota (Figures 1, 2). The proposed project includes stabilization work on CN dock 6 with expansion of the property footprint by filling 24 acres of harbor adjacent to the existing materials storage facility. The existing main materials storage area was created by filling a portion of the harbor during the mid 1960s. The currently proposed project would add a 24 acre expansion to this existing materials storage facility (Figure 3). The project also includes stabilization work on the easterly face of CN dock 6, including addition of sheetpiling and fill at the dock. Once the materials storage expansion is completed, the materials handling conveyors, machinery, and rail trackage would be reconfigured to improve overall efficiency.

Project Location

The proposed project is located adjacent to the existing CN dock 6 at about 34th Avenue West and the waterfront in West Duluth (Figure 4). The project is located within the City of Duluth, St. Louis County, Minnesota. It is in Sections 4 and 5 of Township 49N, Range 14W. The Global Positioning System coordinates are 0566225Easting, 5177850Northing in zone 15 (North American Datum 1983).

Land Use

The property encompassed by this project has been utilized for heavy industrial purposes for over 150 years.

Current Zoning

The property encompassed by this project is zoned Waterfront-Industrial.

Study Methodology

For the purposes of this study “nearby resources” were defined as being within an area of potential effect that extended no more than one-half mile from the CN dock 6.

The primary method employed to identify nearby cultural resources was historical research that focused on the early settlement, industrial development and land changes within the area near the Duluth ore docks. Materials included publications, archival sources, maps and photographs related to Duluth’s shipping, railroad and lumber industries as well as the early settlement and subsequent development of West Duluth near the ore docks. Sources that were consulted include the Minnesota Historical Society and Minnesota State Historic Preservation Office (SHPO) in St. Paul, City of Duluth planning and zoning maps and archives at the Northeast Minnesota Historical Center at the University of Minnesota, Duluth library. A search of the SHPO databases for historic structures and archaeological sites was requested; no structures or sites were recorded within sections 4-9 of T49N, R14W (Cinadr, personal communication 2013).

Because of adverse winter weather conditions (frozen ground, snow cover), no field investigations were undertaken for this project.

Historical Overview

The CN ore docks are located within the portion of the City of Duluth known as West Duluth. Present-day West Duluth encompasses an area from the ore docks to about 85th Avenue West and includes the former Oneota townsite and West Duluth Village as well as the Bay View Heights, Riverside, Ironton, Smithville, Fairmont and Norton Park neighborhoods. For over 150 years this part of Duluth has been associated with the city’s industrial heritage.

Because Duluth’s rugged hills are farther from the St. Louis River and bay in this area, there was an abundance of level ground that was well-suited for industrial development. Oneota, one of the original townsites at the head of Lake Superior, was platted in the vicinity because there was developable land and good access to the river and bay. As early as 1856 a steam-powered sawmill was operating at Oneota. This early sawmill operated until it was destroyed by fire in

1870. That same year the first railroad to reach the head of Lake Superior, the Lake Superior and Mississippi, was completed. The route from St. Paul passed through today's Jay Cooke State Park and along the St. Louis River through Fond du Lac, Gary/New Duluth and West Duluth before reaching its terminus on the shore of Lake Superior at about Fourth Avenue East.

Despite early optimism, the national economic depression that followed the collapse of Jay Cooke's financial empire in 1873 left Oneota and the other small settlements at the head of Lake Superior struggling to survive for nearly a decade.

By the mid-1880's economic conditions were improving, Duluth was entering a decades-long period of growth, and West Duluth was teeming with industrial activity. Flour milling and grain shipping were booming, and the iron ranges of northeastern Minnesota were rapidly developing into the country's premier iron ore producing region. Much of this iron ore would be loaded and shipped to steel mills on the lower Great Lakes from giant ore docks constructed in West Duluth.

By 1893 the Duluth street railway system had been extended to West Duluth, and passengers could ride as far east as Woodland and Lakeside. Another major industrial development also occurred in 1893 when the Duluth, Missabe & Northern Railway completed its rail line and constructed an iron ore loading dock on St. Louis Bay. By 1910 three additional ore docks had been completed assuring West Duluth's role as a major iron ore transshipment point.

The Village of West Duluth, including Oneota, was annexed to the City of Duluth in 1894. That same year Duluth also annexed Bay View Heights, Riverside and the large tract that would be platted and developed as Morgan Park beginning in 1913.

Besides sawmills, steel making and shipping, shipbuilding and railroads, many other diverse manufacturing companies located in West Duluth. It is not possible to recount the history or even provide a complete list here, but West Duluth companies produced everything from rail cars, boilers, marine engines, hoists, logging equipment and giant cranes for offshore oil drilling rigs to tools, structural steel, mining machinery, many food products, paper, electrical and telephone equipment, ice boxes, refrigerators and horseshoes.

Many of the buildings and other structures associated with West Duluth's industrial heritage are long gone, and others have been transformed for other uses. In recent decades West Duluth also has experienced the loss of several hundred houses and other buildings to allow construction of Interstate 35, the development of modern industrial parks and other public improvement projects. Some Oneota houses, for example, were moved, but most were simply demolished. The last remaining homes in this historic settlement were purchased by the City of Duluth and removed during the early 1980s.

Today, West Duluth continues to serve as the base for much of Duluth's industrial, shipping and wholesale activity.

Duluth Ore Docks Construction Sequence

Duluth's first iron ore dock was completed in 1893. It was constructed by the Merritt brothers of Duluth to ship iron ore from their newly-opened Mt. Iron Mine. This dock was 2,300 feet long, and 12.5 million board feet of timber were used in its construction. A second ore dock was constructed during 1895-1896 to help meet the need to ship the rapidly-increasing ore tonnages that were being mined. Between 1899 and 1901 a third ore dock was partially completed. In 1904 this dock was extended to its final length and capacity. A year later dock number 1, having deteriorated beyond repair, was taken out of service. Dock number 1 was dismantled in 1910. Dock number 2 was rebuilt in 1905. Dock number 4 was completed in 1906. It was the largest and last wooden ore dock constructed in Duluth.

Dock number 5 was constructed during 1913 and 1914. Built of steel and concrete, dock 5 was 2,304 feet long and had a capacity of 115,200 tons. It cost \$3 million. An even larger dock, number 6, was completed in 1918. Dock 6 is 2,304 feet long and has a capacity of 153,600 tons. It is the largest structure of its kind on the Great Lakes. Docks 5 and 6 are still extant (Figures 5, 6) and were constructed in the same area as docks 1-4 (Figure 7).

In 1964 and 1965 a taconite pellet storage facility was constructed next to dock 6. Between 1981 and 1983 the dock itself was modified to handle the newer 1,000 foot ore boats that were

becoming the standard Great Lakes bulk carrier. As part of the dock modifications, a conveyor belt shiploader system that can more efficiently load the larger vessels was added.

In 2004 CN (formerly known as Canadian National Railway Company) acquired the Duluth, Missabe and Iron Range Railway Company including the USS Great Lakes Fleet Inc. and the Duluth iron ore docks.

NEARBY RESOURCES

As already noted, “nearby resources” were defined as sites and structures within an area of potential effect that extended no more than one-half mile from CN dock 6. The following resources were identified and reviewed to determine whether the proposed project would have or create any adverse impacts.

Archaeological Resources

There are no recorded archaeological resources in proximity to the proposed project. Nearly all the property along the waterfront near the proposed project location is made land or has been repeatedly disturbed during the past 150 years. The existing main materials storage area is made land so there is no potential for prehistoric archaeological sites in it. However, remnants of historic archaeological materials from the DM&IR docks 1-4 may still be present adjacent to the project. Pilings from dock 1 are reportedly still present in the existing “limestone dock” between CN dock 6 and the main materials storage area; this location will receive effects from the proposed project. Pilings from docks 2-4 may be present underwater adjacent to and between CN docks 5 and 6. Unless documentary evidence of complete removal or a field investigation is conducted, it cannot be assumed that all remnants of docks 2-4 were removed. These resources, if present, are west of and in the proximity of the proposed project.

Shipwrecks

There are no known shipwrecks in proximity to the proposed project location, including the proposed 24 acre expansion of the existing main materials storage area.

Designated Parks

There are no designated parks in proximity to the proposed project location.

Designated Trails

There are no designated trails in proximity to the proposed project location. Historical accounts refer to an old Indian trail along the river and bay but all evidence of this trail has been destroyed by subsequent development.

Recreation Areas and Facilities

Wade Municipal Stadium is located west of and on the opposite side of Interstate Highway 35 from the CN dock 6. Wade Stadium has existed in this location for over 70 years. The proposed project will not affect Wade Stadium.

Several blocks west of Wade Stadium is the City of Duluth's Wheeler Athletic Complex. This facility will not be affected by the proposed project.

Scenic Views and Vistas

No scenic views or vistas will be affected by the proposed project. The CN ore docks themselves are among Duluth's most interesting and impressive industrial structures. Although Interstate 35 passes beneath the approach to the docks, they are best viewed either from the water or from Duluth's Skyline Parkway high on the hill above the city.

Historical/Architectural Resources

The following sites and/or structures have been identified in the vicinity of the proposed project. Except as noted below, superstructural components of these properties no longer exist. Subsurface historic archaeological evidence associated with some of these sites possibly still exists. Field investigations would be required to verify any potential evidence that might still exist as foundations or subsurface deposits.

