

1. PURPOSE, AUTHORITY, STUDY DESCRIPTION, AND PRODUCTS

a. Purpose. This review plan defines levels and scopes of review required for the feasibility phase products. This review plan is a component of the Project Management Plan for the Huron Harbor CAP 204 Feasibility Study. The Risk Management Organization (RMO) for this review plan is LRB.

b. Authority. Continuing Authorities Program (CAP). Section 204 of the 1992 Water Resources Development Act (33 U.S.C. § 2326), as amended.

c. Study Description. This study was initiated to determine feasibility for ecosystem restoration or storm damage reduction using sediment dredged from the Federal Navigation Channel at Huron Harbor, Ohio. Alternatives for the establishment of near shore and/or coastal marshland aquatic habitat will be studied for the purpose of improving Lake Erie coastal fish and wildlife habitat. Near shore and coastal wetland habitat types considered in alternatives during this feasibility study are rare on Lake Erie, with only 5% of the historic extent remaining due to agriculture and urban development.

The alternatives for this project seek to address problems of wetland loss and provide a variety of options for dredge material management for aquatic ecosystem restoration. Maintenance dredging at Huron Harbor occurs approximately every two years. Current data indicates that the shoaling rate is approximately 95,000 CY of sediment per year, therefore 190,000 CY of sediment per dredging cycle. Project alternatives are anticipated to consist of various formulations of rubble mound breakwaters, habitat structure, and plantings for the purpose of created coastal wetland and aquatic habitat. The methods involved in the construction of these features are anticipated to be standard methods for the construction of breakwater and placement of dredged material. The estimated cost for this project range from [REDACTED] to [REDACTED].

Risks for this project range from low and very low. The most significant risks include uncertainty in regard to geotechnical suitability of the existing lakebed for supporting breakwater containment structures and uncertainty with regard to water depths in the proposed areas. In order to combat these, an inventory of existing geotechnical boring information will be conducted, and updated survey information of potential project areas will be acquired as soon as possible in the feasibility study.

Based on the investigations conducted to support the Federal Interest Determination (FID) Report approved by LRD, alternatives to be considered during the feasibility phase to restore the aquatic ecosystem of Lake Erie include ones in which dredge sediment would be used to create coastal wetland marshes consisting of submerged aquatic, shallow or deep emergent, and/or sedge meadow-wetland plant communities. The non-Federal sponsors for this study is the City of Huron, Ohio.

d. Products.

Table 1. List of Products to Be Prepared and Reviewed					
Product / Document	Prepared By	Type of Review to be Performed			
		DQC	ATR	Type I IEPR	Policy / Legal
Detailed Project Report (DPR) and Environmental Assessment (Main Report / Integrated DPR/EA)	In-house Resources	X	X		X
Environmental Appendix <ul style="list-style-type: none"> Habitat Outputs Planting Plan Monitoring Plan 	In-house Resources	X	X		X
Real Estate Plan Appendix	In-house Resources	X	X		X
Coastal Engineering Appendix	In-house Resources	X	X		X
Geotechnical Engineering Appendix	In-house Resources	X	X		X
Cost Appendix	In-house Resources	X	X		X
HTRW Assessment (Phase 1 ESA)	In-house resources	X	X		X
Environmental Coordination Appendix Including: <ul style="list-style-type: none"> Summary of Comments & Responses from Public and Agency Review FONSI Cultural Resources Report 	In-house Resources	X	X		X

2. REVIEW REQUIREMENTS

a. Types of Review. The feasibility phase activities and documents are required to be reviewed in accordance with ER 1110-1-12 and EC 1165-2-217. Based upon the factors under each heading, this study will undergo the reviews identified and described below.

(1) District Quality Control (DQC): DQC procedures will be performed and formally documented for all study products, including supporting documents.

- The District will perform and manage DQC procedures in accordance with the District DQC process.
- DQC will be documented with a summary report / certification.
- Supervisors within each area of responsibility will assign appropriate, qualified staff to perform QC on their respective products. Personnel performing QC shall have the necessary expertise to address compliance with Corps policy.

