



DEPARTMENT OF THE ARMY
DETROIT DISTRICT, CORPS OF ENGINEERS
477 MICHIGAN AVE.
DETROIT, MICHIGAN 48226

IN REPLY REFER TO:

Planning Office
Environmental Analysis Branch

**STATEMENT OF FINDINGS/
FINDING OF NO SIGNIFICANT IMPACT**

**Dredged Material Placement
21st Avenue West Channel Embayment
Duluth, Minnesota**

Proposed Action: In accordance with the National Environmental Policy Act of 1969 (NEPA), the Detroit District, U.S. Army Corps of Engineers (USACE), has assessed the environmental impacts of placing material dredged from the federal navigation project into the 21st Avenue West Channel Embayment in Duluth, Minnesota. Several of the inner harbor sites could be used for the placement of dredged material, however, the 21st Avenue West Channel Embayment site was preferred because it is relatively close to the dredging areas, it lacks habitat, and it is located in a more sheltered position in the harbor.

The proposed project would consist of three phases of dredged material placement over a three-year period. Each phase would consist of approximately 100,000 cubic yards of dredged material, placed at varying depths below the water surface. Actual elevations of the placed dredged material would vary to allow for evaluation of plant growth at different depths and for potential placement of select soil materials to promote growth. Phase 1 (Year 1) includes a shallow water sheltered location along the southwest shore, a deep-water area, and a shoreline softening area along the northeast shore. The deep-water area is in the abandoned (federally deauthorized) 21st Avenue West Channel. Phase 2 (Year 2) extends the shoreline softening area farther from the shore and provides additional deep-water placement in the 21st Avenue West Channel. Phase 3 (Year 3) further expands the shoreline softening area. The actual placement areas may vary in location or sequence. Any changes in material placement location or sequencing will be coordinated with applicable federal and state agencies. Results of the proposed project will be useful in developing future restoration plans at the 21st Avenue West Channel Embayment site and other sites around the estuary for purposes of habitat restoration, as well as for delisting sites from being part of an area of concern (AOC) because of environmental degradation.

Environmental Effects: An Environmental Assessment (EA) and a Section 404(b)(1) of the Clean Water Act (CWA) evaluation of the environmental effects of the discharge of fill material into waters of the U.S. was completed for the proposed project. Based on the findings of the EA, Section 404(b)(1) evaluation, and sediment, elutriate, biological, and bioaccumulation testing, implementing the proposed project would be in compliance with Section 404 of the CWA. The proposed project would not result in significant short-term, long-term, or cumulative adverse environmental effects on biota or water quality. Impacts would be minor and temporary,

consisting primarily of noise and air emissions from equipment and transportation operations, and minor, short term turbidity during in-water placement activities.

Coordination: Early coordination comments with Federal and State natural resource agencies, the State Historic Preservation Office (SHPO), tribes and tribal interests, was completed and comments received are discussed in the EA. The SHPO requested that Area 8 be avoided until this area can be surveyed. Area 8 is one of the Phase 2 (Year 2) placement locations within the 21st Avenue West Channel Embayment. Further survey of Area 8 will be conducted by the USACE in the summer 2013. Depending on the results of the survey and additional coordination with the SHPO, placement plans for that area would be revised if necessary.

The EA and 404(b)(1) evaluation were sent out for a 30-day public review on February 14, 2013. Formal comment letters were provided by the U.S. Fish and Wildlife Service (USFWS), the U.S. Environmental Protection Agency (USEPA), the Minnesota Department of Natural Resources (MDNR), and the Wisconsin Department of Natural Resources (WDNR). The agencies' comments largely focused on concerns with monitoring of the placed material, mercury and other contaminants, and turbidity/wave energy. These agencies were cautiously supportive of the proposed placement project. The WDNR suggested delaying implementing the project until monitoring plans and mitigation measures could be further designed. The USACE, Detroit District provided formal responses to each of these agencies on March 21, 2013, which are summarized in the attached EA Public Review Summary (Enclosure 1).

