MUNGER LANDING DECISION SUMMARY
MINNESOTA POLLUTION CONTROL AGENCY
SITE REMEDIATION UNIT 2

Site Name:	Munger Landing
Address:	Clyde Avenue Boat Launch in Smithville
SR /AI Number:	SR0001015/AI189269
WDNR BRRTS Number:	02-16-580678
Project Manager:	Erin Endsley
Technical Analyst:	Mark Elliott

STATEMENT OF PURPOSE

This Decision Summary presents the selected remedial action for the Munger Landing section of the St. Louis River Area of Concern and summarizes the facts and determinations made by the Minnesota Pollution Control Agency (MPCA) in approving the selected response actions. The response actions were designed to minimize or remove exposure to sediment contaminants that bioaccumulate in the food chain to levels that are protective of human health and the environment. MPCA is proposing to dredge all contaminated sediments above cleanup levels, in order to minimize risks to human health and the environment and to be protective in the long term.

SITE BACKGROUND AND HISTORY

Munger Landing (Site) is located within the boundaries of the St. Louis River Area of Concern (SLRAOC or St. Louis River AOC; Figure 1). Due to documented sediment contamination, the MPCA identified Munger Landing as an area requiring remedial action to address sediment contamination, a "Remedial Action Area", for the SLRAOC. The Site is listed in the SLRAOC Response Action Plan (RAP, 1992) as a required remedial action to remove restrictions on dredging, and the selected response action will assist with the removal of beneficial use impairments and lead to eventual delisting of the SLRAOC. MPCA is working in partnership and coordination with Wisconsin Department of Natural Resources (WDNR) and the U. S. Environmental Protection Agency (USEPA) to conduct the selected response action. MPCA will use state bonding authority to fund the response action, and apply to USEPA's Great Lakes Legacy Act (GLLA) for federal funding. It is anticipated WDNR will contribute funds for the portion of the cleanup in Wisconsin waters.

Munger Landing is a cut-off channel of the St. Louis River, also known as the Clyde Avenue boat launch. It is a city-owned launch and fishing pier located adjacent to the Smithville neighborhood in west Duluth. It is separated from the main river by a long, narrow undeveloped island that runs north to south along the majority of the project area. Current land use in the vicinity is residential, with recreational development at the landing, and recreational and commercial development at the Spirit Lake Marina and RV Park on the north end of the Site. The Lake Superior and Mississippi Railroad also operates a seasonal scenic rail tour on the city-owned rail line that runs north-south adjacent to the Site.

The sides of the cut-off channel are characterized by shallow emergent vegetation areas with water depths ranging between 1 and 3 feet. The central portion of the site is characterized by a deeper channel with depths ranging from 6 to 10 feet, and is the location of the historic channel of the main river which now serves as the official boundary between Minnesota (MN) and Wisconsin (WI). Studies by MN Department of Natural Resources (MN DNR) indicate the site is frequented by spawning muskies

and other fish, and the Site is popular with recreational boaters and fishers. The City of Duluth is in the planning stages for developing a kayak launch north of the fishing pier.

The nearshore and open water sediments were the subject of a 2015 cleanup investigation, and additional sediment investigation was done in 2017 and 2018. The investigation identified heavy metals, mercury, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and dioxins/furans as contaminants of concern in the sediments. Contaminated sediment was identified throughout the Site, and in the adjacent Stewart Creek wetlands and Snively Creek. The contaminated sediment is found on both sides of the MN/WI state border.

This contamination is considered to present a high likelihood of significant effects to benthic invertebrates, and contributes to detectable levels of PCBs, dioxins/furans, and mercury in fish tissue. The levels of contaminants also present a risk to human health for people swimming, wading, or eating fish.

Site History

Historically, the area where Munger Landing is located has been used for a variety of uses. Currently, the Site is downstream from the former U. S. Steel Duluth Works steel mill, and upstream of the Spirit Lake Marina & RV Park, which was formerly a shipbuilding facility. Prior to development, maps from 1861 depict the cut-off channel at the Site as the main river channel, with depths up to 28 feet, with a crescent shaped island/wetland depicted to the east of the main channel. By the early 1900s, maps begin to depict the Morgan Park neighborhood and the U. S. Steel Duluth Works facility to the south of the Site. A rail line is shown along the west shoreline surrounding the Site, and the cut-off channel is labeled as the old channel after the construction of a shipping channel east of the wetland/island complex. Maps from this time begin to show development of the area west of the Site as a residential area.

During the mid- to late 1900s, land use included the further development of the U. S. Steel facility and the Morgan Park neighborhood to the south, and development of the land to the west as a residential neighborhood. The land to the north was used as a shipbuilding facility from 1917-1950, with piers constructed out over the former river channel and extending across the MN/WI border. From 1953-1997, an upland parcel near the Site was the location of two electrical equipment repair companies, Westinghouse Electric Corporation, and the Eastern Electric Apparatus Repair Company, both of whom are considered potential sources of the PCB contamination found at the Site. During low water level years, the aerial photos depict that the shallow areas of the Site consist of emergent vegetation, and only the former main river channel appears to be open water. The size of the island/wetland to the east also varies in size and shape dependent upon the water level.

From 1961-1979, the Smithville wastewater treatment plant was located at the current site of the boat launch. The plant treated water from the surrounding Smithville neighborhood, including the Westinghouse Electric facility. The outfall for the plant was located at the site of the current boat launch. The plant was demolished in 1979, after the Western Lake Superior Sanitary District came on line in 1978. The location was later developed as a boat launch and fishing pier, and continues to be used for that purpose.

The Duluth-Superior Harbor, which connects to Lake Superior, has a long history of serving the manufacturing and shipping needs for the Duluth-Superior Region and has been home to significant historical heavy industry including paper mills, coal gasification plants, and steel processing. The Duluth-

Superior port remains active in the transportation of iron ore, coal, limestone, and grain, and is the largest port on the Great Lakes in terms of shipping volume.

DESCRIPTION OF CONTAMINANTS

Sediment Chemistry

In 2010-2011, the USEPA and United States Army Corps of Engineers (USACE) conducted an extensive sediment characterization project in the SLRAOC. MPCA used the AOC-wide sediment characterization data as a baseline for its planning level analysis of the assessment data, which determined areas of the SLRAOC in need of remediation, additional investigation, or restoration. The MPCA received funding from the USEPA, Great Lakes National Program Office (GLNPO) in 2013 to perform a detailed investigation to determine the nature and extent of contaminated sediments at Munger Landing and prepare a Focused Feasibility Study (FFS). MPCA conducted bioaccumulation and toxicity testing in 2015, and additional sediment characterization for polychlorinated biphenyls (PCBs) and dioxins/furans in 2017. GLNPO conducted additional sediment characterization for PCBs, dioxins/furans, and mercury in 2018. Data gap investigation for PCBs and dioxins/furans was conducted by MPCA in 2019.

The sediment characterization of the Site from 2011-2019 identified sediment contaminated with metals, polycyclic aromatic hydrocarbons (PAHs), PCBs, and dioxins/furans. Concentrations of these contaminants are summarized in Table 1. Due to the elevated concentrations of PCBs, dioxins/furans, and mercury, and their bioaccumulative nature, these compounds are considered the primary contaminants of concern (COCs), and were used to define the remedial footprint. Contaminated sediment was generally identified throughout the Site, with the highest concentration areas adjacent to the boat launch and in the deeper central channel area. Contamination also extends into the Stewart Creek wetlands, and Snively Creek. The sediment portion of the Site totals approximately 35.3 acres. Sediment contamination extends down to 0.5-1.0 meter below sediment surface (bss). The current estimate of the total volume of contaminated sediments is approximately 121,400 cubic yards. The remedial footprint is depicted in Figure 2.

Potential sources of contamination include the upstream electrical repair facilities, which had a history of repairing PCB-containing electrical equipment, and for which there are documented releases to the environment. High levels of PCB-contaminated soils were found at the site of the former facilities, and were later removed or remediated through site redevelopment activities. The outfall of the former wastewater treatment plant was located at the site of the current boat launch, and is co-located with the area with the highest levels of PCBs and mercury in Site sediments. The treatment plant effluent discharged to the river could have contained other contaminants as well.

