

**PEER REVIEW PLAN**

**LOCK AND DAM 8 EMBANKMENT MODIFICATION  
NAVIGATION AND ECOSYSTEM SUSTAINABILITY PROGRAM  
PROJECT IMPLEMENTATION REPORT WITH  
INTEGRATED ENVIRONMENTAL ASSESSMENT**

## PEER REVIEW PLAN

### LOCK AND DAM 8 EMBANKMENT MODIFICATION NAVIGATION AND ECOSYSTEM SUSTAINABILITY PROGRAM PROJECT IMPLEMENTATION REPORT WITH INTEGRATED ENVIRONMENTAL ASSESSMENT

March 21, 2008

#### I. PURPOSE AND REQUIREMENTS

This document is the Peer Review Plan (PRP) for the Lock and Dam 8 Embankment Ecosystem Restoration Project Implementation Report (PIR) with Integrated Environmental Assessment and Appendices (L&D 8 Embankment Decision Document). The project is a component of the Navigation and Ecosystem Sustainability Program (NESP). The PIR for this project builds on the comprehensive feasibility study and provides the site specific planning details necessary for project approval.

This PRP has been developed in accordance with Engineering Circular (EC) 1105-2-408 dated 31 May 2005, "Peer Review of Decision Documents", which 1) establishes procedures to ensure the quality and credibility of Corps decision documents by adjusting and supplementing the review process and 2) requires that documents have a peer review plan. The Circular applies to all feasibility studies and reports and any other reports that lead to decision documents that require authorization by Congress.

#### II. PROJECT DESCRIPTION

**A. Decision Document.** The purpose of the L&D 8 Embankment Decision Document is to present the results of a study undertaken to help restore aquatic habitat via actions directly associated with modification of the embankment at Lock and Dam 8, upper Pool 9 (Reno Bottoms) of the Upper Mississippi River (UMR). This report provides planning, engineering, and implementation details of the recommended restoration plan to allow final design and construction to proceed subsequent to the approval of the plan.

**B. General Site Description.** Lock and Dam 8 is located at UMR River Mile 679.2. The embankment is located in Houston County, MN. The area of project influence is Reno Bottoms. This area is bounded by the embankment to the north, the UMR main channel to the east, the existing river bluffs to the west, and the Upper Iowa River to the south.

**C. Project Scope.** Detailed cost estimates have not yet been developed. However, it's likely that total project cost could range from \$2-6 million.

**D. Problems and Opportunities.** An earth fill embankment is included in Upper Mississippi River Lock and Dam 8. The existing high embankment promotes the following physical conditions that contribute to degradation of the river ecosystem:

- Reduced floodplain conveyance and longitudinal connectivity
- Substantial differences in water elevations between side channels and main channel

- Increased erosion along channels connecting main channel and side channel habitat
- Reduced hydraulic slope and fluvial processes
- Deposition in downstream side channels and backwaters of the upper reaches of Pool 9.

These conditions contribute to the following ecological responses:

- Degraded side channel and floodplain forest habitat
- Reduced fish passage and impeded migration routes
- Reduced habitat regeneration from fluvial processes
- Degraded benthic habitat in downstream side channels and backwaters of the upper reaches of Pool 9.

A Problem Appraisal Report (PAR) for the LD 2-10 Embankments Study proposed the LD 8 embankment as a viable location to investigate embankment modification.

**F. Product Delivery Team.** The St. Paul District Corps of Engineers is preparing the L/D 8 Embankment Decision Document. The PDT will include the following representatives:

Project Management and Environmental  
 Cultural Resources  
 Hydraulics  
 Water Control  
 Structural Engineering  
 Geotech Engineering  
 Cost Engineering  
 Operations  
 Real Estate  
 Planning Center of Expertise

The Corps' Project Manager is the primary point-of-contact for this document.

### III. METHODOLOGY AND MODEL CERTIFICATION

**A. Planning Models.** EC 1105-2-407 provides the following definition of a planning model:

“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.”

**B. Habitat Evaluation.** Habitat outputs will be assessed and derived using the Habitat Evaluation Procedures (HEP) developed by the U.S. Fish and Wildlife Service and other agencies. The specific HEP models have not yet been identified.

The HEP is an established approach to assessment of natural resources. The HEP approach has been well documented and is approved for use in Corps projects as an assessment framework that combines resource quality and quantity over time, and is appropriate throughout the United

States. The Habitat Suitability Index (HSI) models are the format for quantity determinations that are applied within the HEP framework. The following guidelines are provided to help determine the need for certification. ITR of input data may also be appropriate.

- New HSI models developed by the Corps are subject to certification.
- Published HSI models, while peer-reviewed and possibly tested by the developers, are subject to review and approval by the PCX.
- Modifications to published HSI models, where relationships or formulas are changed, may be subject to certification.

These models may need approval by the ERPCX. We do not anticipate using any planning models that will need certification. All are standard models. The modeling approach, including any modifications, will be included in an appendix to the PIR, and thus would be provided for review by the public, as well as the Corps at the district, MVD and HQ levels.

**C. Ecological Goals and Objectives.** The Ecological Goals and Objectives for the UMRS and for Reno Bottoms, and associated metrics, established by the NESP Science Panel and the PDT, will guide the planning, implementation, and evaluation of this project.