On May 01, 2013, the City of Duluth submitted the EA to the Minnesota Environmental Quality Board to fulfill the State requirement for a regional governmental unit to submit an Environmental Assessment Worksheet (EAW) for a 30-day public review. The EAW process resulted in comment letters from the Duluth Seaway Port Authority, the Minnesota Pollution Control Agency (MPCA), and the Minnesota Department of Natural Resources (MDNR). The Duluth Seaway Port Authority provided a letter of support. The MDNR and MPCA letters included comments on the importance of the project, interagency coordination, prediction of outcomes for this and future habitat projects, submerged lands, State listed species review, material stability, organic medium, monitoring, hydraulic vs. mechanical placement, land disturbing activities, benefits, water quality and impairments thereof, temperature effects, compliance with water quality standards, mixing zone, and cumulative impacts. The USACE, Detroit District provided formal responses on behalf of the City of Duluth to the MPCA and MDNR on May 10, 2013, which are summarized in the attached EAW Public Review Summary (Enclosure 2). The City of Duluth, acting as the Regional Governmental Unit for the State EAW process, prepared a Record of Decision, dated May 14, 2013, concluding that "the proposed project does not pose the potential for significant environmental impacts ... therefore an Environmental Impact Statement is not required."

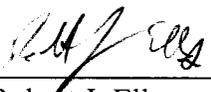
Determinations: The proposed project has been reviewed pursuant to the following Acts and Executive Orders: Fish and Wildlife Act of 1956; Fish and Wildlife Coordination Act of 1958; National Historic Preservation Act of 1966; National Environmental Policy Act of 1969; Clean Air Act of 1970; Executive Order 11593, Protection and Enhancement of the Cultural

Environment, May 1971; Coastal Zone Management Act of 1972; Endangered Species Act of 1973; Clean Water Act of 1977; Executive Order 11988, Flood Plain Management, May 1977; and Executive Order 11990, Wetland Protection, May 1977. Based on the findings of the EA, Section 404(b)(1) evaluation, and results of the 30-day public review and comment period, the proposed project has been found to be in compliance with these acts and executive orders.

The proposed project complies with the Federal Executive Order 11988 (Flood Plain Management), because it will not adversely impact flood plains. The proposed project is within the coastal zone, as defined by the Minnesota's Lake Superior Coastal Program, but would have no adverse effects on the coastal zone or the waters of Lake Superior. Therefore, the proposed project would be "consistent to the maximum extent practicable" (as defined in 16 USC 1456, Coastal Zone Management Act, approved 1978) with the Minnesota's Coastal Program. The State of Minnesota concurred with this determination on May 16, 2013. The State of Minnesota has indicated that the project would comply with State water quality standards through issuance of a Section 401 water quality certification pursuant to the Clean Water Act on May 16, 2013. The USFWS did not object to the USACE's determination of "no effect" on Federally listed species (March 15, 2013). The SHPO provided concurrence on March 5, 2013, that "no historic properties will be affected, with the exception of Area 8 as noted above.

Finding and Conclusion: The findings of the February 2013 Environmental Assessment and Section 404(b)(1) evaluation, and the results of the 30-day public review and comment period, indicate that the proposed placement of federal navigation channel shoal material into the 21st Avenue West Channel Embayment does not constitute a major Federal action significantly affecting the quality of the human environment; therefore, an Environmental Impact Statement will not be prepared.

6/3/13
Date



Robert J. Ells
Lieutenant Colonel, U.S. Army
District Engineer

Enclosures

Dredged Material Placement 21st Avenue West Channel Embayment Duluth, Minnesota

February 2013 Environmental Assessment Public Review Summary

Summary of comments received during the 30-day public review of the Environmental Assessment are provided below, followed by summary of USACE's response (underlined text).

USFWS provided advice on avoidance of impacts on migratory birds and noted their agreement with the USACE's determination of "no effect" on federally listed species. A question was raised regarding review of State-listed species; none are listed for the project area.

Additional information on site selection was requested. The MPCA notes that a host of restoration projects (e.g., 40th and 21st Ave, Grassy Point, Spirit Lake, Pickle Pond, etc.) have concluded the conceptual design phase and will require fill materials to meet habitat improvement objectives. Site selection was multi-faceted. Sites were prioritized to include reaching a target acreage in recovery (project sites encompassing approximately 1,700 acres), stakeholder interest, and potential for success (preliminary or baseline information suggests existing conditions are significantly lower than a reference condition). These sites are presented in the St. Louis River Restoration Initiative 2013 funding request for the AOC. The present dredged material placement contributes towards delisting the site from the AOC as it informs and provides supporting data towards a full restoration of the site.