SAWMILLS

- Oneota Lumber Company sawmill, 1855-1870 (destroyed)
- Duncan, Brewer & Company sawmill, 1891-1902 (destroyed)
- C.S. Murray & Company sawmill, 1899-1910 (destroyed)
- Red Cliff Lumber Company sawmill, 1902-1913 (destroyed)

PIERS and WHARVES

- Boston, New York, Philadelphia, Pittsburgh, Ontario, St. Marie, Superior, Marquette Piers, 1890s-1900s (all destroyed)
- Duncan & Brewer lumber wharf, 1883-1918 (destroyed)
- Erie Pier, 1890s-present (extant and altered)
- Duluth-Superior Dredging Company wharf, 1909-1940s (destroyed)
- Oneota Lumber Company wharf, 1855-1870 (destroyed)
- Great Lakes Dredge & Dock Company wharf, 1908-1940 (destroyed)

Hallett Dock No. 5, 1892-present (extant and altered)
DM & IR log dock, 1897-1942 (destroyed)
DM & IR coal dock, 1907-1964 (dismantled in 1968 to make way for development of
new taconite storage facility)

IRON ORE DOCKS

DM & IR ore dock No. 1, 1893-1905 (destroyed in 1910)
DM & IR ore dock No. 2, 1896-1916 (destroyed in 1918)
DM & IR ore dock No. 3, 1900-1918 (destroyed in 1919)
DM & IR ore dock No. 4, 1906-1927 (destroyed in 1927)
DM & IR (now CN) ore dock No. 5, 1918-present (extant)
DM & IR (now CN) ore dock No. 6, 1918-present (extant and altered)

MISCELLANEOUS SITES

Site of Bright's trading post, 1857- ? (destroyed)
Site of Oneota post office, 1856 (destroyed)
Site of Oneota school, 1860 (destroyed)
Oneota townsite street remnants are visible in the vicinity of Michigan and Superior
Streets between 40th and 46th Avenues West

FINDINGS

The proposed project will not affect most of the nearby resources discussed in this report. Only two of the former DM & IR iron ore docks (no. 1 and 6) will potentially receive direct impacts from the proposed activities; dock 5 and possible remnants of docks 2-4 are adjacent to the project on the west but not directly affected by the proposed activities. These structures, particularly docks 1 and 6, have been recommended as eligible to the National Register of Historic Places several times (see below). None of the other nearby resources listed above and discussed in this study is listed in the National Register of Historic Places (NRHP) or have been determined eligible for listing in the NRHP.

The CN dock 6 (originally DM & IR no. 6) is an extant complete structure that is an architectural resource. It was constructed in 1918 and modified in 1981-1983; it is still in active use for loading ore onto ships. The CN dock 6 has been recommended as eligible to the NRHP under Criteria A, C, and D in several studies of the Duluth Harbor (Walker and Hall 1976:116; Sommer 1984:48, 79; Kelly 1993; Ward and McCarthy 1996:20 [as #95SL11]). It is proposed to be stabilized by the placement of sheetpiling on the easterly face of the dock. In addition, a 6 acre fill is proposed to connect it to the adjacent limestone dock and allow access to the main materials storage area. Reconfiguration of the handling conveyors, machinery, and rail trackage in the storage area could extend onto this 6 acre fill and the dock itself.

Former DM & IR dock no. 1 is not a complete structure, as it was dismantled in 1964. After 1913, this dock was used to ship limestone and it is now identified as the “limestone dock.” However, remnants of the original structure, particularly the wooden pilings and other structural elements, were described as an archaeological resource (Ward and McCarthy 1996:20 [#95SL10]). The structure was considered to be important in the harbor development (Walker and Hall 1976:147) and was recommended as eligible to the NRHP under Criteria A, C, and D (Ward and McCarthy 1996:20). The CN existing main materials storage area extends to the northern part of the eastern edge of the “limestone dock” (see discussion below), already partially obscuring this resource. The proposed 24 acre expansion of this filled area will be to the south end of the eastern edge of this resource, obscuring the entire east side.

The status of all of the former DM & IR ore docks as historic structures is anomalous. Although recommended as eligible to the NRHP, no formal Determination of Eligibility has been recorded for any of the six docks. In addition, none of the ore docks are recorded in the SHPO structures database. Similarly, status as archaeological sites is not confirmed. Archaeological state site forms were completed for docks 1, 6, and 5 as it was felt that the structural components indicated that archaeological deposits were likely present (Ward and McCarthy 1996: Appendix C). However, no state site numbers were assigned by the Office of the State Archaeologist in consultation with the SHPO. This decision was based on the lack of direct evidence of an archaeological component associated with structures that are still in use.

The proposed stabilization of CN dock 6 is here considered to be an impact of the project that will enhance the preservation of the resource by providing needed structural support. Strengthening the structure will add to the lifespan of the resource during the planned period of continued use. Expansion of the existing main materials storage area is considered to be an impact of the project on former DM & IR dock 1 remnants contained in the “limestone dock”; although that is consistent with the previous formation of the storage area, the expansion will obscure additional portions of this resource. Reconfiguration of the existing machinery in the storage area and across dock 1 to dock 6 is consistent with the continued active use of these resources for loading iron ore.

The following additional recommendations are made:

1. Before any actual construction work is started, the remnants of former DM & IR dock no. 1 (“the limestone dock”) should be photographed for archival purposes.
2. The company may wish to prepare a formal Determination of Eligibility for listing the Duluth ore docks in the National Register of Historic Places.

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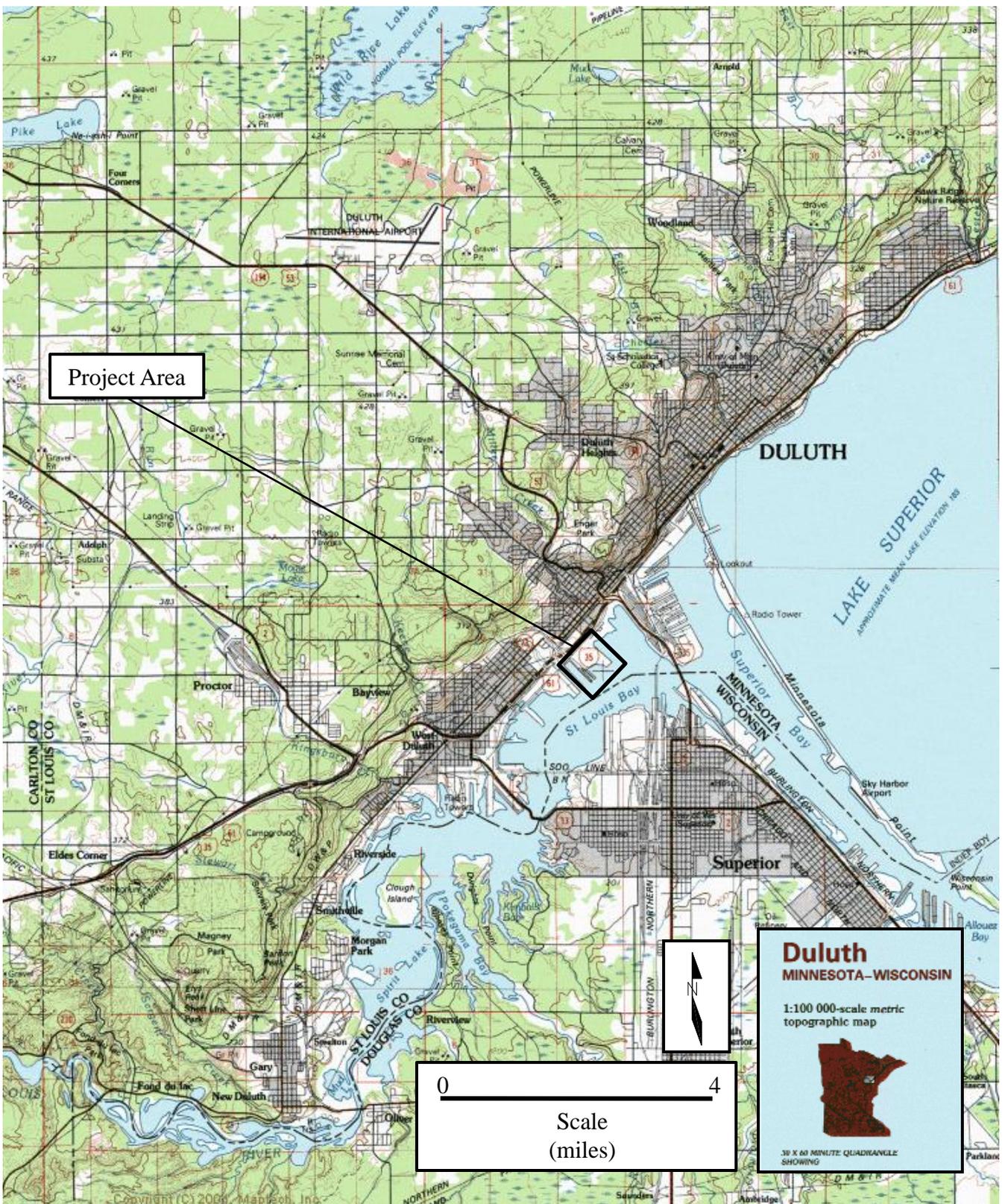


Figure 1. Location of the project area. Duluth, Minn. 1980. 1:100,000 USGS topographic map.

