US Army Corps of Engineers®

Louisville District
Great Lakes and Ohio River Division

Vermilion County, Illinois, Continuing Authorities Program Section 14, Emergency Streambank Stabilization Feasibility Study

P2/Project Number: 478575

Review Plan – Decision Document

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USACE, Louisville District

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USACE, Louisville District

MSC APPROVAL DATE: DD MON YYY

REVIEW PLAN

April 2022

Project Name: Vermilion County, Illinois CAP Section 14

P2 Number: 478575

Decision Document Type: Detailed Project Report

Project Type: Continuing Authority Program Section 14 Streambank Stabilization Project

District: United States Army Corps of Engineers District, Louisville (LRL)

Review Management Organization (RMO): Louisville District

RMO Contact: Matt Schueler, Chief, Civil Works - Planning, Programs, and Project Management Branch, 502-315-6890

Key Review Plan Dates

Date of RMO Endorsement of Review Plan:	25 Apr 2022
Date of LRL Approval of Review Plan:	03 May 2022
Date of Last Review Plan Revision:	None
Date of Review Plan Web Posting:	None

Milestone Schedule

	Scheduled	Actual	Complete
Tentatively Selected Plan:	22 JUN 22	(enter date)	(Yes/**No**)
Public Review of Draft Report:	14 JUL 22	(enter date)	(Yes/**No**)
Final Report Approval:	19 SEP 22	(enter date)	(Yes/**No)**

1. 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. Continuing Authorities Program (CAP). Section 14 of the Flood Control Act of 1946, as amended.

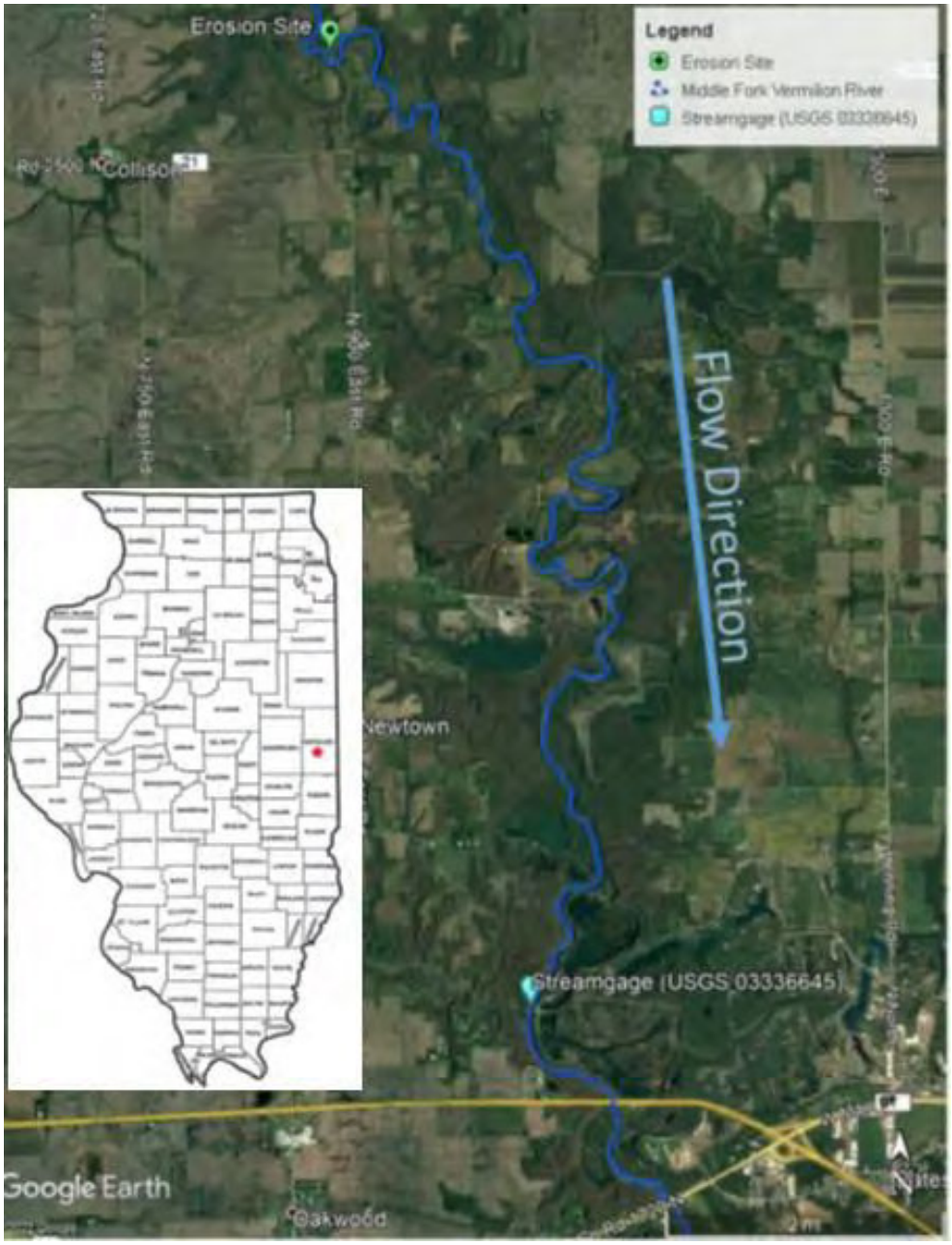
c) Study Description. The study was initiated to investigate measures that can address streambank erosion protection along the Middle Fork Vermilion River in Vermilion County, Illinois. Specifically, the project is located on the left bank of the Middle Fork Vermilion River at approximately 8.3 miles north of Oakwood, IL, upstream from the Highway 21 (a.k.a. North 900 East Road Bridge). The streambank along the Middle Fork Vermilion River is actively eroding and threatening to damage Hwy 21, which is currently only open to one way traffic with assistance from a temporary traffic control signal. The principal cause of the erosion is rapid drawdown and flooding of the Middle Fork Vermilion River. Approximately 300 feet of eroding bank is threatening the roadway with erosion continuing upstream an additional 300 feet as the river curves away from the road. Since 2015, approximately six (6) feet of bank have been lost per year. Based on time lapse observations provided in Google Earth, the minimum horizontal distance from the edge of the road to the bottom of the visible slope decreased from roughly 45-feet (ft) in 2005 to 18-ft in 2019. The primary impact of the streambank erosion is the adjacent roadway infrastructure and vehicle occupant safety. According to Vermillion County officials, approximately 250 vehicles traversed this segment of Highway 21 daily prior to closure (Illinois Department of Transportation – 2019). The road is an essential route for local farm traffic, school bus routes and emergency responders. Due to limited crossings of the Middle Fork Vermilion River in the county, vehicles experience increased delays with a 13.5-mile detour to the north and 20.5-mile detour to the south. At the current rate of erosion, Highway 21 is likely to close permanently to traffic by 2024 if no action is taken to stabilize the bank.

