SCOPE OF WORK FOR
GREAT LAKES LEGACY ACT
FOCUSED FEASIBILITY STUDY, PRE-DESIGN INVESTIGATION & REMEDIAL DESIGN OF IMPACTED SEDIMENTS, THE REMEDIAL DESIGN OF THE PROPOSED DREDGE MATERIAL MANAGEMENT FACILITY, THE REMOVAL OF PCB CONTAMINANT SOURCE MATERIAL, AND THE REMEDIAL ACTION OF CONTAMINATED SEDIMENT IN THE MILWAUKEE ESTUARY AREA OF CONCERN MILWAUKEE, WISCONSIN MODIFICATION NO. 2

Background

The Milwaukee Estuary Area of Concern (AOC) includes portions of three watersheds along the Milwaukee River, Menomonee River, and Kinnickinnic River, as well as the inner and outer Milwaukee Harbor, former industrial canals and slips, and near-shore areas of Lake Michigan. The Milwaukee Estuary AOC has a long history of ecological degradation and pollution that continues into the present. Under the Great Lakes Water Quality Agreement, a Milwaukee Estuary Stage 1 Remedial Action Plan (RAP) was completed in 1991. Updates to the RAP have been periodically performed, with the most recent update in 2022. The RAP identifies the project reaches targeted for this Great Lakes Legacy Act (GLLA) project within the AOC as requiring additional sediment characterization, followed by further evaluation for potential remedial action (RA).

Historical discharges resulted in sediments within the Milwaukee Estuary AOC being contaminated with various pollutants, including metals, polychlorinated biphenyls (PCBs), and polycyclic aromatic hydrocarbons (PAHs). High levels of contamination have been found within the Milwaukee Estuary AOC, resulting in Superfund sites, including the Burnham Canal Superfund Alternative Site, Cedar Creek Superfund Alternative Site, Milwaukee Solvay Coke & Gas Superfund Alternative Site, and the Moss-American Superfund Site. The former We Energies West Side Manufactured Gas Plant (MGP) Site is located on the Menomonee River immediately downstream of 25th Street. The former We Energies Third Ward MGP site is located northeast of the Milwaukee River within the project reach.

To date remedial action has been performed in several areas of the AOC listed below:

- The Moss-American Superfund Site along the Little Menomonee River was remediated from the 1990s to the 2000s.
- The Blatz Pavilion Lagoon project was implemented by the Wisconsin Department of Natural Resources (DNR) and Milwaukee County in 2008.
- The Kinnickinnic River GLLA Project was implemented by the United States Environmental Protection Agency Great Lakes National Program Office (USEPA GLNPO) and the DNR in 2009 for the river stretch from the Becher Street bridge

downstream to Kinnickinnic Avenue bridge.

- USEPA GLNPO and DNR previously completed remediation and site restoration of the Lincoln Park Phase I & II GLLA Projects on the Milwaukee River in 2012 and 2015, respectively.
- The Burnham Canal Superfund Alternative Site, a spur to the South Menomonee Canal, a branch of the Menomonee River, was implemented by Miller Compressing in 2020 and 2021.
- Mercury Marine previously completed remediation of Cedar Creek, a tributary to the Milwaukee River, at Ruck Pond, the former Hamilton Pond, and in Operable Unit 2A (OU2A) (the impounded areas).

In addition to remedial action, progress has been made on contaminated sediment investigations, feasibility studies, and design in the Milwaukee Estuary AOC listed below:

- USEPA GLNPO and We Energies completed a Remedial Investigation (RI) and Focused Feasibility Study (FFS) of the Menomonee River & Milwaukee River (downstream of the confluence) in 2019.
- Design for the Grand Trunk Wetland Restoration and Skipper Bud's Slip habitat improvements was partially completed through a Great Lakes Restoration Initiative (GLRI) funded project. Due to the need to manage a large amount of contaminated material, the design and implementation is now being considered as a component of this GLLA Milwaukee Estuary project.
- The Feasibility Study of Cedar Creek Operable Unit 2B (OU2B) was completed in 2020. EPA Superfund is currently in the process of the Proposed Plan and Record of Decision.

