REVIEW PLAN

Chattahoochee River Aquatic Ecosystem Restoration Project

Columbus, Georgia and Phenix City, Alabama

Mobile District

MAY 2011

US Army Corps of Engineers®

Mobile District

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1. PURPOSE

The purpose of this Review Plan (RP) is to describe the technical review process for the Chattahoochee River Aquatic Ecosystem Restoration Project at Columbus Georgia and Phenix, Alabama. Like the Project Management Plan (PMP), the RP is a living document and may change as the project progresses.

a. U.S. Army Corps of Engineers (Corps) review guidance for studies and projects conducted under the continuing authority of Section 206 of the Water Resources Development Act of 1996, as amended. This project is in the design portion of the Design and Implementation phase. Resulting documents will be the Plans and Specifications and Design Documentation Report. Required review components for this work will consist of District Quality Control/Quality Assurance (DQC/QA), and Agency Technical Review (ATR).

b. References

(1) ER 1110-2-1150, Engineering and Design for Civil Works Projects, 31 Aug 1999

(2) ER 1110-1-12, Engineering and Design Quality Management, 21 Jul 2006

(3) WRDA 2007 H. R. 1495 Public Law 110-114, 8 Nov 2007

(4) Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Jan 2010

(5) EC 1105-2-412, Assuring Quality of Planning Models, 14 May 2010

(6) ER 1105-2-100, Planning Guidance Notebook, Appendix F, Continuing Authorities Program, Amendment #2, 31 Jan 2007

(7) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007

2. DESCRIPTION OF PROJECT

This project involves breaching of the existing Eagle and Phenix and City Mills Dams and constructing associated habitat development features on the Chattahoochee River. The combined length of the pools formed by these two dams represents a total of 2.3 miles of the Chattahoochee River that have been impounded for over 170 years. The Fall Line reach in the study area represents (in its natural condition) a very unique habitat in terms of physical characteristics and species assemblages. As a result (although relatively short in total distance) the extremely limited nature of this type of riverine habitat has particular biological significance compared to other reaches of the Chattahoochee River. From a regional perspective, Fall Line habitat in major rivers throughout Georgia, Alabama, and the Carolinas has been significantly

reduced by the historic construction of dams and impoundments that generate hydropower and benefit commercial inland navigation. As such, very little of the Fall Line reaches of the major rivers in the Southeast remain in a free-flowing condition today.

3. DESCRIPTION OF WORK FOR REVIEW

The proposed aquatic ecosystem restoration project consists of the removal of two low-head dams, two predecessor dams, the construction of an aquatic habitat pool, and the construction of fish stranding reduction channels. The project will remove 450 feet of the Eagle-Phenix dam and 350 feet of the City Mills dam. Both dams are constructed of masonry and stone. The predecessor dams will be removed in their entirety and were timber-crib construction. The aquatic habitat pool will be formed by the construction of a series of grouted rock weirs that will include provisions for planting vegetation. The stranding reduction channels will be constructed by rock removal at about four locations in the City Mills pool. (See Figure 1). Products to be reviewed will include plans and specifications (P&S) and a design documentation report (DDR).

4. BACKGROUND

The continuing authority of Section 206 of the 1996 Water Resources Development Act, as amended, provides authority for the Corps of Engineers to restore degraded aquatic ecosystems. A restoration project is adopted for construction only after investigation shows that the restoration will improve the environment, is in the public interest, and is cost-effective. Each project is limited to a Federal cost of not more than $5 million. This Federal limitation includes all project-related costs for feasibility studies, planning, engineering, construction, supervision, and administration. This project was initiated by a study request from the City of Columbus, Georgia and Phenix City, Alabama in 2002. The study resulted in an Environmental Restoration Report completed in 2004 that recommended the construction of this project. The sponsor for the proposed project will be Uptown Columbus, Inc. a 501(c)(3) corporation.

5. PROJECT DELIVERY TEAM

The Project Delivery Team (PDT) is comprised of those individuals involved directly in the development of the implementation documents. The individual contact information and disciplines of the Mobile District PDT are included in Attachment A of this document.

6. LEVELS OF REVIEW

This RP describes the levels of review and the anticipated review process for the various documents to be produced. This RP is a component of the PMP. The levels of review included in this RP are District Quality Control/ Quality Assurance (DQC/QA) and Agency Technical Review (ATR). Type II IEPR is not required in this paragraph as discussed in the risk informed process in Section 9 below. DrChecks review software will be used to document all comments,

responses, and associated resolutions accomplished throughout the review process. Comments have been limited to those that are required to ensure adequacy of the product.