Additional information was requested on the existing bottom sediments at the project site. Based on past evaluations addressing the 21st Avenue West embayment and the area in front of the Western Lake Superior Sanitary District (WLSSD) treatment plant, contaminants detected in the area include PCBs, PAHs, metals (including mercury), dioxins/furans, and Diesel Range Organics. Of these, mercury, PAHs, and PCBs are found in elevated concentrations, but at deeper intervals where they are not likely to be disturbed by the proposed placement. MPCA review of the existing sediment indicates that limited contamination is present and does not present a significant risk to the receptor if the sediment is undisturbed. The dredged material placement areas are in the embayment, which is generally lower in contaminants than the area to the west, in front of the WLSSD.

Concerns were raised regarding moving sediment (dredged material) that includes mercury (to the embayment site), noting the cumulative mass of mercury moved in the placement activity is significant particularly in comparison to local dischargers. Noting the potential for mercury methylation, and the possibility of cumulative impacts through similar sediment movements in the future and bioaccumulation, caution was advised on placing materials where they will be more susceptible to re-suspension and dispersion. Mercury levels in the navigation channel sediment are similar to the levels already present in the existing sediments at the 21st Avenue embayment. However, for purposes of informing future dredged material placement for habitat restoration, a review of mercury flux, using geochemistry information, to determine if it will increase or decrease with placement of dredged material at the proposed placement site is being conducted.

A number of comments requested clarifications on the sediment sampling, analytical process, and data interpretation used by the USACE. The USACE complies with the Federal standard, which requires use of the USACE/USEPA Great Lakes Testing and Evaluation Manual in determining whether material is acceptable for open water placement. That manual includes the type of tests and procedures and durations that need to be used in the evaluation and testing of sediment. Samples were collected and tested in 2011 for contaminants of concern. The harbor was divided into six management units. Five samples were obtained in each management unit and analyzed for chemical and physical parameters. Additional samples from the five locations were composited and used for the biological tests. Elutriate data was compared to Minnesota water quality standards and was determined to be in compliance. The PCB method used included both aroclor analysis and a PCB congener method testing for 24 congeners and estimated the total PCBs for both the sediments and the biological tissue. This resulted in PCB detection limits in the low single digit ppb range. Biological testing was completed in accordance with the USACE/USEPA Great Lakes Testing and Evaluation Manual.

The use of reference sites (deep holes and Lake Superior) other than the proposed placement site (21st Avenue embayment) was questioned; however, the USACE/USEPA Great Lakes Testing and Evaluation Manual allows for use of a placement site as a reference site. The 21st Avenue West Channel Embayment was not included in the evaluation because the sediments in the embayment are contaminated. Therefore, to get a better evaluation of suitability of the dredged material for determining the Federal Standard for suitability of open water placement, the cleaner open lake and deep-hole sites were used as reference sites.

Clarification was requested regarding the effects of the proposed dredged material placement on the discharge from the WLSSD outfall, and effects of the increased temperatures from the outfall on the project. The WLSSD outfall discharge point is about 500 feet south of the corner of Area 4, which is the nearest placement location. Based on results of a 1999 modeling study for a full ecosystem restoration of the 21st Avenue embayment, and that the present proposal is more distant from the effluent outfall, it is not likely to have any significant effect on the effluent. Monitoring will help identify effects from increased temperatures and nutrients.

One comment addressed the WLSSD outfall with respect to chemicals of emerging concern, such as personal care products and pharmaceuticals. Chemicals of emerging concern (CECs) are beyond the project scope until an unacceptable risk is identified and such risk, if present, is found to outweigh current objectives of improving aquatic habitat conditions.

