



**US Army Corps
of Engineers®**

**Chicago District
Great Lakes and Ohio River Division**

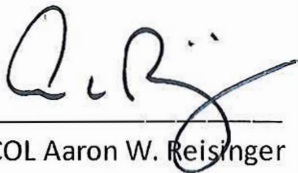
Public Beach Protection in 4 Illinois Communities
Section 1122 of WRDA 2016
Beneficial Use of Dredged Material Pilot Program
(similar to CAP Section 204)

P2/Project Number: 486327

Review Plan

PREPARED
BY: HOXSIE.ALEX.R
USSELL.152318
7410
Alex Hoxsie
Planner
USACE, Chicago District

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RECOMMENDED
BY: 
COL Aaron W. Reisinger
District Engineer
USACE, Chicago District

RECOMMENDED
BY: _____
Hank Jarboe
Chief, Planning and Policy Division
USACE, Great Lakes and Ohio River Division
Review Management Organization (RMO)

APPROVED
BY: _____
Stephen G. Durrett, P.E., SES Regional Program Director
USACE, Great Lakes and Ohio River Division

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I. PURPOSE, AUTHORITY, STUDY DESCRIPTION AND PRODUCTS

A. Purpose.

This review plan defines levels and scopes of review required for the feasibility phase products.

B. Authority

Section 1122 of the Water Resources Development Act (WRDA) of 2016 (modifying Section 204 of WRDA 1992). Accordingly, the feasibility study process for pilot projects in this program is being completed similarly to that for Section 204 of WRDA 1992.

C. Review Management Organization (RMO).

The RMO is responsible for managing the overall peer review effort described in this review plan. The RMO for CAP Section 204 studies is LRD, and the LRD Commander or their Director of Programs is responsible for approving the Review Plan. LRD will serve as the RMO for this Section 1122 pilot project study and has delegated to the Chicago District all other RMO responsibilities identified in EC1165-2-217, except final review and approval of the RP.

D. Decision Document

The Public Beach Protection in 4 Illinois Communities Project, Section 1122 of WRDA 2016 decision document will be prepared in accordance with EP 1105-2-58 (previously ER 1105-2-100, Appendix F). The preferred decision document format is contained in the Detailed Project Report (DPR) template in the LRD CAP Program Management Plan/Standard Operating Procedures, which integrates the environmental documentation required under NEPA and other relevant environmental statutes into the project decision document. The purpose of a DPR is to document the basis for a recommendation to invest federal and non-federal resources to address a local water resource problem or opportunity of significance to the Nation. The approval level of the decision document is the LRD Commander.

An updated EA and FONSI was completed for Waukegan Harbor dredging in September 2019 on a parallel effort that predated the Section 1122 Pilot Project Program. As such, the final feasibility report document will not be an integrated DPR/EA as is typical. Rather, LRC will incorporate the completed 2019 EA by reference in the feasibility report. Additionally, LRC will include the EA and FONSI as an appendix to the final Section 1122 feasibility report.

E. Study/Project Description

Current storm damage costs thousands of dollars to repair and endangers important infrastructure, including: piers, break walls, beach access points, boat launches, water pipes, sewer pipes, and roads. Erosion and sediment overwash cause significant drop-offs at swimming beaches and endanger public access points.

The construction of shore perpendicular structures updrift have resulted in increased downdrift shoreline erosion. Urbanization along the Illinois shoreline has resulted in the destruction of the majority of natural Lake Michigan coastal habitat. Currently, record high lake levels are increasing erosion and public concern/awareness.

If no additional action is taken to address erosion at the 6 public beaches included in the pilot project proposal, it is expected that the non-federal sponsors would continue to truck in quarried sand, as local funding allows, to protect these public amenities and their associated natural habitat. During periods of high lake levels, erosion would continue to reduce the size of these beaches, increasing the risk of damage to the property, populations, and infrastructure behind them. In time, erosion may eventually limit effective options to structural alternatives for coastal management such as revetments and groins to reduce erosion. These measures would be more expensive, result in reduced habitat and public recreation, and cause or exacerbate additional erosion downdrift.

Using dredged material beneficially to protect public beaches and improve coastal habitats while supporting navigation in Waukegan Harbor. Additionally, an opportunity exists to restore and protect critical habitat for a variety of critical species including the federally-listed Piping plover (*Charadrius melodus*) and Pitcher's thistle (*Cirsium pitcher*).

