

**Great Lakes Fisheries and Ecosystem Restoration (GLFER) Program  
Section 506, Water Resources Development Act of 2000, as amended**

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

**DETAILED PROJECT REPORT/ENVIRONMENTAL ASESMENT  
Euclid Creek Spillway GLFER, Cleveland, OH**

**Buffalo District**

**MSC Approval Date: July 26, 2013**

**Last Revision Date: None**



**US Army Corps  
of Engineers ®**

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## 1. PURPOSE AND REQUIREMENTS

- a. **Purpose.** This Review Plan defines the scope and level of peer review for the Euclid Creek Spillway, Cleveland, OH project, Great Lakes Fisheries and Ecosystem Restoration (GLFER) Program which was authorized by Section 506, Water Resources Development Act of 2000, as amended by Section 5011 of the Water Resources Development Act of 2007.

Section 506 of the WRDA of 2000 provides programmatic authority for restoration of the Great Lakes fishery and ecosystem. Section 506 called for the Secretary to develop a plan to support the management of Great Lakes fisheries not later than one year after the date of enactment of the legislation. That plan, coined the "Support Plan", provides the guidance for the planning, design, construction, and evaluation of projects to restore, the fishery, ecosystem, and beneficial uses of the Great Lakes in cooperation with other Federal, State, and local agencies and the Great Lakes Fisheries Commission. Costs for the planning, design, construction, and evaluation of restoration projects are cost-shared 65 percent Federal and 35 percent non-Federal. Non-Federal interests may contribute up to 100 percent of their share for projects in the form of services, materials, supplies, or other in-kind contributions. Non-Federal interests will receive credit for lands, easements, rights-of-way, relocations, and dredged material disposal areas needed for project construction and must be responsible of the operation, maintenance, repair, rehabilitation, and replacement of projects. Non-Federal interests may include private and non-profit entities.

The planning process of the GLFER program was closely modeled after planning and implementation program described for section 206 of the WRDA 1996 in the Continuing Authorities Program. Generally projects for study are selected by an integrated panel of Federal and non-Federal Great Lakes ecosystem restoration experts. Projects selected for further study go through a Federally funded reconnaissance phase, resulting in a Determination of Federal Interest. Projects are approved for feasibility level studies based on factors such as benefits to the Great Lakes fisheries and ecosystem, applicability to the GLFER program, implementation costs, and level of sponsorship. A Detailed Project Report (DPR) is prepared during the feasibility study to serve as the Decision Document.

- b. **Applicability.** This review plan is based on the model Regional Review Plan for GLFER project decision documents, which is applicable to projects that do not require Independent External Peer Review (IEPR), as defined in ER 1165-2-214 Civil Works Review Policy. A GLFER project generally does not require IEPR if it is determined during the course of the study that 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 is not likely to have significant economic, environmental, and/or social effects to the Nation;
  - The project/study is not likely to have significant interagency interest;
  - The project/study is not likely highly controversial;
  - The decision document is not likely to contain highly influential scientific information;

- The information in the decision document or proposed 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; and
- The project has not been deemed by the USACE Director of Civil Works or Chief of Engineers to be controversial nature.

If any of the above criteria are not met, the model GLFER Programmatic Review Plan is not applicable and a study specific review plan must be prepared by the home district, coordinated with the National Ecosystem Planning Center of Expertise (ECO-PCX) and approved by the home Major Subordinate Command (MSC) in accordance with EC 1165-2-214.

Applicability of the model GLFER 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 the ECO-PCX or Headquarters, USACE. The initial decision as to the applicability of the model plan should be made no later than the completion of the Preliminary Restoration Plan. In addition, the home district and MSC should assess at the Alternatives Formulation Briefing (AFB) whether the initial decision on the use of the model plan is still valid or if a project specific review plan should be developed based on new information. If a project specific review plan is required, it must be approved prior to execution of the Feasibility Cost Sharing Agreement (FCSA) for the study.

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 1165-2-214.

#### c. References

- (1) Engineering Circular (EC) 1165-2-214, Civil Works Review, 15 Dec 2012
- (2) EC 1105-2-412, Assuring Quality of Planning Models, 31 March 2010.
- (3) Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006
- (4) ER 1105-2-100, Planning Guidance Notebook, Appendix F, Continuing Authorities Program, Amendment #2, 31 Jan 2007
- (5) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007

- d. Requirements.** This programmatic review plan was developed in accordance with EC 1165-2-214, 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 1165-2-214) and planning model certification/approval (per EC 1105-2-412).