Sediment site characterization has been performed in the Milwaukee Estuary AOC by USEPA GLNPO, DNR, United States Army Corps of Engineers (USACE) and others. Site characterization was performed by USEPA GLNPO under the GLLA for the Kinnickinnic River Mooring Basin in 2015, for the Menomonee River in 2015-2016, and for the Milwaukee River downstream of Estabrook Park, including floodplain areas, to the confluence with the Menomonee River in 2016-2019. Prior to the 2015-2016 site characterization, other sediment sampling events were performed on the Menomonee River by We Energies and USACE. We Energies and others performed a Remedial Investigation of the Milwaukee Solvay Coke & Gas Superfund Alternative Site along the Kinnickinnic River.

Further sediment characterization was performed by DNR through a Site Characterization Grant in 2020 and 2021 for the remaining areas requiring sampling: the South Menomonee Canal, portions of the Kinnickinnic River and inner harbor, adjoining slips and canals along the Kinnickinnic; the Milwaukee Bay including the outer harbor, McKinley Marina, Summerfest Lagoon, South Shore Mooring Basin, Lakeside Power Plant, and nearshore waters. Additionally, USACE performed characterization of the authorized navigation channel portion of the Kinnickinnic River, and USEPA GLNPO conducted additional characterization of the Milwaukee River Floodplains and Downtown project areas as part of the FFS.

The following eleven beneficial use impairments (BUIs) exist in the Milwaukee Estuary AOC: restrictions on fish and wildlife consumption; degradation of fish and wildlife populations; beach closings (recreational restrictions); fish tumors or other deformities; degradation of aesthetics – removed in September 2021; bird or animal deformities or reproduction problems; degradation of benthos; restrictions on dredging activities; eutrophication or undesirable algae; degradation of phytoplankton and zooplankton populations; and loss of fish and wildlife habitat. Seven of the eleven BUIs are impacted by contaminated sediment in the Milwaukee Estuary AOC.

Constituents in the sediment are a primary pollution concern. Impacted sediments are ingested by bottom-dwelling benthic organisms as they feed and can be toxic to many of the invertebrates inhabiting the sediment. In addition, piscivorous fish, birds and mammals may be exposed to bioaccumulative chemicals, such as mercury and PCBs, via diet. Impacted sediments also have the potential to be resuspended by storms and floods.

Depending on the nature and extent of impacts in the project areas, remediation of sediments may be necessary to mitigate environmental risks. The remediation of sediments is considered a management action that is expected to address BUIs. DNR proposed a list of sediment-related management actions to address five BUIs in January 2021 and USEPA GLNPO approved the sediment management action list in February 2021. Thus, the work described in this Scope of Work (SOW), through the management actions, is expected to support the eventual removal of BUIs impacted by sediment contamination.

The Non-Federal Sponsors, including DNR, the City of Milwaukee, Milwaukee County, Milwaukee Metropolitan Sewerage District (MMSD) and We Energies, submitted *Proposal to US EPA GLNPO Legacy Act Program for Feasibility Study, Pre-Design Investigation, and Remedial Design for Remediation of the Milwaukee Estuary* on June 6, 2019. On June 14, 2019, the Non-Federal Sponsors presented the application to USEPA GLNPO's Technical Review Committee-lite. On July 10, 2019, the Non-Federal Sponsors provided a more detailed funding spreadsheet for the application. A GLLA Project Agreement (PA) between the USEPA and Non-Federal Sponsors was signed on January 6, 2020, for the Focused Feasibility Study (FFS), Pre-Design Investigation (PDI) and Remedial Design (RD) of Impacted Sediments, the design of a proposed Dredged Material Management Facility (DMMF) and the removal of PCB Contaminant Source Material in the Milwaukee Estuary Area of Concern, Milwaukee, Wisconsin.

