

REPLY TO ATTENTION OF:

CEMVD-PD-KM

2 April 2008

MEMORANDUM FOR Commander, Vicksburg District

SUBJECT: Bossier Parish, Louisiana, Flood Risk Management Study, Feasibility Report and Environmental Impact Statement, Flood Risk Management Planning Center of Expertise Recommendation for Approval of Peer Review Plan

1. References:

a. EC 1105-2-408, Peer Review of Decision Documents, 31 May 2005.

b. Multiple memorandum, CECW-CP, 30 March 2007, subject: Peer Review Process.

c. Supplement to memorandum, CEMVD-PD-N, 30 March 2007, subject: Peer Review Process.

d. E-mail, CESPK-PD-W, 21 March 2008, subject: FRM-PCX: Bossier Parish, Louisiana, Peer Review Plan Review BackCheck -Final, 1621 hours(encl).

2. I hereby approve the subject Peer Review Plan (PRP) and concur in the recommendation that only independent technical review of this project is required. The proposed PRP was coordinated with, and concurred in by, the Flood Risk Management Planning Center of Expertise (FRM-PCX). The PRP complies with all applicable policy and provides an adequate independent technical review of the plan formulation, engineering and environmental analyses, and other aspects of the plan development. Non-substantive changes to this PRP do not require further approval.

3. Post the PRP to your web page, provide the FRM-PCX a link for posting on its web page, and furnish a copy of the final approved PRP to the FRM-PCX. In accordance with reference 1.c. above, before posting to your web page, remove the names of Corps/Army employees. CEMVD-PD-KM SUBJECT: Bossier Parish, Louisiana, Flood Risk Management Study, Feasibility Report and Environmental Impact Statement, Flood Risk Management Planning Center of Expertise Recommendation for Approval of Peer Review Plan

4. My point of contact for this PRP is Program Management, CEMVD-PD-KM, (601) 634-5065.

Encl

Brigadier General, USA Commanding

CF (w/encl): CECW-CP CEMVD-PD-N

VICKSBURG DISTRICT

PEER REVIEW PLAN

BOSSIER PARISH, LOUISIANA FLOOD RISK MANAGEMENT STUDY FEASIBILITY REPORT AND ENVIRONMENTAL IMPACT STATEMENT

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STATEMENT OF TECHNICAL REVIEW

PEER REVIEW PLAN

BOSSIER PARISH, LOUISIANA FLOOD RISK MANAGEMENT STUDY FEASIBILITY REPORT AND ENVIRONMENTAL IMPACT STATEMENT

1. Project Description.

a. <u>Decision Document</u>. This document outlines the Peer Review Plan for the Bossier Parish, Louisiana, General Investigation (GI) Feasibility Study and Environmental Impact Statement (EIS) and Appendixes. Engineer Circular (EC) 1105-2-408 dated 31 May 2005, "Peer Review of Decision Documents," (1) establishes procedures to ensure the quality and credibility of U.S. Army Corps of Engineers 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. The feasibility report could lead to congressional authorization and is therefore covered by the Circular. The purpose of this feasibility study is to investigate possible solutions to improve the flood risk management capability of Bayou Bodcau Dam at Bayou Bodcau, Louisiana.

b. The Circular outlines the requirement of the two review approaches (independent technical review (ITR) and external peer review (EPR)) and provides guidance on Corps Planning Centers of Expertise (PCX) involvement in the approaches. This document addresses review of the decision document as it pertains to both approaches and planning coordination with the appropriate Center.

(1) <u>ITR</u>. Districts are responsible for reviewing the technical aspects of the decision documents and their supporting interim products through the ITR approach. The 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. The ITR is intended to confirm that such work was done in accordance with clearly established professional principals, practices, codes, and criteria. In addition to technical review, documents should also be reviewed for their compliance with laws and policy. The Circular also requires that DrChecks be used to document all ITR comments, responses, and associated resolution accomplished.