One letter pointed out that the Lower St. Louis River natural resource managers have identified the desire to maintain a deep channel in the Miller and Coffee Creek Bay. The EA has proposed the placement of dredged materials in the 21st Avenue West Channel to raise the current depth of around 23 feet up to 10 feet surface water depth, which may not be sufficient to provide all the deep water benefits identified. Further discussions with the MDNR to determine the desired depth needed in this area was recommended. The concept design for full restoration design was recently updated in coordination with Minnesota DNR fisheries staff. The design includes a channel at -5 feet of Low Water Datum, extending from the area of Miller and Coffee Creeks to the harbor to provide creek flows, boat access, and fish spawning access. The adjacent harbor areas have deep

water. The Minnesota DNR expressed their desire to have deeper water pockets within the bay area and we will work with them to determine an appropriate design. As such, the filling of the de-authorized 21st Avenue West Channel to approximately -10 feet of Low Water Datum under the present proposal would not conflict with the upcoming Section 204 study.

Some comments focused on whether the dredged material was suitable growth medium and requested further information of the potential addition of a bioactive layer to enhance growth, with particular emphasis on growth in the shoreline softening area. The present plan is to dredge in the more nutrient rich, fine grained sediment areas first so it can be placed in the shoreline softening area. Testing has shown the dredged material to have elevated levels of ammonia nitrogen, phosphorus and total Kjeldahl nitrogen. Dredged material has been shown to support plant growth due to nutrients in the material at all sites where it has been placed, which include upland placement sites (Erie Pier CDF in Duluth and Keetac Mine in Keewatin, MN), and ponded areas within the Erie Pier CDF. Monitoring of this dredged material placement activity will help determine the extent to which the dredged material will be successful in aquatic plant growth. The State of Minnesota has the option of placing supplemental material at the site to enhance growth potential.

Many comments requested additional information on monitoring, adaptive management, appropriate water depths for growth, expected aquatic habitat improvements, and goals for species and abundance. A prime objective of the proposed action is to evaluate sediment stability and vegetation establishment. The USACE will focus on the sediment stability monitoring through bathymetric surveys. The MPCA is contracting to have the placed dredged material monitored for a variety of parameters, and notes that baseline, pre-placement survey work is either completed or scheduled to occur prior to placement (sediment contaminants, macroinvertebrates, aquatic vegetation, avian surveys). Aquatic habitat improvements are anticipated, but not guaranteed. The substrate will be improved by placement of the cleaner dredged material, but the actual benefits will be realized insofar as plants are established and animals use the new substrate. The State of Minnesota may place organic material on two of the placement areas to provide a comparison to the raw dredged material. The MPCA has contracted a series of monitoring projects focused on 21st Ave., and an aquatic vegetation survey and a laboratory microcosm growth study will be conducted by the University of Minnesota. Goals are to compare test plots with reference conditions and identify factors limiting aquatic macrophyte assemblage structure at 21st Avenue.

One comment noted that the shallow water area proposed to be created will have surface water depths in excess of one foot, which would not match the preferred hydrologic regime of fresh meadow or shrub swamp species, but that such depth is necessary to avoid establishment of exotic plant species. Therefore, to ensure development of a preferred aquatic vegetative community, a mixture of native aquatic plant species should be planted on the new material. Part of the information desired from this placement activity is to see if the dredged material will result in desirable plant species unassisted, and if the State provides additional substrate, with supplemental soil material. This will help determine how much active planting effort, if any, may be needed in future restoration activities. Initial results will be coordinated with the resource agencies and used to fine tune the second and third year placements.

Another comment suggested that future water depths be considered in light of possible effects from global climate change. Prediction of global climate change and future lake levels is problematic. If it were confirmed at some time that average lake levels were going to permanently decline (or rise) in the future, then adjustments could be made. We are currently working with placement to -1 foot of Low Water Datum, which means the material will likely remain submerged in the foreseeable future.

Many comments were received regarding effects of wave energy entering the 21st Avenue Embayment and the effect on stability of the placed material and development of aquatic habitat. Within the embayment there appear to be fetches, similar to what the placed material will be subjected to, where vegetation is established along the shoreline. Evaluation of wave conditions indicates that waves will be fetch limited in most directions in the St. Louis Bay and also depth limited in almost all directions. The fetch and depth will limit the size of potential waves at the project placement site. The largest expected wave, based on the USACE Shore Protection Manual, should be no greater than about 3 feet. Most waves would be much smaller. The current and circulation patterns are not expected to change significantly with the proposed placement locations. This is based on previous experience around the Great Lakes.