Biological Data

Biological testing has also confirmed uptake of Site contaminants in benthic tissue and fish tissue. In 2016 sediments from the Site were evaluated for toxicity and bioaccumulation of chemicals toward several species of benthic invertebrates. Sediment samples were collected from a total of nine sites. The following tests were conducted: a 10-day Sediment Toxicity Test with *Hyalella azteca*, a 10-day Sediment Toxicity Test with *Chironomis dilutus*, and a 28-day Bioaccumulation Test with *Lumbriculus variegatus*. Survival and growth were determined as endpoints for both 10-day tests. For the *H. azteca* toxicity test, percent survival ranged from 80-98%, and no significant difference in survival was found between the treatment exposures and the control sample. For the *C. dilutes* toxicity test, percent survival ranged from 78-100%, and only one sample (BW15ML-32, 78% survival) was found to be statistically different from the control sample. Four sediment samples were used in the *L. variegatus* bioaccumulation test, and all four tissue samples contained concentrations of dioxins greater than the control sample. Two of the samples (BW15ML-32 and BW15ML-34) rank in the top five highest

concentrations for all compiled dioxin/furan *L. variegatus* bioaccumulation samples in the SLRAOC (first and fourth highest concentrations, 4.1 and 3.8 ng TEQ/kg respectively). Tissue was not analyzed for PCBs.

In 2018, USEPA conducted targeted fish tissue analysis of yellow perch from Munger Landing as part of their efforts to create a biota-sediment accumulation factor (BSAF) model for yellow perch. Fish tissue concentrations from yellow perch composite samples ranged from 7.3 to 9,240 ppb Total PCBs, and from 0.002 to 1.13 ng TEQ/kg dioxins/furans.

Current and Potential Future Land and Water Uses

The Site is located adjacent to the Munger Landing/Clyde Avenue boat launch and the Smithville neighborhood of Duluth. The location was developed as a boat launch and fishing pier in 1980, and continues to be used for that purpose. The property is owned by the City of Duluth and managed by the MN DNR, under a cooperative management agreement. The launch is the City's second most-utilized launch in the City, and is frequented by motorized boaters, kayakers and canoers, and by people fishing either at the fishing pier or from watercraft launched at the landing. The Site is not a posted swimming beach, although people have been document swimming at this location. MPCA coordinated with the City to post signage at the landing advising against swimming and wading activities in this area due to the presence of contaminated sediments.

Currently, the City of Duluth is in the planning stages for developing a kayak launch north of the fishing pier, and establishing a pedestrian trail adjacent to the rail corridor that runs north-south adjacent to the landing. The planned development would increase human use of the Site, including contact with water and sediment. The Site is also included in the proposed St. Louis River National Water Trail, which will attract more recreational users. MN DNR has an interest in making improvements to the landing in conjunction with or after remedy construction in order to address compliance with Americans with Disabilities Act (ADA) requirements, management of invasive species, and better stormwater controls.

SUMMARY OF SITE RISKS

Risk to Human Health

The 2015 RI concluded that the incidental ingestion and dermal contact exposure routes were potentially complete for human recreational users of the Site. Recreational users of the Site include boat and paddle users accessing the Site from the Clyde Avenue boat launch, and people fishing from the fishing pier or from watercraft. Although the Site is not a posted swimming beach, there is evidence of residents accessing the Site for swimming. The proposed National Water Trail designation will attract more recreational users and increase the risk to human receptors. The City's plans for installing a kayak launch north of the fishing pier and the proposed pedestrian trail development will also increase recreational use of the Site.

Additionally, the 2015 RI concluded the ingestion of biota via fish consumption was complete for human recreational users of the Site. Minnesota Department of Health (MDH) fish consumption advisories are in effect for selected fish species in the SLR AOC due to elevated concentrations of PCBs and mercury found in fish tissue (MDH, 2014). Therefore, ingestion of biota via fish consumption is a risk to human health at the Site. No fish consumption advisory is currently in place for any of the other Site COCs, and the MDH does not currently provide meal advice based on COCs, except for mercury and PCBs, in fish (MDH, 2014).

Ecological Risks

The 2015 RI also concluded that the exposure routes including the ingestion of and dermal contact with contaminated sediments were complete for ecological receptors. In addition, uptake through the ingestion of biota in contact with contaminated sediment is also complete for ecological human receptors. The bioaccumulation and toxicity testing conducted in 2016 confirms that ecological exposure pathways are complete and that contaminated sediments at the Site present a potential risk for adverse effects to benthic organisms.

Reduction or isolation of sediment contamination at the Site will likely reduce contaminant concentrations found in biota tissue; therefore, addressing the ecological risk pathway identified for the Site will concurrently address the ingestion of biota via fish consumption pathway for human health.

REMEDIAL ACTION OBJECTIVES

MPCA established the following Remedial Action Objectives (RAOs) for the sediment remediation project:

1. Minimize or remove exposure to sediment contaminants that bioaccumulate in the food chain and contribute to fish consumption advisories;
2. Minimize or remove exposure of the benthic organisms to contaminated sediments above sediment cleanup goals;
3. Preserve water depth to enable the current and/or planned use of the Site;
4. Enhance aquatic habitat, if conditions allow, in a manner that contributes to the removal of beneficial use impairments (BUIs); and
5. Minimize or remove human exposure to contaminated sediments above sediment cleanup goals.

In addition to the RAOs, the response action is intended to address the following beneficial use impairments to the SLRAOC:

1. Restrictions on dredging;
2. Fish consumption advisory;
3. Degradation of the benthos environment;
4. Beach closings and body contact restrictions; and
5. Loss of fish and wildlife habitat.

As recommended by the RAP, areas that are contributing to river sediment impairments should be addressed through remedial activities. In addition, the St. Louis River, including the Duluth/Superior Harbor, is listed as impaired water on the Clean Water Act 303(d) list for bioaccumulative toxins. Toxins include mercury, PCBs, and pesticides (DDT, dioxin, etc.). It is recommended by multiple agency programs that biotoxins be reduced with in the St. Louis River estuary and harbor. Removing or isolating the contaminated sediments from the surface water/sediment interface will help in the reduction of the impaired water resulting from bioaccumulative toxins in the SLRAOC.

Munger Landing is a high priority for remedial action in the SLRAOC based on:

- High levels of bioaccumulating contaminants, including PCBs, mercury, and dioxins/furans that contribute to fish advisories in the SLRAOC, as well as documented fish tissue concentrations in fish from Munger Landing showing elevated levels of PCBs.
- PCB concentrations in sediment exceeding human health risk sediment cleanup levels (SDCVs) developed by MPCA's human health risk assessor, and high human use of the site for recreational activities including swimming, wading, fishing, and boating.

- Anticipated development of a kayak launch and sandy beach by the City of Duluth, increasing potential human exposures at the Site.

CLEANUP LEVELS

Contaminants of concern identified during the 2015 RI include cadmium, copper, lead, mercury, nickel, zinc, PAHs, PCBs, and dioxins/furans. Of the COCs, dioxins/furans and PCBs present the highest likelihood of significant effects to benthic invertebrates from exposure to surficial sediments and highest risk to human health through direct contact with sediments or ingestion of contaminated biota (i.e., fish consumption); therefore, dioxins/furans and PCBs are considered primary COCs, and were used to define the remedial footprint. All other COCs for the Site are considered secondary COCs. Sample locations where sediment concentrations exceed cleanup levels for the secondary COCs are located within the remedial footprint based on the primary COCs. The St. Louis River has a fish consumption advisory for mercury and the highest mercury concentrations at the Site are collocated with at least one primary COC and are within the remedial footprint.

Site-specific cleanup levels (CULs) were established for the primary COCs, in order to determine contaminant concentrations for the protection of human health and the environment. These included CULs based on human health risk, protection of benthic organisms, and an evaluation of background threshold values for specific contaminants in the SLRAOC. The CULs are summarized in Table 2.

Human Health Risk-Based Cleanup Levels

The MPCA evaluated potential human exposure pathways at the Site to develop site-specific human health-based criteria. The MPCA assessed ingestion, dermal contact and inhalation exposure pathways. The assessment indicated that a reasonable maximum estimate of water depth that someone could wade in is 5.5 feet. For sediments in 5.5 feet of water or less, human health-based site-specific sediment cleanup values (SDCVs) were developed for two site-specific PCB exposure scenarios: water covered sediments, and intertidal sediments along shorelines. For water covered sediments, it was determined that potential risks may be present at concentrations exceeding 7.8 mg/kg Total PCBs. For intertidal sediments, it was determined that potential risks may be present at concentrations exceeding 1.6 mg/kg Total PCBs. Additional details on the development and applicability of the site-specific SDCVs are detailed in the Munger Landing PCB Human Health SDCV Technical Memorandum, included in Appendix B of the FFS. The assessment did not include the fish consumption pathway as MDH fish consumption advisories are in effect for selected fish species in the SLRAOC due to elevated concentrations of PCBs and mercury found in fish tissue (MDH, 2014). The levels of Site COCs detected in fish tissue will not be used as CULs, but will be monitored to evaluate remedy effectiveness and to inform fish consumption advisories.

