
Name of Organization: Minnesota Pollution Control Agency

Type of Organization: State

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Project Title: 21st Avenue West Channel Site

Project Category: Contaminated Sediments

Rank by Organization (if applicable): 1

Total Funding Requested (\$): 125,000 **Project Duration:** 2 Years

Abstract:

The MPCA proposes to conduct a focused feasibility study (FFS) for remediation alternatives regarding contaminated sediments discovered in an area of the St. Louis River Area of Concern (SLR AOC) referred to as the 21st Avenue West Channel (the Site), located in the St. Louis Bay, Duluth/Superior Harbor, Minnesota. Development of a remedial action (RA) is of interest to the MPCA because of the Site's location in the SLR AOC and because of its possible contribution as a contaminant source. Additionally, a dredge management plan (DMP) has been under development, which incorporates the Site as a maintenance-dredge disposal and wetland habitat creation area. The DMP is being pursued by the Duluth-Superior Harbor Technical Advisory Committee (HTAC) which includes federal, state, local, environmental and citizen organizations. The contaminated sediments are considered a major obstacle to implementing the DMP. Sediment analysis has revealed elevated concentrations of polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), mercury, and ammonia, as well as, arsenic, cadmium, chromium, copper, lead, nickel, zinc, dieldrin, p,p'-DDE, and p,p'-DDD + o,p'-DDT, dioxins, furans and toxaphene. This FFS will incorporate data collected from previous investigations and will consist of developing a list of RA alternatives, preparing and conducting any necessary treatability or bench/pilot studies and presenting a final RA recommendation. Additionally, a component of the FFS will be to design and implement an investigation that will evaluate ground water / surface water interactions and contaminant loading. The purpose of such an investigation is to ascertain any implications these interactions and contaminant loading rates may have on the various RA alternatives. This investigation should incorporate the results of previous studies as well as coordinate with ongoing and/or proposed studies by other governmental, academic and/or private institutions.

Geographic Areas Affected by the Project

States:

- | | | |
|---|-------------------------------------|--------------|
| <input type="checkbox"/> Illinois | <input type="checkbox"/> | New York |
| <input type="checkbox"/> Indiana | <input type="checkbox"/> | Pennsylvania |
| <input type="checkbox"/> Michigan | <input checked="" type="checkbox"/> | Wisconsin |
| <input checked="" type="checkbox"/> Minnesota | <input type="checkbox"/> | Ohio |

Lakes:

- | | | |
|--|--------------------------|-----------|
| <input checked="" type="checkbox"/> Superior | <input type="checkbox"/> | Erie |
| <input type="checkbox"/> Huron | <input type="checkbox"/> | Ontario |
| <input type="checkbox"/> Michigan | <input type="checkbox"/> | All Lakes |

Geographic Initiatives:

- | | | | | |
|--|----------------------------------|-------------------------------------|--------------------------------------|---|
| <input type="checkbox"/> Greater Chicago | <input type="checkbox"/> NE Ohio | <input type="checkbox"/> NW Indiana | <input type="checkbox"/> SE Michigan | <input type="checkbox"/> Lake St. Clair |
|--|----------------------------------|-------------------------------------|--------------------------------------|---|

Primary Affected Area of Concern: St. Louis River, MN

Other Affected Areas of Concern:

For Habitat Projects Only:

Primary Affected Biodiversity Investment Area:

Other Affected Biodiversity Investment Areas:

Problem Statement:

The sediments located at the Site have been found to be contaminated with PAHs, PCBs, mercury and ammonia, as well as, arsenic, cadmium, chromium, copper, lead, nickel, zinc, dieldrin, p,p'-DDE, and p,p'-DDD +p,p'-DDT, dioxins, furans, and toxaphene (Crane et al. 1997). Suspected sources of Site sediment contamination are both historical and current such as discharge from the nearby wastewater treatment plant and impacts related to inflows from two creeks (Miller and Coffee creeks), as well as others.

The presence of contamination at the Site contributes to an impaired use of the SLR AOC including fish advisories, habitat impairments, and restrictions on navigational dredging. Additionally, contaminated sediments at the Site may represent a significant source of nutrients and toxic chemicals to the SLR AOC, including the Bay, the Duluth/Superior Harbor and Lake Superior. As part of advancing Phase II of the Remedial Action Plan Sediment Strategy process developed for the St. Louis River AOC, an FFS outlining remediation options for the contaminated sediments at the Site needs to be conducted. In addition, contaminant loading, reaction and transport relative to ground water discharge are unknown. Therefore, integral to the evaluation and selection of a RA at the Site, ground water / surface water interactions must be evaluated. An outline of specific tasks, including research and investigative activities, should be provided.

Proposed Work Outcome:

The MPCA proposes to conduct a focused feasibility study of sediment remediation options / response actions for the Site. The objective of this study will be to propose a remediation option or combination of options that will result in the remediation of contaminated sediments at the Site such that there will be no impaired uses of this part of the SLR AOC, as well as contribution to the goal of unimpaired uses of the entire SLR AOC.