Disturbance of underlying sediments during dredged material placement was a noted concern and methods of controlling dispersion of turbidity were requested. In particular, the USFWS expressed concern that the limitations of sediment movement in the proposed project area have not been adequately addressed in project planning to date, noting that elevated contaminants in surface and deeper layers are documented throughout the 21st Avenue West embayment. With primary contaminants of concern including PCBs, PAHs, mercury, and toxaphene and limitations on the sediment chemistry and bioassay data specific to the project areas including detection limit and other protocol issues, the USFWS strongly recommends further evaluation of these data to determine the extent to which proposed actions in the project area may present contaminant-related risks to fish and wildlife, noting that aquatic organisms may become exposed to PCBs, PAHs, mercury, and toxaphene in sediments via ingestion and direct contact, and that through bioaccumulation, greater concentrations may result in fish and wildlife species higher in the food chain. Because this exposure pathway may be exacerbated by disturbing contaminated sediments in the project area, and given the limited site-specific data available, the USFWS is concerned with the potential for adverse impacts to ecological receptors resulting from this increased exposure through suspended sediments and the water column. These impacts can include mortality, cancer, lowered immune system responses, neurological effects, endocrine disruption, and reproductive impairments. Disturbance of underlying sediments will be limited by the use of a baffle plate or other energy dissipater at the end of the hydraulic discharge. The short-term turbidity generated will be mostly from the material being placed with a minor component of input from existing material. Additionally a turbidity curtain will be implemented for the first year placement activity. The curtain will span the mouth of the embayment and turbidity monitoring will be conducted to determine whether or not the curtain is necessary for future year's placement activities. As the existing 21st Avenue West Embayment sediments are often exposed through storm actions, the limited disturbance from project activities should not present a significant risk, and ultimately, placement of cleaner dredged material on top of the more contaminated material would be expected to reduce such exposure.

One commenter asked if the USACE could conduct an analysis and simulation of sediment fate and transport within the 21st Avenue Embayment and estimate the potential transport for parameters of Hg, COD, Zn, and, other parameters of concern. We are initiating a sediment study for the 21st Avenue West Channel embayment to determine if full restoration of the embayment using dredged material would require a wave barrier. Results of this study would provide some insight into sediment fate and transport questions.

The USFWS is providing support and technical assistance to develop an ecological design for the overall 21st Avenue West embayment area, as a first step towards a "Remediation-to-Restoration" process recommended by St. Louis River Area of Concern State and Tribal Coordinators to address historical contamination in select areas of the St. Louis River estuary while also restoring fish and wildlife habitat in the most cost-efficient manner. A final "Ecological Design Report" for the 21st Avenue West area is anticipated to be available in May 2013. This report will help inform phases 2 and 3 of the present dredged material placement proposal, and will help refine the design for full habitat restoration at the 21st Avenue West Channel embayment.

The WDNR suggested that USACE not rush to implement the project in 2013, but instead, focus on working with AOC stakeholders on identifying mitigation measures (including possible sediment removal or remediation) and an implementation schedule in the event adverse effects are found. The MPCA has reviewed the sediment contaminant concentrations data at 21st Ave. and noted the placement areas in Phase I do not raise ecological risk concerns. Placement of acceptable materials above existing sediment layers is a recommended management plan (MPCA, Remedial Review and Determination Memorandum, RAA57). The material would not be removed if habitat benefits are not realized as it also serves towards the purpose to cover the contaminated bay sediment with cleaner material, and monitoring will continue along with possible implementation of adaptive measures that could result in habitat development.

A comment noted that the St Louis River is on Wisconsin and Minnesota's lists of impaired waters for toxic pollutants; specifically mercury, lead, PAHs, PCBs, DDT, Dieldrin, and 2,3,7,8, TCDD and asked for an explanation of how this project can be implemented to prevent further degradation of water quality for these substances?" The dredged material is generally less contaminated than the sediments present at the embayment. Biological testing and elutriate testing did not reveal any concerns and the material was determined suitable for open water placement.