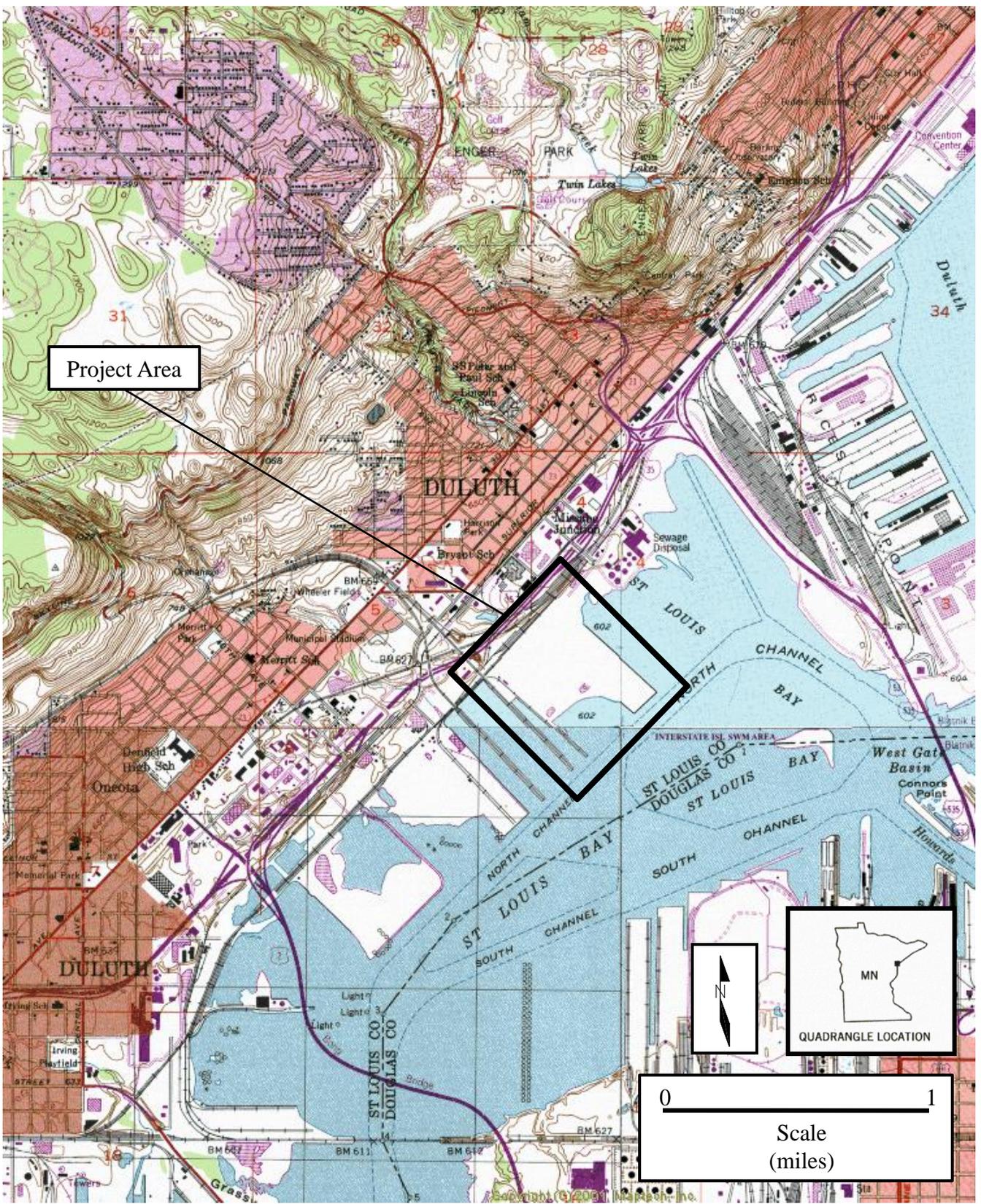


Figure 2. Location of the project area. Duluth Heights, Minn. 1953 (1993); Duluth, Minn. 1953 (1993); Superior, Wis. – Minn. 1954 (1993); and West Duluth, Minn. – Wis. 1997. 1:24,000 USGS topographic maps.

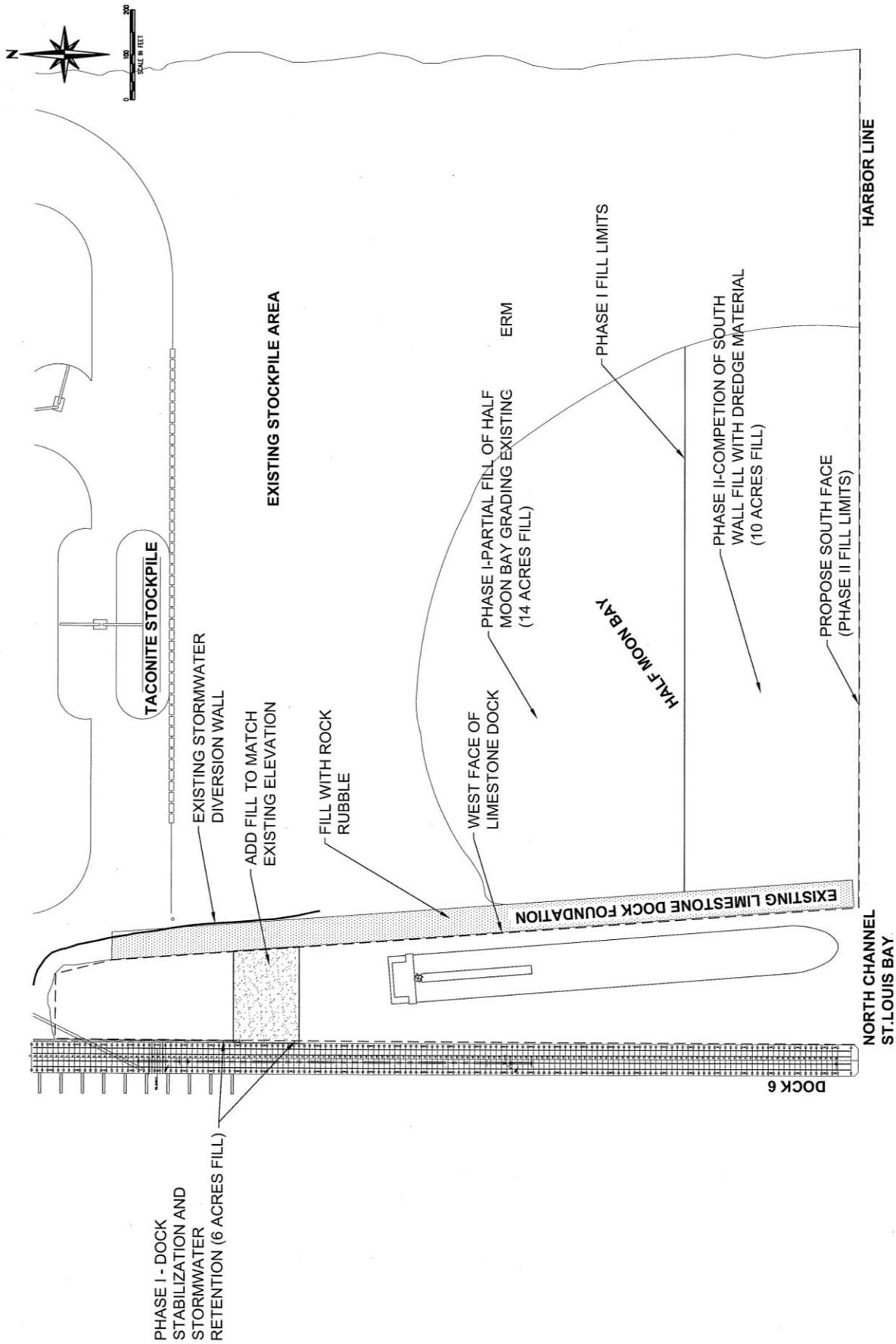


Figure 3. Project plan of work. Image courtesy of Kretch Ojard and Associates, P.A.



Figure 4. Aerial photograph of the project location. Image courtesy of the City of Duluth.

