



MVD DECISION DOCUMENT REVIEW PLAN

UPPER MISSISSIPPI RIVER RESTORATION PROGRAM HABITAT REHABILITATION AND ENHANCEMENT PROJECT

March 2022

Project Name: *Upper Mississippi River Restoration (UMRR) Quincy Bay Habitat Rehabilitation and Enhancement Project (HREP), River Miles 332.0-327.0, Adams County, Illinois*

P2 Number: *475913*

District: *Rock Island District*

District Contact: *Heather Schroeder, Quincy Bay HREP Project Manager,* [REDACTED]

Major Subordinate Command (MSC) and Review Management Organization (RMO):
Mississippi Valley Division is MSC and the RMO per UMRR programmatic Review Plan approved on November 29, 2021

MSC/RMO Contact: *MVD Planning Deputy (601) 634-5869*

Key Review Plan Dates

Date of MSC Approval of Review Plan: *Pending*
Date of Last Review Plan Revision: *N/A*
Date of Review Plan Web Posting: *Pending*

Milestone Schedule

	<u>Scheduled</u>	<u>Actual</u>	<u>Complete</u>
FCSA Execution:	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>
TSP Milestone:	<i>6/7/23</i>	<i>(enter date)</i>	<i>(Yes/No)</i>
Release Draft Report to Public:	<i>1/5/24</i>	<i>(enter date)</i>	<i>(Yes/No)</i>
Final Report Transmittal:	<i>5/15/24</i>	<i>(enter date)</i>	<i>(Yes/No)</i>

Programmatic Review Plan

Please reference the UMRR Programmatic Review Plan for additional information regarding the review of project studies in the program. For this Review Plan only project-specific review information is provided. The plan does not repeat standard information common to all UMRR reviews as noted in the programmatic review plan.

1. FACTORS AFFECTING THE LEVELS AND SCOPE OF REVIEWS

Please reference the UMRR Programmatic Review Plan for additional information regarding the factors affecting the levels and scope of reviews for HREP Projects.

The Quincy Bay HREP (Project) is located in the southernmost portion of Pool 21 adjacent to Quincy, Adams County, Illinois, between river miles 332 and 327 (see Figure 1). It is the first game preserve in the State of Illinois and one of the largest natural bays of the Upper Mississippi River. The Project is located within the Quincy Bay Area Restoration and Enhancement Association (QBAREA) Planning Area.

The Project area is a backwater lake complex measuring approximately 4 miles long with a variable width of up to 2 miles. The area is composed of interconnected channels and small bays, an existing boat harbor, and a small boat access channel. Existing bottomland deciduous forests provide nesting habitat for neotropical migratory birds and roosting and foraging habitat for bat species. Existing floodplain forests are dominated by silver maple, with remnant patches of emergent aquatic vegetation remaining.

Project objectives include:

- *Restoring floodplain habitat and connectivity to the main channel;*
- *restoring diversity of aquatic habitat types with desire for more lentic and backwater habitats;*
- *restoring aquatic vegetation in backwater areas;*
- *restoring floodplain forest diversity, including hard-mast trees;*
- *enhancing floodplain topographic diversity; and*
- *restoring floodplain vegetation diversity in hand with diversifying floodplain inundation periods.*

