



DEPARTMENT OF THE ARMY  
U.S. ARMY ENGINEER DIVISION, GREAT LAKES AND OHIO RIVER  
CORPS OF ENGINEERS  
550 MAIN STREET  
CINCINNATI, OH 45202-3222

CELRD-PD-G

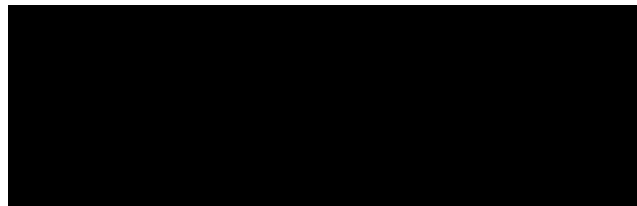
23 May 13

MEMORANDUM FOR Commander, U.S. Army Engineer District, Buffalo, (Attn: David Romano, CELRB-PM-P), 1776 Niagara Street, Buffalo, NY 14207-3199

SUBJECT: Decision Document Review Plan, Little Cuyahoga River, Akron, Ohio, Section 206

1. The attached decision document Review Plan (RP) for Little Cuyahoga River was presented to the Great Lakes and Ohio River Division for approval in accordance with EC 1165-2-214 "Civil Works Review" dated 15 Dec 2012.
2. The objective of the project will be to facilitate restoration of approximately 7.6 miles of the Little Cuyahoga River in Akron, Ohio. The Little Cuyahoga River has numerous impairments including degraded fish and macroinvertebrate habitat and water quality, streambank erosion, sediment loading, and contaminated sediment. These impairments have led to the entire stretch of the Little Cuyahoga River failing to attain the biological criteria for the Ohio Environmental Protection Agency warm water habitat aquatic life use designation. This study will address restoring a section of degraded riverine habitat. Alternatives include streambank erosion control measures and restoration measures which would include the expansion of the riparian buffer, the removal of understory growth, and placement of structures in portions of the river which would provide fish refuge and spawning areas.
3. The RP defines the scope and level of peer review for the activities to be performed for the subject project. The USACE LRD Review Management Organization (RMO) has reviewed the attached RP and concurs that it describes the scope of review for work phases and addresses all appropriate levels of review consistent with the requirements described in EC 1165-2-214.
4. I concur with the recommendations of the RMO and approve the enclosed RP for the Little Cuyahoga River.
5. The District is requested to post the RP to its website. Prior to posting, the names of all individuals identified in the RP and the dollar values of all project costs should be removed.
6. If you have any questions please contact [REDACTED], CELRD-PDP, at [REDACTED], or [REDACTED], CELRD-PDG, at [REDACTED].

Encl  
Review Plan





REPLY TO  
ATTENTION OF

## DEPARTMENT OF THE ARMY

BUFFALO DISTRICT, CORPS OF ENGINEERS  
1776 NIAGARA STREET  
BUFFALO, NEW YORK 14207-3199

CELRB-PM-PL

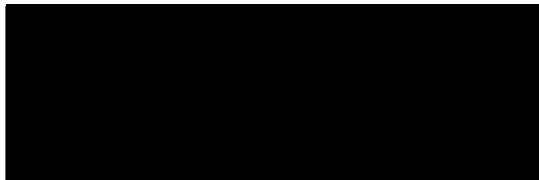
4 Jan 2013

MEMORANDUM FOR Commander, U.S. Army Division, Great Lakes and Ohio River,  
ATTN: CELRD-CM (Ms. Pauline Thorndike), 550 Main Street RM 10524, Cincinnati, OH  
45202-3222

SUBJECT: CAP Section 206, Little Cuyahoga River, Akron, OH Review Plan

1. The plan was reviewed by CELRB-PM-PA/Mr. [REDACTED] PMP. It has been determined by [REDACTED] that the documentation is sufficient for submittal to LRD for review and approval.
2. Per Director of Civil Works' Policy Memorandum #1, Continuing Authorities Program Planning Process Improvements, 19 Jan 2011, Section 206 project do not require IEPR waivers.
3. The point of contact for this subject is [REDACTED] at [REDACTED] or [REDACTED]

Encl  
Review Plan



**DECISION DOCUMENT REVIEW PLAN  
USING THE PROGRAMMATIC REVIEW PLAN MODEL  
for  
Continuing Authorities Program  
Section 14, 107, 111, 204, 206, 208 and 1135 Projects**

Section 206 Little Cuyahoga River, Akron, Ohio

Feasibility Report

Buffalo District

**MSC Approval Date: Pending  
Last Revision Date: 11 Dec 2012**



**US Army Corps  
of Engineers ®**

**DECISION DOCUMENT REVIEW PLAN  
USING THE PROGRAMMATIC REVIEW PLAN MODEL**

Section 206 Little Cuyahoga River, Akron, OH  
Feasibility Report

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## 1. PURPOSE AND REQUIREMENTS

- a. **Purpose.** This Review Plan defines the scope and level of peer review for the **Section 206 Little Cuyahoga River** Feasibility Study. The project is located in Akron, OH, the county seat of Summit County. It is located in the Great Lakes Region approximately 39 miles south of Lake Erie and the city of Cleveland, OH.