(2) <u>EPR</u>. The Circular added EPR to the existing Corps review process. This approach does not replace the standard ITR process. The peer review approach applies in special cases where the magnitude and risk of the project are such that a critical examination by a qualified person outside the Corps is necessary. The EPR can also be used where the information is based

on novel methods, presents complex interpretation challenges, contains precedent-setting methods or models, or is likely to affect policy decisions that have a significant impact. The degree of independence required for technical review increases as the project magnitude and project risk increase.

(a) Projects with low magnitude and low risk may use a routine ITR.

(b) Projects with either high magnitude/low risk or low magnitude/high risk would require both Corps and outside reviewers on the ITR team to address the portions of the project that cause the project to rate high on the magnitude or risk scale.

(c) Projects with high magnitude and high risk require a routine ITR as well as an EPR.

(3) <u>PCX Coordination</u>. The Circular outlines PCX coordination in conjunction with preparation of the review plan. Districts should prepare the plans in coordination with the appropriate PCX. The Corps PCX are responsible for the accomplishment and quality of ITR and EPR for decision documents covered by the Circular. Centers may conduct the review or manage the review to be conducted by others. Reviews will be assigned to the appropriate Center based on business programs. The Circular outlines alternative procedures to apply to decision documents. Each Center is required to post review plans to its website every 3 months, as well as links to any reports that have been made public. The Office of Water Policy Review (OWPR) will consolidate the lists of all review plans and establish a mechanism for soliciting public feedback on the review plans.

(4) The study will prepare a recommended plan to Congress. The feasibility study will include a complete presentation of study analyses and results. It will document compliance of the recommended plan with all applicable statutes, executive orders, and policies.

2. <u>General Site Description</u>. The study area is located in Bossier Parish in northwestern Louisiana. Since completion of the Bayou Bodcau Dam in 1950, the protected area below the dam has changed significantly with many homes and associated improvements being constructed. The study area was predominantly agricultural in nature when the project was constructed; however, significant portions of the study area have now been converted from agricultural to urban uses. Significant residential development has, and continues to, occur in the Red Chute Bayou/Flat River flood plain. Cities and towns in the study area include Bossier City and Benton. The population of Bossier Parish and Bossier City are currently estimated at 107,300 and 58,100, respectively.

a. <u>Project Scope</u>. The proposed project area is in the vicinity of Bayou Bodcau Dam. The study area includes Bayou Bodcau Dam, the area within and adjacent to the upstream lakes footprint, and the area downstream of the dam impacted by the dam's outflow. Feasibility studies will focus on alternatives that would modify Bayou Bodcau Dam outlet to address the area's flood problems and needs. Project costs for structural modifications to dam are estimated

to be in the range of \$30 to \$35 million based on previous studies and reconnaissance studies conducted for the Section 905(b) analysis. Additional real estate interests required upstream of the dam will be evaluated during the feasibility phase and could add costs to the project if additional project rights-of-way are needed.

b. <u>Problems and Opportunities</u>. Since completion of the Bayou Bodcau Dam in 1950, the protected area below the dam has changed significantly, gradually converting from agricultural to urban uses. In 2001, a survey to identify structures at risk of flood damage in the area yielded approximately 1,600 residential structures. The existing outlet of Bayou Bodcau Dam is uncontrolled. The dam serves as a temporary floodwater-retarding structure. The uncontrolled outlet includes two uncontrolled 10-foot diameter conduits. The release at the top of the flood risk management pool is approximately 3,400 cubic feet per second (cfs). A gated outlet would allow floodwaters to be retained longer and slowly released. This feature would result in holding water within the existing easement area approximately 2 weeks longer and 2 feet higher than currently occurs. There is a significant opportunity to reduce flood risk in the area below the dam by adding gates to the dam to regulate outflow.

c. <u>Product Delivery Team (PDT)</u>. The PDT is comprised of those individuals directly involved in the development of the decision document. Contact information and disciplines are listed below.

Name	Discipline	Telephone No.	E-Mail
	Project Manager		
	Economist		
	Biologist		
	Archeologist		
	Structure Design		
	Cost Engineering		
	Geotechnical		
	Hydraulics		
	Water Quality	And a final state of a	
	Real Estate Planning		
	Regulatory		
	Construction		
	Project Resources		

d. <u>Vertical Team</u>. The Vertical Team includes District management, District Support Team (DST), and Review Integration Team (RIT) staff, as well as members of the Planning of Community of Practice (PCoP).