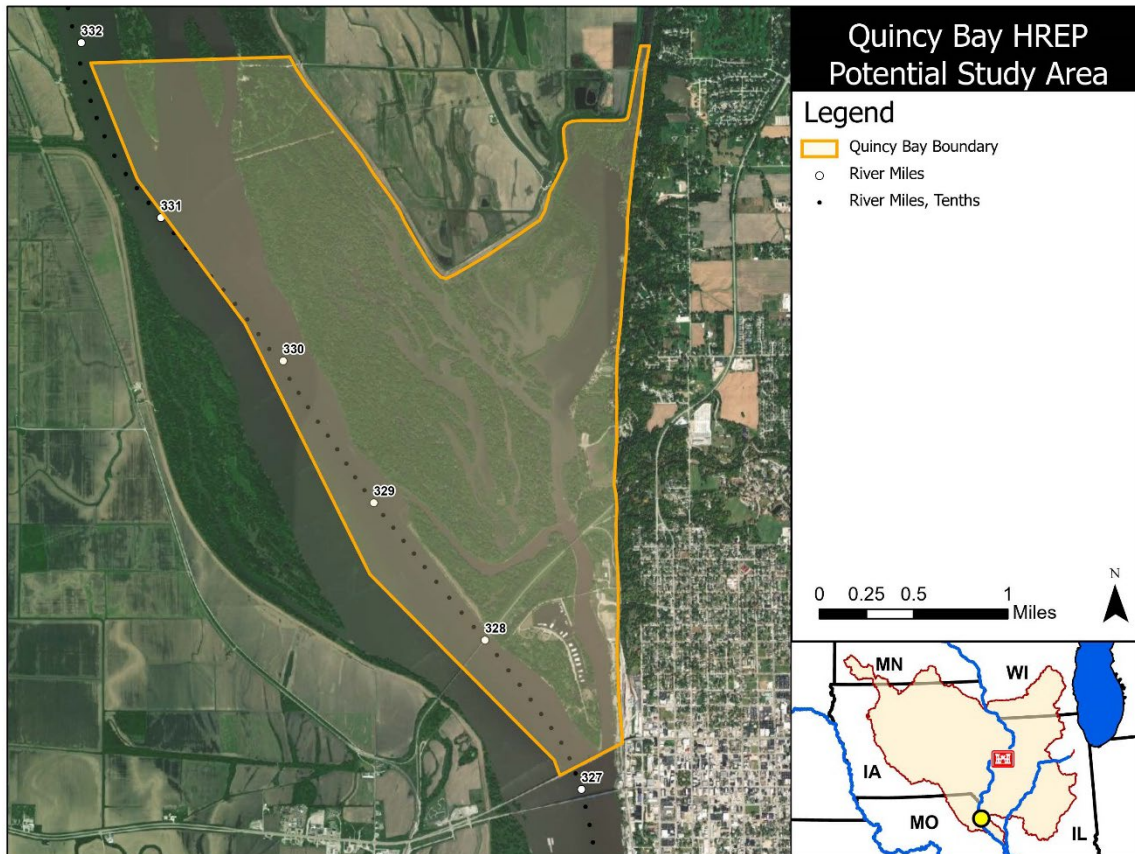


Figure 1. Quincy Bay HREP Study Area

2. REVIEW EXECUTION PLAN

Table 1 provides the schedules and costs for reviews. The specific expertise required for the teams are identified in later subsections of this plan covering each review. These subsections also identify requirements, special reporting provisions, and sources of more information. UMRR Quincy Bay HREP will utilize concurrent review of the Draft Feasibility Report and EA, including Agency Technical Review, MSC Policy and Legal Review, and Public Review, as indicated in Table 1 below.

Table 1: Schedule and Costs of Review

Product(s) to undergo Review	Review Level	Start Date	End Date	Cost	Complete
<u><i>Planning Model Review</i></u>	<u><i>Model Review (see EC 1105-2-412)</i></u>	<u><i>n/a</i></u>	<u><i>n/a</i></u>	<u><i>\$0</i></u>	<u><i>n/a</i></u>
<u><i>Draft Feasibility Report and EA</i></u>	<u><i>District Quality Control</i></u>	<u><i>10/5/2023</i></u>	<u><i>11/16/2023</i></u>	<u><i>\$25,000</i></u>	<u><i>No</i></u>
<u><i>Draft Feasibility Report and EA</i></u>	<u><i>Agency Technical Review</i></u>	<u><i>1/5/2024</i></u>	<u><i>3/1/2024</i></u>	<u><i>\$35,000</i></u>	<u><i>No</i></u>
<u><i>Draft Feasibility Report and EA</i></u>	<u><i>MSC Policy and Legal Review</i></u>	<u><i>1/5/2024</i></u>	<u><i>3/1/2024</i></u>	<u><i>n/a</i></u>	<u><i>No</i></u>
<u><i>Final Feasibility Report and EA</i></u>	<u><i>Targeted District Quality Control¹</i></u>	<u><i>3/14/2024</i></u>	<u><i>3/18/2024</i></u>	<u><i>\$3,000</i></u>	<u><i>No</i></u>
<u><i>Final Feasibility Report and EA</i></u>	<u><i>Targeted Agency Technical Review¹</i></u>	<u><i>3/14/2024</i></u>	<u><i>3/18/2024</i></u>	<u><i>\$3,000</i></u>	<u><i>No</i></u>
<u><i>Final Feasibility Report and EA</i></u>	<u><i>MSC Policy and Legal Review</i></u>	<u><i>5/14/2024</i></u>	<u><i>7/1/2024</i></u>	<u><i>n/a</i></u>	<u><i>No</i></u>

¹ The Final Feasibility Report and EA may undergo a targeted DQC and ATR focusing on significant changes to the analysis or TSP based on the results of concurrent review, should significant changes occur. The scope of this review is scalable.

a. DISTRICT QUALITY CONTROL

Table 2 identifies the required expertise for the DQC team. The DQC Team members will not be involved in the production of any of the products reviewed.

Table 2: Required DQC Expertise

DQC Team Disciplines	Expertise Required
<u>DQC Lead</u>	<u>A senior professional with extensive experience preparing Civil Works decision documents and conducting DQC. The lead will also serve as a reviewer for Plan Formulation</u>
<u>Plan Formulation</u>	<u>A senior water resources planner with experience in riverine aquatic ecosystem restoration consistent with the measures evaluated in the UMRH HREP. Fully familiar with USACE ecosystem restoration policies and have demonstrated experience with Cost Effectiveness/Incremental Cost Analysis (CE/ICA) and the Institute for Water Resources (IWR) Planning Suite. If the reviewer does not have CE/ICA experience, a separate Economics reviewer will be assigned to the DQC Team.</u>
<u>Environmental and Cultural Resources</u>	<u>A senior biologist with experience working on large river systems and with water resources and aquatic and wetland ecology. Experience in calculating ecosystem benefits and be able to ascertain if the ecological output models were appropriately applied. Possess detailed knowledge of NEPA and other environmental statutes and regulations to confirm compliance with NEPA. This reviewer will also be responsible for evaluating any cultural resources work performed for the study, if applicable.</u>
<u>Hydrology and Hydraulic Engineering</u>	<u>The reviewer will be proficient in hydrology and hydrologic engineering with working experience evaluating large river systems. Experience in water resource studies, hydrodynamics, sediment transport and modeling, and GIS is necessary</u>
<u>Civil Engineering and Hazardous, Toxic, and Radioactive Waste</u>	<u>The reviewer will have experience in civil design of ecosystem restoration features for large river systems. A certified Professional Engineer is suggested. This reviewer will also have knowledge of and be responsible for evaluating the Hazardous, Toxic, and Radioactive Waste (HTRW) policies, procedures, and requirements. Experience conducting, writing, and reviewing Phase I HTRW screening assessments is required.</u>
<u>Cost Engineering</u>	<u>The reviewer will have experience in developing cost estimates for Civil Works ecosystem restoration projects, including development of a Total Project Cost Summary, cost and schedule risk analysis, and associated cost contingencies.</u>
<u>Real Estate</u>	<u>An expert with a thorough understanding of real estate transactions for ecosystem restoration projects, including experience with assessment of LERRD requirements for ecosystem restoration projects.</u>
<u>Office of Counsel</u>	<u>A reviewer able to provide comment on legal sufficiency.</u>
<u>Geotechnical Engineering</u>	<u>The reviewer will have experience in geotechnical engineering in large river systems to include backwater dredging. This review may be performed by a dedicated team member or may be satisfied by a Civil Engineering reviewer, depending on individual qualifications.</u>
<u>Economics</u>	<u>A senior economist familiar with ecosystem output analyses and concepts, including demonstrated experience with CE/ICA analysis and the IWR Planning Suite. This review may be performed by a dedicated team member or may be satisfied by a Plan Formulation reviewer, depending on individual qualifications.</u>

b. AGENCY TECHNICAL REVIEW

Table 3 identifies the disciplines and required expertise for this ATR Team (also see Attachment 1 - the ATR Team roster).