Section 206 of the Water Resources Development Act of 1996, Public Law 104-305, authorizes the Secretary of the Army to carry out a program of aquatic ecosystem restoration with the objective of restoring degraded ecosystem structure, function, and dynamic processes to a less degraded, more natural condition considering the ecosystem's natural integrity, productivity, stability and biological diversity. This authority is primarily used for manipulation of the hydrology in and along bodies of water, including wetlands and riparian areas. This authority also allows for dam removal. It is a Continuing Authorities Program (CAP) which focuses on water resource related projects of relatively smaller scope, cost and complexity. Traditional USACE civil works projects are of wider scope and complexity and are specifically authorized by Congress. The Continuing Authorities Program is a delegated authority to plan, design, and construct certain types of water resource and environmental restoration projects without specific Congressional authorization.

- b. **Applicability.** This review plan is based on the model Programmatic Review Plan for Section 14, 107, 111, 204, 206, 208 and 1135 project decision documents, which is applicable to projects that do not require Independent External Peer Review (IEPR), as defined in ER 1165-2-209 Civil Works Review Policy. A Section 14, 107, 111, 204, 206, 208 and 1135 project does not require IEPR if ALL of the following specific criteria are met:

- The project does not involve a significant threat to human life/safety assurance;
- The total project cost is less than \$45 million;
- There is no request by the Governor of an affected state for a peer review by independent experts;
- The project does not require an Environmental Impact Statement (EIS),
- The project/study is not likely to involve significant public dispute as to the size, nature, or effects of the project;
- The project/study is not likely to involve significant public dispute as to the economic or environmental cost or benefit of the project;
- The information in the decision document or anticipated project design is not likely to be based on novel methods, involve the use of innovative materials or techniques, present complex challenges for interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices;
- The project design is not anticipated to require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design construction schedule; and
- There are no other circumstances where the Chief of Engineers or Director of Civil Works determines Type I IEPR is warranted.

If any of the above criteria are not met, the model Programmatic Review Plan is not applicable and a study specific review plan must be prepared by the home district, coordinated with the appropriate Planning Center of Expertise (PCX) and approved by the home Major Subordinate Command (MSC) in accordance with EC 1165-2-209.

Applicability of the model Programmatic Review Plan for a specific project is determined by the home MSC. If the MSC determines that the model plan is applicable for a specific study, the MSC Commander may approve the plan (including exclusion from IEPR) without additional coordination with a PCX or Headquarters, USACE. The initial decision as to the applicability of the model plan should be made no later than the Federal Interest Determination (FID) milestone (as defined in Appendix F of ER 1105-2-100, F-10.e.1) during the feasibility phase of the project. A review plan for the project will subsequently be developed and approved prior to execution of the Feasibility Cost Sharing Agreement (FCSA) for the study. In addition, per EC 1165-2-209, the home district and MSC should assess at the Alternatives Formulation Briefing (AFB) whether the initial decision on Type I IEPR is still valid based on new information. If the decision on Type I IEPR has changed, the District and MSC should begin coordination with the appropriate PCX immediately.

This review plan does not cover implementation products. A review plan for the design and implementation phase of the project will be developed prior to approval of the final decision document in accordance with EC 1165-2-209.

#### c. References

- (1) Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Jan 2010
- (2) Director of Civil Works' Policy Memorandum #1, Continuing Authorities Program Planning Process Improvements, 19 Jan 2011
- (3) EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 2011
- (4) Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006
- (5) ER 1105-2-100, Planning Guidance Notebook, Appendix F, Continuing Authorities Program, Amendment #2, 31 Jan 2007
- (6) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007
- (7) LRD Regional Business Process Manual – QC/QA Procedures for Study/ Design Phase

**d. Requirements.** This review plan was developed in accordance with EC 1165-2-209, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction, and operation, maintenance, repair, replacement and rehabilitation (OMRR&R). The EC outlines four general levels of review: District Quality Control/Quality Assurance (DQC), Agency Technical Review (ATR), Independent External Peer Review (IEPR), and Policy and Legal Compliance Review. In addition to these levels of review, decision documents are subject to cost engineering review and certification (per EC 1165-2-209) and planning model certification/approval (per EC 1105-2-412).

## 2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

The RMO is responsible for managing the overall peer review effort described in this Review Plan. The RMO for decision documents is typically either a Planning Center of Expertise (PCX) or the Risk Management Center (RMC), depending on the primary purpose of the decision document. The RMO for the peer review effort described in this Review Plan is the Ecosystem Restoration Planning Center of Expertise (ECO-PCX). The ECO-PCX point of contact is Jodi Creswell, Mississippi Valley Division.

The RMO will coordinate with the Cost Engineering Directory of Expertise (DX) to ensure the appropriate expertise is included on the review teams to assess the adequacy of cost estimates, construction schedules and contingencies.