3. Quality Control.

a. This plan was developed to ensure that high quality products are produced within the Vicksburg District (CEMVK). This plan establishes the policies, procedures, and organizational responsibilities for providing quality control of planning products for this project.

b. The Peer Review Plan (PRP) for the Bossier Parish, Louisiana, study provides a technical review mechanism ensuring that quality products are developed during the course of the study by CEMVK. The technical review of the feasibility study will consist of an ITR by a Corps District outside CEMVK. An additional level of policy review for the study will be performed at the Headquarters, Chief of Engineers (HQUSACE), and will ensure that all applicable statutes have been applied with respect to cost sharing, project purpose, and budget criteria. All processes, quality control, quality assurance, and policy review will complement each other producing a seamless review process that identifies and resolves technical and policy issues during the course of the study.

c. Study is seeking best value to the Government that may also address sponsor requirements. Technical review will assure accountability for the technical quality of the product. Each technical review objective will be satisfied through a seamless review process performed outside CEMVK (ITR), Mississippi Valley Division (CEMVD) (quality assurance of technical products), and HQUSACE (policy review). The PRP is based upon applicable guidance from higher authority, including Engineer Circular 1105-2-408, "Peer Review of Decision Documents" 31 May 2005.

4. <u>ITR Plan</u>. As outlined in paragraph 1.b(1), the District is responsible for ensuring adequate technical review of decision documents and their supporting interim work products described below. The responsible PDT District of this decision document is Vicksburg (CEMVK).

a. <u>General</u>. An ITR team leader shall be designated for the ITR process. The designated PCX for Flood Risk Management is the South Pacific Division (CESPD). The PCX will coordinate the ITR team and ITR team leader. The ITR team leader is responsible for providing information necessary for setting up the review, communicating with the Project Manager (PM), providing a summary of critical review comments, collecting grammatical and editorial comments from ITRT, ensuring that ITRT has adequate funding to perform the review, facilitating the resolution of the comments, and certifying that ITR has been conducted and resolved in accordance with policy.

(1) The ITR will be accomplished in accordance with ER 1105-2-100, Appendix G. Three ITRs are planned:

(a) Technical work products that support the FSM documentation to include surveying and mapping, hydrology and hydraulics, average annual damage computation, etc., will be subject to ITR prior to submitting the technical products for the FSM.

(b) Technical work products that support the AFB documentation in addition to those listed in (a) above to include environmental/NEPA documentation, average annual damage benefit calculation, cost estimates, etc., will be subject to ITR prior to the AFB. If the draft report is available, that report may serve as the AFB documentation.

(c) ITR will be conducted on the draft report and NEPA document.

(2) The PDT will review the interim products including FSM materials, AFB materials, and draft feasibility report with NEPA document to ensure consistency across the disciplines and resolve any issues prior to the start of ITR on these items.

b. <u>Team</u>. The ITRT will be comprised of individuals who have not been involved in the development of the decision document or interim work products and will be chosen based on expertise, experience, and/or skills. The members will roughly mirror the composition of the PDT. This team will be coordinated by the PCX. This Peer Review Plan will be updated to include the ITRT members, their disciplines, and other relevant information once members are designated. It is anticipated that approximately ten reviewers total should be available in the following disciplines:

Discipline		
Hydraulic Engineering		
Structural Engineering		
Mechanical Engineering		
Electrical Engineering		
Geotechnical Engineering		
Cost Engineering		
Economics		
Environmental		
Plan Formulation		
Real Estate		

(1) <u>Discipline-Specific Guidance and Requirements</u>. The ITRT representation is required in the disciplines listed below. In general, the ITRT members will each have a minimum 15 years experience in their respective discipline. The PCX will review the qualifications of perspective team members prior to their designation/acceptance to ITRT and for any subsequent changes thereto.

(a) <u>Hydrology & Hydraulics</u>. Team member will have a thorough understanding of dynamics of both open channel flow systems and enclosed systems, reservoir analysis, application of detention/retention basins, and approaches that can benefit water quality. The team member will have an understanding of HEC-HMS, HEC-RAS and UNET computer modeling techniques that will be used for this study. The reviewer should also have a solid understanding of the geomorphology of alluvial rivers.