Table 3: Required ATR Team Expertise

ATR Team Disciplines	Expertise Required
<u>ATR Lead</u>	<u>The ATR Lead must be assigned from outside the home MSC. A senior professional with extensive experience preparing Civil Works decision documents and conducting ATR. The lead will have the skills to manage a virtual team through an ATR. The lead will also serve as a reviewer for a specific discipline (such as planning).</u>
<u>Plan Formulation</u>	<u>A senior water resources planner with experience in riverine aquatic ecosystem restoration consistent with the features/ measures evaluated in the UMRR HREPs. The reviewer will be fully familiar with USACE ecosystem restoration policies and demonstrated experience with CE/ICA and the IWR Planning Suite. If the Plan Formulation reviewer does not have CE/ICA experience, a separate Economics reviewer will be assigned to the ATR Team.</u>
<u>Environmental Resources</u>	<u>A senior biologist with experience working on large river systems and with water resources and wetland and aquatic ecology. The reviewer will have experience in calculating ecosystem benefits and be able to ascertain if the ecological output models were appropriately applied. Finally, the reviewer will have detailed knowledge of NEPA statutes and regulations to confirm compliance with NEPA.</u>
<u>Hydrology and Hydraulic Engineering</u>	<u>The reviewer will be proficient in hydrology and hydrologic engineering with working experience evaluating large river systems. Experience in water resource studies, hydrodynamics, sediment transport and modeling, and GIS is necessary</u>
<u>Civil Engineering</u>	<u>The reviewer will have experience in civil design of ecosystem restoration features for large river systems. A certified Professional Engineer is suggested. This reviewer will also be responsible for evaluating the Hazardous, Toxic, and Radioactive Waste (HTRW) policies, procedures, and requirements; if the reviewer does not have HTRW experience, a separate reviewer will be assigned to the ATR team.</u>
<u>Cost Engineering</u>	<u>For projects with a total project cost (TPC) of less than \$10 million, a precertified cost engineer may conduct the Cost Engineering Review and certification instead of the Cost Engineering Directory of Expertise (DX). For projects with a TPC of \$10 million or greater, the Cost Engineering DX will perform the review and provide the cost certification.</u>
<u>Climate Preparedness and Resilience CoP Reviewer</u>	<u>A member of the Climate Preparedness and Resiliency Community of Practice (CoP) will participate in the ATR review. This review may be performed by a dedicated team member or may be satisfied by a H&H reviewer, depending on individual qualifications.</u>
<u>Geotechnical Engineering</u>	<u>The reviewer will have experience in geotechnical engineering in large river systems to include backwater dredging. This review may be performed by a dedicated team member or may be satisfied by a Civil Engineering reviewer, depending on individual qualifications.</u>
<u>Hazardous, Toxic, and Radioactive Waste</u>	<u>The reviewer will have knowledge of HTRW policies, procedures, and requirements for Civil Works studies. Experience conducting, writing, and reviewing Phase I HTRW screening assessments is required. This review may be performed by a</u>

ATR Team Disciplines	Expertise Required
	<u>dedicated team member or may be satisfied by a Civil Engineering reviewer, depending on individual qualifications.</u>
<u>Economics</u>	<u>A senior economist familiar with ecosystem output analyses and concepts, including demonstrated experience with Cost Effectiveness/Incremental Cost Analysis (CE/ICA) and the Institute for Water Resources (IWR) Planning Suite. This review may be performed by a dedicated team member or may be satisfied by a Plan Formulation reviewer, depending on individual qualifications.</u>
<u>Cultural Resources</u>	<u>A senior archaeologist with experience on Section 106 compliance for large river systems. This review may be performed by a dedicated team member or may be satisfied by an environmental resources reviewer, depending on individual qualifications.</u>

c. MODEL CERTIFICATION OR APPROVAL

Table 4: Planning Models. The following models may be used to develop the decision document:

Model Name and Version	Brief Model Description and How It Will Be Used in the Study	Certification / Approval
<u>IWR Planning Suite II (Version 2.0.9)</u>	<u>IWR Planning Suite II was developed by Institute of Water Resources as accounting software to compare habitat benefits among alternatives.</u>	<u>Certified for National Use</u>
<u>RECONS (Version 2.0)</u>	<u>The USACE Regional Economic System (RECONS) is a USACE-certified regional economic model, designed to provide accurate and defensible estimates of regional economic impacts and contributions associated with USACE projects, programs, and infrastructure. Regional economic impacts and contributions are measured as economic output, jobs, income, and value added. Estimates are provided simultaneously for three levels of geographic impact area: local, state, and national.</u>	<u>Certified for National Use</u>
<u>One or more approved for use/certified Habitat Suitability Index (HSI) models (e.g., USFWS HEP models) will be used depending on site-specific conditions</u>	<u>Habitat Evaluation Procedure (HEP) is a species-habitat approach to impact assessment and habitat quality for selected evaluation species documented with an index, the Habitat Stability Index (HSI). This value is derived from an evaluation of the ability of key habitat components to compare existing habitat conditions and optimum habitat conditions for the species of interest. There are currently 167 models for invertebrates, fish, amphibians, reptiles, birds, mammals, and communities. The Quincy Bay PDT anticipates using the following HSI models: bluegill, floodplain forest, smallmouth buffalo, bullfrog, mink, beaver, dabbling duck, diving duck, walleye, and migrating shorebirds through the Northern Plains/Prairie Pothole Region.</u>	<u>Approved or certified for Regional Use (within geographic limits defined for each model)</u>