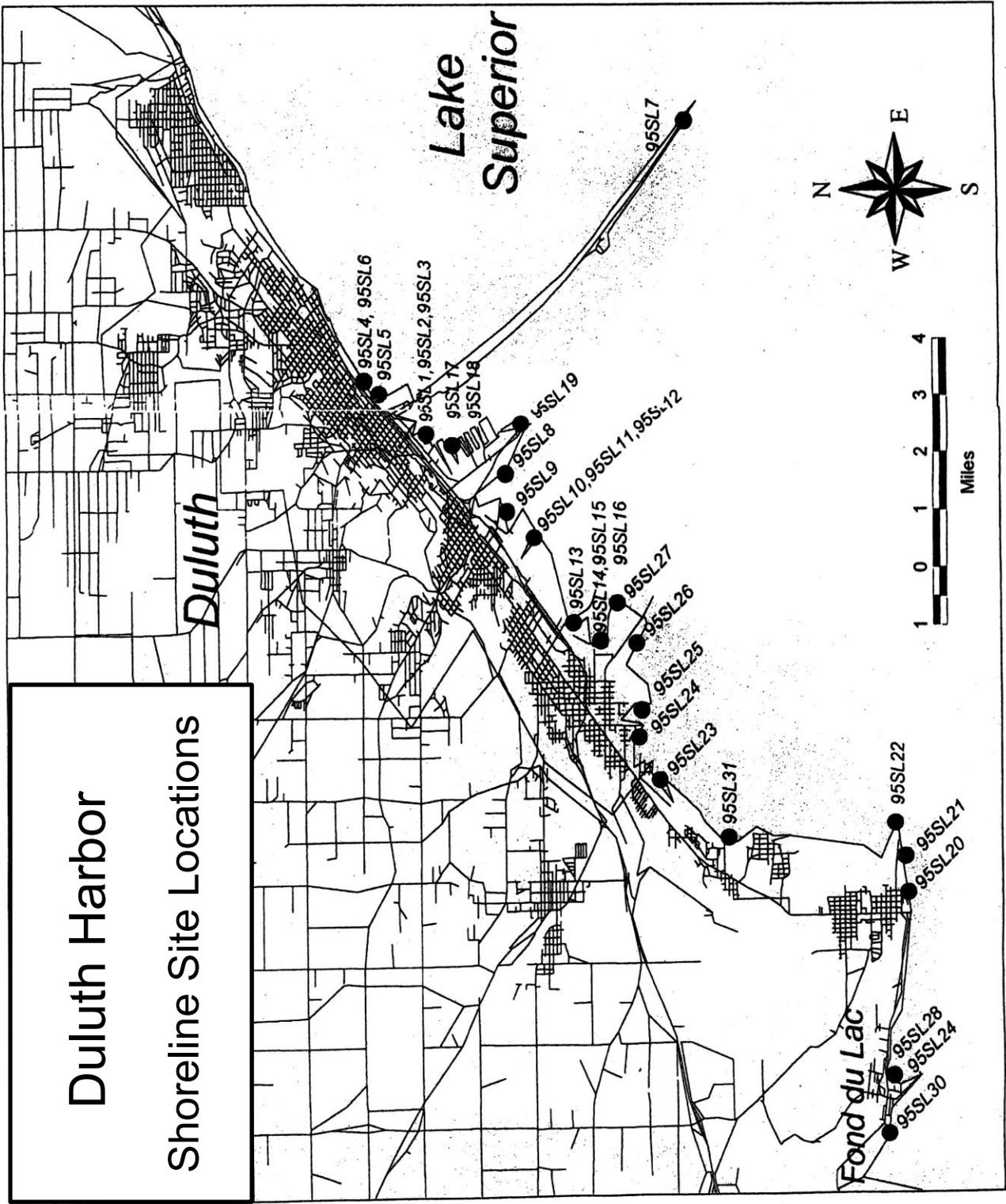
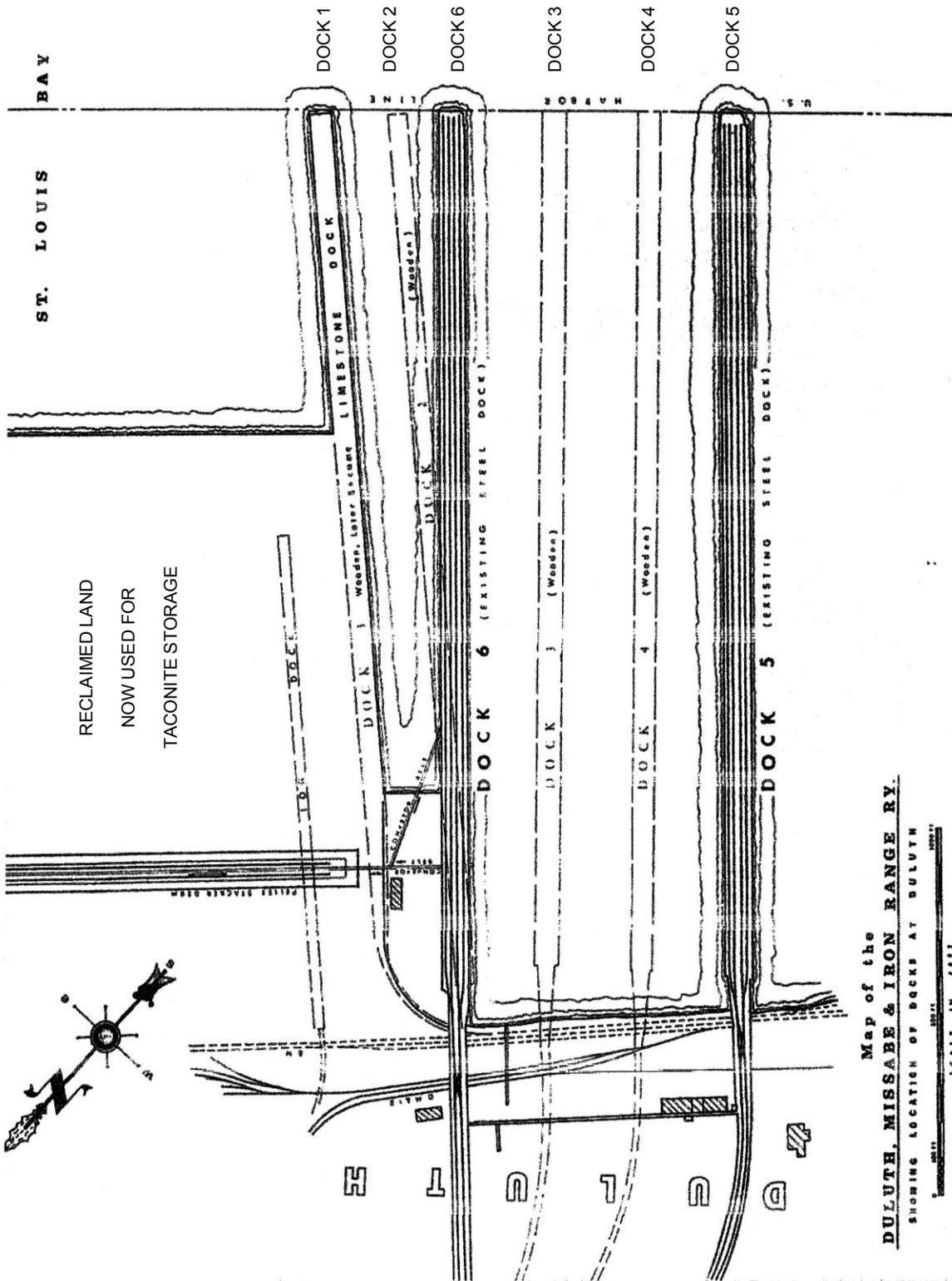


Figure 6. Shoreline Site Locations in the Duluth Harbor. Adapted from Ward and McCarthy (1996).



DRAWN BY GLENN W. BURKE

Figure 7. Map of the Duluth, Missabe, and Iron Range Railroad docks at Duluth, MN. Adapted from *The Missabe Road* by Frank A. King (1972).



3.0 ATTACHMENTS

3.0 Letters from Regulatory Agencies and Public Comments



DEPARTMENT OF THE ARMY
ST. PAUL DISTRICT, CORPS OF ENGINEERS
180 FIFTH STREET EAST, SUITE 700
ST. PAUL MINNESOTA 55101-1678

November 28, 2012

REPLY TO
ATTENTION OF
Operations
Regulatory (2012-000719-WMS)

Mr. Michael Suter
CN Railway
212 W. 37th Ave. West
Duluth, Minnesota 55807

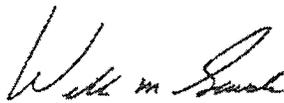
Dear Mr. Suter:

We are enclosing for your information correspondence we received as a result of our public notice that described your project.

It is our policy to give you the opportunity to give us your proposed resolution or rebuttal of these comments. Any response should be sent to this office so that potential resolutions or rebuttals can be considered in our final evaluation. If we receive no response within ten (10) days of this letter, we will presume that no response is intended.

In the interim, we will continue to evaluate your application. If you have any questions, contact Bill Sande in our Hayward field office at (715) 934-2170. In any correspondence or inquiries, please refer to the Regulatory number shown above.

Sincerely,


for Tamara E. Cameron
Chief, Regulatory Branch

Enclosure(s)

Copy furnished:
Jeff Heller, Krech Ojard & Associates, Duluth



RECEIVED
NOV 26 2012
Krech Ojard & Assoc.

November 21, 2012

Jeff Heller
Krech Ojard & Associates
227 West First Street, Suite 200
Duluth, MN 55802

**RE: 2012-00719-WMS, USACOE PERMIT APPLICATION TO DISCHARGE
DREDGED AND FILL MATERIAL, ST. LOUIS RIVER DULUTH HARBOR**

Dear Mr. Heller:

The Minnesota Department of Natural Resources (DNR) Northeast Region has reviewed your application to discharge approximately 30 acres of dredged and fill material into the St. Louis River within the Duluth Harbor for improvements to the Duluth Dock 6 and Material Storage Facility. We have the following comments for your consideration.

As you are aware, the Minnesota DNR is participating in a multi-agency process to delist the St. Louis River Estuary as a Great Lakes Area of Concern (AOC). The AOC program, which is administered by the USEPA, has identified targets to be reached for the protection and restoration of fish and wildlife habitat in the Estuary. Achieving the targets will result in the delisting of the AOC. The goal of restoring 1,700 acres of aquatic habitat was established in order to offset several thousand acres of aquatic habitat lost to filling during development of the Estuary as an international shipping port. The strategy developed by MN DNR, in conjunction with other local resource professionals, is to focus AOC wetland restoration efforts to the area between Grassy and Rice's Points (St. Louis Bay), as this area has suffered the most dramatic wetland losses. Specifically, the littoral area within Half Moon Bay has been identified as a high-quality wetland remnant that supports healthy biological functions. Alternatives to minimize filling of aquatic habitat within this healthy remnant wetland, within a high-priority section of the Estuary for restoration, should be investigated and pursued.

Additionally, compensation for lost wetland resources must be accomplished within the St. Louis River Estuary. This is consistent with the local and regional plans including the Duluth Land Use Plan, Comprehensive Port Development Plan, and the AOC Plan. The Port Development Plan identifies the CN dock as a maritime facility. The recommended policy gives preference to this use for preservation for future development and regards it as one of the highest uses. The existing policies also characterize maritime use as associated with great economic impact and a high priority

Mr. Jeff Heller
November 21, 2012
Page 2

for development. Both existing and recommended policy in the plan identify the value of natural resources within the Estuary and specifically adopt a "no net loss" policy to aquatic habitat (and ecological functions) through preservation, mitigation, and enhancement. These policies contained in the plan specifically support mitigation within the Estuary to offset any realized adverse impacts. More detailed opportunities and policies are included in the Port Plan. These existing policies have been developed in prior planning efforts.

From our assessment, the project also likely triggers a mandatory Environmental Assessment Worksheet (EAW) and would require compliance with regulations under Minnesota Rules and Statutes 103g and 6115. Prior to permit issuance from the MN DNR, an EAW must be completed to assess the environmental effects associated with the proposed project. Contact the Minnesota Environmental Quality Board (EQB) for more information on the need for an EAW, and MN DNR regarding public waters' rules.

Please feel free to contact me or Rian Reed (218) 999-7826 with any questions you may have. Thank you for the opportunity to comment on the permit application to discharge dredged and fill material in the St. Louis River within the Duluth Harbor.

Sincerely,

A handwritten signature in blue ink that reads "Craig Engwall" followed by a small mark that appears to be "fmb".