### 3. STUDY INFORMATION

- a. **Decision Document.** The Section 206 Little Cuyahoga River Feasibility Study, located in Summit County NY, is authorized by Section 206 of the Water Resources Development Act, as amended by Section 210 of the Water Resources Development Act of 1999 and Section 2020 of the Water Resources Development Act of 2007. Section 206 of the Water Resources Development Act of 1996, Public Law 104-305, authorizes the Secretary of the Army to carry out a program of aquatic ecosystem restoration with the objective of restoring degraded ecosystem structure, function, and dynamic processes to a less degraded, more natural condition considering the ecosystem's natural integrity, productivity, stability and biological diversity. This authority is primarily used for manipulation of the hydrology in and along bodies of water, including wetlands and riparian areas. This authority also allows for dam removal. The decision document will be a Detailed Project Report (DPR) and associated Environmental Assessment (EA). The purpose of the decision document is to identify the tasks, schedule, costs, and responsibility required to implement measures to restore aquatic habitat and restore water quality to the Little Cuyahoga River. Assuming a project can be developed that meets the Federal interest for National Ecosystem Restoration, and a non-Federal sponsor is found willing and capable of sponsoring the project, the Detailed Project Report along with accompanying documents will be ultimately approved by the Lakes and Rivers Division (LRD) Commander.

#### **Study/Project Description.**

No Feasibility Cost Sharing Agreement (FCSA) was required for the Little Cuyahoga River Section 206 Aquatic Ecosystem Restoration Project. The cost for the Feasibility Study will be 100% Federally financed, per the Continuing Authorities Program transition guidance in ER 1105-2-100, since feasibility work was begun before January 1, 2006.

The objective of the project will be to facilitate restoration of approximately 7.6 miles of the Little Cuyahoga River in Akron, Ohio. This is expected to be achieved primarily with the improvement of shoreline stabilization structures and implementation of aeration and fish habitat structures to improve the aquatic habitat and overall ecosystem restoration of the project area. The proposed project area is located in the city of Akron, Summit County, Ohio. Akron is located at the confluence of the Cuyahoga and Little Cuyahoga Rivers. The Little Cuyahoga is about 17.4 miles long and has a drainage basin of about 69 square miles at its confluence with the Cuyahoga River. The potential restoration reaches are located between River Miles (RM) 2.02 and RM 9.79 within the City of Akron. See Figure 1 for a project area map.

The Little Cuyahoga River has numerous impairments including degraded fish and macroinvertebrate habitat and water quality, streambank erosion, sediment loading, and contaminated sediment. These impairments have led to the entire stretch of the Little Cuyahoga River failing to attain the biological criteria for the Ohio Environmental Protection Agency warm water habitat aquatic life use designation. This study will address restoring an almost two mile long section of degraded riverine habitat. Alternatives include streambank erosion control measures and restoration measures which would

include the expansion of the riparian buffer, the removal of understory growth, and placement of structures in portions of the river which would provide fish refuge and spawning areas.