(b) <u>Structural</u>. Team member will have a thorough understanding of dam design with particular emphasis on gate design. Experience with modifying/replacing existing gated structures or retrofitting an existing structure with gates would be particularly beneficial, although not required. A certified professional engineer is recommended, though not required.

(c) <u>Mechanical</u>. Team member shall be familiar with dam and gate design. Engineering disciplines other than Mechanical may be acceptable for review of this area of work, subject to meeting the experience requirement stated above.

(d) <u>Electrical</u>. Team member shall be familiar with dam gate and electrical utilities design.

(e) <u>Geotechnical</u>. Team member will have extensive experience in dam and gate design, postconstruction evaluation, and rehabilitation. A certified professional engineer is recommended.

(f) <u>Cost Estimating</u>. Team member will be familiar with cost estimating for similar projects using MCACES. A separate process and coordination is also required through the Walla Walla District for cost engineering.

(g) <u>Economics</u>. Team member will have extensive experience in related flood risk management projects and have a thorough understanding of HEC-FDA.

(h) <u>Environmental</u>. Team member should have a solid background in the NEPA process and wetland analysis. The reviewer should also understand various models likely to be used in the analysis to include 1) Hydro-Geomorphic Classification of Wetlands, 2) Aquatic Habitat Evaluation Procedures (HEP), and 3) Terrestrial HEP. In particular, the reviewer should understand the impacts of increasing the length of time flooding occurs on terrestrial resources.

(i) Plan Formulation. Team member will be familiar with current flood risk management planning and policy guidance. Plan formulation experience in flood risk management studies conducted under the Authority of Section 216 of the 1970 Flood Control Act (review of completed projects) would be beneficial, but not a requirement.

(j) <u>Real Estate</u>. Team member should have recent experience in reviewing Real Estate plans for feasibility studies and be able to draw on "lessons learned" in advising PDT of best practices.

(k) Other disciplines/functions involved in the project include Hazardous/Toxic Waste, Relocations, Operations, Cultural Resources, and Legal. In each case, any required ITR within these disciplines may be accomplished on a case-by-case basis by independent sources. The general experience requirements and principles contained in this document also apply to these disciplines/functional areas. (2) The team will use DrChecks to document the ITR process. The PM will facilitate the creation of a project portfolio in the system to allow access by all PDT and ITRT members. An electronic version of interim technical work products for the Feasibility Scoping Meeting (FSM), Alternative Formulation Briefing (AFB), and the draft report with appendixes and NEPA document, in Word format shall be posted at ftp://ftp.usace.army.mil/pub/ or a hard copy will be provided at least 1 business day prior to the start of the comment period.

(3) <u>Model Certification</u>. Hydraulic and hydrologic models expected to be used include (1) Geo-Hydrologic Modeling System, (2) Geo-HecRaz, and (3) Hydrologic Modeling System. These models were developed by the Hydraulic Engineering Center and are certified models for use in water resource investigations. Environmental models likely to be used include (1) Hydro-Geomorphic Classification of Wetlands Model, (2) Aquatic Habitat Evaluation Procedures (HEP), and (3) Terrestrial HEP. These environmental analysis models are widely used throughout the Corps and widely accepted by natural resource agencies. Any models proposed for use as the study progresses will be evaluated for certification.

(4) The PDT shall send the ITRT leader one hard copy (with color pages, as applicable) of the draft report and appendixes and NEPA document for each ITRT member such that the copies are received at least 1 business day prior to the start of the comment period. Interim technical work products will be provided to the appropriate ITRT members.

(5) The PDT shall host an ITR kickoff meeting virtually to orient the ITRT during the first week of the comment period for the draft report and NEPA document. If funds are not available for an onsite meeting, the PDT shall provide a presentation about the project, including photographs of the site, for the team.

(6) The PM shall inform the ITRT leader when all responses have been entered into DrChecks and conduct an in-progress review to summarize comment responses.