Ecological Risk-Based Cleanup Levels

Ecological risk-based CULs for Site COCs include sediment concentrations based on protection of benthic organisms using MPCA's Sediment Quality Targets (SQTs). The development and application of SQTs are documented in MPCA's SQT Guidance (MPCA, 2007). The SQTs developed by MPCA were adopted for use in the SLRAOC to protect benthic invertebrates, and represent a sediment quality guideline that can be used for making sediment management decisions as part of a weight-of-evidence approach.

Level 1 SQTs are intended to identify contaminant concentrations below which harmful effects on sediment dwelling organisms are unlikely to be observed and Level 2 SQTs are intended to identify contaminant concentrations above which harmful effects on sediment-dwelling organisms are likely to be observed. MPCA has utilized the Midpoint SQT, which is the concentration midway between the Level 1 and Level 2 SQTs for a given contaminant, as a default CUL for many COCs at several SLRAOC

sediment sites. The Midpoint SQT for Total PCBs (370 µg/kg) has been utilized at the Site to define the remedial footprint. MPCA's SQTs are also consistent with WDNR's Consensus-Based Sediment Quality Guidelines.

Currently, the ecological risk-based CULs for the Site are based solely on protection of benthic organisms. Fish tissue analysis by USEPA indicates uptake of PCBs, dioxins/furans, and mercury in fish. CULs for sediment based on protection of fish have not yet been developed based on this data. Sediment concentrations needed to be protective of fish tissue are in development by USEPA using Site-specific biota-sediment accumulation factors, for Total PCBs in yellow perch.

Background Threshold Value Concentrations

MPCA evaluated several contaminants of concern for the lower St. Louis River, below the Fond du Lac dam, to determine background threshold values (BTVs) for compounds believed to be naturally occurring in the estuary, or to have an anthropogenic input due to past industrial activity and historical development of the estuary. In cases where the BTVs are higher than other risk-based CULs, MPCA defaults to the BTV concentration as a CUL. Of the contaminants included in the MPCA BTV evaluation (MPCA, 2016), dioxins/furans was the only Site COC with a BTV exceeding a risk-based CUL, and the BTV for dioxins/furans (24.9 ng/kg TEQ) was thus used to define the remedial footprint at the Site.

SELECTION AND DESCRIPTION OF REMEDY

A revised Focused Feasibility Study (FFS) for the Site was completed in 2018 and provides a summary of current site conditions, a discussion of RAOs, and the identification, screening, evaluation, and comparison of potential alternatives. Remedial alternatives were further refined in a 2019 Focused Feasibility Study Addendum. Following is a summary of the alternatives evaluated in the FFS and FFS Addendum:

Alternative 1: No Action

The no-action alternative would not achieve the remedial objectives.

Alternative 2: Monitored Natural Recovery and Institutional Controls

This alternative would not include any treatment or removal of contaminated sediment but does provide for 30 years of monitoring and controls on the use of the Site.

Alternative 3: Enhanced Monitored Natural Recovery with Thin-Layer Sand Cover

This alternative would consist of applying a thin layer, 0.15 meters (6 inches), of sand material directly on top of the sediment surface in the remedial footprint. Monitoring of sediment chemical concentrations, sediment toxicity, and bioaccumulation of COCs in aquatic life would be conducted until sufficient contaminant sequestration, degradation, transformation, or other natural recovery processes reduce risks to acceptable levels. Implementation of this alternative assumes that approximately 29,000 cubic yards of sand would be applied over a 35.3-acre area at an average thickness of 0.15 meter.

Alternative 4: Dredge and Off-Site Disposal

This alternative would consist of the complete removal of contaminated sediment within the remedial footprint and subsequent off-site disposal. Following dredging, a 0.15-meter (0.5-foot) layer of clean sand, similar to Alternative 3 and 5, would be placed throughout the dredged areas to provide benthic habitat. No long-term monitoring of COCs is required under this alternative. Implementation of this alternative assumes that a total volume of approximately 121,400 cubic yards of contaminated sediments would be removed within the remedial footprint, a 35.3-acre area.

Alternative 5: Hotspot Dredge, Off-Site Disposal, and Enhanced MNR with Thin-Layer Sand Cover
This alternative would consist of removal of higher-concentration sediments within the hotspot remedial footprint only, combined with a thin-layer sand cover applied to the entire remedial footprint. This alternative assumes a total volume of approximately 68,800 cubic yards of contaminated sediments requiring removal. Monitoring of sediment chemical concentrations, sediment toxicity, and bioaccumulation of COCs in aquatic life would be conducted until sufficient contaminant sequestration, degradation, transformation, or other natural recovery processes reduce risks to acceptable levels.

The FFS included a comparative analysis to identify and compare advantages and disadvantages of each of the alternatives. This evaluation was done using the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) remedy selection criteria in general accordance with United States Environmental Protection Agency (USEPA) guidelines for feasibility studies (USEPA, 1990) which divides criteria into three groups.

1. **Threshold Criteria,** which relate to federal statutory requirements that each alternative must satisfy in order to be eligible for selection and including:
    - Overall protection of human health and the environment in both short and long term; and
    - Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) under federal, state, or local environmental laws and regulations.

2. **Primary Balancing Criteria,** which are the technical criteria upon which the detailed analysis is based on, including:
    - Long-term Effectiveness and Permanence;
    - Reduction of Toxicity, Mobility, or Volume through Treatment;
    - Short-term Effectiveness;
    - Implementability; and
    - Costs.

3. **Modifying Criteria based on state agency and community acceptance.**

Each remedial alternative was also evaluated based on Green Sustainable Remediation Criteria.

THRESHOLD CRITERIA
Alternative 1 No Action does not meet the threshold criteria but was carried forward as it is required for analysis under the NCP. Alternative 2 MNR provides a low achievement of threshold criteria because additional study of natural processes at the site to bury and degrade COC-impacted sediment is required. Alternatives 3, 4, and 5 will achieve protection of human health and the environment and comply with the identified ARARs. Alternatives 3 and 5 would eliminate, reduce, or control exposure to contaminated sediment; however, contaminated sediment would remain in place under both alternatives, requiring monitoring to ensure long-term effectiveness. Alternatives 3 and 5 would provide similar levels of protection, while Alternative 5 removes the most contaminated sediments (hotspot area). Alternative 4 would provide the highest level of protection as all contaminated sediments exceeding CULs would be removed from the remedial footprint.

BALANCING CRITERIA
Long-Term Effectiveness and Permanence
Alternative 1 is not effective in the long term or permanent. Alternative 2 may be effective and permanent in the long term; however, RAOs may not be achieved in a reasonable time frame because

the natural degradation processes are poorly understood at the Site and a possible contamination source is located directly upstream of the Site. Alternatives 3 and 5 are effective in the long term; however, contaminated sediment would remain in place under each, though the most contaminated sediments would be removed under Alternative 5. Alternatives 3 and 5 require long-term operation and maintenance (O&M) and ICs to ensure long-term effectiveness. Alternative 4 is the most effective in the long term as COC contaminated sediment would be permanently removed from the remedial footprint.

In summary, Alternative 2 will provide a low achievement of this criterion, and Alternative 3 will provide a low to moderate achievement of this criterion by providing immediate isolation of contaminated sediments. Alternative 5 provides a moderate level of achievement because it combines removal of the hotspot area with the addition of the isolation of the contaminated sediments. Alternative 4 provides the highest level of achievement as all contaminated sediment exceeding CULs is removed from the remedial footprint.

Reduction of Toxicity, Mobility, or Volume Through Treatment

Treatment of contaminated sediments to reduce toxicity, mobility, or volume is not a component of Alternatives 1 and 2; therefore, these alternatives provide no achievement of this criterion. Alternatives 3, 4, and 5 provide varying levels of achievement of this criterion through treatment as each of these alternatives use the same application of a thin-layer sand cover at some point in the remedial process, which may reduce contamination in sediment over time; however, the length of time required to reduce sediment contamination from the thin-layer sand cover application may not be feasible to achieve RAOs. Alternative 5 provides a moderate achievement of this criterion because it reduces the volume of contamination in the hotspot remedial footprint, though this is done by excavation, not treatment. Alternative 4 provides a high achievement of this criterion because reduces the most volume of contaminated sediments through dredging of all contaminated sediment in the remedial footprint though this is done by excavation, not treatment.