- (1) District Quality Control/Quality Assurance (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 Major Subordinate Command (MSC).

- (2) 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 US Army Corps of Engineers (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 a designated Review Management Organization (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.

For decision documents prepared under the GLFER Regional Review Plan Model, the leader of the ATR team will be from outside the home MSC.

- (3) 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 1165-2-214, 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 is generally for decision documents and Type II is generally for implementation products.

- (a) 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 1165-2-214.

For decision documents prepared under the model GLFER Programmatic Review Plan, Type I IEPR is not required.

- (b) 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.

For decision documents prepared under the model GLFER Programmatic Review Plan, Type II IEPR is not required except where public safety issues are present.

- (4) 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.
- (5) Cost Engineering DX Review and Certification. All **decision documents** shall be coordinated with the Cost Engineering Directory of Expertise (DX), located in the Walla Walla District.

For decision documents prepared under the GLFER Programmatic Review Plan Model, Regional cost personnel that are pre-certified by the DX will conduct the cost estimate ATR. The DX will provide the Cost Engineering DX certification.

- (6) Model Certification/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, for the purposes of the EC, 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 use of a certified/approved planning model does not constitute technical review of the planning product. 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 (if required). 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 and the professional practice of documenting the application of the software and modeling results will be followed. The use of engineering models is also subject to DQC, ATR, and IEPR (if required).

For decision documents prepared under the model GLFER Programmatic Review Plan, use of existing certified or approved planning models is encouraged. Where uncertified or unapproved model are used, approval of the model for use will be accomplished through the ATR process. The ATR team will 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.

## **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 GLFER decision documents is the home MSC. The MSC will coordinate and approve the review plan and manage the ATR. The home District will post the approved review plan on its public website. A copy of the approved review plan (and any updates) will be provided to the National Ecosystem Planning Center of Expertise (ECO-PCX) to keep the PCX apprised of requirements and review schedules.

## **3. STUDY INFORMATION**

**Decision Document.** The Euclid Creek Spillway, Cleveland, OH, decision document will be prepared in accordance with the Great Lakes Fisheries Support Plan April 2006. The approval level of decision documents (if policy compliant) is the home MSC. An Environmental Assessment (EA) will be prepared along with the decision document.

**Study/Project Description.** Euclid Creek is a direct tributary to Lake Erie that drains 24 square miles urban and suburban areas of Cuyahoga and Lake County. It is situated along the Ohio Lake Erie coast between the Cuyahoga and Chagrin river systems. The purpose of this project is to restore connectivity to Euclid Creek by providing passage for fish and aquatic organisms past the existing 185<sup>th</sup> Street spillway. This project will contribute to restoration of the Great Lakes Ecosystem and delisting of the Cuyahoga River Area of Concern by addressing the Loss of Fish Habitat Beneficial Use Impairment. The Euclid Creek spillway remains the major barrier separating the lower Euclid Creek from the upper reaches, and preventing the migration of fish and aquatic life between Lake Erie and the upper watershed.

Euclid Creek Spillway is immediately upstream of the Euclid Creek culvert that passes under E. 185<sup>th</sup> street and Interstate 90 in Cleveland, Cuyahoga County, Ohio (Figure 1).



Two with-project alternatives were considered during the Determination of Federal Interest. Alternative 2, Partial Crest Lowering and Creation of a Dual Channel System with a Low Flow/Rock Ramp Channel and a High Flow Channel involves lowering a 25 foot length of the southern spillway crest approximately 2 feet and installing a 170 foot long rock ramp that would allow fish passage up and over the spillway. The northern side of the channel will be refilled and repaired to original conditions and will be utilized as a high flow channel. Alternative 3, Partial Crest Lowering and Installation of Fish Ladder, involves lowering a 25 foot length of the southern spillway crest approximately 2 feet and installing a 75 foot long fish ladder with 24 baffles/v-notch weirs and a jump pool to allow fish passage up and over the spillway. The existing channel in the area of new work will be refilled and repaired to original conditions to prevent damage to the fish ladder and further deterioration of the remaining channel

The proposed measures have potential to improve biodiversity and improve species richness to 18 miles of Euclid Creek. The existing barrier to aquatic life movement imposed by the Euclid Creek spillway restricts the movement of native fish and important sport fish to the creek's upper reaches. Total costs of Alternative 2 and Alternative 3, are [REDACTED] The Northeast Ohio Regional Sewer District will act as the non-Federal sponsor.