Based on the investigations conducted to support the Federal Interest Determination (FID) and the Feasibility Scoping Meeting (FSM), several preliminary alternatives and alternative combinations will be evaluated. Alternatives being considered include Stone Armor, Longitudinal Peaked Stone Toe Protection, Vertical Stabilization, Bendway Weirs, vegetative rip rap or other channel training structures. Th Non-Federal Sponsor for this study is the Vermilion County Highway Department in Vermilion County, Illinois.

The risks and consequences associated with the streambank failure to Highway 21 are threefold. The most serious risk is to vehicles and their occupants that are unaware of the failure and its impact to the road. The other two risks are environmental and economic. As the erosion occurs, a large amount of sediment is introduced into the Middle Fork Vermilion River, which in turn has a negative environmental impact on instream habitat and water clarity.

The level of design detail for the project is conceptual. Much of the geotechnical data will be furnished by the nonfederal Sponsor and validated by LRL Engineering Division for use in the study. Further in-depth efforts for this project will be conducted during the Design and Implementation Phase including a formal survey of the area, further confirmation of the composition of subsurface soils, compliance with Section 106 of the National Historic Preservation Act, and real estate efforts.

Figure 1: Vermilion County, Illinois Project Location



2. REVIEW EXECUTION PLAN

This section describes each level of review to be conducted. Based upon the factors discussed in Section 1, this study will undergo the following types of reviews:

District Quality Control. All decision documents (including data, analyses, environmental compliance documents, etc.) undergo DQC per LRL - District Quality Control (DQC) Procedures for Civil Works Planning Projects (https://qualtrax.usace.army.mil/Default.aspx?ID=56155). This internal review process covers basic science and engineering work products. It fulfills the project quality requirements of the Project Management Plan.

Agency Technical Review. ATR is performed by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. These teams will be comprised of certified USACE personnel. The ATR team lead will be from outside the home MSC. If significant life safety issues are involved in a study or project a safety assurance review should be conducted during ATR.