In summary, Alternative 3 will provide a low achievement of this criterion, Alternative 4 will provide a high achievement of this criterion, and Alternative 5 will provide a moderate achievement of this criterion. Alternatives 1 and 2 will provide the lowest achievement of this criterion because treatment of COC-impacted sediment is not a component of these remedies.

Short-Term Effectiveness

There are no short-term risks associated with Alternatives 1 and 2 as no actions would be implemented at the Site. The rest of the alternatives would have some short-term risks during implementation of the remedy. Short-term adverse effects to aquatic habitat and biota for Alternative 3 would include displacement of fish and smothering of benthic organisms. The effects from Alternative 3 would occur during remedy construction and during the recovery period thereafter. Alternatives 4 and 5 would result in substantially more short-term adverse effects than Alternatives 3 because entire benthic communities would be removed, with the most adverse effects occurring with Alternative 4. Alternatives 4 and 5 both include some level of habitat restoration, and benthic organisms would be expected to be reestablished for all alternatives within several growing seasons.

In summary, Alternatives 1 and 2 would provide a high achievement of the short-term effectiveness criterion as there would be no impact to surrounding community and aquatic habitat and no risk to Site workers. Alternative 3 would have a moderately high achievement of the short term effectiveness criterion, due to an increase in short-term adverse effects to aquatic biota during cover construction; however, impacts are anticipated to be small. Alternatives 4 and 5 would provide low and moderate achievement of this criterion, respectively resulting in the most adverse effects to benthic communities.

Implementability

There are no implementability concerns associated with Alternatives 1 and 2.

Application of cover materials utilized in Alternatives 3, 4, and 5 would require barging of materials to and/or from a nearby staging area or a staging area located along the SLR, such as Hallett Dock #7 or Ponds behind Erie Pier (PEP). It is anticipated that Hallett Dock #7 or PEP would be available as a staging area, but these alternatives assume the use of Hallett Dock #7 and successful coordination of future access agreements. Methods for placement of cover materials are technically feasible and implementable from an engineering perspective.

Weather could significantly impact productivity, particularly if done in the early spring or late fall. High winds in the late fall produce large waves that could impact productivity. Barge traffic and any Site activities would be postponed in the spring until ice melt is completed. Winter or freezing conditions in the fall could shorten the construction season. Alternative 4 has the longest estimated time to complete and, therefore, would stand to be the most impacted by weather.

Implementability also includes administrative feasibility of the remedy. As with most sediment remediation activities, multiple state and federal agencies and other stakeholder input is required, providing a lower achievement of administrative feasibility of implementing a remedy. Additional time would be required to obtain any necessary approvals and permits from other agencies. Alternatives 4 and 5 would require more coordination with regulatory agencies than Alternative 3 because of the additional permitting required for dredging and increased impacts to the ecosystem. For these reasons Alternatives 4 and 5 provide only a low to moderate level of achievement of the implementability criterion, while Alternative 3 provides a moderate achievement.

In summary, Alternatives 1 and 2 have no actions to be implemented and thus provide a high achievement of the implementability criterion. Alternative 3 provides a moderate level of achievement. Alternative 4 provides a low level of achievement of the implementability criterion because it is a more complex alternative to execute due to the coordination of dredging sediments and placement of sand cover. Alternative 5 is slightly less complex than Alternative 4 because it involves the same elements with while dredging a smaller area.

Cost Effectiveness

Cost estimates developed for each alternative are included in Section 3.0 of the FFS. The cost estimates include the following: capital costs, including both direct and indirect costs; annual O&M costs; and net present value of capital and O&M costs. The estimates assumed that Former Hallet Dock #7 will be used as a staging area for Alternatives 3, 4, and 5, costs associated with renting it are not included in this estimate, as the cost would need to be negotiated with the current property owner. The rental costs could significantly impact the final cost. If another facility is identified during design as a feasible staging area, costs for use of that facility could impact the total project cost.

In summary, based on the cost estimates to date, Alternative 1 provides the most cost-effective option with no costs, followed by Alternative 2 ($244,000) because it requires only monitoring. Alternative 3 ($3,570,000) is the next most cost-effective option as less volume of cover materials are required compared to Alternative 4 ($19,346,000), making Alternative 4 the least cost-effective option because it requires the removal and off-site disposal of contaminated sediments within the remedial footprint. Alternative 5 ($12,918,000) is a combination of Alternative 3 and Alternative 4, making it less cost

effective than Alternative 3 but more cost effective than Alternative 4. Table 8 presents a numerical score that compares the cost for all alternatives.

MODIFYING CRITERIA

The modifying criteria, which includes state agency and community support and acceptance, were evaluated during the public notice period in August and September 2019, and at a public open house meeting held on August 22, 2019. Feedback received from stakeholders and the public during this period included a preference for Remedial Alternative 4 in order to remove all contaminated sediments to prevent accumulation of site contaminants in fish and humans, and to provide the greatest long-term environmental protection for the Site. MPCA has actively engaged the adjacent landowners, including the City of Duluth, as well as Minnesota Department of Natural Resources, who manages the City-owned landing. The Fond Du Lac Band of Lake Superior Chippewa, state and federal resource management agencies, and other project partners and stakeholders have been included in Site meetings throughout 2017-2019.

GREEN SUSTAINABLE REMEDIATION CRITERIA

Greenhouse Gas Emissions

Alternative 1 would have no greenhouse gas (GHG) emissions. Alternative 2 would only produce GHG emissions associated with mobilization/demobilization and boat operation associated with sampling efforts. Alternatives 3, 4, and 5 would result in GHG emissions from the mobilization, operation, and demobilization of all fuel-powered construction equipment required to place cover material and dredging. Reduction of emissions can be accomplished by using equipment that is compliant with the latest USEPA non-road engine standards and retrofitting older equipment with appropriate filters.

Toxic Chemical Usage and Disposal

There are no known toxic chemicals associated with these alternatives.

Energy Consumption

Alternative 1 would consume no additional energy. Alternative 2 would consume minimal amounts of fossil fuels compared to the other alternatives. Alternatives 3, 4, and 5 would result in the consumption of fossil fuels for the mobilization, operation, and demobilization of all diesel powered construction equipment associated with dredging and the placement of the cover material, with Alternative 4 requiring the most energy consumption due to the volume of sediments to be dredged.

Use of Alternative Fuels

Alternatives 1 and 2 would not require the use of alternative fuels. Biodiesel blended fuels (B10 or B20) could be used as a supplemental fuel source for all diesel-powered construction equipment associated with Alternatives 3, 4, and 5.

Water Consumption

Alternatives 1 and 2 would not require the consumption of water and there are few water consumption considerations associated with Alternatives 3, 4, and 5.

Waste Generation

Alternatives 1, 2, and 3 would not generate significant amounts of waste. Alternatives 4 and 5 would generate a significant dredge material that will require disposal at a landfill, with Alternative 4 producing the most waste.

Comparative Analysis Summary

The comparative analysis of alternatives narrative discussion and quantitation table scored Alternative 4 the highest. Alternative 1 scored the lowest overall.

Alternative 1 does not achieve overall protection of human health and the environment, does not achieve ARARs, is not effective in the long term, and does not reduce toxicity, mobility, or volume of contamination through treatment. Natural processes occurring at the Site are currently poorly understood; therefore, Alternative 2 ranks low for overall protection of human health and the environment, achievement ARARs, and effectiveness in the long term and short term. Alternative 2 does not reduce toxicity, mobility, or volume of contamination through treatment. Short-term risks associated with Alternatives 1 and 2 are low, and both are implementable and cost-effective.

Alternative 4 provides the highest achievement of protection of human health and the environment and achievement of ARARs, followed by Alternative 5. Alternative 4 has the highest long-term effectiveness, followed by Alternative 5, because the alternatives remove some or all contaminated sediment at the site permanently. Alternative 3 includes a thicker cover than Alternative 5, which further reduces mobility of COCs. Alternative 4 does not reduce the toxicity, mobility, or volume through treatment; however, it does reduce the volume of contaminated sediment through dredging and disposal. Alternative 4 results in the most short-term impacts to the benthic community and also provide the most risk to site workers. Alternative 5 is a mix between Alternative 3 and 4. Alternative 4 is slightly less implementable than Alternative 3. Alternative 5 is the most complicated and therefore least implementable. Alternative 3 is the most cost effective, followed by Alternative 5 and 4, respectively.