The Non-Federal Sponsors submitted the *Proposal to US EPA GLNPO Legacy Act Program, Amendment No. 1 to PA 550892 DMMF, Construction to Support Remediation of the Milwaukee Estuary (the "Amendment")*, on May 14, 2021, and Revision 1 to the Amendment on June 4, 2021. The Amendment added the construction of the DMMF, remedial action of contaminated sediments, and habitat restoration in the Milwaukee Estuary AOC. On June 28, 2021, the Non-Federal Sponsors presented the Amendment application to USEPA GLNPO's Technical Review Committee. A First Modification to the GLLA Project Agreement (First Modification) was signed by the USEPA and Non-Federal Sponsors on January 18, 2023. The First Modification included portions of the Amendment proposal; however, the construction of the DMMF was not included to allow additional time for the Non-Federal Sponsors to identify the funding source(s)

for construction. Future modification(s) were planned to incorporate the other elements of the Amendment proposal; the Second Modification incorporates these other elements of the Amendment proposal to complete the Milwaukee AOC project.

Purpose

The purpose of this project is to implement the necessary management actions to address BUIs related to contaminated sediments and to contribute to habitat and populations related BUIs that are integrated with remedial action to ultimately lead to the delisting of the Milwaukee Estuary AOC. The project shall include completion of an FFS, PDI and RD, to be performed in various phases and within multiple project areas in the AOC as detailed below and as identified in Figure 1. The original project components include completing an FFS, PDI, and RD to address contaminated sediments in project areas identified as containing contaminated sediment, design of the proposed Milwaukee Estuary DMMF, and the removal of PCB contaminant source material within the Milwaukee Estuary AOC, in Milwaukee, Wisconsin (See Figure 1). The project includes various In-Kind Contributions by the Non-Federal Sponsors toward the investigation of sediment, remedial designs addressing contaminated sediments in the project areas, and the removal of material as a source control project within the AOC.

The purpose of the First Modification was to incorporate the remedial action of contaminated sediment by We Energies in the Third Ward MGP Operable Unit 2 (OU-2) project area, to incorporate design of Combined Sewer Overflow (CSO) Outfall - 195 relocation by MMSD, as required for future DMMF construction, and to update Non-Federal Sponsor In-Kind Contributions and the Estimated Total Project Costs detailed in the original PA.

The purpose of this Second Modification is to incorporate the construction of the DMMF by MMSD, the remedial action of contaminated sediment by We Energies of the Solvay Car Ferry Slip, and the remedial action of contaminated sediment and habitat restoration in project areas by USEPA GLNPO and its contractors, and to update Non-Federal Sponsor In-Kind Contributions and the Estimated Total Project Costs.

The FFS, PDI, RD, and RA are to be performed in multiple phases along with the various In-Kind Contribution activities, which include We Energies remedial action of contaminated sediment in the Third Ward and Solvay Car Ferry Slip, source control work, design of CSO Outfall - 195 relocation, and the design and construction of the DMMF. This will be accomplished through a partnership between DNR, the City of Milwaukee, Milwaukee County, MMSD, We Energies and the USEPA, represented by USEPA GLNPO, and their contractors and representatives, as detailed in this PA SOW Modification No. 2.

Project Areas

The project areas include:

- The Milwaukee River and Milwaukee River Floodplains from Estabrook Park to the former North Avenue Dam (Floodplains Reach)
- The Milwaukee River from the former North Avenue Dam to the confluence with the

Menomonee River (Milwaukee River Downtown Reach)

- Milwaukee River Third Ward MGP OU-2 NAPL Reach
- The Menomonee River downstream of 25th Street and the South Menomonee Canal
- The Kinnickinnic River downstream of Chase Avenue, including adjacent slips, the mooring basin, Solvay Car Ferry Slip, the Grand Trunk Wetland and Skipper Bud's Slip, and the
- Milwaukee Bay areas of Lake Michigan within the AOC boundary, as designated during the FFS

The project areas are depicted in Figure 1. Remedial action areas within the project areas continue to be refined during the FFS and RD process.

Project Objectives

The following objectives shall be performed as part of the Second Modification No. 2 by USEPA and its contractors, with support from USACE, in areas identified above as project areas, with the exception of the Third Ward MGP OU-2 NAPL Reach and the Solvay Car Ferry Slip which shall be completed by We Energies (see below).

