REVIEW PLAN
WILD RICE RIVER ECOSYSTEM RESTORATION
FEASIBILITY STUDY
(Revised 6 November 2007)
(Revised 21 November 2007)

1. **Purpose.**

This review plan is for the Wild Rice River Feasibility Study. This review plan was developed in accordance with EC 1105-2-408, "Peer Review of Decision Documents," dated 31 May 2005. The EC establishes procedures to ensure the quality and credibility of Corps decision documents. It applies to all feasibility studies and reports and any other reports that lead to decision documents that require authorization by Congress.

2. **Background Information.**

The Wild Rice River is a tributary of the Red River of the North in northwestern Minnesota, about 250 miles northwest of Minneapolis-St. Paul, Minnesota, and 50 miles northeast of Fargo, North Dakota-Moorhead, Minnesota. The Wild Rice River is about 160 miles long, with a drainage area of about 1,600 square miles. The South Branch Wild Rice River (drainage area 243 square miles) and Felton Creek (159 square miles) are the two main tributaries to the lower Wild Rice River from the southern part of the watershed. Agriculture dominates the basin's economy and land use and has been a prime motivator for extensive channel straightening, ditching, and drainage. For over a century, the Wild Rice River basin has been subjected to clearing, ditching, straightening, diversions, etc. by local interests and various agencies (including the Corps) primarily for the purpose of expanding, improving, and protecting the agricultural-based economy. Remaining forested lands are largely confined to patches along riverine corridors and, in many cases, lack connectivity. Between the 1860s and 1981, over 80 percent of the wetlands in the Wild Rice watershed were lost.

In the 1950s, the Corps straightened 15½ miles of the Wild Rice River to handle a 10-year design flood, and in 1964, the Corps cleared and snagged a 12-mile reach of the Wild Rice River downstream of the 15½-mile channelized reach. Following the 1950's Corps' channel project, levees were built alongside the Wild Rice River channel using local funds.

In the early 1980s, the Corps did about 2½ miles of debris removal and 14½ miles of channel improvement on the South Branch Wild Rice River and about 1 mile of debris removal, 16¼ miles of channel improvement, and 3 miles of levee construction along Felton Creek.

The Corps has spent nearly $2,000,000 since 1990 on post-flood repairs to locally-built levees along the Wild Rice River riverbanks under Public Law 84-99 and the Non-Federal Levee Inspection Program. In addition, the Wild Rice Watershed District and other non-Federal entities have joined together in other flood damage reduction and ecosystem restoration efforts in recent years, constructing ring dikes around farmsteads and rural homes, removing flood-prone residences, and improving levees.

3. **Study Description:**

The Wild Rice River Feasibility Study (WRRFS) is a General Investigations spin-off from the specifically authorized "parent" Red River Reconnaissance Study and associated 905(b) analysis. The authority for the Red River Reconnaissance Study is the 30 September 1974 Resolution of the Senate Committee on Public Works that asked the Corps of Engineers to determine whether report recommendations "on the Red River of the North Drainage Basin, Minnesota, South Dakota and North Dakota … should be modified at this time, with particular reference to flood control, water supply, waste water management and allied purposes."

In addition, and consistent with the precepts of the 1998 Red River Mediation Agreement, the Wild Rice Watershed District has used a systems approach planning process (SAPP) to identify opportunities that provide both flood damage reduction and natural resources enhancement, while balancing the social and economic realities of the region. The SAPP also recognized that efforts should not cause or exacerbate flooding problems further upstream or downstream.

The Wild Rice River Feasibility Study began on January 10, 2003, with the execution of a Feasibility Cost Sharing Agreement between the St. Paul District US Army Corps of Engineers and the Wild Rice River Watershed District (WRWD). The WRWD will provide 50% of all study costs through non-federal cash and in-kind contributions. The Corps of Engineers funds the remaining 50% of study costs. The study is currently estimated to cost $3,120,000.