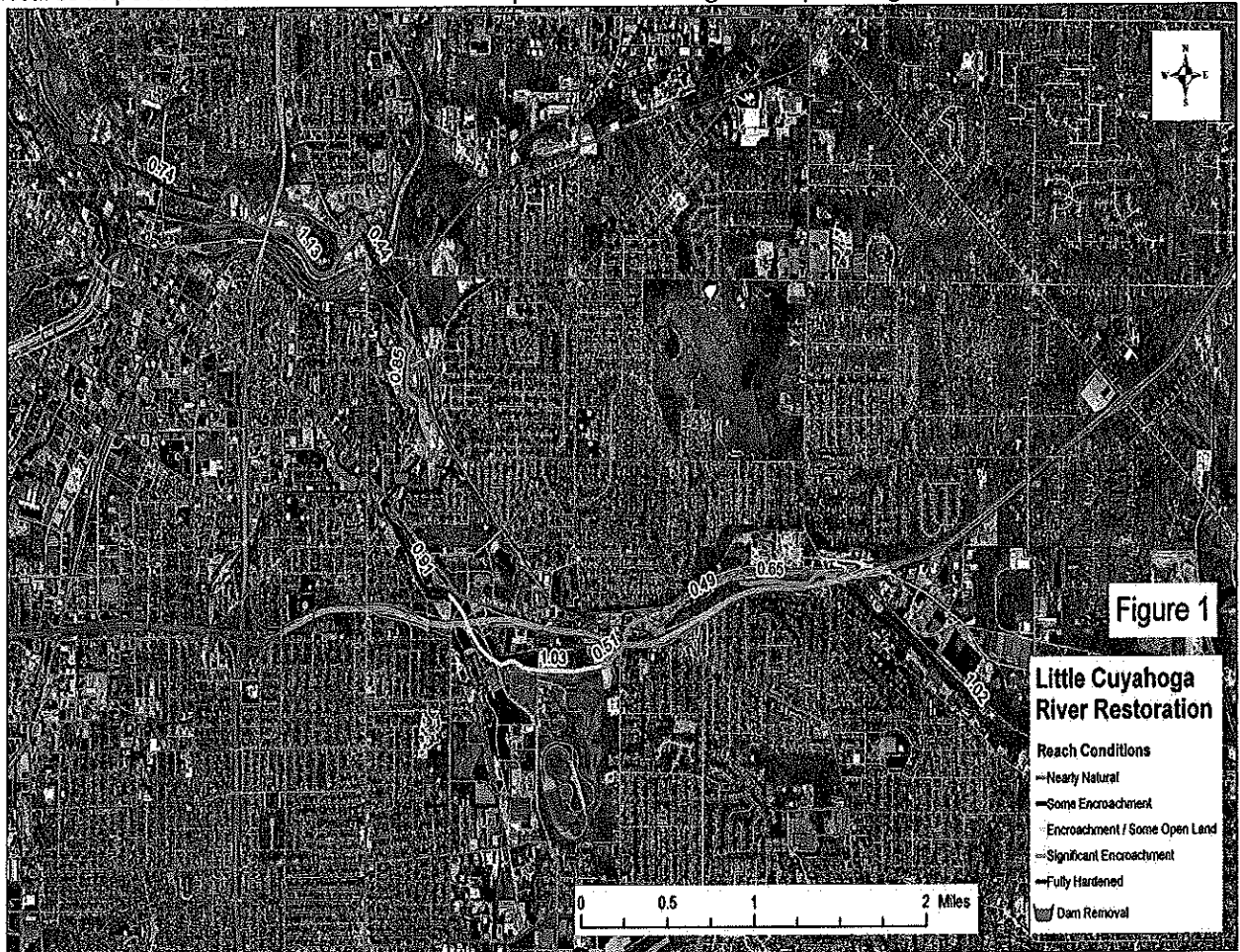


Figure 1: Little Cuyahoga River

**b. Factors Affecting the Scope and Level of Review.**

**Challenges:** The measures involved in restoring and protecting the river is not expected to generate significant technical, institutional, or social challenges. The Buffalo District has in-house expertise and experience constructing measures such as those that will be used for this project.

**Project Risks:** A detailed Risk Management Analysis for this study has been produced as Appendix D of the Project Management Plan (PMP), included as Attachment 5. The major risk is that environmental outputs may not be achieved to the extent desired. Following construction, areas disturbed by construction activities are at an elevated risk of invasive species establishment. In addition, unfavorable weather or physical conditions may cause plant mortality to be greater than expected, thus limiting the establishment of native cover types. An adaptive management plan will be developed and implemented as a method to mitigate invasive species establishment, plant mortality, and other unforeseen ecological challenges.



**Life Safety:** The project will neither be justified by life safety or will involve significant threat to human life/safety assurance. There is no reason to believe that any measures involved in the project are associated with a significant threat to human life.

**Governor Request for Peer Review:** The Governor **has not** requested peer review by independent experts.

**Public Dispute:** The project/study is not anticipated to be controversial nor result in significant public dispute as to the size, nature, or effects of the project or to the economic or environmental costs or benefits of the project.

**Project Design/Construction:** The anticipated project design will take advantage of prevailing practices and methodologies. It is not expected to be based on novel methods or involve the use of innovative techniques, or present complex challenges for interpretation. It also not anticipated that the project will require unique construction sequencing or redundancy.

- c. **In-Kind Contributions.** Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC, ATR, and IEPR. There are no in-kind products and analyses to be provided by the non-Federal sponsor, because the project is grandfathered (i.e., 100% Federal cost for the Feasibility study).

#### 4. DISTRICT QUALITY CONTROL (DQC)

All decision documents (including supporting data, analyses, environmental compliance documents, etc.) shall undergo DQC. DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). The home district shall manage DQC. Documentation of DQC activities is required and should be in accordance with the Quality Manual of the District and the home MSC.

**Documentation of DQC.** District Quality Control will be completed following the guidelines set forth in Section 7.2 District Quality Control (DQC) and Agency Technical Review (ATR) of the 14 February 2011 CELRD Quality Management System (QMS) Document ID: 4921: QC / QA Procedures for Civil Works.

Following the completion of the DQC review by the PDT members and their respective counterparts as necessary, the PDT will sign a certification sheet documenting DQC. The Chief of Planning will also sign a certification sheet documenting that District Quality Control has been completed.

##### a. Products to Undergo DQC.

- (1) Review Plan
- (2) Alternative Formulation Briefing Documentation
- (3) Draft Feasibility Study Report and Draft Environmental Assessment Documentation
- (4) Final Feasibility Study Report and Final Environmental Assessment Documentation

**b. Required DQC Expertise.** Additional DQC of all products will be accomplished by senior (GS-12 or above) staff not directly involved in preparation of the products from the following disciplines:

- (1) Planning
- (2) Programs and Project Management
- (3) Project Management
- (4) Economics
- (5) Hydraulics and Hydrology Engineering
- (6) Geotechnical/Design
- (7) Cost Engineering
- (8) Environmental
- (9) Office of Counsel
- (10) Real Estate

## **5. AGENCY TECHNICAL REVIEW (ATR)**

ATR is mandatory for all decision documents (including supporting data, analyses, environmental compliance documents, etc.). The objective of ATR is to ensure consistency with established criteria, guidance, procedures, and policy. 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 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 and may be supplemented by outside experts as appropriate. The ATR team lead will be from outside the home MSC.