Cost Engineering Review. All decision documents shall be coordinated with the Cost Engineering Mandatory of Expertise (MCX). The MCX will assist in determining the expertise needed on the ATR team. The MCX will provide the Cost Engineering certification. The RMO is responsible for coordinating with the MCX for the reviews. These reviews typically occur as part of ATR.

Policy and Legal Review. All decision documents will be reviewed for compliance with law and policy. ER 1105-2-100, Appendix H and DPM 2019-01 provide guidance on policy and legal compliance reviews. These reviews ensure that report recommendations, supporting analyses and coordination comply with law and policy, and warrant approval. These reviews are not further detailed in this Review Plan.

Table 1 provides the schedules and costs for reviews. The specific expertise required for the teams are identified in later subsections covering each review. These subsections also identify requirements, special reporting provisions, and sources of more information.

Table 1: Levels of Review

Product(s) to undergo Review	Review Level	Start Date	End Date	Cost	Complete
Draft Detailed Report Summary (DPR) with Integrated Environmental Assessment (EA)	Initial DQC	15 Jun 2022	29 Jun 2022	$2,000	No
Draft DPR /EA	Legal Review	27 Jun 2022	11 Jul 2022	N/A	No
Draft DPR /EA	Public/ATR/LRL	14 Jul 2022	15 Aug 2022	$14,000	No
Draft DPR /EA	Final DQC (all comments resolved)	16 Aug 2022	17 Aug 2022	$1000	No
Final DPR /EA	Final Policy & Legal (LRL)	17 Aug 2022	30 Aug 2022	$1000	No
Final DPR /EA	Final Report Approval	19 September 2022			

a. DISTRICT QUALITY CONTROL

The home district shall manage DQC and will appoint a DQC Lead to manage the local review (see EC 1165-2-217, section 8.a.1). Table 2 identifies the required expertise for the DQC team.

Table 2: Required DQC Expertise

DQC Team Disciplines	Expertise Required
DQC Lead	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 and must have experience with Section 14 projects.
Biologist & Archaeologist	A senior professional with experience conducting environmental resource analysis in the CAP program.
Geotechnical Engineering	A senior professional with experience in design of streambank stabilization projects in the CAP program.
Hydrology & Hydraulic Engineering/Water Management	A senior professional with experience in conducting H&H analysis and writing climate change narratives in the CAP program. Team member will be experienced in design and construction of streambank protection projects. In addition, the Team member will be familiar cost estimating for similar civil works projects using MCACES.
Real Estate Specialist	A senior professional with experience in real estate analysis including betterments in the CAP program.

Documentation of DQC. DrChecks will be used to document all DQC comments, responses, and resolutions. Quality Control will be performed continuously throughout the study. A specific certification of DQC completion is required at the draft and final report stages, signed by the Chiefs of each discipline. Documentation of DQC should follow the District Quality Manual and the MSC Quality Management Plan. An example DQC Certification statement is provided in EC 1165-2-217, on page 19 (see Figure F), and Attachment 3 of this Review Plan.

Documentation of completed DQC will be provided to the ATR Team leader prior to initiating an ATR. The ATR team will examine DQC records and comment in the ATR report on the adequacy of the DQC effort. Missing or inadequate DQC documentation can result in delays to the start of other reviews (see EC 1165-2-217, section 9).

b. AGENCY TECHNICAL REVIEW

The ATR will assess whether the analyses are technically correct and comply with guidance and whether the report explains the analyses in a clear manner. An RMO manages ATR. The review is conducted by an ATR Team whose members are certified to perform reviews. Lists of certified reviewers are maintained by the various technical Communities of Practice (see EC 1165-2-217, section 9(h)(1)). Table 3 identifies the disciplines and required expertise for this ATR Team.

Table 3: Required ATR Team Expertise

ATR Team Disciplines	Expertise Required
Biologist	The ATR lead should be a senior professional preferably with experience in preparing Section 14 decision documents and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. The ATR Lead will also serve as the planning reviewer. The ATR Lead should be a senior water resources planner who possesses experiences with the NEPA process and whom also has extensive experience with formulation of CAP projects (especially Section 14 projects). The ATR Lead MUST be from outside LRD.
Geotechnical Engineering	A senior professional with experience in design of streambank stabilization projects in the CAP program.
Climate Change / Hydrology & Hydraulics	A senior professional with experience in conducting H&H analysis and writing climate change narratives in the CAP program.
Cost Engineering	Team member will be experienced in design and construction of streambank protection projects. In addition, the Team member will be familiar cost estimating for similar civil works projects using MCACES.