- The following disciplines will be playing a critical role in the DQC for this ecosystem restoration study:

Table 2a. DQC Team Technical Disciplines and Expertise		
Technical Discipline	Peer DQC Reviewer	Chief Level DQC Reviewer
Plan Formulation	██████████	CELRB-PML-P Chief
Environmental Analysis	██████████	CELRB-PML-E Chief
Ecosystem Restoration		
Civil/Structural Engineering	██████████████████	CELRB-TDD-S Chief
Cost Engineering	██████████	CELRB-TDD-E Chief
Operations	██████████	CELRB-TDO-O
Real Estate Specialist	██████████	TSD-TD-R
Geotechnical/Coastal Engineer	██████████████████	CELRB-TDD-C Chief
HTRW	██████████	CELRB-TDE-H Chief
GIS	██████████	CELRB-TDE-S

(2) Agency Technical Review (ATR): ATR will be scaled to a level commensurate with the risk and complexity of the products to be reviewed. The ATR will assess whether the analyses presented are technically correct and comply with published USACE guidance, and that the document explains the analyses and results in a reasonably clear manner for the public and decision makers. ATR is mandatory for all decision documents (including supporting data, analyses, environmental compliance documents, etc.).

- ATR is managed within USACE by the designated RMO and is conducted by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product.
- ATR teams will be comprised of senior USACE personnel
- ATR reviewers in the Plan Formulation, Environmental, Economic, and Cultural Resources. ATR Team members in these disciplines must be certified by their respective Planning sub-CoP
- ATR reviewers in the Engineering & Construction discipline must be certified by the Certification and Access Program (CERCAP).
- The team lead will be from outside LRD.
- The ATR review will be documented using DrChecks, and an ATR Summary Report and certification will be completed.

Table 2b. ATR Technical Disciplines and Expertise Required		
ATR Disciplines	Expertise Required	Justification / Rationale
ATR Lead- Plan Formulation	The ATR lead should be a senior professional preferably with experience in preparing CAP Section 204 decision documents and conducting ATR. This reviewer will be responsible for reviewing all plan formulation components of the feasibility study. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. The ATR lead may also serve as a reviewer for a specific discipline.	Coordinate all ATR activities.
Ecosystem Restoration	The ecosystem restoration ATR must be familiar with the creation of wetlands and coastal habitat. This reviewer must also be familiar with conducting evaluation of ecosystem restoration outputs and CE/ICA. It is preferred that this reviewer must be familiar with 204 projects. It may be possible that the ATR Lead can cover both Plan Formulation and Ecosystem Restoration roles if he/she has the appropriate expertise	This project is anticipated to be primarily justified based on NER benefits.
Climate Preparedness and Resiliency	At least one member of an ATR Team for inland hydrology and coastal studies, designs, and projects must be certified by the Climate Preparedness and Resilience CoP in CERCAP	Required by EC 1165-2-17; alternatives can be affected by future climate conditions; a climate analysis we be used to determine resiliency.
Cost Engineering Reviewer	Cost MCX Staff or Cost MCX Pre-Certified Professional as assigned by the Walla Walla Cost Engineering Mandatory Center of Expertise with experience preparing cost estimates for Section 14 cost estimates. Must be Certification and Access Program (CERCAP) certified.	Required by EC 1165-2-17
Coastal Engineering	The Coastal Design reviewer should have experience in the design of coastal structures such as breakwaters and/or seawalls. This reviewer should have an expertise in coastal engineering on the Great Lakes.	Proposed alternative consists of coastal structures and engineering.
Disciplines not anticipated to be needed on ATR team		
Structural Design Engineering	Expertise not anticipated to be needed on ATR team.	No structural alternatives expected to be considered.
Environmental (NEPA)	Expertise not anticipated to be required on ATR Team	This project is anticipated to be an ecosystem restoration project with ecological benefits. It is not anticipated that the project will have negative impacts on the physical, social, or cultural environments. The Environmental Evaluation is anticipated to result in a FONSI.

Hydrology and Hydraulic Engineering	Expertise not anticipated to be required on ATR Team	No H&H required.
HTRW	HTRW not anticipated to be needed on ATR team.	Risks of HTRW impact to project low. HTRW not anticipated.
Civil Design Engineering	Expertise not anticipated to be required on ATR Team	Due to the coastal nature of the project, review of the coastal structures of the project will be reviewed by coastal engineer.
Real Estate Reviewer	Expertise not anticipated to be required on ATR Team	Low risk and complexity may be more appropriately accomplished in-house via DQC) Great Lakes Real Estate.

(3) **Type I Independent External Peer Review (IEPR):** A Type I IEPR is not required based on the mandatory triggers outlined in the Memorandum for Major Subordinate Command (MSC) and District Commanders dated April 05, 2019; the memorandum provides interim guidance on streamlining IEPR for improved civil works product delivery. Paragraph 4 states a project study may be excluded Type I IEPR if the project does not meet any of the three mandatory IEPR triggers.