An early planning objective was to provide 10-year flood protection to the adjacent lands. An evaluation of the flood risk management opportunities performed early in the study determined that there was no Federal interest in reducing flood damages in the study area. Therefore, the study will concentrate on examining opportunities for natural resource enhancement, mainly ecosystem restoration along the Wild Rice River.

The combination of the 1950's channelization project, plus construction of the local levees has disrupted natural flood plain functions and processes on the Wild Rice River, and has resulted in loss of riparian habitat and the diminution in value of aquatic habitat. The constricted channel has resulted in increased deposition of sediments downstream of the historic project reach, and caused a decline in plant diversity, water quality and associated fish and wildlife benefits over the years.

The Wild Rice Feasibility Study has been divided, at the local sponsor's request, into two phases. Phase 1 involved selecting the reach of river on which the study would be focused. As the most significant degradation has occurred along the lower one-third of the Wild Rice River, the focus of the feasibility study is on this area. Phase 1 also concentrated on developing existing condition hydraulic modeling, and likely with-project hydraulic modeling. Four alternatives were devised to address the hydraulic issues in the study area. And reconnaissance-level cost and benefit analyses were performed to determine if there was

a likely Federal and local interest in further study. Phase 1 determined that there was likely Federal interest in restoring a 23-mile reach of the Wild Rice River.

Phase 2 of the Wild Rice River feasibility study shall evaluate a variety of ecosystem restoration measures within the 23-mile reach identified in Phase 1. Federal (Corps of Engineers) interest in the Wild Rice River is based on the potential benefits of riparian and aquatic ecosystem restoration. The study will evaluate a range of measures, including restoring the form and function of various extents of the Wild Rice River floodplain by removing or setting back existing levees, restoring the sinuosity of the Wild Rice River channel, and creation of aquatic and riparian habitat within the project reach as needed to maximize ecosystem restoration habitat units while minimizing costs and social effects, such as induced flooding downstream. The study will also address policy issues, cost sharing requirements for implementation, deauthorization of the 1950's straightening and channelization project, and operation and maintenance considerations and responsibilities. The study team recognizes that many of the problems in the project area are symptoms of larger watershed issues. The study team believes that restoration of this extent of the Wild Rice River will be effective in creating meaningful wildlife and aquatic habitat in the area. Additional Opportunities for restoring natural habitat outside of the project area will be entertained as they become apparent, and the project scope can be modified as needed.

4. **Product Delivery Team (PDT).**

The St. Paul District, Corps of Engineers and the Wild Rice Watershed District are jointly conducting this study. The Corps' project manager, is the primary point of contact for the PDT.

Discipline	Office Symbol	Org Code
PDT team leader/ Plan formulation	MVP-PM-B	B6H4400
Public Affairs	MVP-PA	B6C0000
Cultural resources	MVP-PM-E	B6H4300
Environmental/Biologist	MVP-PM-E	B6H4300
Cost Engineer	MVP-EC-D	B6L1DCS
Hydraulic Engineer	MVP-EC-H	B6LIHHC
Hydraulic Engineer (sedimentation)	MVP-EC-H	B6LIHHC
Hydrologic Engineer	MVP-EC-H	B6LIHWC
Structural engineering	MVP-EC-D	B6L1DSM
General Engineer	MVP-EC-D	B6L1DCS
Geotechnical engineer	MVP-EC-D	B6L1DGG
Office of Counsel	MVP-OC	B6E0000
Mechanical Engineer	MVP-EC-D	B6L1DSM
Economist	MVP-PM-E	B6H4300
Geology	MVP-ED-D	B6L1DGG
Real Estate	MVP-RE-PA	B6N0PA0
Surveys	MVP-EC-D	B6L1DGG
Contract Specialist	MVP-CT	B6P0E00
GIS	MVP-PM-E	B6H4300
Houston Engineering, WRWD Engineer		
Wild Rice Watershed District Administrator		
Chair, WRWD Board of Managers		

5. **PCX Coordination:**

The appropriate planning center of expertise (PCX) is the National Ecosystem Planning Center of Expertise (EPX), located in Mississippi Valley Division (MVD). This review plan will be submitted through the St. Paul District Planning Chief, the Planning Center of Expertise director, and PCX deputies for approval.