Documentation of ATR. DrChecks will be used to document all ATR comments, responses, and resolutions. Comments should be limited to those needed to ensure product adequacy. If a concern cannot be resolved by the ATR team and PDT, it will be elevated to the vertical team for resolution using the EC 1165-2-217 issue resolution process. Concerns can be closed in DrChecks by noting the concern has been elevated for resolution. The ATR Lead will prepare a Statement of Technical Review (see EC 1165-2-217, Section 9), for the draft report, certifying that review issues have been resolved or elevated. ATR may be certified when all concerns are resolved or referred to the vertical team and the ATR documentation is complete.

c. INDEPENDENT EXTERNAL PEER REVIEW

Type I IEPR.

Type I IEPR is managed outside of the USACE and conducted on studies. Type I IEPR panels assess the adequacy and acceptability of the economic and environmental assumptions and projections, project evaluation data, economic analysis, environmental analyses, engineering analyses, formulation of alternative plans, methods for integrating risk and uncertainty, models used in the evaluation of environmental impacts of proposed projects, and biological opinions of the project study.

Decision on Type I IEPR. CAP Section 14 projects are excluded from a Type I IEPR unless an EIS is necessary (EP 1105-2-58 and EC 1165-2-217). There are no known consequences of non-performance of the Type I IEPR on project economics or the environmental and social well-being of the public. Additionally, this project is limited in scope and would not significantly benefit from Type I IEPR.

Products to Undergo Type I IEPR. This project will not undergo IEPR.

Type II IEPR.

The second kind of IEPR is Type II IEPR. These Safety Assurance Reviews are managed outside of the USACE and are conducted on design and construction for hurricane, storm and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life.

Decision on Type II IEPR. Type II IEPR Safety Assurance Review (SAR) is required only if life safety is a concern. This project does not meet the requirements for a mandatory Type II IEPR (EC 1165-2-217). The project does not represent a significant threat to human life; it is not controversial; and there has been no request for a Type II IEPR by a governor or the head of a Federal or state agency. There are no changes in life safety risk based on implementation of this streambank stabilization project, and project failure would not result in any life safety issues. This determination will be coordinated with the LRL District Chief of Engineering and the Type II review is not expected (see Attachment 3).

d. MODEL CERTIFICATION OR APPROVAL

EC 1105-2-412 mandates the use of certified or approved models for all planning activities to ensure the models are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. Planning models are any

models and analytical tools used to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives and to support decision making. The use of a certified/approved planning model does not constitute technical review of a planning product. The selection and application of the model and the input and output data is the responsibility of the users and is subject to DQC, ATR, and IEPR.

Planning Models. No planning models are anticipated to be used in the development of the decision document:

EC 1105-2-412 does not cover engineering models used in planning. The responsible use of well-known and proven USACE developed and commercial engineering software will continue. The professional practice of documenting the application of the software and modeling results will be followed. The USACE Scientific and Engineering Technology Initiative has identified many engineering models as preferred or acceptable for use in studies. These models should be used when appropriate. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR.

Table 6: 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
MCACES	Microcomputer-Aided Cost Estimation System; Used to generate detailed cost estimates for each alternative.	Approved
HEC-RAS, 5.0.7	Software to simulate hydraulic processes in the study area.	HH&C COP preferred

e. POLICY AND LEGAL REVIEW

Policy and legal compliance reviews for draft and final planning decision documents are delegated to the District (see CELRD-PDP, Delegation of Decision-Making and Approval Authority for Specified Elements of the Continuing Authorities Program (CAP) to the Louisville District 16 December 2020).

(i) Policy Review.

The policy review is conducted by the LRL Chief of Planning and Policy (Policy Reviewer).

- The Policy Reviewer will be invited to participate in key meetings during the

development of decision documents as well as Milestone meetings. These engagements may include In-Progress Reviews, Issue Resolution Conferences, or other vertical team meetings plus the milestone events.

- The input from the Policy Reviewer should be documented in a Memorandum for the Record (MFR) produced for each engagement with the team. The MFR should be distributed to all meeting participants.

- In addition, the Policy Reviewer may choose to capture some of the policy review input in a risk register if appropriate. These items should be highlighted at future meetings until the issues are resolved. Any key decisions on how to address risk or other considerations should be documented in an MFR.

(ii) Legal Review.

Representatives from the LRL Office of Counsel will be assigned to participate in reviews. The LRL Chief of Planning and Policy or Planning Section Chief will coordinate membership and participation with the office chiefs.

