PROPOSED ALTERNATIVE FOR MANAGEMENT OF CONTAMINATED SEDIMENT FROM DREDGING PROJECTS IN THE MILWAUKEE ESTUARY AREA OF CONCERN

Project Description

The Wisconsin Department of Natural Resources (DNR) at 3911 Fish Hatchery Rd, Fitchburg, Dane County, Wisconsin, has completed the public comment period for a Department-funded remedial action under Wis. Admin. § NR 714.05 for the management of contaminated sediment from dredging projects in the Milwaukee Estuary Area of Concern (MKE AOC). Three management alternatives were contemplated in the Analysis of Dredged Material Management Alternatives and by the stakeholders of the DNR, Milwaukee Metropolitan Sewerage District, the City of Milwaukee and its divisions of the Redevelopment Authority of the City of Milwaukee and the Port Authority, Milwaukee County, We Energies, and the United States Environmental Protection Agency as part of Great Lakes Legacy Act (GLLA) project(s). Each of the stakeholder partners proposes to contribute resources under a GLLA Project Agreement.

Contaminants

The MKE AOC has a long history of ecological degradation and pollution. Historical discharges resulted in sediment within the MKE AOC being contaminated with various pollutants, including metals, polychlorinated biphenyls (PCBs), and polynuclear aromatic hydrocarbons (PAHs). The Milwaukee, Menomonee, Kinnickinnic Rivers, and inner and outer harbor contain about 1 to 2 million cubic yards (CY) of contaminated sediment.

Proposed Action

The DNR recommends the Dredged Material Management Facility (DMMF) alternative because it meets the threshold criteria of being compliant with applicable federal, state, and local regulations and standards as well as provides overall protection of human health and the environment. This option costs approximately $110 to 135 million less than landfill disposal, a 55 to 70% reduction. The DMMF is proposed to be about 42 acres directly north of the existing Jones Island Confined Disposal Facility (JI-CDF). The DMMF will have a capacity of 1.9 million CY[1].

The nearshore DMMF would be an engineered structure for the containment of dredged material. The proposed facility would take advantage of components of the existing JI-CDF and the existing shoreline bulkhead wall, which will be serve as the southern and western containment structures for the DMMF, respectively. The proposed DMMF would require dikes to be constructed for containment on the northern and eastern sides. The proposed containment and fill height would be resilient to long-term changes in lake levels.

The cost for DMMF disposal is significantly less than the landfill disposal option primarily due to the reduction in material handling and landfill fees. A DMMF is more sustainable than a landfill; approximately 1.2 million gallons of diesel fuel will be saved

[1] These estimates have been updated since the Analysis of Dredged Material Management Alternatives for the Milwaukee Estuary Area of Concern in November 2019.

due to reduced hauling. In addition, an estimated 240,000 tons of amendments will not be required to prepare the dredged material for truck transportation. In total, carbon emissions are anticipated to be reduced by 200,000 tons over the useful life of the facility base on transportation requirement evaluation.

Once the DMMF is filled and at final grade, a cap would be placed and vegetated. The space could then be used for shipping, Port Milwaukee operations, and/ or public space. The DMMF is anticipated to be owned and operated by Port Milwaukee. Port Milwaukee would maintain the DMMF once the facility is filled and capped.

Option Evaluation

Following the Wis. Admin. § NR 700 rule series, and consistent with Wis. Admin. § NR 722, the Department evaluated several options including a No Action option, a landfill disposal option and the DMMF option. The Department determined that the proposed DMMF option was the best option.

No Action Comparison

The Department assessed taking no action at this time and concluded that a remedial action is necessary to be in compliance with applicable federal, state, and local regulations. The No Action Option does not include the remedial action necessary to ensure protection of human health and the environment.

Landfill Comparison

The Department assessed landfill disposal and concluded that disposal at a landfill would be more expensive for taxpayers and disruptive to the local community to implement.

A key aspect of the cost for landfilling relates to the requirement that landfills accept only solid waste; hydraulically dredged sediments contain significant water content and cannot meet the liquid content limitations for landfill disposal without dewatering. In addition, the high-water content of dredged material creates challenges for highway transport using standard dump trucks. Sediment must be dewatered before meeting the requirements for landfill acceptance which requires upland staging area and time for processing. Comparatively, a DMMF is itself designed to be part of the dewatering process and would not require upland space or processing for this purpose.

The increased costs for landfill disposal include costs related to dewatering, including water treatment, bag field setup, bag field management, and addition of stabilization agents, plus trucking, landfill tipping fees, and material handling. The increased cost for dewatering, transportation and tipping fees is estimated at $110 to 135 million.

Contact Information

Interested persons wishing to obtain more information may contact Scott Inman, DNR, 3911 Fish Hatchery Rd., Fitchburg, WI 53711, tel. (608) 273-5613, or via email at Scott.Inman@Wisconsin.gov;

The alternatives analysis is available for review at https://dnr.wi.gov/topic/brownfields/documents/rr/20191112_MKE_AOC_MaterialManagmentAnalysisTextFigures.pdf

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