Based on the information provided in the FFS report and on input provided by the Wisconsin Department of Natural Resources, Minnesota Department of Natural Resources, the City of Duluth, Fond du Lac Band of Lake Superior Chippewa, the US Environmental Protection Agency Great Lakes National Program Office, and other stakeholders, the MPCA staff has selected Alternative 4: Dredging and Off-Site Disposal as the preferred option for remediation of contaminated sediment at Munger Landing. Some of the primary reasons for selecting Alternative 4 are summarized below.

- Alternative 4 provides the highest achievement of protection of human health and the environment, and achieves the remedial action objectives (reducing human health risks, removing exposure to sediment contaminants that bioaccumulate in the food chain, removing exposure to benthic organisms to contaminated sediments, and enhancing or preserving aquatic habitat).
- Alternative 4 provides the highest achievement of long-term effectiveness and permanence, as all contaminated sediments exceeding cleanup levels would be removed.
- Primary stakeholders, technical advisors, and adjacent landowners support Alternative 4, which will remove the BUIs and allow for planned future uses of the land adjacent to Munger Landing.
- Alternative 4 will maximize the use of State of Minnesota Bonding and Great Lakes Legacy Act funding for the remediation of contaminated sediments impacting the St. Louis River Area of Concern.

Detailed Description of Alternative 4: Dredge and Off-Site Disposal

This Alternative consists of complete removal of sediments with COCs exceeding the CULs within the remedial footprint (Figure 2). Removal of contaminated sediments would mitigate exposure of aquatic and human receptors to sediment contaminants, thus allowing for achievement of RAOs. The presence of any dredge residuals exceeding CULs following completion of dredging activities may require additional actions to be taken, such as placement of a cover to mix, dilute, and cover any remaining dredge residuals, enforcement of ICs, and post-construction monitoring. The success of a dredging and

excavation remedy at removing all contaminated sediments cannot be determined at this time and, therefore, IC and monitoring costs associated with addressing dredge residuals were not incorporated into the cost analysis. The placement of a 0.15-meter (0.5-foot) layer of clean sand following dredging implementation was assumed within the cost analysis to manage dredge residuals and to provide benthic habitat.

Long-Term Monitoring

Monitoring requirements will be identified in a monitoring plan developed during the remedial design phase. Monitoring will be conducted to evaluate short-term and long-term remedy protectiveness. The monitoring program will include sediment chemistry analysis before, during, and after construction. Because the selected remedial alternative removes the contaminated sediment above CULs and disposes of it off-site, long-term monitoring requirements at the Site should be minimal.

Institutional Controls

Because the selected remedy includes removal of all contaminated sediments at the Site above CULs, institutional controls (ICs) will not be required. The existing fish consumption advisories will function as an IC until estuary fish reach levels for safe consumption.

Cost

The costs associated with each alternative are presented as Class 4 (+50/-30) estimates and are appropriate for remedial design alternative evaluations only. The estimated total present value cost for Alternative 4 is $19,346,000.

PUBLIC COMMENTS AND RESPONSES

On August 22, 2019, the MPCA held an open house for public review and comment on Munger Landing's five clean-up alternatives. The MPCA published a request for comments on August 15, 2019 and accepted public comments through September 20, 2019. The MPCA received one comment and five letters in support of Alternative 4. All commenters voiced support of full removal of contaminated sediment above CULs. The responsiveness summary and public comments are contained in Appendix 3.

DETERMINATION

The selected response actions are consistent with the Minnesota Environmental Response and Liability Act, Minn. Stat. §§ 115B.01 to .18, and are not inconsistent with the Federal Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9601 et seq and the National Contingency Plan, 40 C.F.R Part 300. I have determined the selected response actions are protective of public health and welfare and the environment.

Kathryn J. Sather

Kathryn J. Sather
Division Director
Remediation Division

1/13/2020

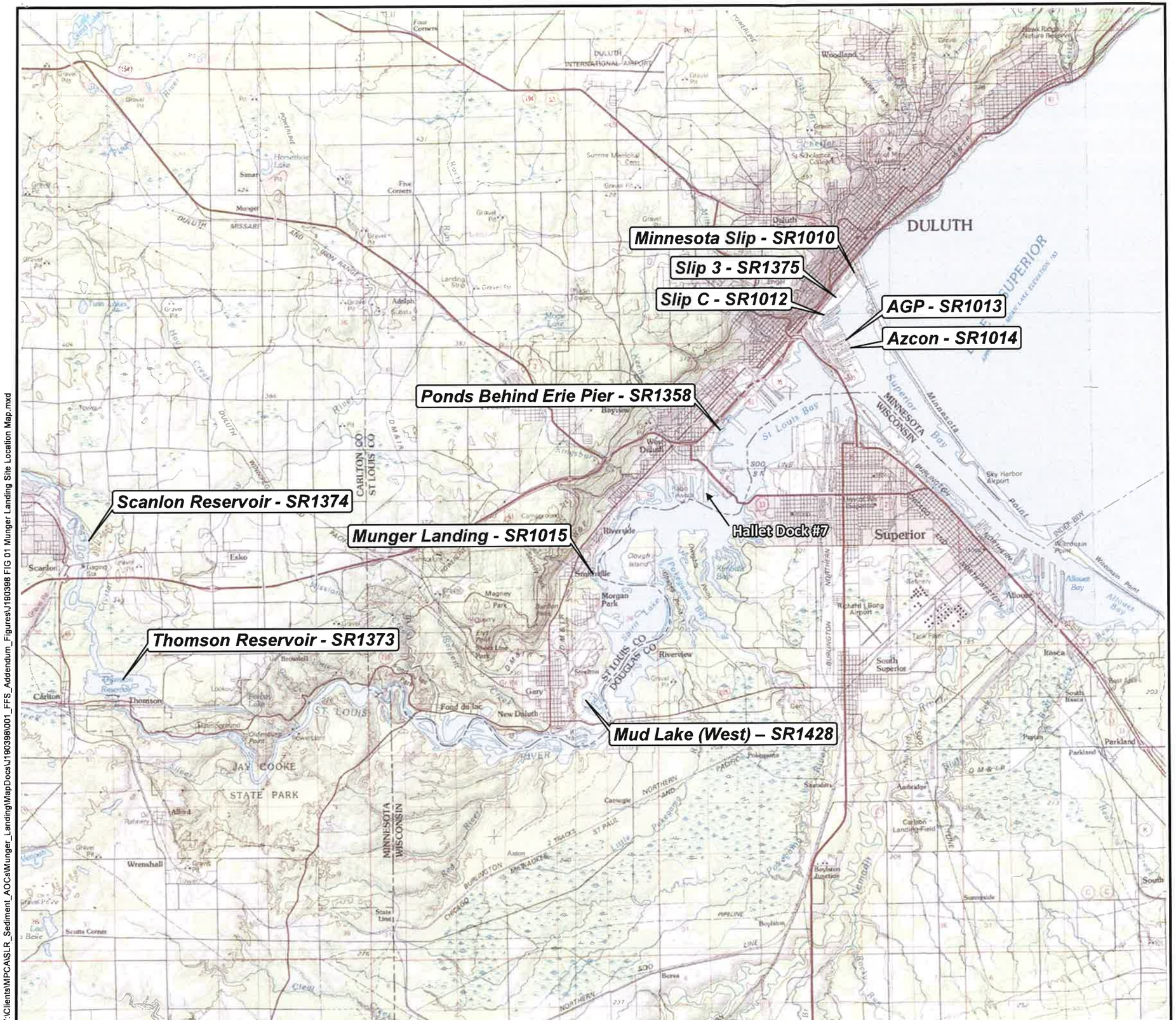
Date

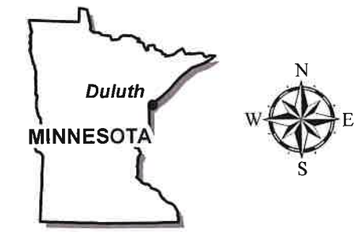
Appendix 1. Figures

Figure 1

Site Location Map

Munger Landing
SLR Sediment Sites
Duluth, MN





Map Projection: NAD 1983 UTM Zone 15 N
Basemap: National Geographic Society, i-cubed

0 2 4 Miles
0 3 6 Kilometers

Site Location (Labeled on map)