Craig L. Engwall
Northeast Regional Director
(218) 999-7913
craig.engwall@state.mn.us



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

NOV 20 2012

REPLY TO THE ATTENTION OF
WW-16J

St. Paul District, Corps of Engineers
Regulatory Branch
15954 Rivers Edge Drive
Hayward, Wisconsin 54843

Re: Public Notice No. 2012-00719-WMS, CN Railroad, Duluth Docks and Storage Facility

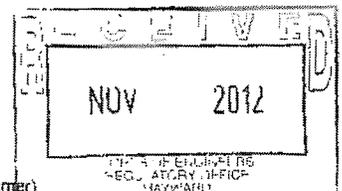
Dear Mr. Sande:

The United States Environmental Protection Agency has reviewed the subject public notice in which the applicant proposes to make improvements at their Duluth Docks and Storage Facility located in St. Louis Bay within the Duluth Harbor in St. Louis County, Minnesota. According to the public notice, the facility allows for rail car and ship loading and unloading and temporary stockpiling of various products; primarily taconite pellets and limestone. The stated project purpose consists of five parts: 1.) provide greater utilization of the capacity of Dock 6 and conveyors; 2.) improve the limestone handling mechanism; 3.) stabilize Dock 6; 4.) provide stormwater retention; and 5.) provide additional stockpile space for limestone and taconite pellets. The project would result in the discharge of dredged and fill material into approximately 24 acres of Half Moon Bay of the St. Louis River in Minnesota to expand the materials stockpiling capacity at the site. EPA has reviewed the public notice, the "Joint Water/Wetland Application Form" dated July 11, 2012 and "CN Dock Expansion Permit Application Response to Request for Information" addressed to you and dated October 18, 2012. We offer the following comments based on our review of the above listed documents.

St. Louis River Area of Concern

The Great Lakes Areas of Concern are defined by the United States of America and Canada Great Lakes Water Quality Agreement as "geographic areas that fail to meet the general or specific objectives of the agreement where such failure has caused or is likely to cause impairment of beneficial use of the area's ability to support aquatic life."¹ The project falls within the St. Louis River Area of Concern.

¹ <http://www.epa.gov/grtlakes/aoc/>



According to the *Lower St. Louis River Habitat Plan May 2002*, conservation targets for the Lower St. Louis River include industrially-influenced bays. "The bays are generally 4-5 feet deep, with varying occurrences of emergent and submergent aquatic vegetation. Lake level fluctuations have the strongest influence on water level and flow in these bays. Many bays have high concentrations of industrial debris such as rebar, concrete, and wood, and some sediments are highly contaminated with PAHs, mercury, lead, PCBs, and other toxins. Exposure to the contaminants associated with the sediments adversely affects many organisms and degrades the habitat."² As a consequence, these industrially-influenced bays are in poor health. The conservation goal for these bays is to preserve open water within these bays and to restore them to good habitat. Restoration "includes ensuring a diversity of native emergent, floating-leaved, and submergent vegetation, as well as increased diversity of native fish and bird species utilizing this habitat type."³

Conservation targets in the bay also include industrial slips which are located along the shoreline of both St. Louis Bay and Superior Bay. A conservation goal is to avoid the loss of any open water or wetland components of these habitats that result from fills and other activities. "Slips where ships regularly move in and out experience water displacement but very little unidirectional water flow. The water is frequently disturbed and turbid in the most active slips. Substrates may be sandy and scoured, or they may contain more silty sediments with varying levels of contaminants (e.g., PAHs, mercury) or industrial materials...Despite the poor conditions, even active slips are used by fish and water birds."⁴

Avoidance and Minimization

As you know, the 404(b)(1) Guidelines (the Guidelines) require that the applicant demonstrate there are no practicable alternatives available that would have a less adverse impact on the aquatic environment for non-water dependant activities such as stockpiling taconite pellets and limestone. The applicant must follow a sequence of steps to be in compliance with the Guidelines, which begins with avoidance of impacts, followed by minimization of impacts, and finally compensation for any remaining unavoidable impacts. EPA requests more information to assist in the evaluation of the alternatives that have been discarded by the applicant.

Specifically, we request more information regarding the statement that the "existing soils do not have the capacity to allow greater loading that would occur with higher stockpiles" and therefore, the stockpiles can't be built up any higher than the existing configuration. The

² <http://www.stlouisriver.org/IAhabitatplan/habitatplan.html>

³ Id.

⁴ Id.

applicant has not provided specific information regarding why the soils won't allow for additional loading within the existing footprint of the stockpiles. In addition, the application does not include any details regarding existing stockpile capacity and how it falls short of handling the volume of material associated with current and future stockpiling needs.

Additionally, the applicant has eliminated the utilization of Dock 5 for materials storage because of the integrity of the dock and costs to refurbish it. The information provided shows that Dock 5 was constructed around the same time period as Dock 6, yet the applicant is investing in stabilization and repair of Dock 6 which is also experiencing structural failure. The applicant needs to provide more detailed information regarding why the refurbishment of Dock 5 is cost prohibitive as this factors into the determination of the practicability of this alternative.

Another alternative for stockpiling/material handling was removal of the existing berm near Half Moon Bay. This alternative was discarded due to inadequate capacity for needed for stockpiling. Again, we do not have any information regarding current and future capacity needs and how this alternative falls short. The applicant should consider multiple locations for stockpiling or combinations of methods and areas for stockpiling in upland areas.

The project is not in compliance with the 404(b)(1) Guidelines because the alternatives analysis is deficient for the above mentioned reasons.

Compensatory Mitigation

"Dredging and deliberate filling have been the two greatest causes of habitat loss in the Lower St. Louis River, and they remain a continual threat...such filling would result in the direct loss of estuarine aquatic habitats and their associated Great Lakes coastal wetland complexes; it would also negatively impact the native fish, birds, and other species that are dependent on these habitats."⁵

As stated previously, compensatory mitigation is the last step in the sequence during a permit review.⁶ EPA maintains that an in depth discussion regarding mitigation is premature given the outstanding issues with the alternatives analysis referenced above and is contingent on whether the remaining issues with the alternatives analysis can be resolved. The applicant has submitted a draft "Application for Withdrawal of Wetland Credits from the Minnesota Wetland Bank" which indicates that they intend to withdraw 30-acres of sedge meadow credits from Agassiz Wild Rice in Beltrami County, MN. EPA recommends that mitigation in the form of restoration and/or enhancement be proposed in the St. Louis River AOC to offset any unavoidable impacts to aquatic resources. EPA understands the compensatory mitigation plan is conceptual and requests a copy of the final mitigation package to review before a permit decision is made.

⁵ Id.

⁶ 40 C.F.R. § 230.91(c), 33 C.F.R. § 323.1(c)

Information on the quality of the proposed discharge materials

EPA understands that material testing of the existing berm has been completed and the results are pending. The applicant should commit to disclosing the results to EPA and the Corps and performing future testing of any material that would be discharged into waters for the purpose of construction this project, as necessary.

In conclusion, the project is not in compliance with the Guidelines for the following reasons: the project would impact 24 acres of shallow aquatic habitat in a Great Lakes AOC, the alternatives analysis is deficient, and the conceptual mitigation plan fails to include compensation for the proposed impacts within the St. Louis River Watershed. We object to the issuance of the permit for this project as currently proposed. Please inform us about your intentions to permit this project before a permit decision is made. Please keep us apprised of any major revisions to the permit and any response to our comments. Please contact Melissa Blankenship of my office at (312) 886-6833 with any questions regarding this matter.

Sincerely,



For

Peter Swenson, Chief
Watersheds and Wetlands Branch

cc: U.S. Fish and Wildlife Service
Ecological Services Field Office
ATTN: Nick Rowse
4101 East 80th Street
Bloomington, MN 55425

Minnesota Pollution Control Agency
Municipal Division
ATTN: David Richfield
520 Lafayette Road North
St. Paul, MN 55155-4194

Minnesota Pollution Control Agency
ATTN: Patrick Carey
525 Lake Avenue South
Suite 400
Duluth, MN 55802

L.J. WALSH CO

230 WEST SUPERIOR ST – STE 600

DULUTH MN 55812

218-348-1810

Mr. Bill Sande

US Army Corps of Engineers

15954 Rivers Edge Dr

Hayward WI 54843

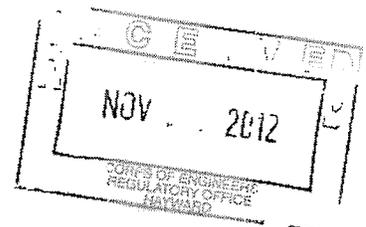
Mr. Sande:

As the owner of adjacent properties with several tenants and shoreline, I am sending you a list of my concerns regarding the CN Railway expansion project reference number 2012-00719-WMS.

- *Additional traffic on Courtland Street with contractor vehicles and large trucks hauling fill.*
- *Additional piles of materials and conveyors will greatly add to an already intolerable problem of fugitive dust which affects our tenants and will affect future development of our waterfront property and our ability to lease space.*
- *According to navigational charts of the St Louis River Basin and shipping canal there are ruins of a dock that run from our Eastern property line out to the shipping canal. The architects drawing shows an ore boat partially docked at the proposed sea wall and hanging out in front of our property blocking our shoreline to boat and seaplane access which affects our use and future development and in turn, our property value.*