- The objective of the FFS will be to evaluate remedial alternatives, including site restoration and overlapping habitat restoration management actions as applicable, and support selection of a remedy that is protective of human health and the aquatic environment and will move the project areas toward remediation, contributing to the eventual removal of BUIs and delisting of the Milwaukee Estuary AOC. The FFS will include sediment sampling as well as assessing shoreline and bulkhead stability within project areas specifically targeted for a remedial action. The FFS will assess how each alternative is likely to influence the BUIs, as well as short-term and long-term effects of each alternative on human health and the environment. The most appropriate remedy for each project area that is protective of human health and the aquatic environment will be selected.

- The PDI will include collection of additional targeted data gap sampling and investigation activities as deemed necessary for completion of the RD as determined during the FFS. PDI tasks will include utility location evaluation in relation to remedial areas, updated bathymetric surveys as needed, Section 106 historic preservation consultation support, treatability study evaluations and additional pre-design information tasks as needed.

  The RD will include the preparation of plans, drawings, and technical specifications for the implementation of the preferred remedial alternative(s) selected in the FFS for the project areas. The RD will include permitting, site restoration plans, habitat restoration plans, if applicable, and a cost analysis of the project.

- The RA will include all activities required to implement the preferred remedial alternatives as depicted in the FFS and the RD in accordance with all contracting

limitations and permitting requirements, including removal, cover placement and capping of contaminated sediment, as applicable. The RA will include TSCA-regulated material within the project area, which was not previously remediated by others. The RA will also include habitat restoration as depicted in the FFS and RD and as required and authorized by permit.

- Following construction of the DMMF by the Non-Federal Sponsors (see below), USEPA GLNPO and its contractors will place project material meeting acceptance criteria (e.g., non-TSCA project material) in the DMMF. It is estimated that the volume of material placed by USEPA GLNPO and its contractors in the DMMF will range from approximately 1,400,000 to 1,500,000 cubic yards (CY), as measured at time of placement within the DMMF (not as a pre-dredge in-situ volume or as final consolidated volume). The USEPA GLNPO and its contractors will be responsible to manage and treat water from the DMMF to meet permit requirements through completion of their placement activities. Following placement of material in the DMMF by USEPA GLNPO and its contractors, USEPA GLNPO will have no ongoing operations, maintenance, or monitoring requirements or responsibilities in relation to the DMMF, placed material or water treatment.

- In addition to FFS, PDI, RD, and RA activities to be performed by USEPA GLNPO and its contractors, USEPA GLNPO will coordinate with and fund USACE to perform technical support as needed on the project.

- RA in the Grand Trunk Slip (previously referred to as Skipper Bud's Slip) as well as RA and habitat restoration of the Grand Trunk Wetland will not be performed until ongoing sources of PCBs have been addressed in the adjacent South Marina Drive storm sewer.

- The project team will engage local stakeholders, through the Waterway Restoration Partnership (WRP), during all stages of project work. Close coordination with the Milwaukee Estuary AOC Communications and Outreach team will be important for project success.

The Non-Federal Sponsors shall perform various In-Kind Contribution activities which have been determined by USEPA GLNPO to contribute to sediment assessment, design, remediation, or the removal of material for source control within the project areas:

- The project includes addressing PCB source material situated in the Basin H sewer line along the Milwaukee River. The removal of the material in the Basin H sewer will be performed by MMSD as a source control project to prevent further or renewed contamination of sediment in the Milwaukee River. PCB contaminated material will be removed from the sewer and properly disposed.

- The City of Milwaukee shall perform a review and evaluation of as-built drawings and plans for sheet pile and potentially other shoreline structures along portions of the project areas, as available, to aid in the design of remedial

alternatives in regard to the structural stability of the shoreline. The review will include evaluation of embedment depth, tie-backs, wall type, age, structural integrity among other evaluations, as information is available.

- The City of Milwaukee shall assist in the location of utilities in the project areas to aid in the design of remedial alternatives. Physically locating utilities, including the elevation of utility lines, will contribute to the development of a remedial design dredge prism which will be protective of utilities.

