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

Reply to
Attention of:

CESWD-PDS-P

07 NOV 2007

MEMORANDUM FOR Commander, Fort Worth District

SUBJECT: Review Plan Approval for the Elm Creek, Abilene, 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 Elm Creek, Abilene, Feasibility Study has been prepared in accordance with referenced guidance.

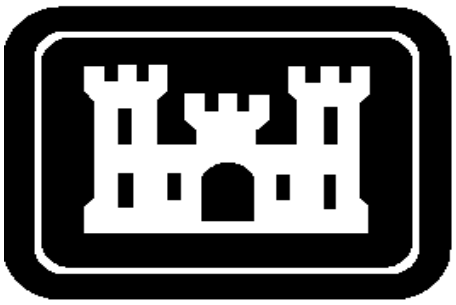
3. This plan has been made available for public comment, and the comments received have been incorporated. It has been coordinated with the Flood Damage Reduction Planning Center of Expertise of the South Pacific Division which is the lead office to execute the plan. The Review Plan includes External 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.

For

Encl

KENDALL P. COX
Colonel, EN
Commanding



U.S. Army

Corps of Engineers

Fort Worth District

Peer Review Plan

Feasibility Study
Elm Creek, Abilene, TX

October 20, 2007

PEER REVIEW PLAN

ELM CREEK, ABILENE, TEXAS FEASIBILITY STUDY

PURPOSE

Pursuant to Engineering Circular (EC) 1105-2-408, "Peer Review of Decision Documents," Office an Management and Budget's "Final Information Quality Bulletin for Peer Review," (OMB Bulletin) and the May 30, 2007 memorandum from Major General Don Riley, USACE Director of Civil Works, a Project Review Plan (PRP) is being developed.

This PRP presents an analysis of the process for independent technical review (ITR) and external peer review (EPR) that will be implemented as part of the Elm Creek, Abilene, TX Feasibility Study. These processes are implemented to ensure the quality and credibility of the government's scientific information and improve the quality of decision documents.

REFERENCES

EC1105-2-408 "Peer Review of Decision Documents" dated May 31, 2005
ER 1105-2-100 "Planning Guidance Notebook & Appendices D, F, G & H"

Background

The Elm Creek, Abilene, Texas Feasibility Study is a flood risk management study of the Elm Creek watershed in and around the city of Abilene, Texas. The study is a reactivation of a cost-shared feasibility study conducted by the Corps of Engineers in 1991. It consists of a reanalysis of the problems, needs and opportunities within the watershed using new topographic surveys, updated hydraulic models and economics reflecting current development, land use changes and the environment within the floodplain. The city of Abilene is the local cost sharing sponsor for this study.

The Elm Creek, Abilene, Texas Feasibility Study will be a typical U.S. Army Corps of Engineers flood risk management feasibility study and will investigate structural measures such as levees, floodwalls, channel modifications, and upstream detention; and nonstructural measures such as flood warning systems, raising structures in place and evacuation of the floodplain. Ecosystem restoration is currently not a high priority project output by the sponsor and therefore is not currently being pursued as part of this study. Recreation development will be pursued, but only when it is compatible with flood risk management alternatives and supported by the sponsor. There is no estimated project cost at this time, but based on the previous study of the watershed the recommended plan could be in excess of $50 million.

The Elm Creek, Abilene, Texas Feasibility Study is in its early stages of development and as such, risks associated with a completed project are unknown at this time. During the feasibility study, project risks will be analyzed in detail and disclosed in the Draft and Final Interim Feasibility Reports. However, generally speaking, the alternative with the least amount of project

risk in addressing future damages would be evacuation of the floodplain. With the complete removal of the structure from the floodplain, there is no risk it of it being damaged by floods greater than the design flood. With almost every other project alternative, there is a inherent project risk. In addition, there is a risk of project failure from geotechnical issues, errors in mapping, lack of operations and maintenance, etc. This risk cannot be determined until detailed analysis have been performed to determine the associated risk. These risks will be disclosed in the study report at that time.

Quality Management Plan

The quality management plan is developed to provide for 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 these studies, and projects that may be subsequently be implemented. In addition, model certification is required for any model used in the planning decision process and 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 the Elm Creek, Abilene, Texas Feasibility Study Project Management Plan will be subject to independent technical review. Seamless functional review will be accomplished by each discipline 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 of staff elements through design checks and other internal procedures, prior to the independent technical review. Dr Checks will be utilized to manage the flow of review, comment, response to comments, and revision confimations where possible within the functional and ITRs.

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 (PCX). The ITR will be accomplished by an independent entity outside the District and designated by the PCX. These products would include documentation for the decision points in the study, i.e. Feasibility Scoping Meeting (FSM) at the end of Phase 1, the Alternative Formulation Briefing (AFB) following development and evaluation of alternative plans, the draft Feasibility Report before public and agency review, and Issue Resolution Conference (IRC) when significant policy issues arise. 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. The need for additional ITR of post AFB documentation will be monitored as the final decision documentation is developed. If it supporting documentation and analysis undergoes significant changes or additions, additional ITR may be warranted. 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. Through this repetitive review process, the final decision document will have undergone thorough independent technical review prior to release of the draft report for public review.

