



Reply to  
Attention of:

**DEPARTMENT OF THE ARMY**  
SOUTHWESTERN DIVISION, CORPS OF ENGINEERS  
1100 COMMERCE STREET  
DALLAS, TEXAS 75242-0216

CESWD-PDS-P

15 OCT 2007

MEMORANDUM FOR Commander, Fort Worth District

SUBJECT: Review Plan Approval for the Bastrop IFS, Lower Colorado River Basin, Feasibility Study

1. References:

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

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

2. The enclosed Review Plan for the Bastrop IFS, Lower Colorado River Basin, Feasibility Study has been prepared in accordance with referenced guidance.

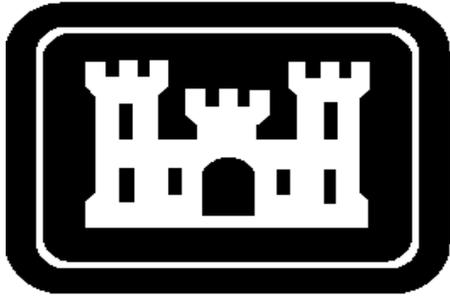
3. This plan has been made available for public comment, and the comments received have been incorporated. It has been coordinated with the Flood Damage Reduction Planning Center of Expertise of the South Pacific Division which is the lead office to execute the plan. The Review Plan does not include External Peer Review.

4. I hereby approve this Review Plan, which is subject to change as study circumstances require, consistent with study development under the Project Management Business Process. Subsequent revisions to this plan or its execution will require new written approval from this office. For further information on this issue please contact Brent Hyden, CESWD-PDF at (469) 487-7033.

A handwritten signature in black ink, appearing to read "Kendall P. Cox".

KENDALL P. COX  
Colonel, EN  
Commanding

Encl



**U.S. Army**

**Corps of Engineers**

**Fort Worth District**

## **Peer Review Plan**

### **Bastrop Interim Feasibility Study**

### **Lower Colorado River Basin, Texas**

September 28, 2007

# PEER REVIEW PLAN

## BASTROP INTERIM FEASIBILITY STUDY

### Background

The Bastrop Interim Feasibility Study is a multipurpose flood damage reduction and ecosystem restoration study on creeks in Bastrop County that are tributaries of the Colorado River. The study is one of seven studies tiered to the Lower Colorado River Basinwide Feasibility Study. The Onion Creek and Wharton Interim Feasibility Studies were combined and resulted in the Lower Colorado River Basin Phase I, Texas Chief's Report being signed in December 2006. This study is now in the Preconstruction, Engineering, and Design Phase (PED) so no peer review plan is required for this study. The remaining five studies, Bastrop, Highland Lakes, Shoal Creek, Walnut Creek, and Williamson Creek Interim Feasibility Studies, all require peer review plans. This peer review plan is being developed for the Bastrop Interim Feasibility Study.

The Bastrop Interim Feasibility Study will be a typical U.S. Army Corps of Engineers study and will investigate structural measures such as levees, floodwalls, channel modifications, and upstream detention and nonstructural measures such as flood warning systems, raising the structures in place and evacuation of the floodplain. Ecosystem restoration measures will include purchase of floodplain land and revegetation of riparian zones, rebuilding stream banks, restoring wetlands and other measures that could be applicable. Multipurpose measures will also be explored to fully utilize project lands if features are compatible. There is no estimated project cost at this time.

The Bastrop Interim Feasibility Study is in its infancy and as such, project risk if a project would be constructed is unknown at this time. During the feasibility study, project risk will be analyzed in detail and disclosed in the Draft and Final Interim Feasibility Reports. However, generalized project risk can be discussed. The alternative with the least amount of project risk for future damages would be evacuation of the floodplain. This is because if a structure is gone, it cannot be damaged. With almost every other project alternative, there is an inherent project risk. The project will only provide protection from a flood equal to or below the project design. For instance, if you build a levee to protect against a 25-year event, it will not provide protection from a 100-year event. In addition, there is a risk of project failure from geotechnical issues, lack of operations and maintenance, etc. This risk cannot be determined until detailed analysis has occurred to determine the associated risk.

### Quality Management Plan

The quality management plan is developed to achieve feasibility phase documents and services that meet or exceed customer requirements and are consistent with Corps policies and regulations. Certain activities such as Independent Technical Reviews and External Peer Reviews are required for Feasibility level studies and designed to improve the quality of feasibility level studies. In addition, model certification is required for any model used to make a planning decision that has not already been certified for use. Each of these topics are discussed below.