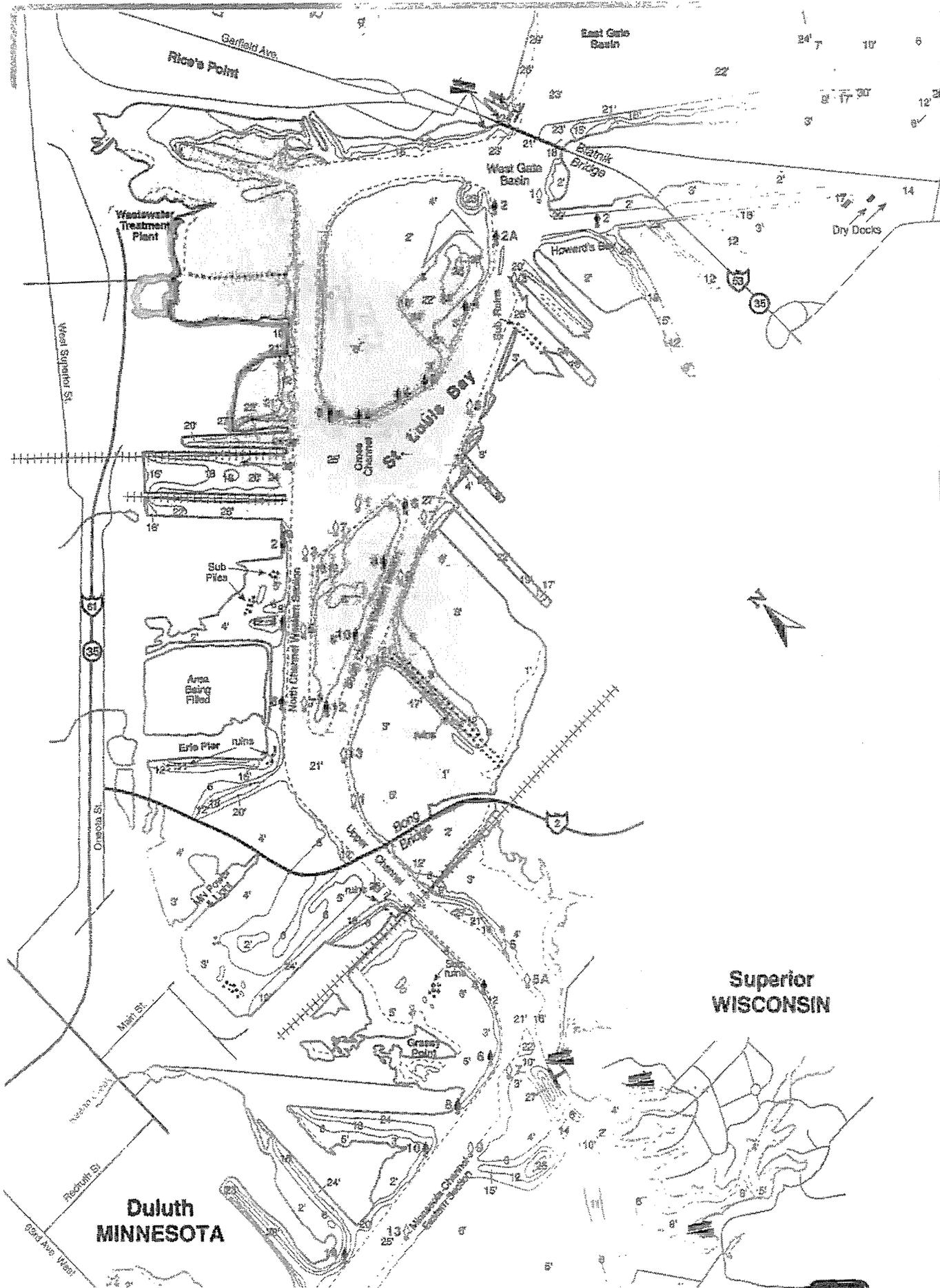
Bryan Walsh

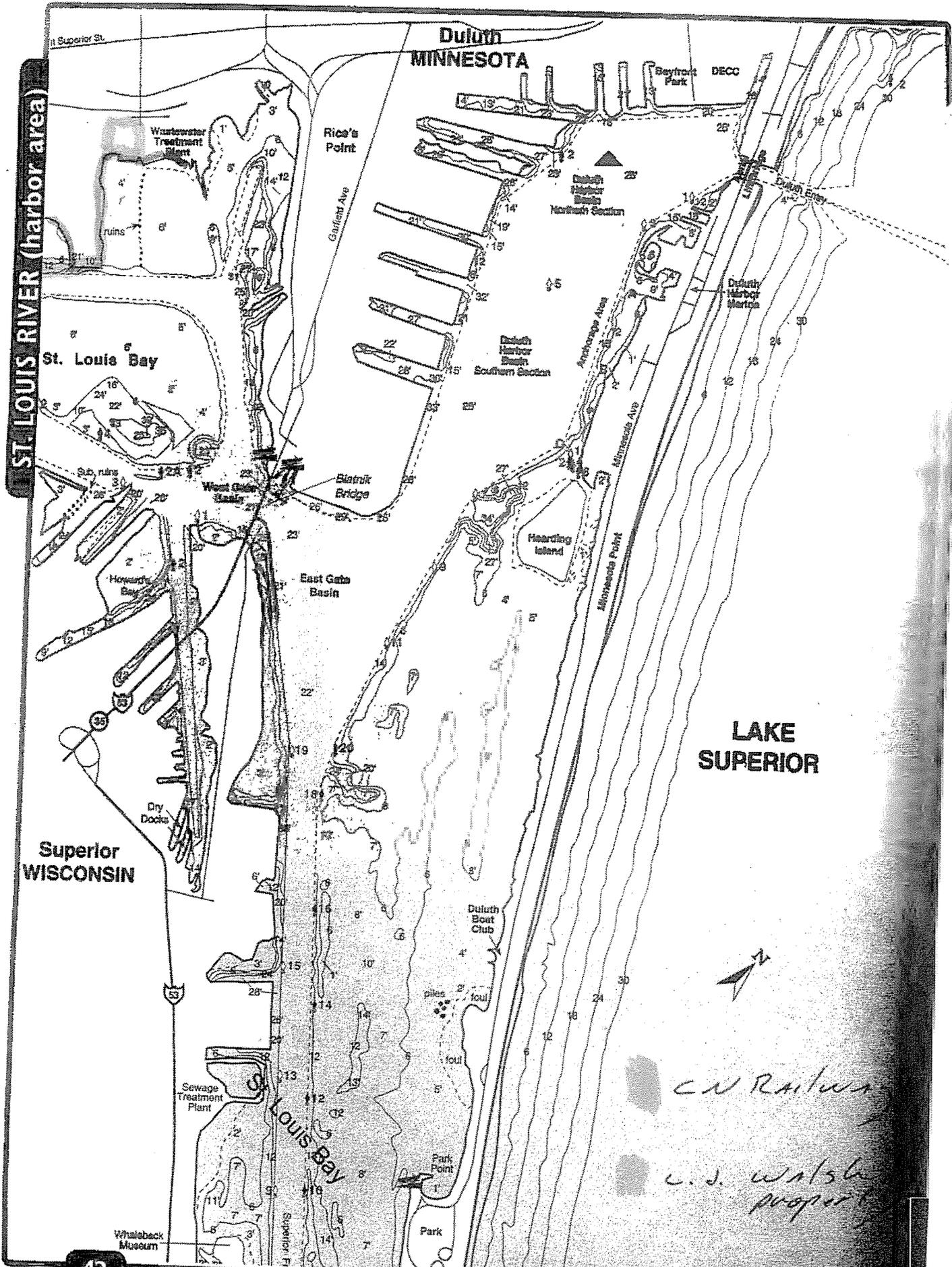
L.J. Walsh Co





ST. LOUIS RIVER (bay area)





C.N. Railway
C.S. Walsh
Proprietor



November 21, 2012

Bill Sande
US Army Corps of Engineers
St. Paul District
15954 Rivers Edge Drive
Hayward, WI 54843

**RE: PUBLIC NOTICE 2012-00719-WMS
CN RAILWAY DULUTH DOCK 6 AND MATERIALS STORAGE FACILITY**

Dear Mr. Sande:

The Duluth Area Chamber of Commerce would like to take this opportunity during the Public Notice period to provide support of the CN Dock 6 and Materials Storage Facility project. Built by the Duluth, Missabe and Iron Range Railway in 1918, the dock has been a fixture of Duluth Harbor for nearly a century. This project will allow it to remain a key component of the steel industry supply chain for decades to come.

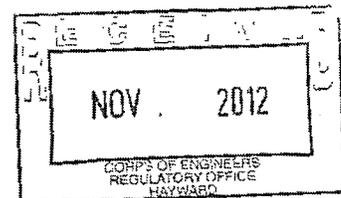
Today 63 employees work on the Duluth Dock, plus hundreds more on the vessels and trains that bring limestone and taconite pellets to and from the facility. The immediate and long lasting economic benefits to the region include the creation of temporary construction jobs and stable, high-paying jobs in the steel supply chain. The economic ripple effect of this expansion would bring further prosperity and progress to Duluth, which we consider to be one of the great cities on the greatest of the Great Lakes.

The Materials Storage Facility Project will enable the facility to accommodate the mining industry well into the future and compete in the global market for raw materials. CN's investment to grow its operations is vital to the continued success of the entire region, as well as our beloved city on the hill. The Duluth Area Chamber of Commerce appreciates the opportunity to support this important project for the region which coincides with our mission of economic growth and stability. I would be pleased to discuss this project further and may be reached at 218-740-3751. I would look forward to hearing from you.

Sincerely,

David Ross, President & CEO
Duluth Area Chamber of Commerce

cc: Mark Erickson, Port Manager, CN
Patrick Waldron, Manager - US Public Affairs, CN





City of Duluth
Don Ness, Mayor

411 West First Street • Room 403 • Duluth, Minnesota • 55802-1199
218-730-5230 • Fax: 218-730-5904 • Email: dness@duluthmn.gov • www.duluthmn.gov

An Equal Opportunity Employer

November 20, 2012

Bill Sande
US Army Corps of Engineers
St. Paul District
15954 Rivers Edge Drive
Hayward, WI 54843

**RE: PUBLIC NOTICE 2012-00719-WMS
CN RAILWAY DULUTH DOCK 6 AND MATERIALS STORAGE FACILITY**

Dear Mr. Sande,

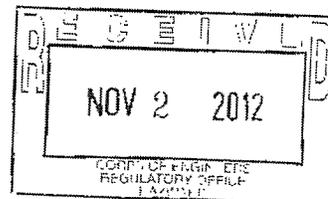
On behalf of the City of Duluth, I am writing to express support of the CN Dock 6 and Materials Storage Facility Project. Since it was built during World War I by the DM&IR, the dock and the adjacent storage facility have been an integral part of our city's industrial waterfront.

Over the past century the dock has been modernized to accommodate the changing and growing needs of industry it serves, from the Iron Range to the Great Lakes. One of those changes came in 1965 with the opening of a stockpile site adjacent to Dock 6. Today, nearly a century after it was built, CN is looking to stabilize the dock structure which will allow taconite to flow through for decades more. Additionally, CN plans to expand the stockpile site in order to grow its capacity to meet the growing demands of Minnesota's steel industry.

