



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 Cibolo Creek IFS, Guadalupe and San Antonio River Basins, 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 Cibolo Creek IFS, Guadalupe and San Antonio River Basins, Feasibility Study has been prepared in accordance with referenced guidance.

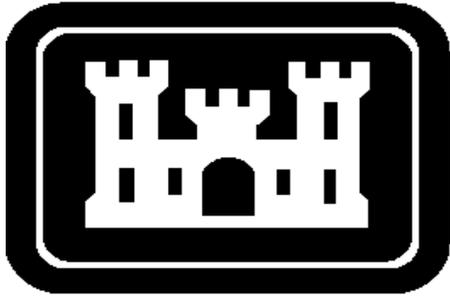
3. This plan has been made available for public comment, and the comments received have been incorporated. It has been coordinated with the Ecosystem Restoration Planning Center of Expertise of the Mississippi Valley Division which is the lead office to execute the plan. The Review Plan includes External Peer Review based on size of project and potential impact on endangered species.

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.

Encl

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

KENDALL P. COX  
Colonel, EN  
Commanding



**U.S. Army  
Corps of Engineers  
Fort Worth District**

## **Project Review Plan**

### **Cibolo Creek Interim Feasibility Study**

### **Guadalupe and San Antonio River Basins, Texas**

October 4, 2007

# **CIBOLO CREEK INTERIM FEASIBILITY STUDY**

## **Guadalupe and San Antonio River Basins, Texas**

### **Project Review Plan**

#### **Independent Technical Review and External Peer Review**

## **1. PURPOSE**

Pursuant to Engineering Circular (EC) 1105-2-408, "Peer Review of Decision Documents," Office of 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 the process for independent technical review (ITR) and external peer review (EPR) that will be implemented as part of the Cibolo Creek Interim 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.

## **2. 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"

## **3. GENERAL**

Cibolo Creek Basin, which encompasses approximately 534,007 acres (834 square miles), originates in the area of southwestern Kendall County, approximately 38 miles northwest of downtown San Antonio, Bexar County, Texas. It flows in an easterly and southeasterly direction, passing through the communities of Boerne, Bulverde, Selma, Universal City, Schertz, and Cibolo (See Figure 1-1). The confluence of Cibolo Creek with the San Antonio River is located north of Karnes City in Karnes County.

At its headwaters, Cibolo Creek is a small stream with large grained rocks, boulders, and limestone cliffs typical of a stream in the Edwards Aquifer Recharge Zone. It is a clear-running perennial stream from several springs located in the headwaters. As the creek transverses the Edwards Plateau it becomes a flood dominated ephemeral creek with a few persistent pools, but does not flow most of the year. Upon entering the Texas Blackland Prairie Cibolo Creek once again becomes perennial and slower moving, supporting aquatic life year round. The channel does not become a wide, deep meandering channel until near its confluence with the San Antonio River.

This study includes only the portion of the Cibolo Creek watershed Downstream of I-10 in Kendall County to the lower Interstate Highway 10 crossing in Bexar and Guadalupe Counties (See Figure 1-2). Cibolo Creek forms the boundary between Bexar and Comal counties on the north and between Bexar and Guadalupe County on the east. The study area accounts for

approximately 200,000 acres (312 square miles) and has a unique geographic shape, in that it becomes significantly constricted (less than 2.5 miles wide at the narrowest point) as it passes over the Edwards Aquifer Recharge Zone. Overall, it is a relatively long and narrow watershed, averaging about 8 miles in width. Elevations within this portion of the watershed range from 2010 National Geodetic Vertical Datum (NGVD) in the headwaters to 592 feet NGVD at the lower Interstate Highway 10 crossing.

The study area includes outcrops of two major aquifers, the Trinity and the Edwards. Thin, rocky soils and fairly steep slopes characterize both areas. The Edwards aquifer outcrop generally exhibits greater permeability and infiltration of rainfall than the Trinity aquifer outcrop. Stream channels within both aquifer outcrops lose flow to karst features such as fractures, sinkholes, and caves. Flow within the channel while it crosses the recharge zone is relatively infrequent because of the loss of flow that percolates from the channel bottom to serve as recharge for the aquifer.

The Cibolo Creek Interim Feasibility Study is a 3.9 million dollar multipurpose ecosystem restoration and flood risk management study. During the study, ecosystem restoration measures such as best management practices, recharge structures, and measures implemented in combination with potential flood risk management measures will be evaluated. Flood risk management measures that will be evaluated could include upstream detention, channel modifications, bypass channels, and evacuation of the floodplain. The total project cost could be between \$20-40 million.