#### *Independent Technical Review*

All of the major products for the tasks listed in the detailed scope of work in each of the Bastrop Interim Feasibility Study Project Management Plan will be subject to independent technical review. Seamless Single Discipline Review will be accomplished prior to the release of materials to other members of the study team or integrated into the overall study. Section chiefs shall be responsible for accuracy of the computations through design checks and other internal procedures, prior to the independent technical review.

Independent Technical Review will occur prior to major decision points in the planning process so that the technical results can be relied upon in setting the course for further study. Review of the report and all appendices will be coordinated and documented by the ITR team leader. As mentioned throughout the PMP, all Independent Technical Review will be coordinated with the Planning Center of Expertise for Flood Damage Reduction. These products would include documentation for the decision points in the study (Feasibility Scoping Meeting at the end of Phase 1 and the Alternative Formulation Briefing). Since this quality control will have occurred prior to the decision event, the decision event is free to address critical outstanding issues and set direction for the next step of the study, since a firm technical basis for making decisions will have already been established. Independent technical review will be initiated at least twenty working days prior to submission of documentation for a decision event, such as FSM or AFB, submission of documentation for a HQUSACE issue resolution conference. Continued ITR of the post AFB documentation will be reviewed as it is incorporated into the draft Interim Feasibility Report to ensure a complete ITR is conducted. In addition, the draft and final reports will be reviewed internally by the Fort Worth District including all team members and resource providers as well as supervisors and the non-Federal Sponsor. The complete independent technical review will be completed prior to release of the draft report for public review.

For products that are developed under contract, which is unexpected, the contractor will be responsible for quality management as well as a Corps independent technical review. Quality assurance of the contractor's quality control will be the responsibility of the district.

#### *External Peer Reviews*

Engineering Circular (EC) 1105-2-408 requires external peer reviews for projects where information is based on novel methods, presents complex challenges for interpretation, contains precedent-setting methods or models, presents conclusions that are likely to change prevailing practices, addresses important public safety risks (e.g. designs that include floodwalls) or is likely to affect policy decisions that have a significant impact. External Peer Review would occur after a draft report was prepared and should run concurrent to the Independent Technical Review of the draft report. External Peer Review is expected to take 3-5 months to be completed. There are several options for External Peer Review. One option that the Fort Worth District is exploring is to Prepare an Memorandum of Agreement (MOA) with a Texas university and let that university facilitate an external peer review potentially using additional universities for technical expertise. A second option is to use established External Peer Review Contracts. A third option is to use the National Academy of Sciences (NAS). The need for external peer reviews and how they would be accomplished are discussed by Interim Feasibility Study below.

At this time, external peer review is not currently being envisioned but may become necessary if project scope, costs, or risks increase. If after phase 1 of the study, it is determined that external peer review is appropriate, then it will be added to the revised PMP at that time and the Peer Review Plan will be revised and posted to the website.

#### *Planning Models*

The Bastrop Interim Feasibility Study will utilize models developed by the City of Austin and certified by FEMA in 2007 for floodplain mapping. These models include: HEC-RAS and GEO-RAS. Models used to measure ecosystem restoration benefits will be determined at a later date, but could include the U.S. Fish and Wildlife Service's Habitat Evaluation Procedures or the U.S.

Environmental Protection Agency's Aquatic Habitat Assessment Model. The outputs of all of these models will be reviewed by the Independent Technical Review Team, but model certification is not expected to be needed since the H&H models are in the Crops Suite of models and the other models have been certified for use by their agency for this type of analysis.

## Technical Review Team

The following Table will be completed and updated throughout the review process. The project delivery team member will review the appropriate documentation before it forwarded for higher Corps review. Their immediate supervisor will also review the documentation to ensure technical sufficiency. In addition, an Independent Technical Review Team will be established by the Flood Damage Reduction PCX. An ITR review team members table will be placed within the Interim Feasibility Report to document their participation and contributions to the study. The provided information below will be completed for each Interim Feasibility Study.