This project will have immediate and long-term economic benefits to Duluth and the entire region, first with the creation of temporary construction jobs and then with stable, permanent employment opportunities. This project will enable the facility to accommodate the mining industry well into the future and allow Duluth to remain competitive in the raw materials global market. The City of Duluth appreciates this opportunity to express support for such an important regional project during this public notice period. Please feel free to contact me at (218) 730-5230 if I can be of further assistance or support.

Sincerely,

Don Ness
Mayor





**Fond du Lac
Environmental
Program**

William Sande
Regulatory Branch, St. Paul District
U.S. Army Corps of Engineers
15954 Rivers Edge Drive
Hayward, WI 54843

28 November 2012

RE: 2012-00719-WMS



Dear Mr. Sande:

I am writing to comment on the project proposed by Canadian National to discharge dredge and fill material into Half Moon Bay in the Duluth Harbor (St. Louis River Estuary) for improvements to their Duluth Dock 6 and Materials Storage Facility. The Fond du Lac Band of Lake Superior Chippewa (Fond du Lac) retains hunting, fishing, and gathering rights in the 1854 Ceded Territory in which this project is located.

In addition, Fond du Lac has been working with numerous federal, state, local, and tribal agencies, non-profit organizations, academia, and other interested parties to remediate contaminated sediments and develop habitat restoration projects within the St. Louis River Estuary as part of the eventual delisting of the estuary as an Area of Concern (AOC). One of the identified reasons for AOC listing is the Loss of Fish and Wildlife Habitat, a Beneficial Use Impairment (BUI). Those working to remove this BUI have set an interim goal of restoring 1,700 acres of habitat within the estuary.

We have the following concerns regarding this project:

1) No discussion of alternatives can be found in the USACE Public Notice. This is not acceptable. The applicant should be required to undertake a serious analysis of potential alternatives that could still accomplish their goals. Additionally, the Public Notice does not indicate that the applicant undertook any sequencing steps to reduce their proposed impacts.

2) The proposed project essentially proposes filling Half Moon Bay in its entirety. The loss of 24 acres of existing fish and wildlife habitat would have a severe impact on removal of the Loss of Fish and Wildlife Habitat BUI by taking a further step backwards in the goal of 1,700 acres of restored fish and wildlife habitat.

3) It appears the applicant has proposed mitigation in the form of purchasing credits from a mitigation bank. This is also unacceptable. The loss of fish and wildlife habitat, shallow and deepwater wetlands and deepwater riverine habitat within the estuary cannot be compensated adequately by transferring those mitigation credits outside the estuary and most likely outside of the St. Louis River watershed. We request ALL mitigation be conducted within the St. Louis River Estuary should the applicant receive their desired permit.

4) As stated above, the Fond du Lac Band of Lake Superior Chippewa retains hunting, fishing, and gathering rights – usufructuary rights – within the 1854 Ceded Territory of which the estuary is a part. Areas that contribute to the production of fish, wildlife, and plants that Indians have depended upon to maintain their way of life for centuries have been disappearing from the landscape. As an agency of the United States of America, the United States Army Corps of Engineers has a Trust Responsibility to the Fond du Lac Band of Lake Superior Chippewa as well as other Tribes throughout the nation. Stemming the loss of habitat that band members depend on should be one of those responsibilities.

5) Despite our objections, and I assume the objections of others, should this project be granted a Department of the Army – Dredge and Fill Permit, we would have an additional concern regarding the source of their dredge material utilized for the project. As part of the restoration of habitat areas within the estuary, the partners working toward BUI removal have been working with the Civil Works Branch of the Corps to aid them in accomplishing the beneficial reuse of dredged materials from the navigation channels within the Duluth Harbor. We have been proposing that much, if not all of this material be used for the creation and restoration of habitat within the estuary – material that would be placed in those areas directly without prior placement within the Dredged Materials site at Erie Pier. As the Public Notice does not address the applicant's intention to use dredge materials from Erie Pier for their project, we are concerned that the applicant may attempt to obtain materials directly from the dredging operations to reduce their project costs. If this were to occur, it would severely limit the partners' ability to develop and conduct habitat restoration projects within the St. Louis River Estuary.

The Fond du Lac Band of Lake Superior Chippewa thanks the U.S. Army Corps of Engineers for the opportunity to comment on this proposed project.

Sincerely:

A handwritten signature in black ink that reads "Richard D. Gitar". The signature is written in a cursive style with a large initial "R" and a long horizontal stroke at the end.

Richard D. Gitar
Water Regulatory Specialist/Tribal Inspector
Fond du Lac Reservation
Office of Water Protection



Minnesota Pollution Control Agency

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DEC 21 2012
Krech Ojard & Assoc.

December 19, 2012

Ms. Tamara Cameron
USACE
Regulatory Branch Chief, St. Paul District
180 Fifth St E Ste 700
St. Paul, MN 55101-1678

Mr. Jeff Heller
Krech Ojard & Associates
227 First St W Ste 200
Duluth, MN 55802

RE: Denial Without Prejudice of 401 Certification for CN Railway; 2012-00719-WMS

Dear Ms. Cameron and Mr. Heller:

This letter is submitted by the Minnesota Pollution Control Agency (MPCA) under authority of Section 401 of the Clean Water Act (CWA) (33 USC 1251 et seq.), Minn. Stat. chs. 115 and 116 Minn. R. 7001.1400-7001.1470.

Thank you for the opportunity to meet on November 15, 2012 and discuss the application for a 401 Certification for proposed CN loading facility improvements. As we discussed at the meeting, the proposed site contains a mixture of deep water river habitat and river wetland. Further information is needed to determine aquatic habitat value of the areas of the St. Louis River that are proposed to be filled. It was also agreed that the habitat at the proposed site has historically been impacted and is not a pristine natural habitat.

The proposed compensation for removal of portions of the river needs further research to determine whether compensation can be located nearby in the river. Based on knowledge of existing areas of concern it is reasonable to expect that compensation is possible in nearby segments of the river. Compensation at a nearby location would be consistent with Minnesota Rules. Requirements in Minnesota Rules Chapter 7050 provides the MPCA some flexibility in the timing of the compensation provided the compensation comes from the St. Louis River Area of Concern (AOC)

For these reasons, MPCA is denying without prejudice the 401 Certification. Stated more simply, the existing application information does not allow MPCA to determine that the proposed project would meet Minnesota water quality standards. We are allowing CN to provide additional information and opportunity to propose a modified approach to compensation. Upon receipt of additional information we will reconsider our determination.

Ms. Tamara Cameron
Mr. Jeff Heller
Page 2
December 19, 2012

For further information, please contact Jim Brist at 651-757-2245.

Sincerely,

A handwritten signature in cursive script that reads "David Richfield". The signature is written in black ink and is positioned above the printed name and title.

David Richfield
Supervisor, Agency Rules Unit
SSTS Section
Municipal Division

DR/JB:ah

cc: Peter Swenson, USEPA
Janice Cheng, USEPA
Bill Sande, USACE
Kent Lokkesmoe, DNR

Minnesota Department of Natural Resources

DIVISION OF ECOLOGICAL & WATER RESOURCES

1568 HIGHWAY 2, Two Harbors, MN 55616
218-834-1442



January 9, 2013

Jeff Heller, P.E.
Krech Ojard & Associates
227 West First Street, Suite 200
Duluth MN 55802

CN Dock 6 Modification, St Louis River Estuary, St Louis County:

Application Received but Incomplete – Additional Information Needed

Thank you for your recent DNR permit application. Your application has been reviewed by DNR staff and is **not complete**. You will need to provide additional information before your application can be processed.

The steps we follow when reviewing your application are based on the guidance given in Minnesota Statutes, chapter 103G and Minnesota Rules, chapter 6115. The information an applicant provides helps staff to understand the work being proposed so that reviewers may make informed decisions.

Please provide the following information for the above referenced application

- Available additional supporting information under project alternatives describing efforts to minimize encroachment change or damage to the environment, particularly the ecology of the waters
- Approved spoils disposal plan
- Completed fee calculation sheet
- Estimated amount of material to be excavated/filled
- Technical reports: including on-site stormwater evaluation, and a characterization of the site addressing susceptibility of the adjacent beds of public waters to actions of wind, waves, and currents which demonstrates the proposed fill will be stable
- A complete set of the most recently developed drawings or plans for proposed project, including temporary and permanent erosion and sediment control measures, and measurements and dimensions related to dock stabilization, stormwater retention, and phased materials storage/handling surface area increases

Last Updated July 17, 2012



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Transition to an Electronic System in 2013

The DNR is happy to report that work is underway to transition to an online system for our water permit application and annual water use reporting. We anticipate that the first stage of the new system will be available in July of 2013, with additional features being added in future years. This new system is being designed to benefit DNR's permit holders and applicants with a simple, convenient and easy-to-use system. More information about this process will be available on our website in early 2013.

Please contact me at patricia.fowler@state.mn.us or 218-834-1442 with questions.

Sincerely,

A handwritten signature in cursive script, appearing to read "Patricia L. Fowler".

Patricia L Fowler, Area Hydrologist
DNR Ecological and Water Resources

- Ground level photographs of area in question
- Other;

- If the results of the mandatory environmental review process lead to an alternative that has unavoidable impacts, these adverse effects are subject to mitigation measures approved by the commissioner. As previously conveyed, DNR recommends any mitigation occur within the St. Louis River Estuary.

- Demonstrated consistency with the requirements of state and federal entities under the Federal Clean Water Act related to proposed fill material used. → ASK Corps →
we provide will meet.

Please be aware that no further action will be taken on your permit application until the above requested items are received and your permit application is considered to be complete.

Next Steps in Your Application Process

The next steps in review of your permit application will begin as soon as we receive **both** the information needed (indicated above) as well as payment of your application fee, which will be invoiced separately.