All CAP projects are excluded from Type I IEPR except those conducted under Section 205 and Section 103, or those projects that include an EIS or meet the mandatory triggers for Type I IEPR.

This feasibility study does not meet any of the three mandatory IEPR triggers for the following reasons:

- The estimated total cost of the project, including mitigation costs, is not greater than \$200 million.
- The Governor of Ohio has not requested a peer review by independent experts.
- The study is not controversial due to significant public dispute over size, nature, or effects of the project or the economic or environmental costs or benefits of the project.

When none of the three mandatory triggers for IEPR are met, MSC Commanders have the discretion to conduct IEPR on a risk-informed assessment of the expected contribution of IEPR to the project. An IEPR would not provide additional benefit to the study for the following reasons:

- a. This study does not include the development or use of any novel methods.
- b. This project does not pose likely threats to health and public safety.
- c. There is no anticipated inter-agency interest.
- d. Buffalo District has not received a request from the head of any Federal or State agency for an IEPR.
- e. The proposed project is not anticipated to have unique construction sequencing or a reduced or overlapping design construction schedule.

(4) Type II Independent External Peer Review (IEPR): Type II IEPR, or Safety Assurance Review (SAR), are managed outside the USACE and are conducted on design and construction activities for hurricane, storm, and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. **Since this document does not involve life safety concerns, a Type II IEPR would not be considered.**

(5) Policy and Legal Review: All decision documents will be reviewed for compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in Appendix H, ER 1105-2-100.

(6) Public Participation.

- a. A public involvement program will be included to satisfy NEPA requirements and solicit public and government agency input.
- b. The District shall contact agencies with regulatory review for coordination as required by applicable laws and procedures.
- c. The District will review comments resulting from public and agency review and will provide the ATR team copies of public and agency comments and responses.

3. MODEL CERTIFICATION OR APPROVAL. The following models may be used to develop the decision documents:

EP 1105-2-58 specifies that approval of planning models is NOT required for CAP projects, but planners should utilize certified models if they are available. The ATR certification package will include an explicit statement that says that the models and analysis are used appropriately and in a manner that is compliant with Corps policy, and they are theoretically sound, computationally accurate, and transparent. The ATR certification package will address any limitations of the model or its use documented in study reports.

The following models may be used to develop the decision document:

Table 3a. Planning Models		
Model Name and Version	Model Description and How It Will Be Used	Certification / Approval Status & Date
IWR Planning Suite Version 2.0.9	<p>Cost Effectiveness, Incremental Cost Analysis.</p> <p>The Institute for Water Resources Planning Suite (IWR-PLAN) is a decision support software package that is designed to assist with the formulation and comparison of alternative plans. While IWR-PLAN was initially developed to assist with environmental restoration and watershed planning studies, the program can be useful in planning studies addressing a wide variety of problems. IWR-PLAN can assist with plan formulation by combining solutions to planning problems and calculating the additive effects of each combination, or "plan." IWR-PLAN can assist with plan comparison by conducting cost effectiveness and incremental cost analyses, identifying the plans which are the best financial investments and displaying the effects of each on a range of decision variables. The ecological habitat units calculated using the Habitat Evaluation Process will be used as inputs in IWR-PLAN to evaluate the benefits associated with each project alternative.</p>	Certified
Lake Erie Qualitative Habitat Evaluation Index (L-QHEI) Version 2.1	<p>The Lake Qualitative Habitat Evaluation Index (QHEI) is designed to provide a measure of habitat quality that generally corresponds to those physical factors that affect fish communities and which are generally important to other aquatic life (e.g. invertebrates). A QHEI measurement can have a maximum score of 100 with scores less than 30 identifying a very poor quality stream and scores of 70 or higher characterizing excellent quality streams. The standard QHEI was adjusted for use in evaluating lake shore environment.</p> <p>https://epa.ohio.gov/portals/35/documents/QHEIManual_LakeErieShoreline_June2010.pdf</p>	LRD guidance Approval
Floristic Quality Assessment Index (FQAI) - Ohio	<p>The Floristic Quality Assessment Index is a tool for scoring the ecological value of a given wetland based on the composition of its plant community.</p> <p>https://www.epa.ohio.gov/portals/35/wetlands/Ohio_FQAI.pdf</p>	Approved