(7) A revised electronic version of the report and appendixes and interim technical work products with comments incorporated shall be posted at ftp://ftp.usace.army.mil/pub/ for use during back checking of the comments.

(8) PDT members shall contact ITRT members or leader as appropriate to seek clarification of a comment's intent or provide clarification of information in the report. Discussions shall occur outside of DrChecks, but a summary of discussions may be provided in the system.

(9) Reviewers will be encouraged to contact PDT members directly via e-mail or telephone to clarify any confusion. DrChecks shall not be used to post questions needed for clarification.

(10) The ITRT, PDT, and vertical team shall conduct an After Action Review (AAR) no later than 3 weeks after ITR certification.

c. Funding.

(1) The PDT district shall provide labor funding by cross charge labor codes. Funding for travel, if needed, will be provided through Government order. The PM will work with the ITRT leader to ensure that adequate funding is available and commensurate with the level of review needed. The current cost estimate for this review is \$50,000. Any funding shortages will be negotiated on a case-by-case basis and in advance of a negative charge occurring.

(2) The ITRT leader shall provide organization codes for each team member and a responsible financial point of contact (CEFMS responsible employee) for creation of labor codes.

(3) Reviewers shall monitor individual labor code balances and alert the ITRT leader to any possible funding shortages.

d. Timing and Schedule.

(1) Throughout the development of this document, the PDT will brief Senior staff and subject matter experts from the PDT District to ensure planning quality. Members of the vertical team (DST, Planning CoP, RIT) will be invited to attend and provide comments on the product to date.

(2) The ITR process for the interim products, feasibility report, and NEPA document will follow the timeline below. Actual dates will be scheduled once the period draws closer. It is estimated that review of the feasibility report and NEPA document will begin in the third quarter of FY 2010.

Task	Date (Week)
Feasibility Scoping Meeting	January 30, 2009
Feasibility Report and NEPA Document	March 31, 2010
Comment period begin	April 1, 2010
Kickoff meeting	April 1, 2010
ITR comments due	April 30, 2010
PDT responses due	May 14, 2010
Responses back check	May 28, 2010
Certification	June 11, 2010
Alternative formulation briefing (AFB)	June 25, 2010
AFB policy memorandum issued	July 23, 2010
Recertification, if needed	
AAR NLT	August 3, 2010

e. <u>Review</u>.

(1) ITRT responsibilities are as follows:

(a) Reviewers shall review the interim work products for the FSM, AFB, and draft report and NEPA documents to confirm that work was done in accordance with established professional principals, practices, codes, and criteria and for compliance with laws and policy. Comments on the report shall be submitted into DrChecks.

(b) Reviewers shall pay particular attention to one's discipline, but may also comment on other aspects as appropriate. Reviewers who do not have any significant comments pertaining to their assigned discipline shall provide a comment stating this.

(c) Grammatical and editorial comments shall not be submitted into DrChecks. Comments should be submitted to ITRT leader via electronic mail using tracked changes feature in the Word document or as a hard copy markup. The ITRT leader shall provide these comments to the PM.

(d) Review comments shall contain these principal elements:

- $\underline{1}$. A clear statement of the concern
- $\underline{2}$. The basis for the concern, such as law, policy, or guidance
- <u>3</u>. Significance for the concern
- 4. Specific actions needed to resolve the comment

(e) The "Critical" comment flag in DrChecks shall not be used unless the comment is discussed with the ITR manager and/or PM first.

(2) The PDT team responsibilities are as follows:

(a) The team shall review comments provided by the ITRT in DrChecks and provide responses to each comment using "Concur," "Nonconcur," or "For Information Only." Concur responses shall state what action was taken and provide revised text from the report, if applicable. Nonconcur responses shall state the basis for the disagreement or clarification of the concern and suggest actions to negotiate the closure of the comment.

(b) Team members shall contact the PDT and ITRT managers to discuss any "nonconcur" responses prior to submission.

f. <u>Resolution</u>.