Some comments were requesting specific dredging locations be identified to ensure they were included in the sampled areas. Only the first year locations are currently identified (all in the outer harbor). However, the testing conducted in 2011 represents the entire Duluth-Superior Harbor, with the exception of non-maintained areas, which would not be used for the proposed placement.

A number of corrections were suggested (strikeout and bold text). Some suggested revisions to the Fisheries section of the EA include, "Historically, the fishery in the estuary was severely degraded by habitat loss ~~and water quality problems~~ attributable to over 100 years of shoreline and watershed development, **water quality problems due to un-regulated water quality discharges**, and by heavy fishing pressure" and "Lake sturgeon, which had been nearly eliminated from the harbor by the turn of the 20th century..." We also note that an

editing error replaced the word “project” in the quoted WDNR comment with the word “placement” four times. A final clarification is that the USFWS study referenced in EA Sections 3.27 and 4.49 (and cited as "NRRI, 2012") is a preliminary report associated with the ecological design which characterizes select biological and hydrodynamic aspects of the 21st Avenue West embayment.”

Finally, some concerns were expressed regarding lack of information in the EA on bird use of the project area and whether bird herbivory will contribute to low levels of vegetative restoration success, especially considering the warmer water area at the WLSSD outfall which creates an open water area that results in a large and persistent bird population throughout the winter. Part of the evaluation of this placement effort will be to learn about such limitations as bird herbivory, and other possible deterrents to vegetation. A variety of birds will benefit from any vegetation that develops, but to a limited degree as this is a limited placement. More detailed discussion of birds would occur in an EA addressing the full ecosystem restoration under the USACE Section 204 program.

Dredged Material Placement 21st Avenue West Channel Embayment Duluth, Minnesota

Environmental Assessment Worksheet Public Review Summary

Summary of comments received during the 30-day Environmental Assessment Worksheet public review are provided below, followed by summary of any response (underlined text).

In exerting "navigational servitude", the USCOE served submerged land owners with a notice that the land would be taken without compensation for dredged material placement. It is likely that the state has ownership of submerged lands below the Ordinary Low Water Level, therefore, the use of parcel data or tax assessor records may not be an acceptable method to determine ownership. The 21st Avenue project lies in navigable waters of the United States. All navigable waters are under the control of the United States for the purpose of regulating and improving navigation and although the title to the shore and submerged land is in the name of various states and individual owners, it is always subject to the servitude in respect of navigation created in favor of the Federal Government by the Constitution.

Could you please provide documentation of State Listed species present within 1 mile of the project area and how it was determined they would not be affected. A recent Minnesota Natural Heritage Information System Index Report of records for an adjacent site was completed in February 2013. The current proposal falls within the one-mile radius of that records search. According to the results of that search, no State-listed species are present that would be affected by the current proposal.

The EA/EAW indicates that some placed materials would extend (spread) beyond the target locations, but did not describe what efforts will be undertaken to document the completed material placement for physical locations, material thicknesses, etc., which should be done to inform future evaluation of the stability and effectiveness of the placement. Multiple bathymetric surveys will be completed to evaluate sediment stability of the placed material. Additionally, MPCA has contracted for pre- and post-placement observations and sediment particle size analysis referencing survey markers for consistency of repeat observations.

The proposal to add organic medium on top of the dredged material is a connected action and should be treated as a project component to be addressed in greater detail, including information on physical makeup, and suitability for use at shallow depths where the material may be subjected to river currents and wave energy. This is an option that the Minnesota Department of Natural Resources (MDNR) may pursue; however, at this time there is not sufficient information on the particular material that may be used. A point of contact at MDNR was provided for further information.

The EAW/EA states that beyond sediment placement, no active measures will be taken to achieve benefits to aquatic resources. Biological monitoring is referenced, but the document provides no specifics regarding how the monitoring will be conducted, how benefits will be

measured, or what parameters will be assessed and by what methods. Other than the potential addition of organic medium to some plots within the placemetn areas by the MDNR, this proposed project is a passive placement to see what habitat may develop naturally. The MPCA has contracted a series of monitoring projects focused on 21st Ave. An aquatic vegetation survey and a laboratory microcosm growth study will be conducted by the University of Minnesota. Conditions will be evaluated using pre- and post-placement observations, with reference condition comparisons used where appropriate to identify factors limiting SAV assemblage structure. Biological monitoring will identify the benefits of the proposed placement of materials through increases in habitat complexity and damping wave energy impacts on sediment stability. Biological response through improved assemblage structure is the targeted outcome. A contact person at MPCA was provided for further information on the monitoring effort.