There are multiple risks that will be discussed in detail during the evaluation of alternatives and documented within the feasibility report. One of these risks include possible increase in flooding durations from ecosystem restoration measures designed to result in longer duration flows in the creek. If a rain event occurred that exceeded the design frequency of a flood risk management measure, there is a risk of flooding. For instance, if a 100-year event occurred and the project was only designed to protect against a 25-year event, it would be possible that all of the structures the project was designed to reduce the risk of flooding, would indeed flood. Furthermore, if a recharge structure or upstream detention feature was constructed and there was dam failure, there would be an risk that flooding would occur. Again, these risks are currently just generalized and will be discussed in detail during the evaluation of alternatives. A detailed flood risk management section will be documented within the report if flood risk management measures are recommended for implementation.

## **4. REVIEW REQUIREMENTS AND PROCESS**

As part of the Quality Control Plan for the Cibolo Creek Interim Feasibility Study, an ITR team will be formed to perform periodic reviews of the feasibility study components including project assumptions, analyses, and computations, as need throughout the planning process. The ITR is best conducted by experienced peers within the same discipline who are not directly involved with the development of the study under review.

### ***Independent Technical Review (ITR)***

An Independent Technical Review (ITR) 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. Pursuant to Engineering Circular (EC) 1105-2-408, this feasibility study will need to have a Corps Independent Technical Review (ITR) team assigned by the Planning Center of Expertise (PCX) for Ecosystem Restoration Projects review all products. In addition, given the significant Water Supply and Management component to this study, coordination with the appropriate PCX for this is also anticipated.

Independent technical review will be initiated at least *twenty* working days prior to submission of documentation for a decision event, i.e. FSM or AFB, or 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.

The ITR process will be conducted throughout the study process. ITR involvement is anticipated between major milestones (FSM, IPR and AFB). Per EC 1105-2-408, the District has coordinated and will continue coordination with Flood Damage Reduction Planning Center of Expertise (PCX - South Pacific Division) who has subsequently delegated ITR team for FSM to Tulsa District. The ITR point-of-contact at Tulsa District is Marc Masnor (CESWT-PE-P).

### ***External Peer Review (EPR)***

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. The options for External Peer Review are as follows:

- ❑ Fort Worth District is exploring is to Prepare an Memorandum of Agreement (MOA) with a Texas 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.

It is anticipated that the Cibolo Creek Interim Feasibility would require an EPR. The general process for conducting the EPR will be similar to the process outlined below. EPR will be conducted concurrent with the ITR of the draft Feasibility Report.

## Process Diagram for Managing An External Peer Review



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The Business of Innovation

### 5. REVIEW COSTS

ITR costs for the FSM was approximately \$22,000. Additional ITR costs for the AFB and draft feasibility report are currently estimated to be \$45,000. These costs are cost-shared with the study's non-federal sponsors.

EPR costs are expected to be 100% federally funded. Cost estimates for EPR will be developed prior to submission of the Draft Feasibility Report.

### 6. 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.

| <b>Study Team and Review Assignments</b> |                   |                   |                           |
|------------------------------------------|-------------------|-------------------|---------------------------|
| <b>Discipline</b>                        | <b>PDT Member</b> | <b>Supervisor</b> | <b>Review Team Member</b> |
| 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. <u>6 Aug 2007</u> | _____              | FSM      | _____               |
| 2. _____             | _____              | AFB      | _____               |
| 3. _____             | _____              | Post AFB | _____               |

## **7. 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.

Web sites are a new and unique avenue for disseminating information to stakeholders, especially over such a large area. A study web site is currently under development. Once the website is operational, most up-to-date study information will be posted. Study participants, points of contact, schedule, images, videos, minutes of coordination meetings, information on interim and other studies, and links to related sites will be provided. In addition, a portal will be 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.

## **8. 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**

**CIBOLO CREEK INTERIM FEASIBILITY STUDY  
GUADALUPE AND SAN ANTONIO RIVER BASINS, TEXAS**

Duplicate as necessary.

**Certification by Review Team Members** (Duplicate as necessary)

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**

**CIBOLO CREEK INTERIM FEASIBILITY STUDY  
GUADALUPE AND SAN ANTONIO RIVER BASINS, TEXAS**

**Statement of Technical and Legal Review**

**Completion of Independent Technical Review**

The District has completed the General Investigation of the **Cibolo Creek** 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**

**CIBOLO CREEK INTERIM FEASIBILITY STUDY  
GUADALUPE AND SAN ANTONIO RIVER BASINS, TEXAS**

**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