**D. Cost Effectiveness.** Cost effectiveness and incremental cost analyses will be based upon the Institute for Water Resources (IWR) PLAN program and other standard methods of analysis.

#### **IV. INDEPENDENT TECHNICAL REVIEW PLAN**

**A. Independent Technical Review.** ITR is the primary method of quality control for this decision document. ITR is a critical examination by a qualified person or team that was not involved in the day-to-day technical work that supports the decision document. ITR is intended to confirm that such work was accomplished in accordance with clearly established professional principles, practices, codes, and criteria, and that recommendations are in compliance with laws and policy. The St. Paul District is responsible for ensuring adequate technical review of this decision document.

**B. ITR Team.** The Ecosystem Restoration Planning Center of Expertise (ERPCX) will be contacted and requested to set up the ITR team. The ITR will likely be performed by members of the Corps of Engineers, Rock Island or St. Louis Districts in coordination with the Ecosystem Restoration Planning Center of Expertise. The ITR team also includes one person from an outside Corps Division (this representative has yet to be determined). The expertise and technical backgrounds of the ITR team members qualify them to provide a comprehensive technical review of the product. Review of cost estimates will be coordinated with the Walla Walla District Cost Estimating Directory of Expertise. The specific ITR team members are yet to be identified. The ERPCX will be requested to establish the ITR team. The ITR would include the following disciplines:

- Environmental/NEPA
- Plan Formulation
- Cultural Resources
- Hydraulics Engineering
- Structural Engineering
- Cost/Value Engineering
- Operations

- Real Estate

The ITR Team Leader will be from a Corps Division outside of Mississippi Valley Division (MVD)

The ITR team will use DR CHECKS software to record its comments and to document resolution of issues, as required by EC 1105-2-408. All comments resulting from the independent technical review will be resolved prior to forwarding the feasibility study to higher authority and local interests. The report will be accompanied by a certification, indicating that the independent technical review process has been completed and that all technical issues have been resolved.

**C. Value Engineering Plan.** Value Engineering (VE) evaluations provide another method for ensuring quality. The goal of VE on this project is to ensure that a full array of alternatives is considered in order to maximize cost effectiveness. A VE study will be conducted during the plan formulation before the final array of alternatives has been defined. The VE study objectives will be to build upon the design team's preliminary plan formulation efforts, clarify the functional requirements of project features, and recommend additional conceptual alternatives to meet those requirements. The same team that performs ITR will conduct the VE study.

**D. Quality Control.** Quality control will also be monitored via internal/District functional element reviews, and Higher Authority/vertical team conferences and reviews.

**E. External Peer Review.** This feasibility study will not be subject to External Peer Review. The study is not anticipated to generate influential scientific information that would be either controversial or of sufficient risk and magnitude as to require External Peer Review as described in EC 1105-2-408. This approach has been supported to date by the NESP Program, and will be further coordinated with the vertical team to ensure consensus on this approach. Construction costs are expected to be between \$2 and \$6 million.

**F. Public Review.** The St. Paul District will pursue public involvement during at least two project periods. The first will be during alternatives formulation. The second period of public involvement will be during the review period when the Environmental Assessment is available to the public. The draft PIR and environmental assessment will be distributed for public review as part of the normal NEPA review process. The formal public review will be scheduled after the Alternative Formulation Briefing and before submitting the report to the Civil Works Review Board in accordance with the study schedule defined in the Project Management Plan.

**V. SCHEDULE.** The schedule for study tasks related to review and public input are shown in the following table. As of this writing, there is uncertainty regarding the amount and timing of FY 2008 NESF for any given project. Because of this, the schedule is expressed as time durations rather than specific dates.

Task Name	Duration	Start Date	Finish Date
Continue Preliminary Altrntv Form.	<b>30 days</b>	<b>TBD</b>	<b>TBD</b>
Develop draft list of alternatives	<b>15 Days</b>	<b>TBD</b>	<b>TBD</b>
ITR Review & VE Study	4 wks	<b>TBD</b>	<b>TBD</b>
<b>Feasibility Scoping Meeting</b>	4 wks	<b>TBD</b>	<b>TBD</b>
Feasibility Analysis of Final Alternatives	15 wks	<b>TBD</b>	<b>TBD</b>
<b>Alt. Formulation Briefing</b>	4 wks	<b>TBD</b>	<b>TBD</b>
HQ/MVD/public review	6 wks	<b>TBD</b>	<b>TBD</b>
Public meeting (local)	1 day	<b>TBD</b>	<b>TBD</b>
ITR Review	4 weeks	<b>TBD</b>	<b>TBD</b>
<b>Division Engineer transmit to HQ</b>	<b>0 days</b>	<b>TBD</b>	<b>TBD</b>
HQUSACE policy review	4 wks	<b>TBD</b>	<b>TBD</b>
CWRB briefing	1 day	<b>TBD</b>	<b>TBD</b>
Write Draft Chief's report	1 wk	<b>TBD</b>	<b>TBD</b>
Agency and Public Review	6 wks	<b>TBD</b>	<b>TBD</b>

Bold font designates Major Milestones.