

# Milwaukee Harbor (Jones Island) Confined Disposal Facility-Dredged Material Disposal Facility Beneficial Use Evaluation

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**Background/Objectives.** The Milwaukee Harbor (Jones Island) Confined Disposal Facility-Dredged Material Disposal Facility (CDF-DMDF) is owned by the City of Milwaukee – Port of Milwaukee (Port of Milwaukee) and operated and maintained by the U.S. Army Corps of Engineers (USACE). An in-lake facility attached to land, the facility is located at the south end of the Milwaukee Harbor, in Milwaukee, Wisconsin, and is within the Milwaukee Estuary Area of Concern (AOC). As part of this project, the Port of Milwaukee and WEC Energy Group (WEC) sought to identify the potential for the beneficial use of historically placed dredged material in the CDF-DMDF, which is of interest to many AOC stakeholders as there are multiple sediment removal projects necessary to restore beneficial use impairments. The CDF-DMDF was constructed in 2011 on top of the original Jones Island CDF which reached capacity with the placement of permitted environmental dredged material from the Kinnickinnic River Legacy Act project. The CDF-DMDF has a constructed capacity of 510,000 cubic yards (cy) and is expected to receive 30,000 to 40,000 cy of sediment per year. As of 2015, the CDF-DMDF had a remaining capacity of 476,000 cy.

**Approach/ Activities.** Potential use of this material will create additional capacity within the CDF-DMDF for dredged sediments from Milwaukee Harbor Federal Navigation Project and non-federal projects within Milwaukee Harbor. The initial step in this process is the collection of core samples of the placed dredged material within the CDF-DMDF to determine its physical and chemical composition. With the support of the Port of Milwaukee and USACE, WEC contracted Foth Infrastructure & Environment, LLC (Foth) to perform this field investigation in March 2018 using a direct push technology drill rig mounted onto a 26-foot long pontoon boat.

**Results/Lessons Learned.** Although the material is not in the defined group of industrial byproducts under Wisconsin Administrative Code (Wis. Admin. Code) Ch. NR 538.03(4), sediment chemistry was evaluated relative to the standards outlined in the “Guidance for the Beneficial Use of Industrial Byproducts” and NR 538 for comparison purposes. Use of the dredged material as an industrial byproduct would require special approval from the Wisconsin Department of Natural Resources under Wis. Admin. Code NR 538. Correspondence from USACE to the Port of Milwaukee, dated October 4, 2017, clarified the responsibility of parties removing material from the CDF-DMDF and liability for placement of that material.

Total elemental analysis of the samples was performed and results were compared to Category 1 and 2 standards of Wis. Admin. Code NR 538 because Categories 1-2 represent potentially high volume uses that could easily account for the volume of material present in the CDF-DMDF. In general, sediment chemistry limits use of the material for Category 1 or 2 uses, the high plasticity of the material makes it less desirable as use for habitat restoration backfill or marsh construction fill, in spite of the high organic content. Thus, amending the material to make it physically or chemically acceptable for Categories 3-4 uses is feasible, it would add cost that reduces the cost effectiveness of using the material. Depending on special landfill permits, the fine-grained material may have use as daily cover at a landfill for Category 5 usage. An order-of-magnitude estimate for creation of a new DMDF with a capacity of 460,000 cy of dredged

material was shown to be more cost effective than creating capacity in the current CDF-D MDF by excavating and using the existing stored dredged material for daily cover at a landfill.