(1) Reviewers shall back check PDT responses to the review comments and either close the comment or attempt to resolve any disagreements. Conference calls shall be used to resolve any conflicting comments and responses. (2) Reviewers may "agree to disagree" with any comment response and close the comment with a detailed explanation. The ITRT members shall keep the ITR leader informed of problematic comments. The vertical team will be informed of any policy variations or other issues that may cause concern during Headquarters review.

g. <u>Certification</u>. To fully document the ITR process, a statement of technical review will be prepared. Certification by the ITR leader and PM will occur once issues raised by the reviewers have been addressed to the review team's satisfaction. Indication of this concurrence will be documented by the signing of a certification statement (Appendix A). A summary report of all comments and responses will follow the statement and accompany the report throughout the report approval process.

h. <u>Alternative Formulation Briefing (AFB)</u>. The AFB for this project will occur after ITR certification. It is possible that the briefing will result in additional technical or policy comments for resolution. After resolution of significant comments, the ITR will be recertified, if needed.

5. EPR Plan.

a. This decision document will present the details of a feasibility study undertaken to modify Bayou Bodcau Dam to improve its flood risk management capability. The scope and technical complexity do not warrant an EPR. The Section 905(b) analysis indicated total project costs ranging from approximately \$30 to \$35 million. Should the Government estimate for the recommended plan exceed \$45 million, the decision to forego an EPR will be revisited based on the Water Resources Development Act (WRDA) of 2007 implementation guidance. The WRDA 07 includes provisions that require an EPR for projects that exceed \$45 million.

(1) It is unlikely that the Corps report to be disseminated will contain influential scientific information. The Flood Risk Management measures that were identified within the Section 905(b) analysis will be evaluated using standard hydrologic, hydraulic, geotechnical, environmental, and economic processes. The efforts envisioned to date will not result in a highly influential scientific assessment.

(2) It is anticipated that while this study will be challenging and beneficial, it will not be novel, controversial or precedent setting, nor have significant national importance.

(3) <u>Project Magnitude</u>. The magnitude of this project is determined as low. While the hydrology of the study area is considered complex, the project is not particularly complex. The project will likely have positive long-term cumulative effects.

(4) <u>Project Risk</u>. This project is considered low risk overall. The potential for failure is considered to be low. Floodwater retention is a straightforward concept in Flood Risk Management. The existing outlet of Bayou Bodcau Dam is uncontrolled. The uncontrolled outlet includes two 10-foot diameter conduits. The release at the top of the flood risk management pool is approximately 3,400 cfs. Bayou Bodcau has performed its flood risk reduction function well since completion in 1950. However, significant changes have occurred in the downstream watershed that warrant feasibility studies. Much of the downstream watershed has been converted from agricultural to urban uses. Studies will be directed at adding gates to the dams' outlet structure. Gates would add significantly more outflow control than currently exists on the project. Gates on flood risk management projects such as dams are typical features and generally considered to be low risk. Features under study are not expected to increase the risk of dam failure or result in the dam being classified in a different Dam Safety Action Classification. The uncertainty of success of the project is low because the methods used for evaluating the project are standard.

(5) The subject matter covered in the decision document is not expected to be novel, controversial, or precedent-setting, and the project will not have significant interagency interest or significant economic, environmental, or social effects.

(6) Therefore, a separate EPR will not be conducted on the decision document, provided the project cost estimate does not exceed the \$45 million threshold established in WRDA 07 and external members will not be part of the ITR team. The ITR, public, and agency review will serve as the main review approaches.

6. Public Involvement.

a. Public review of the document will occur after issuance of the AFB policy guidance memorandum, after ITR of the draft feasibility report and NEPA document, and concurrence by HQUSACE that the document is ready for public release. The period will last 30 days as required by law. As such, public comments other than those provided at any public meetings or workshops held during the planning process will not be available to the review team. Significant public comments that result in changes to the formulation will require a new ITR.

b. The public review of necessary state or Federal permits will also take place during this period.

c. A formal state and agency review will occur concurrently with the public review. However, it is anticipated that intensive coordination with these agencies will have occurred concurrent with the planning process. Possible state and agency issues are related to timber damage related to impounding water longer.

d. Upon completion of the review period, comments will be consolidated and addressed, if needed. A comment resolution meeting will take place, if needed, to decide upon the best resolution of comments. A summary of the comments and resolutions will be included in the document.