Table 5: Engineering Models. These models may be used to develop the decision document:

Model Name and Version	Brief Model Description and How It Will Be Used in the Study	Approval Status
<u>ADH 2-dimensional hydraulic model</u>	<p><u>ADH is a state-of-the-art Adaptive Hydraulics Modeling system developed by the Coastal and Hydraulics Laboratory, ERDC, USACE (www.chl.erdc.usace.army.mil), and is capable of handling both saturated and unsaturated groundwater, overland flow, and two- or three-dimensional shallow water problems. One of the major benefits of ADH is its use of adaptive numerical meshes that can be employed to improve model accuracy without sacrificing efficiency. It also allows for the rapid convergence of flows to steady state solutions. ADH contains other essential features such as wetting and drying, completely coupled sediment transport, and wind effects. A series of modularized libraries make it possible for ADH to include vessel movement, friction descriptions, as well as a host of other crucial features. ADH can run in parallel or on a single processor and runs on both Windows systems and UNIX based systems.</u></p> <p><u>ADH will be used to simulate 2-dimensional (longitudinal and lateral) variation in water surface elevation, flow velocity, and flow direction in project areas. Both steady and unsteady flow conditions may be simulated depending on needs. For steady-state simulations, flows ranging from low flow to the 1-percent probability flood will be used. Model results for existing conditions, future without, and alternatives will be compared to determine whether project objectives are being achieved. Sediment transport simulations can be done if needed.</u></p>	<u>HH&C CoP Preferred Model</u>
<u>HEC-RAS 5.0.7 (River Analysis System)</u>	<u>The Hydrologic Engineering Center's River Analysis System (HEC-RAS) program provides the capability to perform one-dimensional steady and one-dimensional or two-dimensional unsteady flow river hydraulics calculations. The program will be used for steady flow analysis to evaluate the future without- and with-project conditions at project sites. For a particular study the model could be used for unsteady flow analysis or both steady and unsteady flow analysis. Sediment transport simulations can be done if needed.</u>	<u>HH&C CoP Preferred Model</u>
<u>HEC-SSP Version 2.1.1</u>	<u>The Hydrologic Engineering Center's (HEC) Statistical Software Package (SSP) can perform statistical analyses of hydrologic data to produce duration curves along the Mississippi River.</u>	<u>CoP Preferred Model</u>
<u>Micro-Computer Aided Cost Engineering System (MCACES) MII Version 3.0</u>	<u>MCACES is a cost estimation model. This model will be used to estimate costs for the HREP.</u>	<u>Certified.</u>

ATTACHMENT 1: TEAM ROSTERS

(Delete this attachment before posting the Review Plan on the District web page.)

PROJECT DELIVERY TEAM		
Name	Office	Position
<i>Heather Schroeder</i>	<i>PM-M</i>	<i>Project Manager</i>
<i>Rachel Perrine</i>	<i>PD-F</i>	<i>Lead Planner</i>
<i>Tara Gambon</i>	<i>EC-DN</i>	<i>Engineering & Construction Technical Lead</i>
<i>David Tsai</i>	<i>EC-G</i>	<i>Geotechnical Engineer</i>
<i>Erin La Russo</i>	<i>EC-HQ</i>	<i>Water Quality</i>
<i>Anton Stork</i>	<i>EC-H</i>	<i>Hydraulic Engineer</i>
<i>John Lacina</i>	<i>EC-TE</i>	<i>Cost Engineer</i>
<i>Dillan Laaker</i>	<i>PD-P</i>	<i>Biologist/NEPA Compliance</i>
<i>Tate Sattler</i>	<i>OD-MN</i>	<i>Forester</i>
<i>Eric McCann</i>	<i>PD-P</i>	<i>Cultural</i>
<i>Grace Wieland</i>	<i>PDE-R</i>	<i>Economist</i>
<i>Matt Quinn</i>	<i>RE-A</i>	<i>Real Estate</i>
<i>Amy Kubel</i>	<i>EC-TG</i>	<i>Geographer/EGIS</i>
<i>Mary Rodkey</i>	<i>PM-M</i>	<i>Writer/Editor</i>
<i>Stephen Packer</i>	<i>OC</i>	<i>Office of Counsel</i>
<i>Rome Frericks</i>	<i>QBAREA</i>	<i>Board Co-Chair</i>
<i>Chuck Bevelheimer</i>	<i>QBAREA</i>	<i>Board Co-Chair</i>
<i>Michael Klinger</i>	<i>QBAREA</i>	<i>Board Secretary</i>
<i>Glenn Sanders</i>	<i>QBAREA</i>	<i>Board Member</i>
<i>Jeff Rakers</i>	<i>QBAREA</i>	<i>Board Member</i>
<i>Sara Schmuecker</i>	<i>USFWS</i>	<i>Fish and Wildlife Biologist</i>
<i>Chad Craycraft</i>	<i>IL DNR</i>	<i>Federal Programs Coordination Manager</i>
<i>Matt O'Hara</i>	<i>IL DNR</i>	<i>River and Streams Program Manager</i>
<i>Dave Glover</i>	<i>IL DNR</i>	<i>Mississippi River Fisheries Biologist</i>
<i>Ben Funk</i>	<i>IL DNR</i>	<i>Adams County acting Wildlife Biologist</i>