- In some cases, legal review input may be captured in the MFR for the particular meeting or milestone. In other cases, a separate legal memorandum may be used to document the input from the Office of Counsel.

- Each participating Office of Counsel will determine how to document legal review input.

ATTACHMENT 1: TEAM ROSTERS *

PROJECT DELIVERY TEAM			
Name	Office	Position	Phone Number
[redacted]	Planning	Project Manager	[redacted]
	H&H Engineering	PE/A	
	Geotechnical	Engineer	
	Civil Engineering	Engineer	
	Cost	Engineer	
	Real Estate	Specialist	
	Environmental	Biologist	
	Cultural Resources	Archaeologist	
	Office of Counsel	Assistant District Counsel	
	Customer	Customer	

DISTRICT QUALITY CONTROL TEAM			
Name	Office	Position	Phone Number
[redacted]	CELRL PMC-P	Planning Team Lead	[redacted]
	CELRL PMC-P	Wildlife Biologist	
	CELRL-ED-T-G	Hydrolaulics and Hydrology Eng.	
	CELRL-EDT-H	Geotechnical Design Section	
	CELRL-ED-M-C	Cost Engineering	
	CELRL-REC	Real Estate Division	

AGENCY TECHNICAL REVIEW TEAM			
Name	Office	Position	Phone Number
[redacted]	CEMVP-PDC	Biologist	[redacted]
Geotechnical Engineering	TBD		
Climate Change / Hydrology & Hydraulics	TBD		
Cost Engineering	TBD		

*Team lists above are subject to change.

ATTACHMENT 2: STATEMENT OF TECHNICAL REVIEW FOR DECISION DOCUMENTS

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the Vermilion County, Illinois CAP Section 14 Streambank Stabilization Project. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-214. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrChecks[SM].

_____ _____

[redacted]
ATR Team Lead
CEMVP-PDC

Date

_____ _____

[redacted]
Project Manager
CELRL PMC-P

Date

ATTACHMENT 3: CERTIFICATION OF RISK INFORMED DECISION FOR TYPE II IEPR

VERMILION COUNTY, ILLINOIS, SECTION 14 EMERGENCY STREAMBANK AND STABILIZATION FEASILBIILTY STUDY

CERTIFICATION OF RISK INFORMED DECISION FOR TYPE II IEPR

Type II IEPR Safety Assurance Review (SAR) is required only if life safety is a concern. In accordance with EC 1165-2-217, the feasibility study, which consists primarily of streambank stabilization and protection, was evaluated for life safety risks. At this time, the subject study does not meet the requirement for mandatory Type II IEPR. The project does not represent a significant threat to human life; it is not controversial; and there has been no request for a Type II IEPR by the Governor of Illinois or the head of a Federal or State agency. There are no changes in life safety risk based on implementation of this streambank stabilization project and project failure would not result in any life safety issues. I have determined that a Type II IEPR is not required for this project.

[redacted]

Chief, Engineering Division
CELRL-ED

2/8/2022
Date

ATTACHMENT 4: STATEMENT OF DISTRICT QUALITY CONTROL

PROJECT NAME
PROJECT AUTHORITY
CERTIFICATION OF DISTRICT QUALITY CONTROL

1. Statement of Quality Control – Completion of District Quality Control

District Quality Control (DQC) review has been completed for the *Vermilion County, Illinois, Section 14*. DQC was conducted to comply with the requirements of EC 1165-2-217. During the DQC, compliance with established policy, principles and procedures, utilizing justified and valid assumptions, was verified. This included review of assumptions, methods, procedures and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the results, including whether the product meets the customer's need consistent with law and existing US Army Corps of Engineers policy.

2. Summary of DQC Review Comments

3. Certification

_____ _____

[redacted] Section
CELRL-PMC-P

_____ _____
[redacted] Date
Project Manager
CELRL-PMC-P

_____ _____
[redacted] Date
Chief, Planning Section
CELRL-PMC-P

_____ _____

[redacted]
Geotechnical Engineering
CELRL-ED-T-G

Date

_____ _____

[redacted]
[redacted]/Hydraulics
CELRL-EDT-H

[redacted]

_____ _____

[redacted]
Cost Engineering
CELRL-ED-M-C

Date

_____ _____

[redacted]
Real Estate
CELRL-RE-C

Date

ATTACHMENT 5: REVIEW PLAN REVISIONS LOG

Revision Date	Description of Change	Page / Paragraph Number

ATTACHMENT 6: 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