- a. **Factors Affecting the Scope and Level of Review.** The GLFER Programmatic Review Plan has been used to determine the appropriate scope and level of review for this study as this project is of a scope and scale typical of an ecosystem restoration project under the GLFER Program.

**Spillway.** Local topography indicates that the spillway itself may be covering a shale ledge. The elevation of the shale bedrock streambed immediately upstream of the spillway is at approximately the same elevation as the crest of the spillway. Removal of the concrete spillway itself would serve only to expose this natural shale cliff of approximately the same height, and do little to improve connectivity and fish passage. The spillway may have been installed to prevent erosion of this shale cliff and protect the railroad bridge immediately up stream. Measures to be evaluated will most likely consist of modification, but not removal of the existing spillway.

**Hydraulic Modeling.** Project alternatives will likely involve alteration of the spillway. Hydraulic modeling and analysis will be required to ensure that alternatives will not result in erosion, head-cutting or other instabilities that will threaten existing infrastructure. Flow modeling will also be essential to ensure the efficacy of project alternatives with respect to fish passage.

**Sea Lamprey.** An initial review of available fish data did not indicate presence of the invasive sea lamprey (*Petromyzon marinus*) in Euclid Creek above or below the spillway. In addition, the substrate of Euclid Creek above the spillway is not thought to be suitable for sea lamprey nesting. For these reasons, the risk of introducing sea lamprey upstream is negligible.

**Interagency Support.** Numerous agencies and organizations support this project to restore connectivity between Lake Erie and Euclid Creek Spillway, including Ohio Environmental Protection Agency, Northeast Ohio Regional Sewer District and Cuyahoga Soil and Water Conservation District. Plan formulation will require significant coordination with project partners. A communication framework has already been established between USACE PDT and project partners.

Other Considerations:

- The project is not likely to have significant negative economic, environmental, and/or social effects to the Nation.
- Social challenges are expected to be minimal or absent. The project site is tucked between two gas stations, an overpass and a railroad bridge. The project site is unattractive and not legally accessible to the public.
- With-project conditions will not likely involve any significant threat to human life, as it will not result in an increased flood risk.
- The project/study is likely to have significant interagency interest. To date feedback from a diverse group of project partners has been extremely supportive.
- The project/study will not be highly controversial, as it has received support thus far from interested stakeholders.
- The project report is not likely to contain influential scientific information or be a highly influential scientific assessment, as it will rely heavily on previously collected fish data and readily accepted methodology.
- The information in the decision document or proposed project design will not 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

- b. In-Kind Contributions.** Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC and ATR, similar to any products developed by USACE. In-kind services to be provided as credit toward cost-share are currently being negotiated with the non-Federal sponsor.

In-kind services may include topographic surveys, geotechnical borings, fish sampling, coordination and outreach, hydrologic modeling, and general administration.

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

District Quality Control will be conducted and recorded using DrChecks.

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

- a. Products to Undergo ATR.** ATR will be performed throughout the study in accordance with the District and Regional Quality Management System (QMS). The ATR shall be documented and discussed at the AFB milestone. Certification of the ATR will be provided prior to the District Commander signing the final report. Products to undergo ATR will include the Detailed Project Report and all appendices. Appendices will be developed for the Cost Estimates, Engineering Designs, Hydraulic Modeling and Analysis, and Real Estate Plan. An Environmental Assessment will be integrated into the Detailed Project Report.
- b. Required ATR Team Expertise.** The proposed ATR team members are presented in Table 1. The following expertise is needed: Plan Formulation, Environmental Science, Incremental Cost Analysis, Civil or Structural Design, Hydrology and Hydraulics, and Cost Engineering. The Review Team leader will have expertise in aquatic ecosystem restoration and USACE Civil Works policies. The remaining team members will be selected by the team leader based on expertise and availability.