CLEAN WATER LAND & LEGACY AMENDMENT

Bay West
Customer-Focused Environmental & Industrial Solutions

Drawn By: MDH Date Drawn/Revised:8/6/2019 Project No.J190398

Y:\Clients\MPCA\SLR_Sediment_AOCs\Munger_Landing\MapDocs\J190398\001_FFS_Addendum_Figures\J190398 FIG 01 Munger Landing Site Location Map.mxd

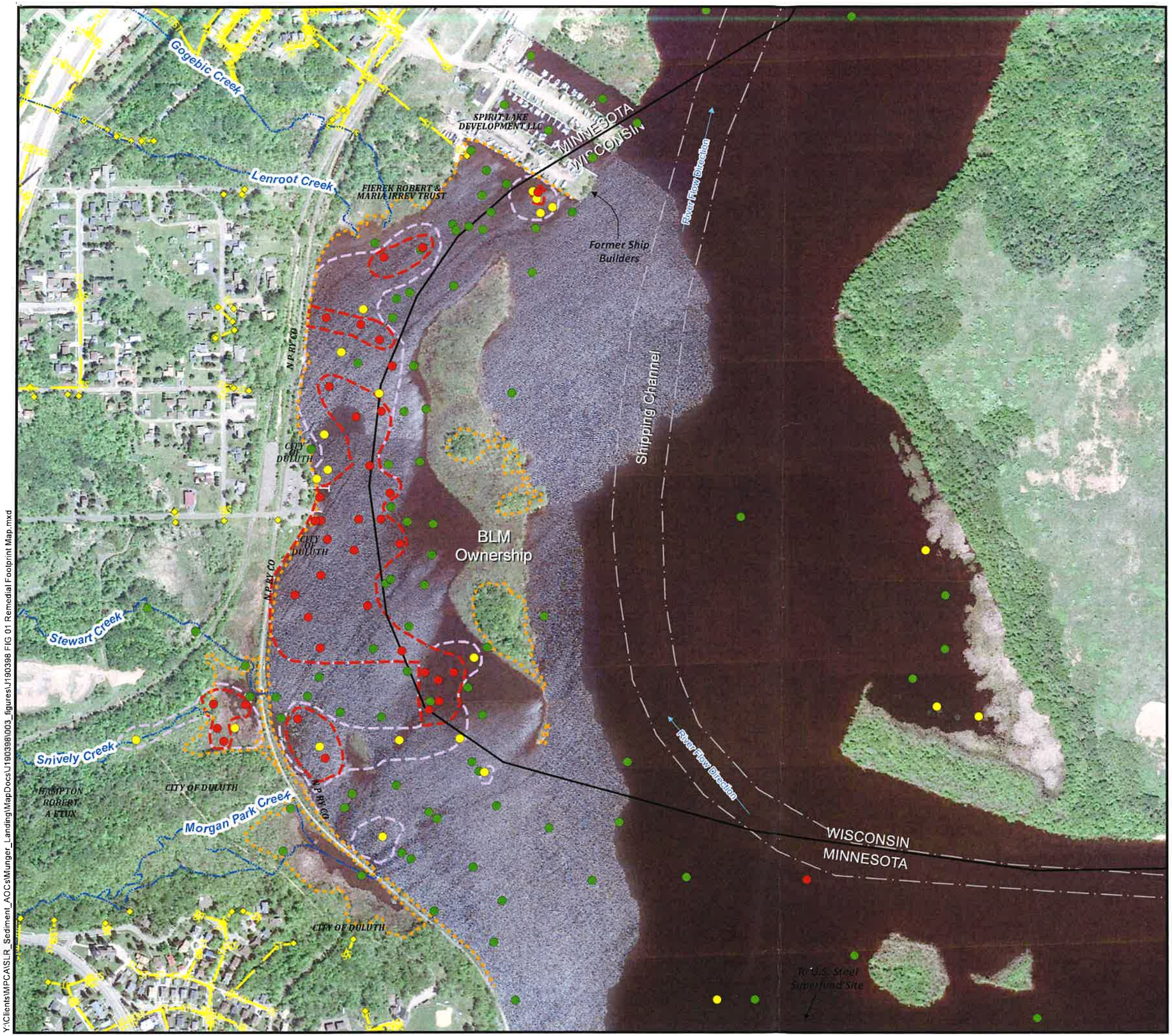
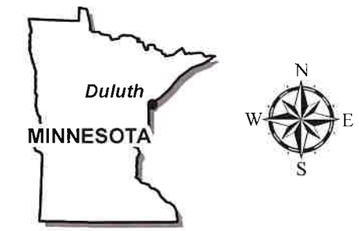


Figure 2

Munger Landing Remedial Footprint Map

Munger Landing SLR Sediment Sites

Duluth, MN



Map Projection: NAD 1983 UTM Zone 15 N
Basemap: Google Earth Aerial Imagery, 6/5/2017

0 500 1,000 Feet

0 150 300 Meters

- PCBs >1,000 ug/kg or TEQ Fish >50 ng/kg
- PCBs >370 ug/kg or TEQ Fish > 24.9 ng/kg
- PCBs >1,000 ug/kg or TEQ Fish >50 ng/kg

Shipping Channel

State Border

Stream

Ordinary High Water (OHW) Level at 602.8 ft (Vertical datum of IGLD85)

Sewer Outfall

Sanitary Sewer

Storm Sewer

Remedial Footprint
TEQ Fish = 24.9 ng/kg (BTV)
Total PCBs = 370 ug/kg (Midpoint)
MN Acreage = 30.7
WI Acreage = 5.9

Hotspot
TEQ Fish = 50 ng/kg
Total PCBs = 1000 ug/kg
MN Acreage = 17.6
WI Acreage = 3.8

Bay West
Customer Focused Environmental & Industrial Solutions

Date Drawn/Revised:10/31/2019 Project No.J190398

Y:\Clients\MPCA\SLR_Sediment_AOCs\Munger_Landing\MapDocs\J190398\003_figures\J190398 FIG 01 Remedial Footprint Map.mxd

Appendix 2. Tables

Table 1. Summary Statistics for Site Sediment COCs
Munger Landing
SR0001015
St. Louis River Area of Concern
Duluth, Minnesota

Chemical	Units	All Intervals							Surface (0-15 cm)							Subsurface (>15 cm)						
		Number of Samples	Number of Detects	Number of Non Detects	Minimum Concentration	Maximum Concentration	Mean	Median	Number of Samples	Number of Detects	Number of Non Detects	Minimum Concentration	Maximum Concentration	Mean	Median	Number of Samples	Number of Detects	Number of Non Detects	Minimum Concentration	Maximum Concentration	Mean	Median
Cadmium	mg/kg	149	145	4	0.036	3.1	0.73	0.48	55	54	1	0.1	2.1	0.86	0.77	94	91	3	0.036	3.1	0.66	0.375
Chromium	mg/kg	149	149	0	4.7	63.1	29.41	30.2	55	55	0	4.7	52.7	31.99	36.5	94	94	0	7.800	63.1	27.90	27.1
Copper	mg/kg	149	149	0	6	140	31.27	28.4	55	55	0	6.5	112	36.43	35.2	94	94	0	6.000	140	28.25	23.05
Lead	mg/kg	149	149	0	2.1	260	50.34	30.2	55	55	0	3.4	208	57.67	43.4	94	94	0	2.100	260	46.06	15.8
Nickel	mg/kg	149	148	1	5.4	58.9	25.08	24.1	55	54	1	5.4	58.9	27.95	30.5	94	94	0	7.400	52.8	23.39	21.95
Zinc	mg/kg	149	149	0	16.3	832	187.06	119	55	55	0	25.1	648	214.26	195	94	94	0	16.300	832	171.15	81.4
Mercury	mg/kg	189	151	38	0.0055	8.0	0.23	0.078	77	62	15	0.0067	8.00	0.27	0.099	112	89	23	0.0055	6.30	0.187	0.0545
Total PCBs	ug/Kg	232	149	83	0.00	247000	1699.18	51.15	109	79	30	0.00	43700	936.56	80	123	70	53	0	247000	1904	43.2
Total PAH13	ug/Kg	130	130	0	36.49	137600	4177.67	838.70	49	49	0	0.00	23542	3745.75	2137.5	81	81	0	36.490	137600	4438.95	314.6
TEQ KM Fish	ng TEQ/Kg	180	180	0	0.050	292	21.83	2.44	92	92	0	0.18	292.00	22.36	4.77	88	88	0	0.05	248.94	18.45	0.97