6. **Reviews and Quality Control.**

Quality control will be monitored via internal/District functional element reviews, Local Sponsor reviews, and Higher Authority/vertical team conferences and reviews. The following describes the measures that will be taken to ensure quality control on this study

Scheduled Reviews and Public Meetings: Feasibility reports must undergo both technical and policy compliance review. Technical review, which is the District's responsibility, is accomplished at the district level. Policy compliance review is Headquarters responsibility. The following is a summary of the reviews already conducted or required for this feasibility study.

a. Preliminary Feasibility Scoping Meeting: The preliminary Feasibility Scoping Meeting was held on 24 January 2005. Guidance from the January 2005 meeting indicated that additional information was needed for the future-without-project conditions; that the ecosystem restoration goals and objectives needed to be prepared and presented at an in-progress review meeting; that the study needed to include interagency collaboration;, that the rationale behind the width of corridor provided by the recommended setback levees be presented in an in-progress review meeting; that increment in cost between various levee heights be quantified, and either be justified as a project cost or be identified as a locally-preferred plan; that the study should address deauthorization of the 1950's Corps' channelization project.

b. Phase 1 Public Meeting: A public meeting was held on 8 September 2005, in Twin Valley, Minnesota, to present the results of Phase 1 of the Feasibility Study. Four alternatives were presented: Alternative 1 – setback levees and channel restoration along 23 miles of the Wild Rice River, combined with flowage easements to offset induced flooding downstream; Alternative 2 – setback levees and channel restoration along 23 miles of the Wild Rice River, combined with a minor diversion of Wild Rice River flows to offset induced flooding downstream; Alternative 3 - setback levees and channel restoration along 12 miles of the Wild Rice River, combined with a major diversion of Wild Rice River flows to offset induced flooding downstream; and Alternative 4 - setback levees and channel restoration along 23 miles of the Wild Rice River, combined with a major diversion of Wild Rice River flows to offset induced flooding downstream, but with lower setback levee elevations downstream of the diversion. The recommendation from Phase 1was Alternative 1 at a cost of $47.1 million. Phase 2 will further develop Alternative 1 to determine the most cost-effective means of providing ecosystem restoration benefits within the 23-mile project area.

c. Issue Resolution Conference (IRC) or In-Progress Review (IPR): The purpose of an issue resolution conference is to involve the USACE vertical team in the early identification and resolution of potential problems that could delay study progress. The purpose of an in-progress review is to provide the USACE vertical team and others, as needed, an update of study findings

and progress. An in-progress review will be held to identify the ecosystem restoration goals and objectives and to discuss the rationale for the selected river corridor. Both of these issues were identified in the preliminary feasibility scoping meeting.

d. Feasibility Scoping Meeting (FSM): The purpose of the feasibility scoping meeting is to bring the USACE vertical team, the non-Federal sponsor, and resource agencies together to reach agreement on the problems and solutions to be investigated during the feasibility study and the scope of analysis required. The feasibility scoping meeting should be held after problems and opportunities have been identified, resource conditions have been inventoried and forecast, and preliminary plans have been formulated and evaluated. The feasibility scoping meeting is also key to the NEPA scoping process. FSM documentation should include, as a minimum, a detailed description of identified problems and opportunities, statements of specific planning objectives and constraints, a detailed description of future without project conditions, a description of applicable management measures, the results of preliminary plan formulation and evaluation, and the results of preliminary coordination and public involvement.