### **a. Products to Undergo ATR.**

Supporting analysis and documents, including but not limited to the following will also be subject to Agency Technical Review:

- (1) Economic analysis and appendices
- (2) Cost estimates
- (3) Geotechnical analysis
- (4) Environmental Outputs
- (5) Supporting environmental analysis (cultural resources, resource inventories, etc.)

Supporting Analysis and Documents provided as work in-kind will also be subject to Agency Technical Review.

**b. Required ATR Team Expertise.** The expertise/disciplines represented on the ATR team should reflect the significant disciplines involved in the planning effort. The PDT has determined that the expertise needed for review shall include Environmental Planning and Analysis, Inland Navigation & Economics, Coastal Engineering, Geotechnical Engineering, and Real Estate. The roster of the ATR and the expertise required is outline in the table that follows.

Name	Organization	Discipline	Expertise Required
	CENWS	ATR Lead	The ATR lead should be a senior professional with extensive experience in preparing Civil Works decision documents and conducting ATR's. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process.
	CENWS	Environmental Analysis	Team member will be experienced in the NEPA process and analysis, and have a biological or environmental background that is familiar with the project area and ecosystem restoration. Team member should be familiar lighthouse or other significant cultural/historic resource shoreline protection project. Should also be familiar with models used for assessing ecological outputs.
	CELRC-PM-PL-E	Planning	The Planning reviewer should be a senior water resources planner with experience in the formulation of Ecosystem Restoration Projects, specifically in urban areas.
	CENWS	Economics	Technical specialist for economic evaluation. Familiar with coastal storm damage economic benefit analysis.
	CELRH-EC-DC	Civil	Team member will be experienced in the design and construction of CAP ecosystem restoration projects.
	CENWW	Cost Engineering DX	Team member will be experienced in design and construction Ecosystem Restoration projects. In addition the Team member will be familiar cost estimating for similar civil works projects using MCACES.
	CENWS	Hydrology & Hydraulics	Urban stream restoration. HEC-RAS experience.
	CELRE-RE	Real Estate	Team member will be experienced with lands, easements, rights-of-way, relocation, and disposal real estate processes.

c. **Documentation of ATR.** DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. Comments should be limited to those that are required to ensure adequacy of the product. The four key parts of a quality review comment will normally include:

- (1) The review concern – identify the product's information deficiency or incorrect application of policy, guidance, or procedures;
- (2) The basis for the concern – cite the appropriate law, policy, guidance, or procedure that has not be properly followed;
- (3) The significance of the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and
- (4) The probable specific action needed to resolve the concern – identify the action(s) that the reporting officers must take to resolve the concern.

In some situations, especially addressing incomplete or unclear information, comments may seek clarification in order to then assess whether further specific concerns may exist.

The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical team coordination (the vertical team includes the district, RMO, MSC, and HQUSACE), and the agreed upon resolution. If an ATR concern cannot be satisfactorily resolved between the ATR team and the PDT, it will be elevated to the vertical team for further resolution in accordance with the policy issue resolution process described in either ER 1110-1-12 or ER 1105-2-100, Appendix H, as appropriate. Unresolved concerns can be closed in DrChecks with a notation that the concern has been elevated to the vertical team for resolution.

At the conclusion of each ATR effort, the ATR team will prepare a Review Report summarizing the review. Review Reports will be considered an integral part of the ATR documentation and shall:

- Identify the document(s) reviewed and the purpose of the review;
- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions;
- Identify and summarize each unresolved issue (if any); and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

ATR may be certified when all ATR concerns are either resolved or referred to the vertical team for resolution and the ATR documentation is complete. The ATR Lead will prepare a Statement of Technical Review certifying that the issues raised by the ATR team have been resolved (or elevated to the vertical team). A Statement of Technical Review should be completed, based on work reviewed to date, for the AFB, draft report, and final report. A sample Statement of Technical Review is included in Attachment 2.

## **6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)**

IEPR may be required for decision documents under certain circumstances. IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. A risk-informed decision, as described in EC 1165-2-209, is made as to whether IEPR is appropriate. IEPR panels will consist of independent, recognized experts from outside of the USACE in the appropriate disciplines, representing a balance of areas of expertise suitable for the review being conducted. There are two types of IEPR:

- Type I IEPR. Type I IEPR reviews are managed outside the USACE and are conducted on project 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. Type I IEPR will cover the entire

decision document or action and will address all underlying engineering, economics, and environmental work, not just one aspect of the study. For decision documents where a Type II IEPR (Safety Assurance Review) is anticipated during project implementation, safety assurance shall also be addressed during the Type I IEPR per EC 1165-2-209.