- The City of Milwaukee shall perform an assessment of the sewer along South Marina Drive suspected to be a source of PCBs to the Grand Trunk Slip project area along the Kinnickinnic River. The City of Milwaukee shall work to identify the ongoing source of PCBs entering the sewer along South Marina Drive. Following control of any ongoing source of PCBs, the City of Milwaukee shall perform a clean out of the sewer line as a source control component of this GLLA project to prevent further or renewed contamination of sediment. Additional remediation may be required by private property owners with the extent of remediation to be determined at a future date.

- We Energies, as the Non-Federal Sponsor on the GLLA Menomonee and Milwaukee Rivers RI and FFS Project Agreement, provided In-Kind Contributions in excess of what was required of them under the PA. Final review and approval of the documentation supporting the contribution of In-Kind Contribution has been issued. We Energies shall contribute overmatch from the Menomonee and Milwaukee Rivers RI and FFS PA towards this Milwaukee Estuary AOC FFS, PDI, RD and RA. This overmatch includes We Energies' evaluation of the existing Jones Island Confined Disposal Facility (CDF) Beneficial Use Investigation performed as part of the Menomonee and Milwaukee Rivers RI and FFS.

- We Energies shall perform the RD and RA of the Solvay Car Ferry sediment remediation and associated habitat restoration along the Kinnickinnic River.

- We Energies shall perform the remedial design of the Third Ward MGP OU-2 project for Area A and Area B (NAPL A and NAPL B) sediment remediation in the Milwaukee River.

- We Energies, with support from a WISDOT Harbor Assistance Program (HAP) Grant, prepared an initial design for the proposed DMMF. The proposed DMMF is intended to be the disposal location for non-TSCA contaminated sediment from the Milwaukee Estuary AOC.

- MMSD shall complete the design and final permitting of the DMMF, with financial assistance from the City of Milwaukee and DNR.

- MMSD will design the relocation of Combined Sewer Overflow (CSO) Outfall – 195, as required for the construction of the DMMF.

- MMSD shall construct the DMMF according to the final design and permit requirements. Upon construction completion, the DMMF shall be made available to USEPA GLNPO and its contractors for placement of GLLA project material meeting acceptance criteria (e.g., non-TSCA material), with no fees or charges associated with placement or disposal to be required of USEPA GLNPO or its contractors.

- Because the DMMF will be constructed on City of Milwaukee owned lakebed situated within the Port of Milwaukee, the City of Milwaukee/Port Milwaukee will be responsible for the post-construction maintenance and monitoring of the DMMF, and the City of Milwaukee/Port Milwaukee will also be responsible for the management of water from the DMMF to meet permit requirements after USEPA GLNPO and its contractors complete their placement of the GLLA material in the DMMF.

- Milwaukee County will provide access, as necessary and appropriate, to the Milwaukee River Floodplains though its 878 acres of continuous greenspace along the Milwaukee River Greenway.

- The Non-Federal Sponsors shall assist USEPA GLNPO in the identification and coordination, as feasible, for a post-dredge process water treatment facility staging area near the DMMF to be utilized by USEPA GLNPO and its contractors for RA. A viable staging area will be determined during PDI and is required prior to development of a RD and solicitation of RA by USEPA GLNPO.

- Staff time performed by the Non-Federal Sponsors associated with project management, coordination, and development, as reported by the Non-Federal Sponsors and as approved by USEPA GLNPO, will be included as In-Kind Contributions.

Funding

The Project Agreement signed on January 6, 2020, for FFS, PDI, RD and source control, along with other in-kind contributions by Non-Federal Sponsors, had a total ceiling cost of $29,285,715. The First Modification signed on January 18, 2023, which included RA in the Third Ward, the design of CSO Outfall – 195 relocation, and Non-Federal Sponsors' staff time, had a total ceiling cost of $78,944,044.