Waukegan Harbor is an authorized federal navigation harbor located in Waukegan, Illinois on the western shore of Lake Michigan. The harbor is located approximately 40 miles north of Chicago, Illinois and 10 miles south of the Illinois-Wisconsin state line. The federal navigation channel is comprised of three main areas: Inner Harbor, Outer Harbor, and Approach Channel. There is also an area adjacent to the federal harbor known as the Advanced Maintenance Area. This area is dredged to form a basin where littoral sand can be deposited before it settles in the federal channel reducing the frequency of dredging the federal channel. The harbor is used for both industrial and recreational activities.

The default location for placement of dredged material is currently in the open water area approximately 1 mile south of Waukegan Harbor. The littoral placement of sand adjacent to Illinois Beach State Park has occurred in the past, but continues to be contingent on the park's funding for sand placement.

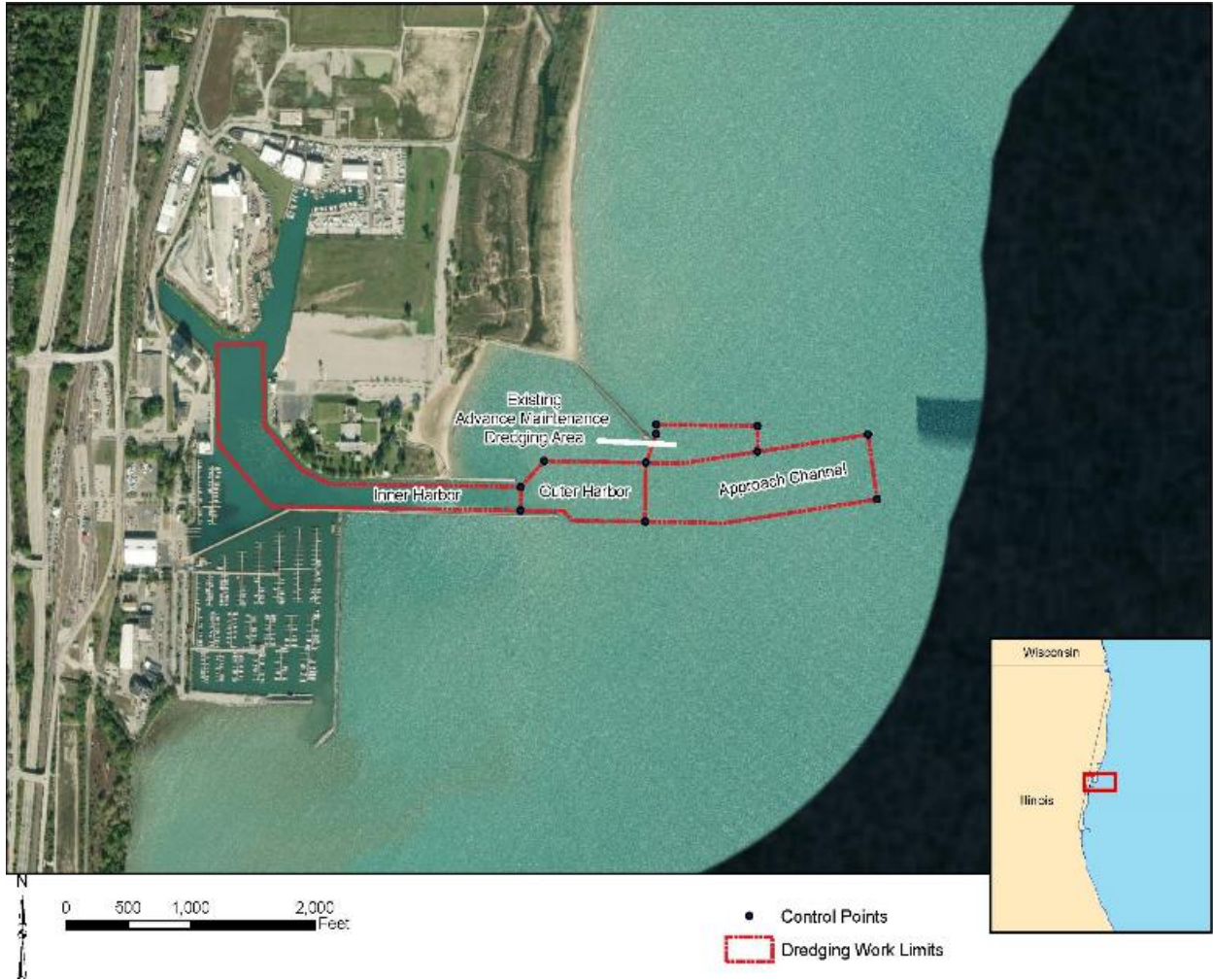


Figure 1: Overview of Waukegan Harbor federal navigation harbor.