- Type II 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. Type II IEPR panels will conduct reviews of the design and construction activities prior to initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule. The reviews shall consider the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health safety and welfare.
- a. **Decision on IEPR.** Based on the criteria set forth in EC1165-2-209, the proposed study will not require Type I or Type II IEPR. The project study does not pose a significant threat to human life; the estimated total cost of the project is less the \$45 million; the governor of the State has not requested a peer review by independent experts; and the DCW or the Chief of Engineers has not determined the project study to be controversial in nature or to result in significant public dispute over either the size, nature, or effects of the project or the economic or environmental costs or benefits of the project.
  - b. **Products to Undergo Type I IEPR.** Not Applicable
  - c. **Required Type I IEPR Panel Expertise.** Not Applicable
  - d. **Documentation of Type I IEPR.** Not Applicable.

## **7. POLICY AND LEGAL COMPLIANCE REVIEW**

All decision documents will be reviewed throughout the study process 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 reports and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the home MSC Commander. DQC and ATR augment and complement the policy review processes by addressing compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of findings in decision documents.

## **8. COST ENGINEERING DIRECTORY OF EXPERTISE (DX) REVIEW AND CERTIFICATION**

All decision documents shall be coordinated with the Cost Engineering DX, located in the Walla Walla District. The DX will assist in determining the expertise needed on the ATR team and Type I IEPR team (if required) and in the development of the review charge(s). The DX will also provide the Cost Engineering DX certification. The RMO is responsible for coordination with the Cost Engineering DX.

## 9. MODEL CERTIFICATION AND APPROVAL

The approval of planning models under EC 1105-2-412 is not required for CAP projects. MSC Commanders are responsible for assuring 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. Therefore, the use of a certified/approved planning model is highly recommended should be used whenever appropriate. Planning models are defined as any models and analytical tools that planners use 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 selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC and ATR.

The responsible use of well-known and proven USACE developed and commercial engineering software will continue and the professional practice of documenting the application of the software and modeling results will be followed. As part of the USACE Scientific and Engineering Technology (SET) Initiative, many engineering models have been identified as preferred or acceptable for use on Corps studies and these models should be used whenever 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 and ATR.

- a. **Planning Models.** The following planning models are anticipated to be used in the development of the decision document:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Certification / Approval Status
IWR-PLAN	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. IWRPLAN 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 effects alternatives.	Certified
HEC-RAS	The Hydrologic Engineering Center's River Analysis System (HEC-RAS) program provides the capability to perform one-dimensional steady and unsteady flow river hydraulics calculations. It was used in this study to determine: 1) baseline and with project conditions for developing and evaluating restoration alternatives; 2) if the recommended plan would impact base flood elevations; and 3) ecosystem connectivity of existing and recommended plan during low flows.	Certified
HEP	The Habitat Evaluation Process (HEP) is a habitat based approach for assessing environmental impacts of proposed water and land resource development projects. The method can be used to document the quality and quantity of available habitat for selected wildlife species. The procedure provides information for two general types of wildlife habitat comparisons: the relative value of different areas at the same point in time; and the	Certified

	relative value of the same areas at future points in time. By combining the two types of comparisons, the impact of proposed or anticipated land and water use changes on wildlife habitat can be quantified. Per the certified HEP models developed by the USFWS, specific cover types for each species as well as minimum habitat requirements are included in the model description. The Project Area was evaluated in order to determine if the minimum habitat requirements are present and if the specific cover types for each species are also present. The potential for achieving the desired cover type and minimum habitat area through restoration activities was also evaluated. Appendix E documents the results of the HEP analysis.	
HSI	A Habitat Suitability Index is a numerical index that represents the capacity of a given habitat to support a selected species. These models are based on hypothesized species-habitat relationships rather than statements of proven cause and effect relationships. HSI model results represent the interactions of the habitat characteristics and how each habitat relates to a given species. Species Indices from USFWS blue book do not require a separate USACE approval. The following HSIs will be used for this study: yellow warbler, great blue heron, hairy woodpecker, beaver, marsh wren and muskrat.	<b>Certified</b>
QHEI	The Qualitative Habitat Evaluation Index gives an estimate of the suitability of a stream segment to meet warmwater habitat for aquatic organisms. Segment boundaries were established in the field by using bridges that traverse the river or if a change in the vegetative character of the riparian zone was observed.	<b>Certified</b>

b. **Engineering Models.** The following engineering models are anticipated to be used in the development of the decision document:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Approval Status
MII	Microcomputer-Aided Cost Estimation System; Used to generate detailed cost estimates for each alternatives.	Approved

**10. REVIEW SCHEDULES AND COSTS**

a. **ATR Schedule and Cost.** The following Table contains the initial estimates for the ATR schedule and cost as determined by the Buffalo District PDT. It is subject to further coordination and negotiation with the vertical team, ATR Team, and the relevant Planning Centers of Expertise.

ATR Cost

- a) ATR Lead - [REDACTED]
- b) Plan Formulation/Environmental Specialist - [REDACTED]
- c) Economist - [REDACTED]
- d) Real Estate Specialist - [REDACTED]
- e) Civil Engineer with Geotech and Design experience - [REDACTED]
- f) Hydraulic / Hydrologic Engineer - [REDACTED]
- g) Cost Estimator - [REDACTED]

TOTAL ANTICIPATED ATR COST = [REDACTED]

b. **Type I IEPR Schedule and Cost.** Not Applicable

- a. **Model Certification/Approval Schedule and Cost.** For decision documents prepared under the model Programmatic Review Plan, use of existing certified or approved planning models is encouraged. Where uncertified or unapproved model are used, review of the model for use will be accomplished through the ATR process. The ATR team should apply the principles of EC 1105-2-412 during the ATR to ensure the model is theoretically and computationally sound, consistent with USACE policies, and adequately documented. If specific uncertified models are identified for repetitive use within a specific district or region, the appropriate PCX, MSC(s), and home District(s) will identify a unified approach to seek certification of these models.