e. Alternative Formulation Briefing (AFB): The purpose of the alternative formulation briefing is to confirm that the plan formulation and selection process, the tentatively selected plan, and the definition of Federal and non-Federal responsibilities are consistent with applicable laws, statutes, Executive Orders, regulations and current policy guidance. The goal is to identify and resolve any legal or policy concerns that would otherwise delay or preclude Washington-level approval of the draft report, and to allow the districts to release the draft report to the public concurrent with the Headquarters policy compliance review of the draft report. An alternatives formulation briefing is held when the District is prepared to present the results of the alternative formulation, evaluation and comparison of plans and has identified a tentatively selected plan. The AFB will result in a policy guidance memorandum, which will provide direction on whether or not concurrent HQUSACE and public review of the draft feasibility report will be allowed.

f. Phase 2 Public Meeting: A public meeting will be held after the AFB to present the results of the alternative formulation, evaluation and comparison of plans; and to present the tentatively selected plan to the public for comment prior to preparing a draft feasibility report. Public meeting comments will be made available to the project delivery team and reviewers.

g. Draft Feasibility Report Review: A draft feasibility report will be prepared and submitted for technical, policy, legal and public review. As directed in the AFB guidance memorandum, the HQ policy review may be required before public release of the draft feasibility report. After completing the technical, policy and legal review of the draft report and making any resulting changes to the report, HQUSACE will give approval for releasing the report for public review.

h. Division Commander's Public Notice/public review of feasibility report and Environmental assessment. After getting approval from HQUSACE, the Division Commander shall issue a public notice announcing completion of the feasibility report. The notice shall provide for a 30-day period for comments on the report. The NEPA documentation (Environmental Assessment) shall be released for public and agency review either with or shortly after release of the revised feasibility report. 30 days shall be allowed for review and comment of the environmental assessment.

i. Final Report Submittal Package. After the public review of the report is complete, and the public review comments have been considered, the NEPA documentation will be finalized. The feasibility report and environmental assessment shall be submitted to HQUSACE for final policy compliance review and certification by the Civil Works Review Board.

j. Civil Works Review Board Review: Final Report Policy Compliance Certification. This review will concentrate on the compliance of the final report with the Policy Guidance Memorandum. Successful review will culminate in the Chief of Engineers approval and transmittal to Assistant Secretary of the Army for Civil Works (ASA(CW)) for approval and transmittal to Congress.

k. Independent Technical Review (ITR): ITR is a process employed by the Corps of Engineers to ensure that studies and projects meet applicable standards of quality. ITR involves 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.

ITR will be ongoing throughout product development, rather than a cumulative review performed at the end of the investigation. An Independent Technical should be performed on the updated Project Study Plan, any in-progress review documents, the feasibility scoping documents, the alternatives formulation briefing documents, and the draft and final feasibility reports. The ITR will be performed by the Corps of Engineers, Ecosystem Restoration Planning Center of Expertise. The team leader and primary point-of-contact for the ITR team is _____ (to be assigned by Ecosystem PCX). The ITR team leader shall assign team members possessing the expertise and technical backgrounds qualifying them to provide a comprehensive technical review of the product. Independent Technical Review team members should be familiar with the six-step planning process used for evaluation of Ecosystem Restoration projects, especially the methodology used in evaluating Ecosystem Restoration (ER) benefits, and the concepts of cost effectiveness and incremental cost analysis. It would also be beneficial for ITR team members to be familiar with the Red River of the North basin and its tributaries. The ITR team members/disciplines are identified in the following table (names to be recommended by the ITR team leader):

Independent Technical Review Team

Name	Discipline	Telephone number	Office Symbol	Org Code
	ITR team leader			
	Real estate			
	Cultural resources			
	Environmental			
	Cost Engineering*			
	Hydraulics and Hydrology			
	Plan formulation			
	Economics			
	Structural engineering			
	Geotechnical engineering			

* The Cost Engineer shall be approved by the Cost Engineering PCX in Walla Walla District.