DISTRICT QUALITY CONTROL		
Name	Position	Experience
<i>Karla Sparks</i>	<i>DQC Lead/Plan Formulation</i>	<i>Ms. Sparks has 10 years of professional expertise planning large river ecosystem and wetland restoration projects that are complex and is very familiar with CAP program processes and policy requirements. Ms. Sparks has extensive experience preparing Civil Works decision documents, from multiple perspectives, and conducting DQC Reviews.</i>
<i>Joseph Jordan</i>	<i>Environmental and Cultural Resources</i>	<i>Mr. Jordan has over 30 years of professional expertise in large river ecosystem restoration projects. He is very familiar with CAP program processes and policy requirements as well as NEPA compliance, ecological modeling, and cultural/environmental resources. Mr. Jordan is ATR</i>

		<i>Certified for Ecosystem Restoration and Environmental Compliance and has been the MVD Biologist Regional Technical Specialist for six years.</i>
<i>Matt Zager</i>	<i>Hydrology & Hydraulic Engineering</i>	<i>Mr. Zager is a senior H&H Engineer with experience in complex habitat restoration projects, river systems modeling using HEC-RAS, sediment transport and modeling, using GIS for H&H Engineering, and regulated flow frequency analysis.</i>
<i>Kara Mitvalsky</i>	<i>Civil Engineering and Hazardous, Toxic, and Radioactive Waste</i>	<i>Ms. Mitvalsky is a certified Professional Engineer and has over 20 years of experience as a civil and environmental engineer designing habitat restoration projects, CAP program processes and policy requirements along with other general civil engineering work, including evaluating HTRW policies, procedures, and requirements. She has experience conducting, writing, and reviewing Phase I HTRW screening assessments.</i>
<i>Garrett Mattila</i>	<i>Cost Engineering</i>	<i>Mr. Mattila is a senior Cost Engineer with experience in large river ecosystem and wetland complex restoration projects. He has extensive experience in developing and reviewing <u>cost estimates for Civil Works ecosystem restoration projects, including development of a Total Project Cost Summary, cost and schedule risk analysis, and associated cost contingencies.</u></i>
<i>Steve Stickle</i>	<i>Real Estate</i>	<i>Mr. Stickle is a Realty Specialist with experience in Federal lands and MOUs, including LERRD requirements and real estate transactions for Civil Works projects</i>
<i>Rian Hancks</i>	<i>Office of Counsel</i>	<i>Mr. Hancks is the District Counsel with extensive experience in reviewing District Feasibility Studies, legal sufficiency of documents, and policy/legal requirements.</i>
<i>Matt Stewart</i>	<i>Geotechnical Engineering</i>	<i>Mr. Stewart is a senior Geotechnical Engineer with experience in large river systems, including backwater dredging and berm/island construction.</i>
<i>Diane Karnish</i>	<i>Economics</i>	<i>Ms. Karnish has over 10 years of USACE economics experience in developing economic simulation models and analysis for large, complex regional investigations; and extensive experience in CAP program processes and policy requirements and analyzing FRM projects in accordance with ER 1105-2-100. Ms. Karnish has extensive experience with ecosystem output analyses and concepts, including CE/ICA analysis and the IWR Planning Suite.</i>

AGENCY TECHNICAL REVIEW		
Name	Position	Experience
<i>TBD</i>	<i>ATR Team Lead (the ATR Lead will be from outside of the home MSC)</i>	<i><u>A senior professional with extensive experience preparing Civil Works decision documents and conducting ATR. The lead will have the skills to manage a virtual team through an ATR. The</u></i>

		<u>lead will also serve as a reviewer for a specific discipline (such as planning).</u>
TBD	<i>Plan Formulation</i>	<u>A senior water resources planner with experience in riverine aquatic ecosystem restoration consistent with the features/measures evaluated in the UMRR HREPs. The reviewer will be fully familiar with USACE ecosystem restoration policies and demonstrated experience with CE/ICA and the IWR Planning Suite. If the Plan Formulation reviewer does not have CE/ICA experience, a separate Economics reviewer will be assigned to the ATR Team.</u>
TBD	<i>Environmental Resources</i>	<u>A senior biologist with experience working on large river systems and with water resources and wetland and aquatic ecology. The reviewer will have experience in calculating ecosystem benefits and be able to ascertain if the ecological output models were appropriately applied. Finally, the reviewer will have detailed knowledge of NEPA statutes and regulations to confirm compliance with NEPA.</u>
TBD	<i>Hydrology & Hydraulic Engineering</i>	<u>The reviewer will be proficient in hydrology and hydrologic engineering with working experience evaluating large river systems. Experience in water resource studies, hydrodynamics, sediment transport and modeling, and GIS is necessary</u>
TBD	<i>Civil Engineering</i>	<u>The reviewer will have experience in civil design of ecosystem restoration features for large river systems. A certified Professional Engineer is suggested. This reviewer will also be responsible for evaluating the Hazardous, Toxic, and Radioactive Waste (HTRW) policies, procedures, and requirements; if the reviewer does not have HTRW experience, a separate reviewer will be assigned to the ATR team.</u>
TBD	<i>Cost Engineering</i>	<u>For projects with a total project cost (TPC) of less than \$10 million, a precertified cost engineer may conduct the Cost Engineering Review and certification instead of the Cost Engineering Directory of Expertise (DX). For projects with a TPC of \$10 million or greater, the Cost Engineering DX will perform the review and provide the cost certification.</u>
TBD	<i>Climate Preparedness and Resilience CoP Reviewer</i>	<u>A member of the Climate Preparedness and Resiliency Community of Practice (CoP) will participate in the ATR review. This review may be performed by a dedicated team member or may be satisfied by a H&H reviewer, depending on individual qualifications.</u>
TBD	<i>Geotechnical Engineering</i>	<u>The reviewer will have experience in geotechnical engineering in large river systems to include backwater dredging. This review may be performed by a dedicated team member or may be satisfied by a Civil Engineering reviewer, depending on individual qualifications.</u>
TBD	<i>Hazardous, Toxic, and Radioactive Waste</i>	<u>The reviewer will have knowledge of HTRW policies, procedures, and requirements for Civil Works studies. Experience conducting, writing, and reviewing Phase I HTRW</u>