Notes:
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
ng TEQ/Kg - nanograms toxic equivalence per kilogram
PAH - polycyclic aromatic hydrocarbons
PCB - polychlorinated biphenyls
TEQ KM Fish - toxic equivalence of Polychlorinated dibenzo-p-dioxins/Polychlorinated dibenzofurans calculated using the US EPA Advanced Kaplan Meier TEQ Calculator and 1998 World Health Organization TEQ values for fish

Table 2. Summary of Sediment Cleanup Levels

Contaminant	Unit	Concentration	Basis
Total PCBs	mg/kg	7.8	HH; water-covered sediments
Total PCBs	mg/kg	1.6	HH; intertidal sediments
Total PCBs	µg/kg	370	Eco; SQT
Dioxins/Furans TEQ KM Fish	ng TEQ/kg	24.9	BTV

Notes:

PCBs = polychlorinated biphenyls

HH = Human health risk-based value

Eco = Ecological risk-based value

SQT = MPCA's Sediment Quality Targets for protection of benthic organisms

TEQ KM Fish = toxic equivalence of Polychlorinated dibenzo-p-dioxins/Polychlorinated dibenzofurans calculated using the US EPA Advanced Kaplan Meier TEQ Calculator and 1998 World Health Organization TEQ values for fish

BTV = Background threshhold value

Appendix 3. Responsiveness Summary

RESPONSIVENESS SUMMARY

MPCA received one public comment form from the public meeting, and five comment letters submitted during the public comment period. The comment form and comment letters are attached to the Responsiveness Summary. All commenters voiced support of Alternative 4, the full dredge and off-site disposal of sediments above cleanup levels. Responses to comments are summarized below.

Groups, organizations, government entities, and individuals who submitted comments included:

- W.J. McCabe (Duluth) Chapter, Izaak Walton League of America
- Minnesota Environmental Partnership
- Friends of Western Duluth Parks and Trails
- Wisconsin Department of Natural Resources
- William Majewski
- Chuck Froseth

Public Comments and Responses

Comments in Support of Alternative 4

- "We would prefer to see the Minnesota Pollution Control Agency follow the cleanup course of Alternative 4 to remove all of the contaminated sediment from Munger Landing and dispose of it off-site. The presence of PCBs and the likelihood that they will accumulate in not just fish, but in humans, is our rationale for dredging/removal versus capping them on-site with a thin-layer sand cover. Though more expensive, complete removal would eliminate the need for long-term monitoring, and would preserve a greater area of benthic habitat in the bay. We feel it would provide the greatest degree of long-term environmental protection of the site."
- "Alternative 4, "Dredging and Off-Site Disposal", is the best choice for long-term clean-up of the legacy contaminants at the site. Full excavation of the contaminated sediments ensures that even decades from now the risk to public and ecosystem health is virtually eliminated. We support this option because, by removing all the polluted sediments, there will be no physical contact with these pollutants by human activity in the water at this site. Alternative 4 also prevents the possibility of bio-accumulation in the fish that are being caught and eaten by people fishing at this site. We strongly support Alternative 4 and we encourage the MPCA to seek the funds to implement this alternative. The Great Lakes Restoration Initiative and Great Lakes Legacy Act were set up for projects just like this, to do the right thing for both people and planet."
- "DNR supports the selection of Alternative 4, full-scale dredging and off-site disposal of contaminated sediments."
- "I am writing to indicate support for the proposed remedy for the cleanup of the Munger Landing site as per Alternative 4. I believe I can speak on behalf of many acquaintances in the new neighborhood who I have spoken to about the need for complete removal of the contaminants from the river where a lot of activity takes place in the form of fishing and boating, bird watching, hiking, wildlife viewing and other similar activities."

MPCA Response

MPCA appreciates the comments in support of the selected Alternative 4, Full Dredge and Off-site disposal.

Comments in Opposition to Other Alternatives

- "We are especially opposed to alternatives 1, 2, and 3 because they do not permanently remove the contaminants from the estuary. Our chapter believes complete removal should be a necessary step in the remediation process, when technically and financially possible. Complete

clean-up at this site is especially important because Munger Landing is heavily used for fishing and water recreation activities that include human contact with the water and sediments."

MPCA Response

MPCA agrees that Alternatives 1, 2, and 3 do no permanently remove the contaminants from the estuary, and they do not adequately human health and ecological risk. MPCA supports full removal of contaminated sediment above cleanup levels at the Site.

Comments Addressing Project Partnerships

- "Contamination at Munger Landing spans the state line, and DNR is committed to working in partnership with the MPCA, and others, to address contaminated sediments and associated beneficial use impairments at this site. DNR has assembled a team of technical experts for Munger Landing and is looking forward to providing support to complete the design and implementation of a cost-effective remedy. We welcome a joint MPCA – DNR application for a Great Lakes Legacy Project for a sediment cleanup at Munger Landing."

MPCA Response

MPCA intends to continue coordination with WI DNR during project design, permitting, and construction. We anticipate a joint project application for Great Lakes Legacy Act funding for the Munger Landing contaminated sediment site.

Comments Addressing Additional Public Involvement

- "Please hold another meeting to let public know of selection and why selection was made."

MPCA Response

MPCA will provide a public notice of the remedy selection, and the decision document that summarizes the justification for the remedy selection and other important site documents will be available on the MPCA website. MPCA does not anticipate having another public meeting to discuss remedy selection, although additional meetings will be held for stakeholder engagement, and to inform neighborhood residents about remedy construction.

Comments Addressing Other Concerns

- "In addition, we urge the MPCA to use this project as an opportunity to implement the goals of Governor Walz's Executive Order #1, regarding Diversity, Inclusion, and Equity. The Order asks agencies to address diversity, inclusion, and equity in State government practices, including state government contracting. If ten percent of the $19 million Munger Landing project cost went to support local hires of people from marginalized communities (and their businesses), that would be a great win."

MPCA Response

The total project cost consists of a 65% federal and 35% non-federal partner cost share. When MPCA partners with EPA's Great Lakes Legacy Act for sediment cleanup, the project bidding and contracting is done by EPA, not the state of Minnesota, and therefore is subject to federal contracting guidelines.

From:	RICHARD AND CAROL STAFFON
To:	Endsley, Erin (MPCA)
Cc:	Andrew Slade; RICHARD AND CAROL STAFFON; rcstaffon@gmail.com; jloleary; barklounger@gmail.com; csterle777; jboe; dandybur; mattdoyle; spmead; Darrell & Pam Spencer; Matthew Hansen; Martha & Craig Minchak; Julie O"Leary; Molly Thompson; David Zentner; glenn.merrick@lsc.edu; kristinl55803; RICHARD AND CAROL STAFFON; rcstaffon@gmail.com; jloleary; conniemoeller; jloleary; csterle777; dfpoulin; jboe; dandybur; bobtammen; mattdoyle; spmead; lobstahgurl; gglass143; gmerrick; Joel & Shannon Hoffman; barklounger@gmail.com; Mike Schrage; Paul Ojanen; Will Munger; bayerhansenmarketing@gmail.com; Foster & Gail Gilliland; kzstodola@ualr.edu; bstodola@hotmail.com; Gary Meier; Judy Gibbs; Molly Thompson; Dennis Isernhagen; David Zentner
Subject:	McCabe Ikes Comments on Munger Landing Site
Date:	Friday, September 20, 2019 9:14:37 AM
Attachments:	Munger Landing Comment Ltr to PCA 9-20-2019.docx

Hello Erin,

Please see the attached comment letter we are submitting to you for the Munger Landing remediation project. We support the need to obtain GLRI or GLLA funding for the complete clean-up of this important water access and recreation area.

...Rich Staffon, President
W. J. McCabe Chapter, IWLA
rcstaffon@msn.com 218-879-3186 h, 218-451-1415 c

"Far and away the best prize that life has to offer is the chance to work hard at work worth doing." Teddy Roosevelt

W.J. McCabe (Duluth) Chapter
Izaak Walton League of America

P. O. Box 3063. • Duluth, MN 55803

September 20, 2019

Erin Endsley, MPCA Project Manager
525 Lake Avenue South, Suite 400
Duluth, MN 55804
erin.endsley@state.mn.us

Dear Ms. Endsley,

On behalf of the W. J. McCabe (Duluth) Chapter of the Izaak Walton League of America, please see below our comments regarding the proposed options for the clean-up of contaminants at the Munger Landing site in the St. Louis River Area of Concern. Our chapter has long been involved in the cleanup and restoration of the St. Louis River estuary. Clean water, healthy fish and wildlife habitat are among our top priorities.