Figure 2: Waukegan Harbor, the existing open water placement site, Illinois Beach State Park, and 6 potential placement sites for inclusion in the proposed pilot project (NOTE: Waukegan Beach is included in the 2019 EA but is not being considered in the Section 1122 Pilot Project).

F. Estimated Project Costs and Schedule:

Project costs and schedule for the completion of the Feasibility Study, Design Phase, and Construction were estimated based on previous and ongoing Chicago District projects and USACE Great Lakes and Ohio River Division (LRD) project schedule recommendations. The cost and schedule are preliminary and will be refined during the Feasibility Phase of the project.

The study is anticipated to cost approximately \$240,000 to complete. Tentative feasibility cost level estimates for implementation of the pilot project are approximately \$1,200,000.

G. Feasibility Study Products

The feasibility study products/documents to be prepared and reviewed are listed in the following table. The table includes only formally documented reviews. Interim products will also be reviewed on an ongoing basis, as described in the LRC Feasibility Phase Quality Control/Quality Assurance procedures.

Table 1 - Feasibility Study Products

Product/Document	DQC	ATR	IEPR I	Policy/Legal
MII Cost Estimate	X			
Geotechnical Engineering	X			
Risk Assessment	X			
Real Estate Map and Gross Appraisal	X			
Integrated Detailed Project Report (DPR) and Environmental Assessment (Main Report)	X	X		X
Real Estate Appendix	X	X		X
Coastal Engineering Appendix	X	X		X
Climate Preparedness and Resiliency Appendix	X	X		X
Civil Engineering Appendix	X	X		X
Cost Estimate	X	X		X
HTRW Assessment	X			X

II. 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. This study will undergo the following reviews: District Quality Control (DQC); Agency Technical Review (ATR); Policy and Legal Review; and Public Review. These reviews are described in greater detail below.

B. District Quality Control (DQC):

DQC procedures will be performed for all study products. Formally documented DQC will, at a minimum, be completed for the Draft Detailed Project Report, the Final Detailed Project Report, and all supporting documents. LRC Office of Counsel will be consulted to provide legal review and guidance during the feasibility study development and review process.

- a. Chicago District will perform and manage DQC procedures in accordance with the Chicago District DQC process (ISO Process; Document ID: 33360 LRC – Feasibility Phase Quality Control/Quality Assurance).
- b. DQC will be documented with a summary report / certification.
- c. 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.
- d. LRC Office of Counsel will conduct a legal sufficiency review after the completion of DQC and before submitting the DPR to the MSC.

Disciplines required for the DQC of this beneficial use of dredged material study are noted in Table 2.

Table 2 Required DQC Expertise

DQC Team Technical Disciplines and Expertise		
Technical Discipline	Peer DQC Reviewer	Chief Level DQC Reviewer*
Plan Formulation	Each peer-level DQC reviewer will have no production role in the study/project and will have the necessary expertise/experience to thoroughly review the study products identified in paragraph (1).	PMD-EP Chief
Civil Engineer		TSD-DC Chief
Cost Estimator		RE Chief (Regional) and MSC RE Appraiser
Real Estate Specialist		PMD-EF Chief
Biologist/Cultural Resources		TSD-DG Chief
Geotechnical Engineer		TSD-DH Chief
Coastal Engineer		PMD-EP Chief
Environmental Engineer		Office of Counsel
Economist		
Policy and Legal		

C. Agency Technical Review (ATR):

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.).

- a. 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. The team lead will be from outside LRD.
- b. All ATR reviewers must be certified to perform ATR by USACE.
- c. ATR will be documented using DrChecks and an ATR Summary Report and Certification.

Due to the low risk associated with the implementation a beneficial use project, the total number of reviewers will be kept as small as possible without compromising the quality and completeness of the review. Multiple disciplines may be covered by a single reviewer based on appropriate experience, expertise, and certification. The disciplines required for ATR for are noted in the following table.