		<u>screening assessments is required. This review may be performed by a dedicated team member or may be satisfied by a Civil Engineering reviewer, depending on individual qualifications.</u>
TBD	<i>Economics</i>	<u>A senior economist familiar with ecosystem output analyses and concepts, including demonstrated experience with Cost Effectiveness/Incremental Cost Analysis (CE/ICA) and the Institute for Water Resources (IWR) Planning Suite.</u>
TBD	<i>Cultural Resources</i>	<u>A senior archaeologist with experience on Section 106 compliance for large river systems. This review may be performed by a dedicated team member or may be satisfied by an environmental resources reviewer, depending on individual qualifications.</u>

MSC POLICY AND LEGAL COMPLIANCE REVIEW TEAM		
Name	Office	Position
<i>Gary Young</i>	<i>PD-L</i>	<i>Chief, Planning Division & Ecosystem PCX</i>
<i>Matt Mallard</i>	<i>PD-P</i>	<i>Deputy, Planning</i>
<i>Greg Miller</i>	<i>PD-P</i>	<i>Operational Director, ECO-PCX</i>
<i>Sean Mickal</i>	<i>PD-P</i>	<i>Senior Environmental Planner</i>
<i>Corey Lawton</i>	<i>PD-P</i>	<i>Planning Specialist</i>
<i>James Briggs</i>	<i>PD-R</i>	<i>Acquisition & Planning SME</i>
<i>Brian Maestri</i>	<i>PD-P</i>	<i>Senior Economist</i>
<i>Jennifer Ryan</i>	<i>PD-P</i>	<i>Archaeologist & Tribal Liaison</i>
<i>Melissa Mullen</i>	<i>RBT</i>	<i>Geotechnical Engineering</i>
<i>Jennifer Chambers</i>	<i>RBT</i>	<i>Structural Engineering</i>
<i>Philip LaBarre</i>	<i>RBT</i>	<i>Cost Engineering</i>
<i>Brynn Morgan</i>	<i>CECC-MVD</i>	<i>Office of Counsel</i>

ATTACHMENT 2: HREP FACT SHEET



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, MISSISSIPPI VALLEY DIVISION
P.O. BOX 80
VICKSBURG, MISSISSIPPI 39181-0080

CEMVD-PDP

MEMORANDUM FOR Commander, Rock Island District

SUBJECT: Upper Mississippi River Restoration Program, Quincy Bay Area Habitat Rehabilitation and Enhancement Project (HREP), Adams County, Illinois, Fact Sheet

1. Reference Memorandum, CEMVR-PM-M, 29 Jul 2020, subject: Upper Mississippi River Restoration Program, Quincy Bay Area Habitat Rehabilitation and Enhancement Project (HREP), Adams County, Illinois, Fact Sheet.
2. Subject Fact Sheet is approved for continued HREP planning.
3. The MVD point of contact for this action is Ms. LeeAnn Riggs, CEMVD-PDM, at telephone number [REDACTED]

YOUNG.GAR [REDACTED]
Y.LAWRENCE [REDACTED]

Encl

GARY L. YOUNG
Chief, Planning Division

QUINCY BAY AREA
HABITAT REHABILITATION AND ENHANCEMENT PROJECT
UPPER MISSISSIPPI RIVER, POOL 21, ADAMS COUNTY, ILLINOIS
UPPER MISSISSIPPI RIVER RESTORATION PROGRAM
ROCK ISLAND DISTRICT

FACT SHEET

I. LOCATION

Quincy Bay is located in the southernmost portion of Pool 21 adjacent to Quincy, Adams County, Illinois, between river mile 332 and 327 (Figure 1). It is the first game preserve in the State of Illinois and one of the largest natural bays of the Upper Mississippi River. The Quincy Bay Area Habitat Rehabilitation and Enhancement Project (Project) is located within the Quincy Bay Area Restoration and Enhancement Association (QBAREA) Planning Area.

II. EXISTING RESOURCES

Quincy Bay is a backwater lake complex measuring approximately 4 miles long with a variable width of up to 2 miles. The area is composed of interconnected channels and small bays, an existing small boat harbor, and a small boat access channel. Land within Quincy Bay consists of bottomland deciduous forests that provide nesting habitat for Neotropical migratory birds and roosting and foraging habitat for bat species. Existing floodplain forests are dominated by silver maple and remnant patches of emergent aquatic vegetation remain.

III. PROBLEM IDENTIFICATION

The construction of Lock & Dam 21 (1938), a railroad bridge (late 1950s), levees and the opening of a small-boat access channel across Bay Island (1969) resulted in changes to water flow patterns and sediment accumulation in the Middle and Upper Bay. Those features, along with the naturally occurring sedimentation from Mississippi River flooding and tributary streams, have resulted in shallower waters in Quincy Bay and a higher flood frequency and duration over the past several years. Upwards of 245,000 tons of sediment is estimated to be deposited into Quincy Bay annually. Approximately 70% is attributable to flooding, 22% is transported through the access channel, and approximately 8% is delivered by creeks that drain into Quincy Bay. This sedimentation has caused the water volume of Quincy Bay to decrease by an estimated 72%.