Currently the Project Management Plan has scheduled most of the work to be conducted in-house by the Fort Worth District. If products are to be developed by contract, the contractor will be responsible for quality management as well as a independent technical review. Quality

assurance of the contractor's quality control will be the responsibility of the District. The contractor furnished data will be included with all other study data and reviewed by the ITR team at appropriate times, as previously discussed, during study development.

External Peer Review

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. The options for External Peer Review are as follows:

- Fort Worth District is exploring to the use of a Memorandum of Agreement (MOA) with a regional university to conduct the external peer review utilizing technical resources of said academia
- Contract with entities with expertise in External Peer Reviews.
- Engage the National Academy of Sciences (NAS) to conduct the EPR. In this case, the most likely reviewing agency would be Battelle.

It is anticipated that the study report will not be influential scientific information nor a highly influential scientific assessment. It will not be based on novel methods, present complex challenges for interpretation, contain precedent-setting methods or models, present conclusions that are likely to change prevailing practices, and is not likely to affect policy decisions that have a significant impact. But rather the study should be a routine flood risk management study using conventional methods and models for analysis, analyze conventional alternative plans of improvement, and is expected to recommend a non-controversial plan for implementation.

Based on the previous study of the Elm Creek watershed, the final recommended plan could be in excess of $50 million. Since the cost of the recommended plan is projected to exceed the threshold for mandatory peer review, it will be assumed that peer review will be required and consequently made a part of the study's plan. If all conditions which indicate the necessity of EPR do not materialize, then the decision to undergo EPR may be revisited.

The following figure shows the process to be used in conducting the External Peer Review.

The External Peer Review will be conducted concurrently with the Independent Technical Review of the draft Feasibility Report and should take about 3 months to accomplish. The method of accomplishing the Review will be decided during the Feasibility Scoping Meeting.

Planning Models

The Elm Creek, Abilene, Texas Feasibility Study is using hydrology and hydraulic models developed by the Corps' Hydrologic Engineering Center, namely, HEC-HMS, HEC-RAS and HEC-GeoRAS. These models are being used to analyze the hydrology and hydraulic characteristics of the watershed, to delineate floodplains for the study, and for FEMA's Flood Insurance Program. Because of FEMA's involvement, they are assisting in another level of technical review that is not normally available during a feasibility study. Economic evaluation of flood damages and benefit determination for alternative plans of improvement will utilize the HEC-FDA model. 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. The models envisioned to be used on this study are used on a routine basis on all studies conducted by the Fort Worth District and are, or will soon be, certified by the prospective model proponent within the Corps of Engineers.

Review Costs

ITR costs for the FSM is estimated to be approximately $25,000. Additional ITR costs for the AFB and draft feasibility report are currently estimated to be $35,000. These costs are cost-shared with the study's non-federal sponsors.

EPR costs are expected to be 100% federally funded and is estimated to cost approximately $100,000.

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 is 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 Feasibility Report to document their participation and contributions to the study.

Discipline	Review Team Member
Plan Formulation	
H&H	
Civil Design	
Structural Design	
Geotechnical	
Cost Estimating	
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 preformed 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.

The Study Management Team provides operational oversight and monitors progress. This team consists of members from the Corps of Engineers, the Federal Emergency Management Agency and the city of Abilene. 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 which consist of representatives of the various District functional staff elements and the city of Abilene.

Communications for the Elm Fork Feasibility Study will address the varied interests and nature of the public, agencies and organizations. Public workshops and meetings will be used to solicit their input into the study and to provide the results of the study. The draft Feasibility Report and accompanying environmental document which has been reviewed by the ITR and EPR teams will be provided to stakeholders for their review and comment.

Web sites are a new and unique avenue for disseminating information to stakeholders. The Fort Worth District's Website at http://www.swf.usace.army.mil will be utilized to allow for the widest possible dissemination of project related materials. All project related documents will be placed on the website and information related to its access will be disseminated to the study stakeholders for their use and information.

Quality Control Reports

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

QUALITY CONTROL REPORT

ELM CREEK, ABILENE, TEXAS 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**

QUALITY CONTROL REPORT

ELM CREEK, ABILENE, TEXAS FEASIBILITY STUDY

Statement of Technical and Legal Review

Completion of Independent Technical Review

The District has completed the General Investigation of the Elm Creek, Abilene, Texas 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)**.

_____

Technical Review Team Leader Date

QUALITY CONTROL REPORT

ELM CREEK, ABILENE, TEXAS 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.

_____

Project Manager Date

_____

Chief, Programs and Project Management Division Date

_____

Chief, Planning Environmental, and Regulatory Division Date

_____

Chief , Engineering and Construction Division Date

_____

Chief, Real Estate Division Date

_____

District Counsel Date