Study Team and Review Assignments			
Discipline	PDT Member	Supervisor	Review Team Member
Plan Formulation			
H&H			
Civil Design			
Structural Design			
Geotechnical			
Cost Estimating			(Walla Walla District)
Economic Analysis			
Cultural			
Environmental			
Real Estate			
HTRW			
Recreation			

## Documentation of Technical Review Process

Date Began	Review Team Leader	Issue	MFR Resolution Date
1. _____	_____	FSM	_____
2. _____	_____	AFB	_____
3. _____	_____	Draft Report	_____

## Communication Strategy

This section of the Peer Review Plan assures that all work performed is accomplished according to the Project Management Business Processes as detailed in ER 5-1-11. Consistent with these guidelines, the PM is responsible for providing the key communication role in managing the project scope, quality, cost, budget and schedule; facilitating actions to resolve potential or existing issues, and reporting the status, delays, and change in scope of the project to clients and higher authorities.

Initial steps have been taken to provide communication structure to the study by establishing a hierarchy of delivery and oversight teams. An Executive Committee provides leadership and guidance to the study. The Executive Committee meets quarterly to discuss issues that arise. The Study Management Team provides operational oversight and monitors progress. The Product Delivery Team conducts day to day operations leading to study products and deliverables. These teams meet regularly to communicate progress, issues, problems and resolution among the key players; the Corps of Engineers, the Lower Colorado River Authority, and Travis County.

Communications for the Lower Colorado River Basinwide Feasibility Study and the other associated Interim Studies must recognize the large size of the lower Colorado River Basin. The recently created Texas Colorado River Floodplain Coalition provides an excellent avenue for information and feedback to local communities along the Lower Colorado River. The LCRB Study will utilize the Coalition's newsletter, various correspondences and its web site (<http://www.tcrfc.org>) to maintain a flow of information on the status of the study, and requests for feedback.

Web sites are a new and unique avenue for disseminating information to stakeholders, especially over such a large area. A study web site (<http://www.fdep.org>) has been established to provide a continued source of up-to-date study information. Study participants, points of contact, schedule, images, videos, minutes of coordination meetings, information on interim and other studies, and links to related sites are provided. In addition, a portal is provided for study participants to assess study specific in-progress data and data exchange mechanisms. Agency and other web sites are also linked to the study site providing a wide area of interest access to the study. In addition, links to the project website will be established on the Fort Worth District's Website at <http://www.swf.usace.army.mil> to allow for the widest possible dissemination of project related materials. All project related documents will be placed on the websites.

A more comprehensive communications plan will be developed during the first Phase of the Interim Feasibility Study. It will supplement the Basinwide communication plan and will identify the project specific stakeholders and the Communication Strategy to be used during the course of this study. The strategy includes the communication methods, frequency of communication, and types of information to be conveyed to the stakeholders and the public in general. Upon its completion, it will serve to supplement the communication strategy set forth herein.

## **Quality Control Reports**

The below Quality Control Reports will be completed after each review process to document the Independent Technical Review Process.

**QUALITY CONTROL REPORT**

**LOWER COLORADO RIVER BASIN FEASIBILITY STUDY  
BASTROP INTERIM FEASIBILITY STUDY**

**Certification by Review Team Members**

I certify that the study and review process required to be performed under by responsibility has been completed and the technical work is generally in accord with Corps regulations, standard report requirements and customer expectations.

**Review Team Member**

**Date**

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# QUALITY CONTROL REPORT

## LOWER COLORADO RIVER BASIN FEASIBILITY STUDY BASTROP INTERIM FEASIBILITY STUDY

### Statement of Technical and Legal Review

### Completion of Independent Technical Review

The District has completed the General Investigation of the Bastrop Interim Feasibility Study. Notice is hereby given that an independent technical review, that is appropriate to the level of risk and complexity inherent in the project, has been conducted as defined in the Quality Management Plan. During the independent technical review, 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 analysis; alternatives evaluated; the appropriateness of data used and level of data obtained; and reasonableness of the results including whether the product meets the customer's needs consistent with law and existing Corps policy. The independent technical review was accomplished by **(insert name of an independent district team/personnel from XX District/by A-E Contractor)**.

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Technical Review Team Leader

Date

# QUALITY CONTROL REPORT

## LOWER COLORADO RIVER BASIN FEASIBILITY STUDY BASTROP INTERIM FEASIBILITY STUDY

### **Certification of Independent Technical Review:**

Significant concerns and explanation of the resolution are as follows:  
(Describe the major technical concerns, possible impact, and resolution)

As noted above, all concerns resulting from independent technical review of the project have been considered. The report and all associated documents required by the National Environmental Policy Act have been fully reviewed.

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Project Manager

Date

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Chief, Programs and Project Management Division

Date

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Chief, Planning Environmental, and Regulatory Division

Date

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Chief , Engineering and Construction Division

Date

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Chief, Real Estate Division

Date

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District Counsel

Date