This increased sedimentation and loss of connectivity has resulted in significant degradation of deep-water habitat and fragmentation of fish, wildlife, and migratory bird habitat. Historically, Upper Quincy Bay was an important stopover point for diving ducks during spring/fall migrations; however, there is evidence that the failure of species to use Quincy Bay has resulted in reduced reproductive output. Furthermore, the relatively diverse pre-settlement floodplain forest consisting of hackberry, pecan, elm, willow and cottonwood is now largely dominated by silver maple.

Without restoration, the important ecosystem of Quincy Bay could be lost forever. Open waters will continue to convert to shallow backwaters and drier bottomland forests that will continue to develop into plant communities dominated by flood-tolerant species and invasive species such as reed canary grass and Japanese hops.

IV. PROJECT GOALS

The desired outcome for the Project is a high quality and diverse forest and wetland habitat for wildlife and aquatics, with reductions in sedimentation into Quincy Bay, and an increased resiliency against future sedimentation. Dredging within Quincy Bay and connected sloughs and lakes will provide both shallow lotic and deep lentic backwater habitats for fish to reproduce, feed, and overwinter in Pool 21. This restored habitat has the potential to recruit additional fish and wildlife species to the area. The dredged material will be used to create topographic diversity to promote and protect habitat for aquatic and terrestrial vegetative species, including native trees. These actions will restore a more natural hydrogeomorphic condition in Quincy Bay area. Additionally, modification to the small boat access channel will decrease sediment load entering into Quincy Bay from the main channel, decreasing total suspended solids concentrations and improving conditions for aquatic vegetation.

The Project goals align with the Habitat Needs Assessment II *Future Desired Habitat Condition* developed by the River Resources Coordinating Team for the Project area and include:

- restoring floodplain habitat and connectivity to the main channel;
- restoring diversity of aquatic habitat types with desire for more lentic and backwater habitats;
- restoring aquatic vegetation in backwater areas;
- restoring floodplain forest diversity, including hard-mast trees;
- enhancing floodplain topographic diversity; and
- restoring floodplain vegetation diversity in hand with diversifying floodplain inundation periods.

V. PROPOSED PROJECT FEATURES

The proposed Project consists of three components that will restore fish and wildlife habitat and reduce future sediment accumulation rates in Quincy Bay. The following features were identified during previous feasibility studies; however, additional solutions may be identified in the current feasibility study:

1. Dredging of portions of Quincy Bay and connected sloughs and lakes to restore aquatic habitat
2. Construction of a rock dike/weir structure or friction channel at the small boat access channel to reduce velocity and sediment transport

3. Increase topographic diversity above-flood elevation areas for reforestation and wetland vegetation species.

VI. IMPLEMENTATION CONSIDERATIONS

Quincy Bay is located near the following HREPs: Monkey Chute, Cottonwood Island, and Long Island Division of Great River National Wildlife Refuge. These projects are similar to the Quincy Bay Project in that they have experienced sedimentation issues and degraded habitat. Together, these completed projects will function to curb the rate of ecosystem degradation and maintain existing conditions in the face of future disturbances and stressors in the Lower Impounded cluster.

The Project provides a unique opportunity to expand upon the following local landscape restoration sites and efforts (Figure 2):

- Triangle Lake Wetland Enhancement & Restoration waterfowl refuge
- Privately-owned lands within the Indian Grave Drainage District enrolled in habitat programs
- Bob Bangert Park wetland restoration
- Quincy Park District “Green Corridor.”

VII. FINANCIAL DATA

Project features are located entirely on Federal land within QBAREA limits. The total estimated cost of the proposed Project components, depending on features chosen, ranges from 15 to 25 million dollars. Funding for the Project would be 100% Federal in accordance with Section 906(e) of the Water Resources Development Act of 1986. The operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) costs will be the responsibility of the local sponsor, QBAREA.

VIII. STATUS OF PROJECT

The Project was submitted to the Fish and Wildlife Interagency Committee on October 15, 2019 and endorsed by the River Resources Coordinating Team on November 21, 2019. This fact sheet was endorsed by the Upper Mississippi River Restoration Coordinating Committee on February 26, 2020.

IX. SPONSORSHIP

The QBAREA is the local non-Federal Sponsor and would be responsible for OMRR&R of Project features.

X. POINTS OF CONTACT

Marshall Plumley, UMRR Program Manager, U.S. Army Corps of Engineers, Rock Island District, [REDACTED]

Rome Frericks, Quincy Park District, [REDACTED]

David Glover, IL DNR, [REDACTED] (FWIC Champion)