## **11. PUBLIC PARTICIPATION**

A stakeholders meeting involving project sponsors, agencies, organizations, and the USACE was held on March 15, 2011 in the City of Akron. A total of 18 individuals attended the meeting. The purpose of the meeting was to introduce the project to stakeholders, to discuss the project purpose and objectives, determine what additional baseline conditions information may be available, and to review project conceptual plans for restoration. A range of comments were received at the meeting consisting of identifying sources of additional information, importance of the railroads to the area, and the potential need to complete additional historic (Section 106) investigations. Also, participants expressed interest in the project complementing the experience of Cuyahoga Valley Scenic Railroad riders. The CVSR traverses the project area from north to south during the summer months. Overall participants expressed strong support for the project in light of other restoration initiatives completed in the Little Cuyahoga River. It is anticipated that as part of the completion of NEPA documentation, additional Public Involvement opportunities will be provided and will be documented in the Environmental Assessment. Additional stakeholder meeting to present the recommended plan will occur after completion of the AFB.

## **12. REVIEW PLAN APPROVAL AND UPDATES**

The home MSC Commander is responsible for approving this review plan and ensuring that use of the Model Programmatic Review Plan is appropriate for the specific project covered by the plan. The review plan is a living document and may change as the study progresses. The home district is responsible for keeping the review plan up to date. Minor changes to the review plan since the last MSC Commander approval are documented in Attachment 3. Significant changes to the review plan (such as changes to the scope and/or level of review) should be re-approved by the MSC Commander following the process used for initially approving the plan. Significant changes may result in the MSC Commander determining that use of the Model Programmatic Review Plan is no longer appropriate. In these cases, a project specific review plan will be prepared and approved in accordance with EC 1165-2-209 and Director of Civil Works' Policy Memorandum #1. The latest version of the review plan, along with the Commanders' approval memorandum, will be posted on the home district's webpage.



### 13. REVIEW PLAN POINTS OF CONTACT

Public questions and/or comments on this review plan can be directed to the following points of contact:

#### USACE Buffalo District (LRB) Points of Contact

- [REDACTED] Project Manager [REDACTED]
- [REDACTED] Project Planner [REDACTED]

#### Great Lakes and Ohio River Division Points of Contact

- [REDACTED] (CELRD), [REDACTED]
- [REDACTED] (CELRD), [REDACTED]
- [REDACTED] (CECW-LRD), [REDACTED], [REDACTED]

#### Review Management Organization Points of Contact

- [REDACTED] (CEMVD ) ECO-PCX, [REDACTED]
- [REDACTED] (CEMVP-PD-F), ECO-PCX, LRD Account Manager, [REDACTED]