The components of the study shall include:

1. Review and analysis of relevant data/ information previously gathered with respect to the site.
2. Coordinate with proposed or ongoing studies in the Duluth Harbor to obtain relevant and useful information.
3. Development of a list of all remediation option alternatives;
4. Screening of each remediation option alternative by conducting a detailed analysis of each option including comparison of existing chemical data for the Site with sediment quality guidelines that have been developed for the SLR AOC in order

to develop Site-specific contaminant clean-up goals in conjunction with other Site specific information including sediment chemistry, sediment toxicity, and benthological and bioaccumulative data, consideration of present and future land and water uses of the Site area, as well as others, and the long-term effectiveness of the remedy, the implementability of the remedy, the short-term risks associated with implementation of a particular remedy, the total costs, and the community acceptance of the selected remedy;

5. Preparation and conducting any necessary treatability or bench/pilot studies to support the selection of a remediation option;
6. Preparation of an outline of tasks necessary to assess the interaction of ground water discharge to surface water at the Site and it's role in the selection of a remediation option;
7. Preparation of a detailed report summarizing the remediation options alternatives and a recommendation for selection of one or more of the options to implement as a response action;
8. Evaluate contaminant loading from the Miller and Coffee Creek / storm sewer Systems.
9. Design and implementation of a ground water / surface water investigation which will assist in remedy selection as well as allow short and long term impacts and trends to be assessed.

Project Milestones:	Dates:
Project Start	10/2000
Selection of Remediation Options	11/2000
Assessment of Remediation Options	05/2001
Presentation of Selected Remedys	06/2001
Draft Report	08/2001
Final Report	09/2002
Project End	10/2002
	/

Project Addresses Environmental Justice

If So, Description of How:

The Duluth - Superior Harbor, including the Site area, have long been used, in part, by economically depressed citizens in the Duluth - Superior area as a place to fish for food close to their homes. Some have chosen to drive further distances to less contaminated areas for fish, while others have continued to fish in these areas despite the contamination. The project is a significant stepping stone in the assessment and ultimate management of this contaminated area. Over time, this will create a more local and healthier food source for economically depressed citizens.

Project Addresses Education/Outreach

If So, Description of How:

A significant portion of the St. Louis River Area of Concern has similar contamination as the 21st Avenue Site. Therefore, the results of this project will significantly educate policy makers such as the HTAC and the St. Louis River Citizen's Action Committee and others as well as the general public as to the feasibility of remedies available for other locations in the AOC while considering site specific differences and the various management options being pursued at any given location.

Project Budget:

	Federal Share Requested (\$)	Applicant's Share (\$)
Personnel:	0	4,268
Fringe:	0	896
Travel:	1,000	450
Equipment:	0	0
Supplies:	0	0
Contracts:	122,636	0
Construction:	0	0
Other:	0	914
Total Direct Costs:	123,636	6,528
Indirect Costs:	1,364	72
Total:	125,000	6,600
Projected Income:	0	0

Funding by Other Organizations (Names, Amounts, Description of Commitments):

Five percent of the entire project costs will be provided in cash or in-kind support from the MPCA, totaling \$6,600. In addition, significant resources have already been spent by the Army Corp of Engineers and other HTAC members in investigating the possibility of a wetland habitat restoration project in the area. The Corp has already spent over \$350,000 conducting feasibility and plans & specification activities. If the wetland restoration project is ultimately feasible, the Corp would pay for 75% of the total costs (about \$850,000) and the locals would pay for 25% of the total costs (about \$280,000) plus numerous hours of in-kind services from various HTAC members. Finally, the Metropolitan Interstate Committee may be pursuing Coastal Zone Management funds (about \$50,000) to further investigate the project.

Description of Collaboration/Community Based Support:

The proposed project is the culmination of a significant amount of collaboration with many broad-based stakeholders existing in the St. Louis River Area of Concern. The Duluth-Superior Harbor Technical Advisory Committee (HTAC Committee) is a long-standing partnership consisting of over 20 members including the US Army Corp of Engineers, US Coast Guard, St. Louis River Citizen's Action Committee, Duluth Seaway Port Authority, Metropolitan Interstate Committee, Minnesota Pollution Control Agency (MPCA), Minnesota Department of Natural Resources, Wisconsin Department of Natural Resources, Minnesota and Wisconsin Departments of Transportation, environmentalists, and several other local/regional entities. Among many harbor related issues, investigating and employing a multi-faceted dredge material management plan has been a significant part of HTAC's focus. As part of the multi-faceted approach, the HTAC Committee has been working for over 6 years with the U.S. Army Corp of Engineers to investigate the feasibility of using maintenance dredge material to restore wetland habitat in an area of the St. Louis River Area of Concern referred to as the 21st Avenue West Channel Site (Site). A significant amount of resources have been spent by the Corp and others to investigate this possibility thus far. If ultimately feasible, the project may help manage upwards of 10 years worth of maintenance dredge material in the harbor. A significant roadblock to pursuing this project is contamination existing at the Site. The HTAC Committee recently passed a resolution supporting the MPCA's efforts to secure GLNPO funding to investigate contaminated sediment management options at the site to discover whether the creation of wetland habitat is an acceptable and feasible option.