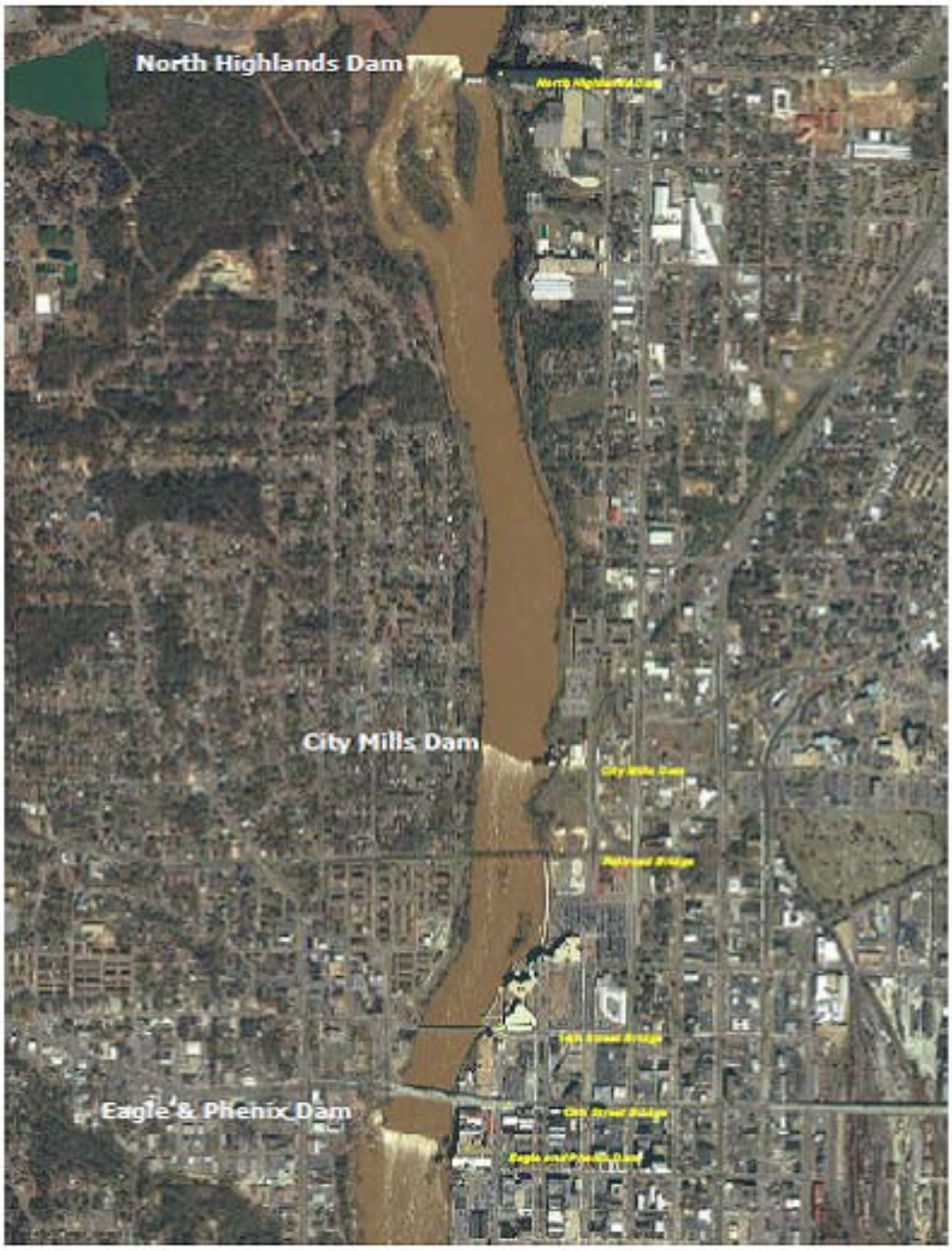

Figure 1 – Aerial Map

7. DISTRICT QUALITY CONTROL/QUALITY ASSURANCE (DQC/QA)

All documents to be produced will undergo District Quality Control/Quality Assurance (DQC/QA). DQC/QA is the review of basic science and engineering work products focused on fulfilling the project quality requirements defined in the PMP. Major Subordinate Command (MSC) and District quality management plans address the conduct and documentation of this fundamental level of review. DQC/QA will be managed by Mobile District in accordance with ER 1110-1-12, Engineering & Design Quality Management, EC-1165-2-209 and the District Quality Management Plan. The DQC/QA will include quality checks and reviews, supervisory reviews, PDT reviews, and Biddability, Constructability, Operability and Environmental Review (BCOE) reviews required by ER 1110-1-12. The A-E prepared implementation documents, Project Design Plans and Specifications, for this project are classified as Products Prepared by Others. The A-E will perform a Technical Review (TR) and Quality Control (QC); and Mobile District will perform Quality Assurance (QA) per ER 1110-1-12. The A-E Contractor will provide a signed Statement of Technical Review (Attachment 3). Additionally, the PDT is responsible to assure the overall integrity of the documents produced. The DQC/QA review will be completed prior to submitting documents for ATR.

8. AGENCY TECHNICAL REVIEW

All documents produced as part of this effort will undergo ATR 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 Corps guidance, that design plans and specifications and supporting analysis are clear, constructible, environmentally sustainable, operable and maintainable.

The ATR team will consist of the individuals that represent the significant disciplines involved in the accomplishment of the work. ATR will be managed within the Corps and conducted by senior Corps personnel outside of the Mobile District that are not involved in the day-to-day production of the project. DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. The documents to be reviewed are the DDR, and technical plans and specifications. The PDT/A-E will evaluate comments in DrChecks and revise materials as necessary. The ATR leader will be from outside the MSC, and must complete a statement of technical review for all final products and final documents. By signing the ATR certification, the district leadership certifies policy compliance of the document and also that the DQC/QA activities were sufficient and documented.

Disciplines Required for Review. At a minimum, the following disciplines should be represented on the ATR team:

Discipline	Required Expertise
Site Engineer	Team member should be familiar with requirements for horizontal construction. The team member should have a thorough understanding of site drainage and grading considerations, earthwork quantities, demolition plans, etc.