Table 3 Required ATR Disciplines

ATR Disciplines	Expertise Required	Justification / Rationale
ATR Lead	<ul style="list-style-type: none"> • Senior professional • Experience in preparing CAP Section 204 decision documents • Experience conducting ATR • Skills and experience to lead a virtual team through the ATR process 	The ATR lead is necessary to coordinate all ATR activities. The ATR lead may also serve as a reviewer for a specific discipline.
Plan Formulation	<ul style="list-style-type: none"> • Senior planner • Experience in beneficial use of dredged material applications • Experienced in CAP Section 204 projects 	A Plan Formulation Reviewer is necessary to review the plan formulation of non-structural beneficial use of dredged material measures and alternatives.

ATR Disciplines	Expertise Required	Justification / Rationale
Biology/Cultural Resources	<ul style="list-style-type: none"> Experienced in the application of habitat models and CE/ICA process for identifying the recommended plan in ecosystem projects. 	A Biology/Cultural Resources Reviewer is necessary to review habitat model selection and application, as well as review the PDT's CE/ICA using the IWR Plan model.
Coastal Engineering	<ul style="list-style-type: none"> Expert in the field of coastal sediment transport dynamics Experience working on coastal storm damage reduction and/or beach nourishment projects. 	A Coastal Engineering Reviewer is necessary to review the WOPC & WPC. The Coastal Engineer may also serve as a CPR Reviewer.
Climate Preparedness and Resiliency (CPR)	<ul style="list-style-type: none"> Certification by the CPR Community of Practice (CoP) in the Corps of Engineers Review Certification and Access Program (CERCAP). 	As required by Engineering and Construction Bulletins (ECB) 2018-14, at least one member of an ATR Team for projects covered by this ECB, at least one reviewer will be CPR certified. The CPR CoP may help identify those who can perform, assist, or review qualitative assessments. The CPR reviewer may also serve as a reviewer for Coastal Engineering
Civil Engineering	<ul style="list-style-type: none"> Experienced with the design of beach nourishment projects. 	The Civil Engineering Reviewer is necessary to review design of non-structural alternatives.
Real Estate	<ul style="list-style-type: none"> Experienced in preparing real estate plans for non-structural beach nourishment and ecosystem restoration projects. 	The Real Estate Reviewer is necessary to ensure all real estate requirements for future implementation are properly identified and documented.

ATR Disciplines	Expertise Required	Justification / Rationale
Cost Engineering	<ul style="list-style-type: none"> • Experience preparing cost estimates for shoreline protection and/or beneficial use of dredged material projects. 	A Cost Engineering Reviewer is required by the Cost MCX. A Cost MCX staff member or Pre-Certified Professional will be assigned by the Walla Walla MCX.

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. 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 Illinois 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.

An IEPR would not provide additional benefit to the study for the following reasons:

- This study does not include the development or use of any novel methods.
- This project does not pose likely threats to health and public safety.
- There is no anticipated inter-agency interest.
- Chicago District has not received a request from the head of any federal or state agency for an IEPR.

The proposed project is not anticipated to have unique construction sequencing or a reduced or overlapping design construction schedule.

Type II Independent External Peer Review (IEPR): Since this document does not involve life safety concerns, as confirmed by the LRC Chief of Engineering and Construction in the District Chief of Engineering Assessment of Life-Safety Risk, a Type II IEPR would not be considered.

Policy and Legal Review: The draft and final document will be reviewed for their compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in Appendix H, ER 1105-2-100. These reviews culminate in determinations that the recommendations in the report and the supporting analyses and coordination comply with law and policy.

Public Participation:

- Chicago District anticipates that no additional NEPA will be required for this project based on the EA that was finalized in September 2019 from a preexisting parallel effort.
- Chicago District, with the non-federal partners, will include a public involvement program designed to be similar to what would normally be carried out under NEPA to solicit public and government agency input and increase transparency.
- Chicago District shall contact agencies with regulatory review for coordination as required by applicable laws and procedures.

III. MODEL CERTIFICATION OR APPROVAL.

The models listed in Table 4 and Table 5 may be used to develop the decision documents.