ITR comments and responses will be recorded in the online Design Review Checking (DRChecks) system (www.projnet.org). The DRChecks review shall be managed by the ITR team leader. Documentation of the independent technical review will be included with the submission of the reports to Mississippi Valley Division and HQUSACE. All comments resulting from the independent technical review will be resolved prior to forwarding the Wild Rice River 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.

l. Review of Work-in-Kind: The Study Sponsor will be responsible for quality control over deliverables provided as in-kind work. The scopes of work and costs for study tasks to be performed by the local sponsor shall be approved by the St. Paul District prior to the performance of the work. St. Paul District project delivery team members will provide the independent technical review of study elements performed as work-in-kind. The St. Paul District will verify that study tasks performed as in-kind work meet study requirements before granting cost-sharing credit for the work.

m. Model Review: An environmental community model will be developed during fiscal year 2008. The environmental community model will be developed in coordination with outside agencies, and will require review and approval by the Ecosystem Center of Expertise, as outlined in EC 1105-2-407 (Planning Models Improvement Program: Model Certification).

n. External Peer Review (EPR): External peer review is recommended if there is vertical team consensus that the subject matter is novel, is controversial, is precedent-setting, has significant interagency interest, or has significant economic, environmental and social effects on the nation. As the anticipated implementation cost of the project exceeds the $45 million threshold set by Congress, it is recommended that this feasibility study be subjected to External Peer Review.

The Ecosystem Planning Center of Expertise is responsible for the accomplishment and quality of external peer reviews, and will facilitate the external peer review for this study. The external peer review team members will be selected from subject matter experts outside of the Corps of Engineers. External peer review will be conducted at the Alternative Formulation Briefing. EPR may be conducted at additional points, as deemed appropriate by the PCX.

o. Value Engineering Review: During the feasibility phase of an ecosystem restoration project, environmental objectives are identified, measures are designed to attain each of these objectives, measures are combined into alternatives, the environmental output and the cost of each alternative are calculated, and incremental cost analysis is used to identify the recommended alternative. The recommended alternative will be that which maximizes environmental output at various expenditure levels. Therefore, the goal of Value Engineering on this study will be to ensure that the environmental outputs are achieved in the most cost-effective manner. Value engineering will be conducted early in the design phase to determine if there is a more cost-effective way of attaining the environmental outputs that have been identified during the feasibility phase. An independent Value Engineering team, made up of St. Paul District personnel, planning center of expertise personnel, or a combination of the two, will be used to examine the measures recommended by the Project Delivery team, and to identify opportunities to achieve the Ecosystem Restoration objectives in a more cost-effective manner. The Local Sponsor will be part of the value engineering study process. The Value Engineering Team members will be identified in the design phase.

7. **Schedule.** The following is the anticipated schedule for the various reviews and public meetings. The Project Study Plan is currently under review. This review plan will be updated as more information becomes available.

Review Name	Participants	Timing/Schedule
Preliminary Feasibility Scoping Meeting	MVP, MVD, HQ, Local Sponsor	24 January 2005
Phase 1 Public Meeting	MVP, Local sponsor, general public	8 September 2005
In-progress review (ecosystem restoration goals and objectives, rationale on selected river corridor)	MVP, MVD-DST, MVD-PCX, ECX, Local Sponsor, ITR	February 2009
Feasibility Scoping Meeting	MVP, MVD-DST, MVD-PCX, ECX, HQ, Local Sponsor, ITR	August 2009
Alternative Formulation Briefing	MVP, MVD-DST, MVD-PCX, ECX, EPR, HQ, Local Sponsor, ITR	February 2010
Phase 2 Public Meeting	MVP, Local sponsor, general public, agencies	January 2011
HQ Policy Review and Draft Feasibility report and EA review	MVP, MVD-DST, MVD-PCX, ECX, HQ, Local Sponsor, agencies, general public, ITR	June 2011
HQ Policy Review and Final Feasibility Report and EA	MVP, MVD-DST, MVD-PCX, ECX, HQ, Local Sponsor, agencies, general public	Nov 2011
Civil Works Review Board		April 2012
Chief's Report		June 2012
ASA (CW) approval		November 2012

8. Point of Contact.

For more information about this study, please contact the project manager,
St. Paul District, US Army Corps of Engineers, 190 Fifth Street East, Suite 401, St. Paul, MN 55101-1638.