The EA/EAW did not indicate to what extent will the manner in which dredged material is placed (mechanical or hydraulic) affect the stability of the placed materials, dispersion of materials, or contribute to greater suspension of sediments in the water column. Shallow depths at the site likely will preclude mechanical placement. The EA evaluates the expected scenario of hydraulic placement. If mechanical placement occurs, the effects as described would be reduced.

The EA/EAW provided no specific details on the extent of the proposed land disturbing activities associated with the Project, including upland stockpiling of materials. There are no land disturbing activities. The construction contractor will be operating strictly from the water. Any equipment brought to the site by truck would be required to use existing commercial and/or public launch sites and docks to enter the waterway.

The St. Louis River has numerous impairments for aquatic consumption and aquatic recreation (MPCA 303(d) Impaired Waters List). The EA/EAW did not evaluate whether the proposed activities will contribute to these impairments and/or otherwise exacerbate existing water quality or habitat conditions. The EA and 404(b)(1) Evaluation conclude that the project will not have significant adverse effects on water quality. As such, aquatic consumption impairments and recreational impairments would not be worsened by the proposed dredged material placement.

The project area is near the mouths of Miller Creek and Coffee Creek, and the Western Lake Superior Sanitary District (WLSSD) wastewater discharge. Miller and Coffee creeks deliver sediment and nutrients to the 21st Avenue West embayment, and the WLSSD discharge contributes warmer water temperatures and nutrients to the area. Information should be provided regarding the residence time of the embayment, how that will be changed by the Project and to what extent the project will affect the water quality of the embayment and/or change flow patterns. An effluent temperature and flow study is to be conducted by the University of Minnesota. A modeling study of effluent concentrations conducted in 1999 for a proposed restoration that included a wave barrier across the Embayment and only 50 feet from the WLSSD discharge point, indicated that water temperature effects of the full restoration with wave barrier from the WLSSD outfall would extend farther across much of the southern half of the 21st Avenue Embayment, probably averaging a third of a degree Celsius over that area, with the highest increases nearest the outfall (up to about 1 degree Celsius). As the present activity is significantly smaller than a full restoration, temperature increases are expected to be negligible.

The document did not provide adequate detail to demonstrate how compliance with water quality standards will be achieved during construction, nor did it define the point (physical distance from the project area) at which the project will meet applicable water quality standards. A “mixing zone” for water quality compliance is cited, but not defined. The EA/EAW should describe the monitoring that will be conducted to determine compliance with water quality standards, the frequency and the duration of monitoring, the areal extent of the mixing zone and how water quality compliance will be ensured, and the contingencies that will be in place in the event that water quality standards are not being met during construction. Given the periodic, event-based alterations in water clarity, there is little evidence provided that suggests short-term exceedance of a turbidity standards in the St. Louis River estuary is deleterious to benthic assemblages. Nonetheless. The USACE is planning to place a turbidity curtain across the entrance to the 21st Avenue West Channel Embayment during the first year of construction activities and will monitor turbidity inside and outside of the turbidity curtain during dredge material placement activities, and up to two months after. The mixing zone would be the area within the turbidity curtain. The need for a turbidity curtain in future years will be based on monitoring data from the first year of construction.

The references cited in the Wetlands and Aquatic Habitat section of the EAW/EA is quite dated. It is possible that this information is no longer accurate. The habitat description in the EA for the 21st Avenue West Embayment is likely not changed appreciably, and significant habitat has not been identified in the embayment.

The document did not adequately address cumulative potential effects, as required in Item 29 of the EAW. Also, while the EA/EAW focused on the pilot project, it provided little detail on the full scale project that will be informed by this Project. The cumulative effects section of the EA does not address those of a full scale restoration of the 21st Avenue West Channel Embayment because a full restoration, if pursued, will include an environmental analysis with discussion of cumulative effects relative to the full restoration of the site.