Environmental Engineer/Protection Specialist	Team member(s) should have a minimum of 5 years experience in environmental evaluation and compliance requirements.
Geotechnical Engineer	Team member should have a minimum of 5 years experience to include geotechnical evaluation of earthen or rock structures.
Hydraulic Engineer	Team member should have a minimum of 5 years experience in hydraulic design associated with dam removal and rock weir construction projects.
Structural Engineer	Team member(s) should have a minimum of 5 years experience in the design and construction of low head dam removal projects.
Civil Engineer (Construction)	Team member should have a minimum of 5 years experience with administration of contracts for civil works project construction.
ATR Leader	Team member should have minimum expertise such as having led prior ATRs, etc. The ATR lead may also have been a senior ATR reviewer on a similar type projects within the past 5 years. ATR Team Leader can also serve as one of the review disciplines in addition to team leader duties.

9. INDEPENDENT EXTERNAL PEER REVIEW

Independent External Peer Review (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 the Corps is warranted. There are variations in the scope and procedures for IEPR, depending on the phase and purposes of the project under review. For clarity, IEPR is divided into two types, a Type 1 IEPR is generally for decision documents developed during the feasibility phase and a Type II IEPR is generally conducted when needed during the design and implementation phase. Because this project is: 1) in the design and implementation phase; and, 2) this project does not contain any of the mandatory triggers contained in EC1165-2-209, a Type 1 IEPR is not required. A Type II IEPR Safety Assurance Review (SAR) shall be conducted on design and construction activities for hurricane and storm risk management and flood risk management projects, as well as other

projects where potential hazards pose a significant threat to human life. This applies to new projects and to the major repair, rehabilitation, replacement, or modification of existing facilities.

The District Chief of Engineering, as the Engineer-In-Responsible-Charge, does not recommend a Type II IEPR Safety Assurance Review for this project. The project purpose is not hurricane and storm risk management or flood risk management, and the project does not have potential hazards that pose a significant threat to human life. Innovative materials or novel engineering methods will not be used. Redundancy, resiliency, or robustness is not required for design. Also, the project has no unique construction sequencing, or a reduced or overlapping design construction schedule. Therefore, a Type II IEPR of implementation documents will not be undertaken. If the project scope is changed, this determination will be reevaluated.