Table 4 Planning Models

Planning Models		
Model Name and Version	Model Description and How It Will Be Used	Certification Approval
IWR Planning Suite	IWR Planning Suite assists with plan formulation by combining user-defined solutions to planning problems and calculating the effects of each combination or “plan.” The program can assist with plan comparison by conducting cost effectiveness and incremental cost analyses, identifying the plans which are best financial investments and displaying the effects of each on a range of decision variables.	Certified
Shorebird Migration Model	The Shorebird Migration Model was developed as a shorebird community management tool. It includes the spring and fall migration seasons as well as variables and suitability index relationships representing three functional habitats – food, security, and predictability. The model is used to evaluate and compare alternatives for restoration of shorebird migration habitat. An independent review team managed by the National Ecosystem Restoration Planning Center of Expertise evaluated the subject model. The Shorebird Migration Model is certified	25 July 2018

Planning Models		
Model Name and Version	Model Description and How It Will Be Used	Certification Approval
	for regional use within the US Environmental Protection Agency Level II Ecoregions described in the model documentation as of 25 July 2018.	

Table 5 Engineering Models

Engineering Models		
Model Name and Version	Model Description and How It Will Be Used	Approval Status
MII	MII is the second generation of the Micro-Computer Aided Cost Estimating System (MCACES). It is a detailed cost estimating software application that was developed in conjunction with Project Time & Cost LLC. MII provides an integrated cost estimating system (software and databases) that meets the U.S. Army Corps of Engineers (USACE) requirements for preparing cost estimates.	Enterprise Model

A risk-based decision was made not to include a sediment transport model in this study. It is understood that the habitat created and/or protected as a result of this study will be temporary in nature and require replenishment over time. The same is anticipated to be true of the ancillary benefits to shoreline erosion and recreation. It is possible that a sediment transport model that is currently under development by ERDC may be used for monitoring and documenting success of the pilot project in the future.

IV. REVIEW SCHEDULE AND BUDGET.

The schedule and budgets for formal reviews are shown in below table. Ongoing quality control will take place during the study as documented in the LRC DQC process. Below is the timeline for review activities. For this study, concurrent reviews by LRD, ATR, and the public will streamline the overall review process and occur following a successful MDM Briefing.

Table 6 Product Review Schedule and Budget

Product and Review Schedule				
Product(s) to undergo Review	Review Level	Start Date	Finish Date	Budget (\$)
MII Cost Estimate	District Quality Control	01-Jun-2020	01-Jul-2020	\$2,000 [†]
Draft Detailed Project Report and Integrated Environmental Assessment (DPR & IEA)	District Quality Control & LRC Policy and Legal Sufficiency Review	21-May-2020	31-Jun-2020	\$8,000
Draft DPR & IEA	Agency Technical Review	30-Jun-2020	31-Aug-2020	\$10,000
Draft DPR & IEA	LRD Policy and Legal Review (MDM)	30-Jun-2020	31-Jul-2020	\$5,000
Draft DPR & IEA	Public and Agency Review	31-Jul-2020	30-Aug-2020	\$2,000
Final DPR & IEA	District Quality Control	30-Aug-2020	31-Aug-2020	\$2,000
Final DPR & IEA	LRD Policy and Legal Review (Submit Final Report)	01-Sept-2020	30-Sept-2020	\$1,000
Total:				\$30,000
[†] Costs included in the overall study budget [‡] Dependent upon I&R SLRA funding availability [*] Scheduled Dates will be revised with Actual Dates				

ATTACHMENT 1: Contacts

Function	Name (Last, First)	Phone	Office
RMO Contact	Jarboe, Hank	(513) 684-6050	CELRD-PDS-P
MSC Contact	Burkett, Matthew	(513) 684-2049	CELRD-PD-S

PROJECT DELIVERY TEAM			
Function/Discipline	Name (Last, First)	Phone	Office
Project Manager (Lead)	Nguyen, Mike	312-846-5555	CELRD-PM-PM
Planner	Hoxsie, Alex	312-846-5587	CELRD-PMD-EP
Biologist & Cult. Resources*	Belcik, John	312-846-5595	CELRD-PMD-EF
Geotechnical Engineer	Ferris, Dan	312-846-5477	CELRD-TS-DG
Civil Engineer	Moya, Timothy	312-846-5593	CELRD-TS-DC
Cost Engineer	Gadbois, Jeremiah	312-846-5464	CELRD-TS-DC
Coastal Engineer	Fuller, Jeff	312-846-5516	CELRD-TS-DH
Environmental Engineer	Dove, Margaret	312-846-5502	CELRD-TS-DH
Real Estate	Rohde, Michael	312-846-5576	CELRD-RE-O
<p>* LRC can support basic cultural resources coordination tasks. If significant cultural resources concerns are identified during the feasibility phase, LRC will coordinate with an Archeologist from another District to support the study.</p>			