ATR Team Members/Disciplines	Expertise Required
ATR Lead	The ATR lead should be a senior professional with experience in preparing Section 206 or GLFER decision documents and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. Typically, the ATR lead will also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc).
Planning	The Planning reviewer should be a senior water resources planner with experience in ecosystem restoration planning.
Biology/ NEPA/ Ecosystem Output Evaluation	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 with fish passage projects and have experience on projects involving aquatic invasive species issues.
Hydrology and Hydraulic Engineering	The hydraulic engineering reviewer will be an expert in the field of hydraulics and have a thorough understanding of open channel flow dynamics, hydrology, and/or computer modeling techniques that will be used such as HEC-RAS, HEC-HMS, GIS.
Civil Engineering	Team member will be knowledgeable in the art and science ecosystem restoration projects such as design of channels. Should also be a licensed professional engineer.
Economist	Economist should have experience conducting CE/ICA.

Cost Engineering	The Cost engineering reviewer will be an expert in preparing government estimates for a wide variety of planning, design, and construction projects. The cost Reviewer should also be CAP Certified by the Cost CX familiar with the ATR process in cost quality improvements for the Corps. Experiences should included flood control, Environmental Restorations, bank stabilization and earthwork Projects
Real Estate	The Real Estate reviewer will selected from the approved LRD ATR Roster List IAW CELRD Policy Guidance Letter No 3. The Real Estate ATR team member is expected to be thoroughly knowledgeable in the real estate planning process for cost shared and federal civil works projects and have expertise in underlying real estate policies and the implementation of such projects. The ATR member will be expected to have the awareness of recurring project issues. If P.L. 91-646 relocations of occupants, farms or businesses are anticipated, or public facility or utility relocations are anticipated, the Regional Relocation Technical Specialist for Real Estate must be included as a team member, either for the entire project or for the elements of the Real Estate Plan associated with the relocation(s).

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 HQUACE), 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 1110-2-12 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 prior to the District Commander signing the final report. A sample Statement of Technical Review is included in Attachment 2.

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

- a. **Decision on IEPR.** Based on the information and analysis provided in paragraph 3(c) of this review plan, the project covered under this plan is excluded from IEPR because it does not meet the mandatory IEPR triggers and does not warrant IEPR based on a risk-informed analysis. If any of the criteria outlined in paragraph 1(b) are not met, the model Regional Review Plan is not applicable and a study specific review plan must be prepared by the home district, coordinated with the National Ecosystem Planning Center of Expertise (ECO-PCX) and approved by the home Major Subordinate Command (MSC) in accordance with EC 1165-2-214.
- 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. MODEL CERTIFICATION AND APPROVAL**

- 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 Planning Suite 2.0.6	This model assists with formulating plans, cost-effectiveness, and incremental cost analysis, which are required in ecosystem restoration projects. This model expands Version 1.0.11.0 by adding an "annualizer" module. This module allows for easy calculations of equivalent annual average values, total net values, annualizing non-monetary benefits, and calculating costs.	Certified
Qualitative Habitat Evaluation Index (QHEI) 2006	The Qualitative Habitat Evaluation Index (QHEI) is a physical habitat index designed to provide an empirical, quantified evaluation of the general lotic macrohabitat characteristics that are important to fish communities. A detailed analysis of the development and use of the QHEI is available in Rankin (1989) and Rankin (1995). The QHEI is composed of six principal metrics each of which are described below. The maximum possible QHEI site score is 100. Each of the metrics are scored individually and then summed to provide the total QHEI site score.	QHEI has been approved for single use. PDT will seek approval for single use for this project.

**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	Validation Status
HEC-RAS 4.0 (River Analysis System)	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. The program will be used for steady flow analysis to evaluate the future without- and with-project conditions. [For a particular study the model could be used for unsteady flow analysis or both steady and unsteady flow analysis. The review plan should indicate how the model will be used for a particular study.]	Validated

## 8. REVIEW SCHEDULES AND COSTS

### a. ATR Schedule and Cost.

Description	Scheduled Date	Estimated Cost
AFB Package	July 2014- September 2014	

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

- c. **Model Certification/Approval Schedule and Cost.** For decision documents prepared under the model GLFER Programmatic Review Plan, use of existing certified or approved planning models is encouraged. Where uncertified or unapproved model are used, approval of the model for use will be accomplished through the ATR process. The ATR team will 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.