We would prefer to see the Minnesota Pollution Control Agency follow the cleanup course of Alternative 4 to remove all of the contaminated sediment from Munger Landing and dispose of it off-site. The presence of PCBs and the likelihood that they will accumulate in not just fish, but in humans, is our rationale for dredging/removal versus capping them on-site with a thin-layer sand cover.

Though more expensive, complete removal would eliminate the need for long-term monitoring, and would preserve a greater area of benthic habitat in the bay. We feel it would provide the greatest degree of long-term environmental protection of the site.

We are especially opposed to alternatives 1, 2, and 3 because they do not permanently remove the contaminants from the estuary. Our chapter believes complete removal should be a necessary step in the remediation process, when technically and financially possible. Complete clean-up at this site is especially important because Munger Landing is heavily used for fishing and water recreation activities that include human contact with the water and sediments.

Thank you for attention to our comments.

Sincerely,

s/*Matt Hansen*/

Matt Hansen, Board Member and Chair of Conservation Issues Committee
W. J. McCabe Chapter, Izaak Walton League of America
bayerhansen@icloud.com; 651-354-5808

From:	Andrew Slade
To:	Endsley, Erin (MPCA)
Cc:	dwhite@cleanwater.org; info@daytripperofduluth.com; Kristin Larsen; Mike Casey; Julene Boe (jboe56@gmail.com); Steve Morse; "Le Lind"; Lori Andresen
Subject:	Letter of support for Alternative 4 at Munger Landing project
Date:	Friday, September 20, 2019 3:05:59 PM

Erin Endsley, MPCA Project Manager
525 Lake Avenue South, Suite 400
Duluth, MN 55802
erin.endsley@state.mn.us

Dear Ms. Endsley,

As representatives of the organizations listed below, we are writing to support Alternative 4 for the Munger Landing project.

Munger Landing is a popular access point for the St. Louis River. Our members and supporters use the fishing pier to catch fish for their families. They launch kayaks, canoes and even stand-up paddleboards at the current boat ramp and will continue to do so at the new kayak put-in proposed by the City of Duluth. Neighbors from Smithville use the site as their main recreational access to the river. On a hot day, they might even take a quick dip in the water.

Alternative 4, "Dredging and Off-Site Disposal", is the best choice for long-term clean-up of the legacy contaminants at the site. Full excavation of the contaminated sediments ensures that even decades from now the risk to public and ecosystem health is virtually eliminated. We support this option because, by removing all the polluted sediments, there will be no physical contact with these pollutants by human activity in the water at this site. Alternative 4 also prevents the possibility of bio-accumulation in the fish that are being caught and eaten by people fishing at this site.

We strongly support Alternative 4 and we encourage the MPCA to seek the funds to implement this alternative. The Great Lakes Restoration Initiative and Great Lakes Legacy Act were set up for projects just like this, to do the right thing for both people and planet.

In addition, we urge the MPCA to use this project as an opportunity to implement the goals of Governor Walz's Executive Order #1, regarding Diversity, Inclusion, and Equity. The Order asks agencies to address diversity, inclusion, and equity in State government practices, including state government contracting. If ten percent of the $19 million Munger Landing project cost went to support local hires of people from marginalized communities (and their businesses), that would be a great win.

Thank you for hearing our concerns. Please address any follow-up questions or correspondence to Andrew Slade, Great Lake Program Director, Minnesota Environmental Partnership, andrew@mepartnership.org

Deanna White, Clean Water Action
Jake Boyce, Day Tripper of Duluth

Kristin Larsen, Friends of the Cloquet Valley State Forest
Mike Casey, Friends of Western Duluth Parks and Trails
Julene Boe, McCabe Chapter, Izaak Walton League of America
Steve Morse, Minnesota Environmental Partnership
Le Lind, Save Lake Superior Association
Lori Andresen, Save Our Sky Blue Waters

From: Mike Casey
To: Endsley, Erin (MPCA)
Subject: Munger Landing
Date: Tuesday, September 17, 2019 10:06:49 AM

Erin,
The Friends of Western Duluth Parks and Trails will be signing onto Minnesota Environmental Partnership letter supporting option 4.

Please add us to your outreach list of stakeholders in western Duluth.

We are a state registered group. I'm the current chair so you can use my email address or our FWDPT address <friendswdpt@gmail.com> This is our mission statement:

Friends of Western Duluth Parks and Trails is organized to enable citizens and other interested groups to better partner with the City to plan, design, construct and maintain the best possible parks and trails in western Duluth.

Mike Casey
Chair, Friends of Western Duluth Parks & Trails

From:	Graham, Joseph R - DNR
To:	Endsley, Erin (MPCA)
Cc:	Saari, Christopher A - DNR; Fassbender, Judy L - DNR
Subject:	Wisconsin DNR Support of Selected Remedy for Munger Landing (BRRTS 02-16-580678)
Date:	Friday, September 20, 2019 8:36:43 AM

Dear Ms. Endsley,

The Wisconsin Department of Natural Resources (DNR) appreciates the efforts of the Minnesota Pollution Control Agency (MPCA) to evaluate alternatives to address sediment contamination at the Munger Landing site. On November 6, 2017, the MPCA notified DNR about the discovery of hazardous substance discharges on at Munger Landing following receipt of sampling results showing sediments contaminated with polychlorinated biphenyls (PCBs), dioxin-furan congeners, and metals. DNR assigned Bureau for Remediation and Redevelopment Tracking System (BRRTS) number 02-16-580678 to this site.

Contamination at Munger Landing spans the state line, and DNR is committed to working in partnership with the MPCA, and others, to address contaminated sediments and associated beneficial use impairments at this site. DNR supports the selection of Alternative 4, full-scale dredging and off-site disposal of contaminated sediments.

DNR has assembled a team of technical experts for Munger Landing and is looking forward to providing support to complete the design and implementation of a cost-effective remedy. We welcome a joint MPCA – DNR application for a Great Lakes Legacy Project for a sediment cleanup at Munger Landing.

Please do not hesitate to contact me if you have any questions.

Thank you,

We are committed to service excellence.
Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Joe Graham
Contaminated Sediment Expert
Remediation & Redevelopment
Wisconsin Department of Natural Resources
Desk: (715) 635-4075
Cell: (715) 292-4925
joseph.graham@wisconsin.gov

dnr.wi.gov

From: William Majewski
To: Endsley, Erin (MPCA)
Subject: Munger Landing-Letter of Support for Proposed Alternative 4
Date: Thursday, September 12, 2019 6:08:28 PM

Erin

I am writing to indicate support for the proposed remedy for the cleanup of the Munger Landing site as per Alternative 4. As a 47 year resident of Morgan Park I had the opportunity to observe the use of the river in this area. My son grew up exploring the river and streams there and fished from the banks along with many other persons over the years. Although I have recently moved to Upper Smithville from Morgan Park where I was active civically, I can attest to the support from the neighborhood for cleanup of the river. I believe I can speak on behalf of many acquaintances in the new neighborhood who I have spoken to about the need for complete removal of the contaminants from the river where a lot of activity takes place in the form of fishing and boating, bird watching, hiking, wildlife viewing and other similar activities.

Thank you for the briefing on the project.

Bill Majewski
3603-95th Ave. W.
Duluth, MN 55808
Sent from Mail for Windorws 10

Mud Lake West Public Comment Sheet

Use this space to write your comments

MPCA is interested in your comments on the remedial alternatives developed for the Mud Lake West sediment cleanup site in the St. Louis River Area of Concern. You may use the space below to write your comments and submit it at the public meeting on August 22, 2019, or you can mail the comments to MPCA Project Manager Erin Endsley, 525 Lake Avenue South, Suite 400, Duluth, MN 55802. Comments must be postmarked by September 16, 2019. If you have questions, please contact Erin Endsley at 218-302-6619. Comments may also be submitted via email to erin.endsley@state.mn.us.

Options are well laid out. Appears MnPCA has a good approach & alternatives to this situation. Please hold another meeting to let public know of selections & why selection was made

[Would prefer, and I know MnPCA has no authority here, to see RR vacated.
line

Comment applies to Mud Lake & Munger — except for RR comment

Name: Chuck Frosert

Affiliation:

Address: 9909 Hudson Blvd #101

City: Duluth MN

State: MN Zip: 55808