For the proposed project all mandatory environmental review must be completed before a permit can be issued. As DNR has indicated in previous discussion and correspondence, the project will require a mandatory EAW per MN Rule 4410.4300, Subp. 27., Item A., for projects that will change or diminish the course, current, or cross-section of **one acre or more of any public water** or public waters wetland except for those to be drained without a permit pursuant to Minnesota Statutes, chapter 103G, the local government unit shall be the RGU. There may be additional categories which **may also trigger mandatory state or federal review.** We encourage continued coordination during this process.

For a permit of this type, the process typically involves:

- 30 day review (may involve municipality, county, watershed organization, and SWCD)
- Technical and resource review by DNR staff
- Determination of any additional fees required
- Possible request for additional information from applicant

The process may also involve:

- Site visit by DNR or local government staff
- Site-specific technical study

It is expected that the permit application review process generally takes 45 to 150 days after we receive both the information outlined above and payment of your application fee. **Please be advised that no activity proposed in this permit application may take place unless the permit is issued.** You may not proceed with the work in anticipation of receiving a permit.

3.0 ATTACHMENTS

4.0 Sediment Sample Table and Locations

Table 1: Sediment Sampling Results and Screening

Analyte	Sample 11-3-5	Sample S1	Sample S2	Sample S3	Sample S4	Sample S5	Sample Average	MPCA Level 1	MPCA Level 2	Units
Aldrin	0	0	0	0	0	0	0.0	1000	2000	ug/kg
alpha-BHC	0	0	0	0	0	0	0.0			ug/kg
beta-BHC	0	0	0	0	0	0	0.0			ug/kg
delta-BHC	0	0	0	0	0	0	0.0			ug/kg
gamma-BHC (Lindane)	0	0	0	0	0	0	0.0	9000	15000	ug/kg
Chlordane (Technical)	0	0	0	0	0	0	0.0	13000	74000	ug/kg
alpha-Chlordane	0	0	0	0	0	0	0.0			ug/kg
beta-Chlordane	0	0	0	0	0	0	0.0			ug/kg
4,4'-DDD	0	0	0	0	0	0	0.0	56000	125000	ug/kg
4,4'-DDE	0	0	0	0	0	0	0.0	40000	80000	ug/kg
4,4'-DDT	0	0	0	0	0	0	0.0	15000	88000	ug/kg
Dieldrin	0	0	0	0	0	0	0.0	800	2000	ug/kg
Endosulfan I	0	0	0	0	0	0	0.0			ug/kg
Endosulfan II	0	0	0	0	0	0	0.0			ug/kg
Endosulfan sulfate	1.6	0	2.2	0	0	0	0.6			ug/kg
Endrin	0	0	0	0	0	0	0.0	8000	56000	ug/kg
Endrin aldehyde	0	0	0	0	0	0	0.0			ug/kg
Endrin ketone	0	0	0	0	0	0	0.0			ug/kg
Heptachlor	0	0	0	0	0	0	0.0	2000	3500	ug/kg
Heptachlor epoxide	0	0	0	0	0	0	0.0			ug/kg
Methoxychlor	0	0	0	0	0	0	0.0			ug/kg
Toxaphene	0	52	113	0	0	0	27.5	13000	28000	ug/kg
PCB-1016	0	0	0	0	0	0	0.0	1200	8000	ug/kg
PCB-1221	0	0	0	0	0	0	0.0	1200	8000	ug/kg
PCB-1232	0	0	0	0	0	0	0.0	1200	8000	ug/kg
PCB-1242	0	0	0	0	0	0	0.0	1200	8000	ug/kg
PCB-1248	0	0	0	0	0	0	0.0	1200	8000	ug/kg
PCB-1254	0	0	0	0	0	0	0.0	1200	8000	ug/kg
PCB-1260	0	0	0	0	0	0	0.0	1200	8000	ug/kg
PCB-1262	0	0	0	0	0	0	0.0	1200	8000	ug/kg
PCB-1268	0	0	0	0	0	0	0.0	1200	8000	ug/kg
Arsenic	4.7	5.6	4.3	2.7	2	2.9	3.7	9	20	mg/kg
Barium	55.8	110	80.6	55	52.7	53.3	67.9	1100	18000	mg/kg
Chromium	21.4	32.2	27.5	20.1	19.6	18.6	23.2			mg/kg
Copper	14.9	28.6	23.7	13.2	13.6	14.4	18.1	100	9000	mg/kg
Lead	21.2	41	34.1	18.1	13.8	25.7	25.7	300	700	mg/kg
Manganese	344	570	439	352	310	298	385.5	3600	8100	mg/kg
Nickel	16.7	23	19.8	16	15.6	41.1	22.0	560	2500	mg/kg
Selenium	7.4	9.6	7	6.4	5.1	5.5	6.8	160	1300	mg/kg
Mercury	0.042	0.25	0.16	0.05	0.029	0.087	0.1	0.5	1.5	mg/kg
Acenaphthene	0	18.7	0	8.2	0	0	4.5	1200000	5260000	ug/kg
Acenaphthylene	11.5	39.6	0	17.9	0	0	11.5			ug/kg
Anthracene	20.4	73.4	15.3	36	8.2	0	25.6	7800000	45400000	ug/kg
Benzo(a)anthracene	62.3	241	51.9	106	23.7	24.4	84.9			ug/kg
Benzo(a)pyrene	81	297	64.7	148	29.6	28.5	108.1	2000	3000	ug/kg
Benzo(e)pyrene	58.9	235	49.8	106	22.9	19.7	82.1			ug/kg
Benzo(g,h,i)perylene	52.1	136	35.1	83.2	17.8	16.8	56.8			ug/kg
Benzo(a)fluoranthene	152	528	118	283	59	57.6	199.6			ug/kg
Carbazole	0	12.4	0	0	0	0	2.1			ug/kg
2-Chloronaphthalene	0	0	0	0	0	0	0.0			ug/kg
Chrysene	66.4	281	61	119	26.4	24.2	96.3			ug/kg
Dibenz(a,h)acridine	0	0	0	0	0	0	0.0			ug/kg
Dibenz(a,h)anthracene	16	42.9	9.2	24.6	0	0	15.5			ug/kg
Dibenz(a,j)acridine	0	0	0	0	0	0	0.0			ug/kg
Dibenzo(a,e)pyrene	59.2	52.6	16.7	43.6	9.9	9	31.8			ug/kg
Dibenzo(a,h)pyrene	24	34.7	0	25.5	0	0	14.0			ug/kg
Dibenzo(a,i)pyrene	0	12.5	10.5	8.5	0	0	5.3			ug/kg
Dibenzo(a,l)pyrene	0	0	0	0	0	0	0.0			ug/kg
7H-Dibenzo(c,g)carbazole	0	0	15.7	0	0	0	2.6			ug/kg
Dibenzofuran	12.2	24.1	0	20.8	0	0	9.5			ug/kg
7,12-Dimethylbenz(a)anthracene	0	0	0	0	0	0	0.0			ug/kg
1,6-Dinitropyrene	0	0	0	0	0	0	0.0			ug/kg
1,8-Dinitropyrene	0	0	0	0	0	0	0.0			ug/kg
Fluoranthene	114	400	102	196	44.1	45.9	150.3	1080000	6800000	ug/kg
Fluorene	13.9	35.7	0	22.9	0	0	12.1	850000	4120000	ug/kg
Indeno(1,2,3-cd)pyrene	48.8	122	31.7	82.3	16.1	17	53.0			ug/kg
3-Methylcholanthrene	0	0	0	0	0	0	0.0			ug/kg
5-Methylchrysene	18.4	63.2	13.8	27.1	0	0	20.4			ug/kg
1-Methylnaphthalene	19.6	22.9	9.3	30.4	8.8	0	15.2			ug/kg
2-Methylnaphthalene	25.4	37.8	12.7	41.1	12.4	0	21.6			ug/kg
Naphthalene	24.7	91.5	19.9	41.2	19.1	0	32.7	10000	28000	ug/kg
5-Nitroacenaphthalene	0	0	10.9	0	0	9.2	3.4			ug/kg
6-Nitrochrysene	0	0	0	0	0	0	0.0			ug/kg
2-Nitrofluorene	0	0	0	0	0	0	0.0			ug/kg
1-Nitropyrene	0	0	0	0	0	0	0.0			ug/kg
4-Nitropyrene	0	0	0	0	0	0	0.0			ug/kg
Perylene	124	141	270	229	189	193	191.0			ug/kg
Phenanthrene	53.7	164	41	87.5	22.1	15.8	64.0			ug/kg
Pyrene	109	424	98.4	187	42.8	42.1	150.6	890000	5800000	ug/kg
Chromium, Hexavalent	0	2.9	0	0	0	0	0.5	87	650	mg/kg
Oil and Grease	117	536	167	151	80.4	0	175.2			mg/kg
Chromium, Trivalent	21.4	29.3	27.5	20.1	19.6	18.6	22.8	44000	100000	mg/kg
Nitrogen, Ammonia	116	300	179	124	119	130	161.3			mg/kg
Nitrogen, Total Kjeldahl Nitrogen	1100	1920	1660	921	1430	1180	1368.5			mg/kg
Nitrogen, NO2 plus NO3	0	2.4	2.2	0	0	0	0.8			mg/kg
Phosphorus	488	900	778	558	606	516	641.0			mg/kg
Cyanide	0	0.38	0	0	0	0	0.1	60	5000	mg/kg
Mean Total Organic Carbon BAP Equivalent	24600 n/a	34600 n/a	29000 n/a	25400 n/a	32700 n/a	23900 n/a	28366.7 435.3			mg/kg ug/kg



Reference: Google Earth Image



FILE No. sample locations.dwg
 PROJECT No. 113-81071

SCALE	None
CADD	MTK
DATE	2/27/2013
CHECK	...
DATE	...
REV.	...

TITLE	
CN DULUTH DOCKS Borehole / Sample Locations	
FIGURE	-
CN / DULUTH DOCKS / MN	