10. REVIEW MANAGEMENT ORGANIZATION

It is the responsibility of the Review Management Organization (RMO) to assign the ATR team and to ensure that lead is outside the home Major Subordinate Command (MSC); to manage the ATR and develop and prepare a "charge" to the ATR team. The RMO for this project is the South Atlantic Division (SAD) as the MSC for this region. Mobile District will assist SAD with management of the ATR and development of the "charge".

11. POLICY AND LEGAL COMPLIANCE

The National Environmental Policy Act (NEPA) compliance is required for the construction of this project. This will include consideration of no adverse impacts to the environment. NEPA documentation will be prepared and coordinated by Mobile District in parallel with the preparation of construction plans and specifications. The Corps will ensure compliance as part of the design review and project coordination process and no construction will occur prior to the completion of the NEPA process, BCOE certification, state water quality certification, and the satisfaction of other applicable local permit requirements. All contract documents and supporting environmental documents shall be reviewed by the Mobile District Office of Counsel prior to final contract award. NEPA and environmental documents shall be submitted to the ATR team with the DDR and Technical Plans and Specifications to aid in ATR review.

12. REVIEW SCHEDULE AND COSTS

The cost for DQC/QA and ATR is estimated to be approximately $10,000.00 and $20,000.00 respectively. The documents to be reviewed and scheduled dates for review are as follows:

Milestone	Review	Schedule Dates
100% Unreviewed P&S and DDR	DQC/QA	18 Apr 2011
Final P&S and DDR	ATR	15 May 2011

13. PUBLIC PARTICIPATION

The RP will be made accessible to the public through the Mobile District website link http://www.sam.usace.army.mil/. Public review of the RP can begin as soon as it is approved by the Division Commander and posted by the Mobile District. Comments made by the public will be available to the review team. Public and interagency review for the Environmental Assessment (EA) will be conducted in accordance with NEPA, as outlined in ER 1105-2-100.

14. MAJOR SUBORDINATE COMMAND (MSC) APPROVAL

The MSC is responsible for approving the RP as prepared by the Mobile District. Approval is provided by the MSC Commander. The Commander's approval should reflect team input as to the appropriate scope and level of review for the decision document. Like the PMP, the RP is a living document and may change as the project progresses. Changes in the RP should be approved by following the process used for initially approving the RP. In all cases the MSC will review decisions on the level of review and any changes made in updates to the project.

ATTACHMENT 1 – TEAM ROSTER

Product Delivery Team Members

Discipline (POC)	Office/Agency
Project Manager	CESAM-PD-FP
Project Architect/Engineer (PAE)	CESAM-EN-HH
Environmental Engineer	CESAM-PD-EI
Cultural Resources	CESAM-PD-EI
Contractor	CH2M/HILL
Sponsor	Uptown Columbus, Inc.

DQC/QA Team Members

Office	Discipline
CESAM-EN-DA	Structural
CESAM-EN-DE	Mechanical
CESAM-EN-DE	Electrical
CESAM-EN-DA	Site
CESAM-EN-E	Cost
CESAM-EN-E	Cost (Alt)
CESAM-EN-GG	Geotechnical
CESAM-EN-HH	Hydraulics
CESAM-EN-HW	Water Management
CESAM-PD-EI	Env. Compliance

ATR Team Members

Office	Discipline
TBD	Site
TBD	Environmental
TBD	Geotechnical
TBD	Hydraulics
TBD	Structural
TBD	Construction
CEMVP-EC-H	ATR Lead

ATTACHMENT 2 - ACRONYMS AND ABBREVIATIONS

Term	Definition
ATR	Agency Technical Review
BCOE	Biddability, Constructability, Operability and Environmental Review
CORPS	U.S. Army Corps of Engineers
DQC	District Quality Control
DQC/QA	District Quality Control/Quality Assurance
EA	Environmental Assessment
EC	Engineer Circular
EIS	Environmental Impact Statement
ER	Engineer Regulation
HQUSACE	Headquarters, U.S. Army Corps of Engineers
IEPR	Independent External Peer Review
ITR	Independent Technical Review
MSC	Major Subordinate Command
NEPA	National Environmental Policy Act
OMB	Office and Management and Budget
PDT	Project Delivery Team
PMP	Project Management Plan
QA	Quality Assurance
QC	Quality Control
RMO	Review Management Organization
RP	Review Plan
SAR	Safety Assurance Review
TR	Technical Review
WRDA	Water Resources Development Act