## 9. PUBLIC PARTICIPATION

State and Federal resource agencies may be invited to participate in the study covered by this review plan as partner agencies or as technical members of the PDT, as appropriate. Agencies with regulatory review responsibilities will be contacted for coordination as required by applicable laws and procedures. The ATR team will be provided copies of public and agency comments. The public will have the opportunity to provide formal comments during NEPA scoping and during public coordination of the Environmental Assessment.

## 10. REVIEW PLAN APPROVAL AND UPDATES

The home MSC Commander is responsible for approving this review plan and ensuring that use of the GLFER 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 1165-2-214. The latest version of the review plan, along with the MSC Commanders' approval memorandum, will be posted on the home district's webpage.

## 11. REVIEW PLAN POINTS OF CONTACT

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

- Bryan Hinterberger (Project Manager) (716) 879-4409 [REDACTED]

**ATTACHMENT 1: TEAM ROSTERS**

Table 1. Study Project Delivery Team

<b>Discipline</b>	<b>Name</b>	<b>Office/Agency</b>
Project Manager	[REDACTED]	CELRB-PM-PB
Lead Planner	[REDACTED]	CELRB-PM-PM
Environmental Analysis	[REDACTED]	CELRB-PM-EA
Real Estate	[REDACTED]	CELRE-RE
Civil Design	[REDACTED]	CERLB-TD-DS
Geotechnical Analysis	[REDACTED]	CERLB-TD-DC
Hydrology and Hydraulic Engineering	[REDACTED]	CELRB-TD-HD
Cost Engineering	[REDACTED]	CELRE-TD-DE
Contracting	[REDACTED]	CELRB-CECT-LRB
Office of Counsel	[REDACTED]	CELRB-OC

Table 2. Agency Technical Review Team

<b>Discipline</b>	<b>Name</b>	<b>Office/Agency</b>
ATR Lead	[REDACTED]	MVP
Planning	[REDACTED]	MVR
Biologist/NEPA	[REDACTED]	MVP
Econ (CE/ICA)	[REDACTED]	MVR
Hydrology & Hydraulic Engineering	[REDACTED]	MVP
Civil Engineering	[REDACTED]	MVP
Cost Engineering	[REDACTED]	MVP
Real Estate	[REDACTED]	LRN

**ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECISION DOCUMENTS**

**COMPLETION OF AGENCY TECHNICAL REVIEW**

The Agency Technical Review (ATR) has been completed for the <type of product> for <project name and location>. 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<sup>sm</sup>.

SIGNATURE \_\_\_\_\_ Date \_\_\_\_\_  
Name  
ATR Team Leader  
Office Symbol/Company

SIGNATURE \_\_\_\_\_ Date \_\_\_\_\_  
Name  
Project Manager  
Office Symbol

SIGNATURE \_\_\_\_\_ Date \_\_\_\_\_  
Name  
Architect Engineer Project Manager<sup>1</sup>  
Company, location

SIGNATURE \_\_\_\_\_ Date \_\_\_\_\_  
Name  
Review Management Office Representative  
Office Symbol

**CERTIFICATION OF AGENCY TECHNICAL REVIEW**

Significant concerns and the explanation of the resolution are as follows: Describe the major technical concerns and their resolution.

As noted above, all concerns resulting from the ATR of the project have been fully resolved.

SIGNATURE \_\_\_\_\_ Date \_\_\_\_\_  
Name  
Chief, Engineering Division  
Office Symbol

SIGNATURE \_\_\_\_\_ Date \_\_\_\_\_  
Name  
Chief, Planning Division  
Office Symbol

<sup>1</sup> Only needed if some portion of the ATR was contracted

**ATTACHMENT 3: REVIEW PLAN REVISIONS**

Revision Date	Description of Change	Page / Paragraph Number

NOTE: Revisions to the Review Plan since it was last approved by the MSC Commander should be documented in Attachment 3. Significant changes (such as a change in the level or scope of review) require re-approval by the MSC Commander following the process used for initially approving the plan. DELETE THIS TEXT BOX BEFORE FINALIZING THE REVIEW PLAN.

**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
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	QMP	Quality Management Plan
FEMA	Federal Emergency Management Agency	QA	Quality Assurance
FRM	Flood Risk Management	QC	Quality Control
FSM	Feasibility Scoping Meeting	RED	Regional Economic Development
GRR	General Reevaluation Report	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