The funding for the PA Second Modification, for which the work is described in the above Project Objectives section, are In-Kind Contributions, cash contributions and overmatch contributions from previous GLLA projects performed in the Milwaukee Estuary AOC, to be provided by the Non-Federal Sponsors as shown in Table 1, as follows:

Table 1: List of Non-Federal Sponsor Contributions and Estimated Costs

Contributions	**Estimated Cost**	**Non-Federal Sponsor**
Basin H PCB Sewer Design & Clean Out	$6,200,000	MMSD
CSO Outfall – 195 Relocation Design	$796,026	MMSD
DMMF Design	$3,300,000	MMSD
DMMF Construction	$114,000,000	MMSD
MMSD Staff Time	$2,700,000	MMSD
As-Built Evaluation	$100,000	City of Milwaukee
Utility Locate	$100,000	City of Milwaukee
S. Marina Drive Sewer Assessment	$150,000	City of Milwaukee
S. Marina Drive Sewer Clean Out	$500,000	City of Milwaukee
DMMF Permitting and Support to MMSD	$50,000	City of Milwaukee
City Staff Time	$50,000	City of Milwaukee
Milwaukee County Parks Access Permits	$1,750	Milwaukee County Parks
Solvay Car Ferry Slip Remedial Design	$450,000	We Energies
Third Ward MGP OU-2 Remedial Design	$1,767,094	We Energies
DMMF Design (with WISDOT HAP)	$1,300,000	We Energies
Menomonee & Milwaukee FFS Overmatch	$807,194	We Energies
Third Ward MGP OU-2 Remedial Action	$33,000,000	We Energies
Solvay Car Ferry Slip Remedial Action	$2,125,000	We Energies
DNR Staff Time	$500,000	DNR
DMMF Permitting and Support to MMSD	$1,752,000	DNR
Contaminated Sediment Bonding	$500,000	DNR
DMMF Construction Contribution	$5,248,000	DNR
Total Non-Federal Sponsor Contribution	**$175,397,064**	

The cost share allocation for the In-Kind Contributions indicated in Table 1 is 65% Federal and 35% Non-Federal, except for the Third Ward MGP OU-2 Remedial Action, which is 54% Federal and 46% Non-Federal and the Solvay Car Ferry Slip Remedial Action, which is 50% Federal and 50% Non-Federal.

The cost of the FFS, PDI, RD, RA and associated habitat restoration for the various project reaches that will be performed by USEPA GLNPO and EPA's contractors is estimated at between $250,000,000 and $300,000,000.

The total cost of the Project Agreement for this Second Modification includes the items described in this PA SOW is as specified in Table 1 and as follows.

Total Non-Federal Sponsor Contribution:	**$175,397,064**
Total Federal Contribution:	**$301,369,392**
Estimated Total Project Costs:	**$476,766,456**

Milwaukee Estuary AOC Project Phases & Project Milestones

Following completion of the FFS and any required PDI activities for the various project reaches, RD will be performed by USEPA GLNPO. Project areas may be consolidated or reconfigured for the RD as appropriate and applicable based on location, the nature of the sediment RA required, site and habitat restoration, the physical conditions of the reach, and disposal considerations. Following completion of the RD and issuance of required permits and access approvals, and following completion of DMMF construction, RA and restoration will be performed.

It is anticipated that MMSD shall complete the Basin H sewer cleanout in 2023. MMSD shall complete the design of CSO Outfall - 195 relocation in 2022 and 2023. MMSD shall complete the design of the DMMF in 2023, followed by DMMF construction.

We Energies completed design and final permitting of the Third Ward MGP OU-2 remedial action project in 2022 and began remedial action in 2022 with completion in 2024. In addition, We Energies shall complete the design of the Solvay Car Ferry Slip in 2023 and 2024 and will proceed with RA of the Car Ferry Slip following RD approval and permitting.

The City of Milwaukee will continue its review of the as-built drawings and plans as appropriate for the various project areas during the FFS or PDI project phase. The City of Milwaukee will initiate its assessment of the South Marina Drive sewer sediment, will work to identify and control sources of PCBs to the sewer line along South Marina Drive, and following source control, which is not part of this Project, will perform a clean out of the sewer line.

The City of Milwaukee/Port Milwaukee will perform maintenance and monitoring of the DMMF as required following construction of the facility. The City of Milwaukee/Port Milwaukee will manage water in the DMMF as needed to meet permit requirements after USEPA GLNPO and its contractors complete their placement of material associated with the GLLA project.