Table 3b. Engineering Models		
Model Name and Version	Model Description and How It Will Be Used	Approval Status
MCACES	Microcomputer-Aided Cost Estimation System; Used to generate detailed cost estimates for each alternative.	Approved
CMS Wave/Flow Coastal Model	Coastal Modeling System (CMS) SMS Ver.11.1; CMS-WAVE used to simulate 2D wave spectral transformation. CMS-WAVE coupled with CMS-Flow includes capabilities to compute both hydrodynamics and sediment transport as bed load, suspended load, and total load, and morphology change.	Classified as CoP Preferred

4. REVIEW SCHEDULE AND BUDGET. The schedule and budgets for reviews are shown in below table.

Table 3. Product and Review Schedule				
Product(s) to undergo Review	Review Level	Start Date	Finish Date	Budget (\$)
Draft Detailed Project Report and Integrated Environmental Assessment (DPR & EA)	District Quality Control	22 NOV 21	12 JAN 22	■
Draft DPR & EA	Agency Technical Review	31 JAN 22	10 MAR 22	■
Draft DPR & EA	LRB Policy and Legal Review	13 APR 22	15 JUN 22	■
Draft DPR & EA	Public and Agency Review	24 MAY 22	23 JUN 22	■
Final DPR & EA	Final District Quality Control & Agency Technical Review	27 JUL 22	24 AUG 22	■
Final DPR & EA	Final LRB Policy and Legal Review	23 SEP 22	04 DEC 22	■

ATTACHMENT 1 – Contacts

REVIEW MANAGEMENT ORGANIZATION (RMO) - LRB			
Function	Name (Last, First)	Phone	Office
RMO Lead	██████████	██████████	CELRB-PML

VERTICAL TEAM CONTACTS			
Function	Name (Last, First)	Phone	Office
MSC Contact – District Support Program Manager	██████████	██████████	CELRD-PDS

PROJECT DELIVERY TEAM			
Function/Discipline	Name (Last, First)	Phone	Office
Project Manager (Lead)	██████████	██████████	CELRB-PMP-M
Planner	██████████	██████████	CELRB-PML-P
Biologist	██████████	██████████	CELRB-PML-E
Geotechnical Engineer	██████████	██████████	CELRB-TDD-C
Civil/Structural Engineer	██████████	██████████	CELRB-TDD-S
Project Management Specialist	██████████	██████████	CELRB-PM-PO
Geotechnical Engineer	██████████	██████████	CELRB-TDD-C
Coastal Engineer	██████████	██████████	CELRB-TDD-C
Environmental Engineer	██████████	██████████	CELRB-TDE-E
Real Estate	██████████	██████████	CELRB-RE

* LRB can support basic cultural resources coordination tasks. If significant cultural resources concerns are identified during the feasibility phase, LRB will coordinate with an Archeologist from another District to support the study.

DISTRICT QUALITY CONTRAL (DQC) TEAM			
Function/Discipline	Name (Last, First)	Phone	Office
DQC Lead, Plan Formulation	██████████	██████████	CELRB-PML-P
Env. Analysis & Cult. Resources*	██████████	██████████	CELRB-PML-E
Geotechnical/Coastal Engineer	██████████	██████████	CELRB-TDD-C
Project Management	██████████	██████████	CELRB-PMP-O
Cost Engineer	██████████	██████████	CELRB-TDD-E
Environmental Engineer	██████████	██████████	CELRB-TDE-E
Real Estate	██████████	██████████	CELRB-RE

AGENCY TECHNICAL REVIEW (ATR) TEAM*			
Function/Discipline	Name (Last, First)	Phone	Office
ATR Lead/Plan Formulation*	██████████	██████████	CENAO-WRP-R
Ecosystem Restoration	TBD	TBD	TBD
Coastal Design	TBD	TBD	TBD
Cost Engineering	TBD	TBD	TBD

* Alternatively, Dan Hughes, also of CENAO could lead or help with the ATR if necessary.

CAP 204 Huron Harbor Regional Sediment Management, City of Huron, Ohio.
Review Plan

P2/Project No.:468072

Last Updated: 17 November 2020

POLICY AND LEGAL COMPLIANCE REVIEW TEAM			
Function	Name (Last, First)	Phone	Office
P3M CAP Program Advocate, Planning and Policy Review	██████████	██████████	CELRB-PML
TSD CAP Program Advocate Review:	██████████	██████████	CELRB-TDD
Legal Compliance	██████████	██████████	CELRB-OC