DQC TEAM			
Function/Discipline	Name (Last, First)	Phone	Office
Planner	McClain, Kaitlyn	(312) 846-5598	CELRD-PMD-EP
Biologist & Cult. Resources	Herleth-King, Shawna	(312) 846-5407	CELRD-PMD-EF
Geotechnical Engineer	Schulenberg, Joe	(312) 846-5454	CELRD-TS-DG
Civil Engineer	Rana Mishra	(312) 846-5428	CELRD-TS-DC
Cost Engineer	Rana Mishra	(312) 846-5428	CELRD-TS-DC
Coastal (Hydrology and Hydraulic) Engineer	Meyer, Kristine	(312) 846-5510	CELRD-TS-D-HH
Environmental Engineer	Miller, Jennifer	(312) 846-5505	CELRD-TSD-DH
Economist	Zach Hartley	(312) 846-5514	CELRD-PMD-EP
Real Estate (LRC)	Harris, Lillian	(312) 846-5522	CELRD-RE-O
Real Estate (MSC)	Appraiser TBD	TBD	CELRD-RE-O
Policy and Legal	Frank, Carin	(312) 846-5353	CELRD-OC

ATR TEAM			
Function/Discipline	Name (Last, First)	Phone	Office
ATR Lead	Opsahl, Katie	(651) 290-5259	CEMVP-PDF
Plan Formulation	Opsahl, Katie	(651) 290-5259	CEMVP-PDF
Biology/Cultural Resources	Steve Clark	(651) 290-5278	CEMVP-PD-P
Coastal Engineering	Lisa Winter	(978) 318-8954	CENAE-EDW
Climate Preparedness and Resiliency (CRP)	Lisa Winter	(978) 318-8954	CENDAE-EDW
Real Estate	TBD		
Civil Engineering	TBD		
Cost Engineering	Bill Bolte	(509) 527-7585	CENWW-ECE

MSC POLICY AND LEGAL REVIEW TEAM			
Function/Discipline	Name (Last, First)	Phone	Office
Plan Formulation			
Biology/Cultural Resources			
Coastal and/or Hydrology and Hydraulic (H&H) Engineering			
Civil Engineering			
Geotechnical Engineering			
Environmental Engineering			
Cost Engineering			
Real Estate			

ATTACHMENT 2: REVIEW PLAN REVISIONS LOG

<All revisions after the initial LRD Commander approved review Plan shall be documented here, including major revisions (i.e. at initiation of Design and Implementation Phase) where LRD Commander is required and the cover page updated to reflect the latest Commander approval date. >

Revision Date	Description of Change	Page / Paragraph Number

ATTACHMENT 3: ACRONYMS AND ABBREVIATIONS

Term	Definition	Term	Definition
ASA(CW)	Assistant Secretary of the Army for Civil Works	NER	National Ecosystem Restoration
ATR	Agency Technical Review	NEPA	National Environmental Policy Act
CAP	Continuing Authorities Program	O&M	Operation and maintenance
CSDR	Coastal Storm Damage Reduction	OMB	Office and Management and Budget
DPR	Detailed Project Report	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
DQC	District Quality Control/Quality Assurance	OEO	Outside Eligible Organization
DX	Directory of Expertise	OSE	Other Social Effects
EA	Environmental Assessment	PCX	Planning Center of Expertise
EC	Engineer Circular	PDT	Project Delivery Team
EIS	Environmental Impact Statement	PAC	Post Authorization Change
EO	Executive Order	PMP	Project Management Plan
ER	Ecosystem Restoration	PL	Public Law
FDR	Flood Damage Reduction	QMS	Quality Management System
FEMA	Federal Emergency Management Agency	QA	Quality Assurance
FRM	Flood Risk Management	QC	Quality Control
FSM	Feasibility Scoping Meeting	RED	Regional Economic Development
HQUSACE	Headquarters, U.S. Army Corps of Engineers	RMC	Risk Management Center
IEPR	Independent External Peer Review	RMO	Review Management Organization
LERRDs	Lands, Easements, Rights-of-Way, Relocations, Disposal/borrow areas	RTS	Regional Technical Specialist
MCX	Mandatory Center of Expertise	SAR	Safety Assurance Review
MDM	MSC Decision Meeting	USACE	U.S. Army Corps of Engineers
MSC	Major Subordinate Command	WRDA	Water Resources Development Act
NED	National Economic Development		