**ATTACHMENT 1: TEAM ROSTERS**

**Project Development Team**

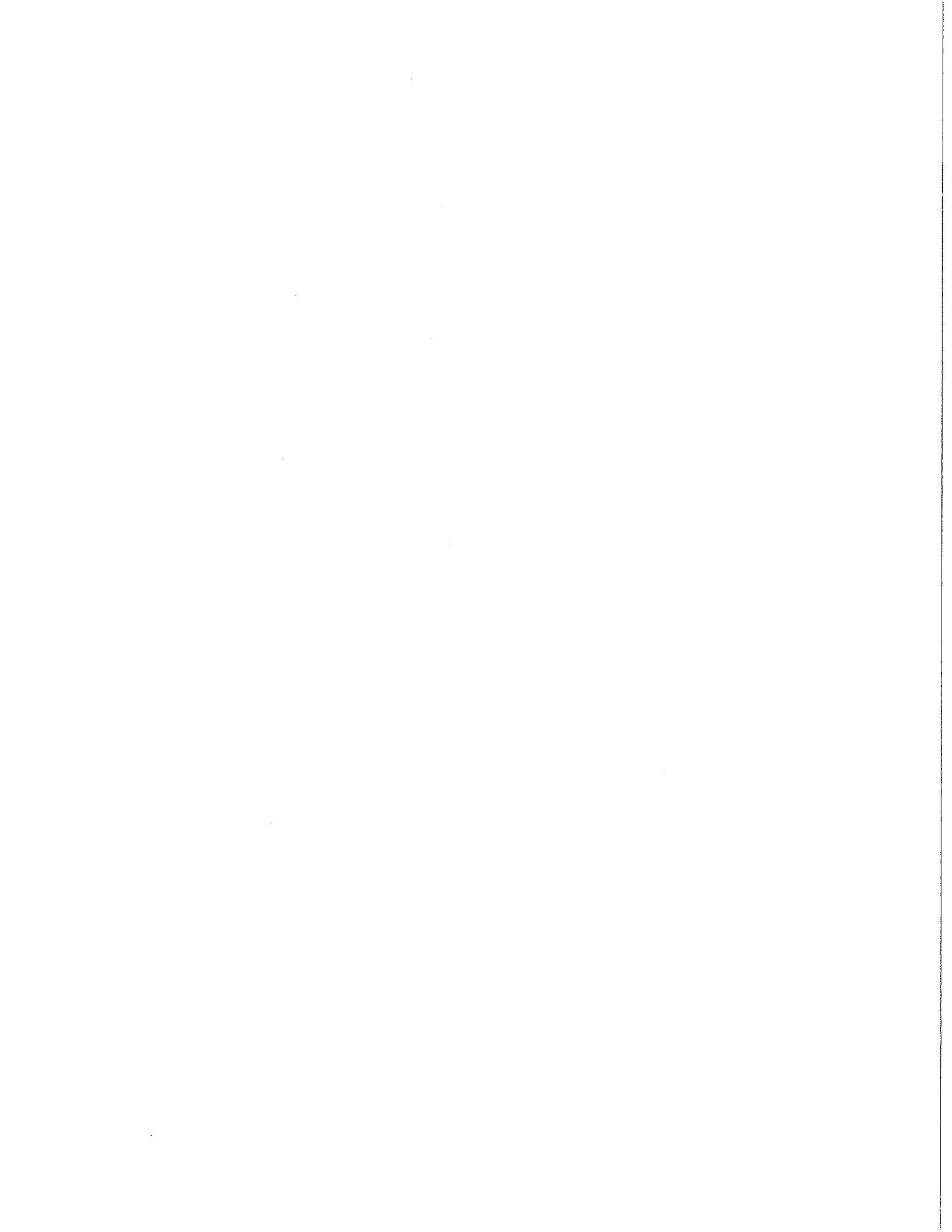
Name	Function	Organization	Phone	Email
	Project Manager	USACE-Buffalo		
	Plan Formulator	USACE-Buffalo		
	Environmental Analysis	USACE-Buffalo		
	Geotechnical Engineering	USACE-Buffalo		
	Civil Engineering	USACE-Buffalo		
	H&H	USACE-Buffalo		
	Economics	USACE-Buffalo		
	Real Estate	USACE-Buffalo		
	Legal Counsel	USACE-Buffalo		
	Outreach Coordinator	USACE-Buffalo		
	Cost Engineering	USACE-Buffalo		

**ATR TEAM**

Name,	Organization	Contact Information	Discipline
	CENWS-PM-ER		ATR Lead
	CENWS-EN-HH-HE		Hydraulics/Hydrology
	CELRC-PM-PL-E		Planning
	CELRH-EC-DC		Civil
	CENWS-PM-ER		Env. Analysis
	CENWS-PM-PL		Economics
	CENWW-EC-X		Cost Engineering
	CELRE-RE		Real Estate

**VERTICAL TEAM**

Name	Location	Phone	Email
	ECO-PCX		
	LRD		
	LRDOR		
	CECW-LRD		



**ATTACHMENT 3: REVIEW PLAN REVISIONS**

<b>Revision Date</b>	<b>Description of Change</b>	<b>Page / Paragraph Number</b>

**ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS**

<b>Term</b>	<b>Definition</b>	<b>Term</b>	<b>Definition</b>
AFB	Alternative Formulation Briefing	NED	National Economic Development
ASA(CW)	Assistant Secretary of the Army for Civil Works	NER	National Ecosystem Restoration
ATR	Agency Technical Review	NEPA	National Environmental Policy Act
CSDR	Coastal Storm Damage Reduction	O&M	Operation and maintenance
DPR	Detailed Project Report	OMB	Office and Management and Budget
DQC	District Quality Control/Quality Assurance	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
DX	Directory of Expertise	OEO	Outside Eligible Organization
EA	Environmental Assessment	OSE	Other Social Effects
EC	Engineer Circular	PCX	Planning Center of Expertise
EIS	Environmental Impact Statement	PDT	Project Delivery Team
EO	Executive Order	PAC	Post Authorization Change
ER	Ecosystem Restoration	PMP	Project Management Plan
FDR	Flood Damage Reduction	PL	Public Law
FEMA	Federal Emergency Management Agency	QMP	Quality Management Plan
FRM	Flood Risk Management	QA	Quality Assurance
FSM	Feasibility Scoping Meeting	QC	Quality Control
GRR	General Reevaluation Report	RED	Regional Economic Development
Home District/MSD	The District or MSD responsible for the preparation of the decision document	RMC	Risk Management Center
HQUSACE	Headquarters, U.S. Army Corps of Engineers	RMO	Review Management Organization
IEPR	Independent External Peer Review	RTS	Regional Technical Specialist
ITR	Independent Technical Review	SAR	Safety Assurance Review
LRR	Limited Reevaluation Report	USACE	U.S. Army Corps of Engineers
MSC	Major Subordinate Command	WRDA	Water Resources Development Act