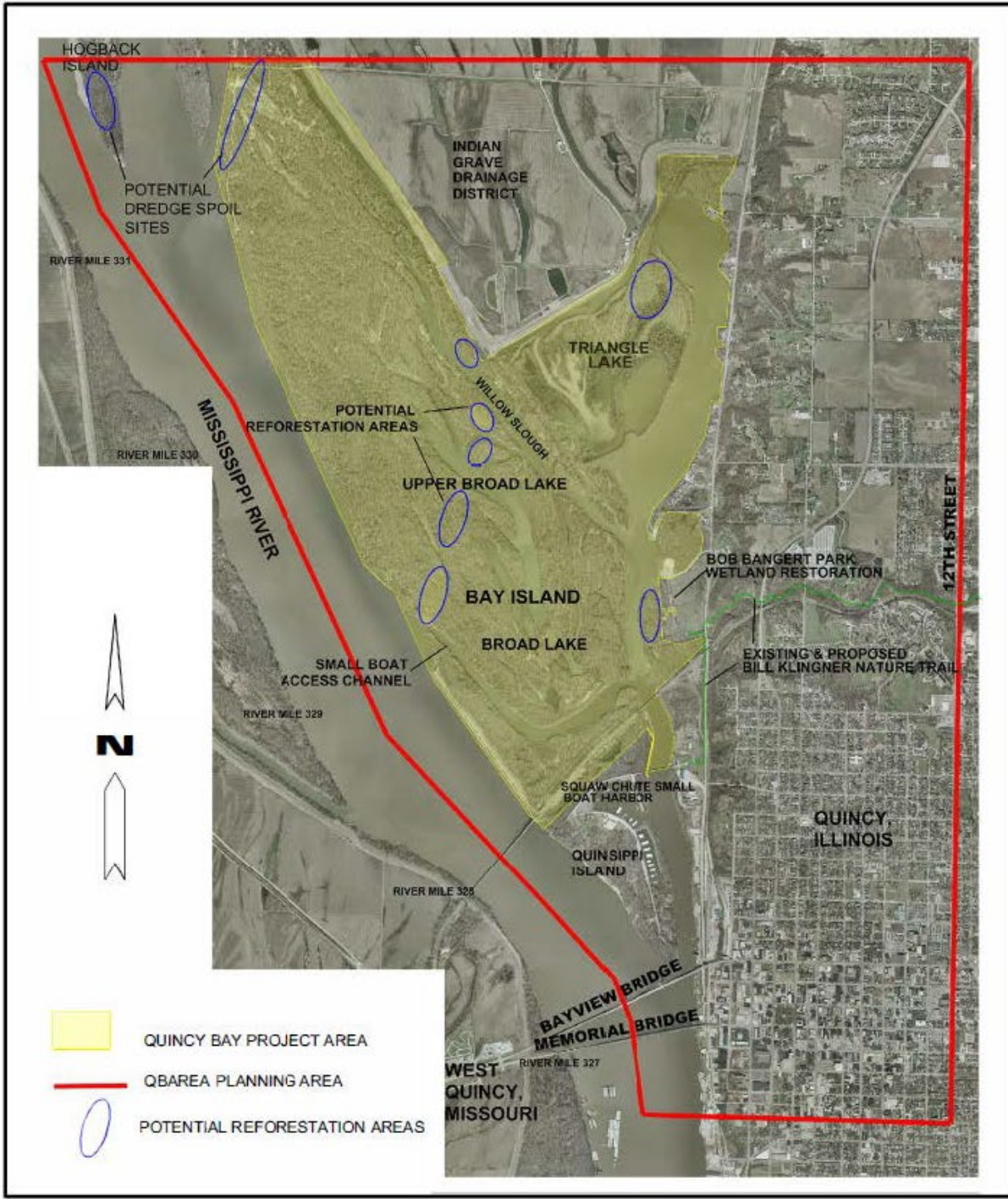


Figure 1. Map of proposed Quincy Bay Project Area (yellow shaded area) within the Quincy Bay Area Restoration and Enhancement Association (QBAREA; red outlined area). Also shown are potential sites for reforestation indicated in blue.



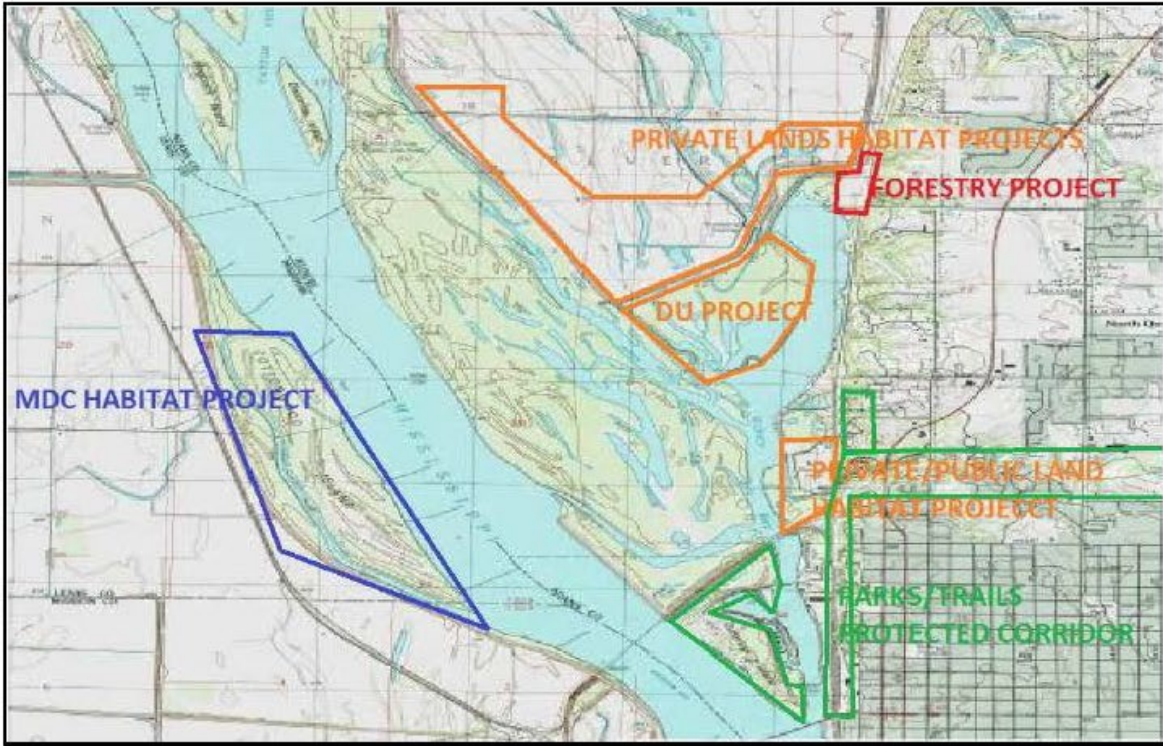


Figure 2: Local Landscape Restoration Efforts