

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



Reply to
Attention of:

CESWD-PDS-P

26 OCT 2007

MEMORANDUM FOR Commander, Fort Worth District

SUBJECT: Review Plan Approval for the Nueces 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.

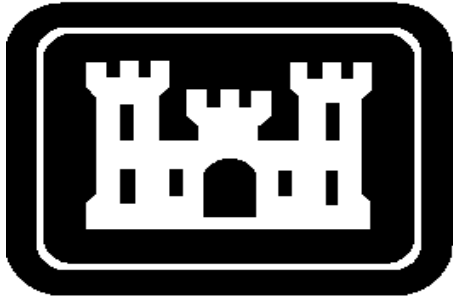
2. The enclosed Review Plan for the Nueces River Basin Feasibility Study has been prepared in accordance with referenced guidance.

3. This plan has been made available for public comment, and the comments received have been incorporated. It has been coordinated with the 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.

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


KENDALL P. COX
Colonel, EN
Commanding



U.S. Army

Corps of Engineers

Fort Worth District

Peer Review Plan

Nueces River and Tributaries Feasibility Study

Nueces River and Tributaries, Texas

October 18, 2007

TABLE OF DELIVERABLES

QUALITY CONTROL PLAN

NUECES RIVER AND TRIBUTAIRES FEASIBILITY STUDY

1. PURPOSE

The Fort Worth District is responsible for the technical quality and policy compliance of the products associated with the Nueces River and Tributaries Feasibility Study. In accordance with EC 1105-2-408, the applicable Corps' Planning Center of Expertise is responsible for managing the independent technical review prior to submission to Washington-level Headquarters (HQUSACE). The Quality Control Plan included in this document identify quality control processes to be followed by the Fort Worth District for all work to be conducted under this study authority, including in-house, sponsor and contract work. The Quality Control Plan, which ensures that the feasibility products for this study conform to all current professional practices and standards, is accomplished by a three tiered approach that includes quality control, independent technical review and peer review prior to submission of feasibility products to SWD and HQUSACE.

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

The Nueces River watershed is located in south central Texas and includes portions of the Texas Hill Country in the upper watershed, extends downstream through the Winter Garden area and the Coastal Plains and finally ends in the Nueces estuary and bay system on the Gulf Coast. The watershed has a total drainage area of 17,075 square miles, and includes all or parts of 24 counties. The major urban area associated with this basin is the City of Corpus Christi, which is located near the mouth of the river on the Gulf Coast. The Edwards Plateau, a major source of water for the city of San Antonio and Bexar County, accounts for about 20 percent of the basin and is recognized to have high potential for ground water recharge. Historic land use practices, drought conditions, and poor water resource management have resulted in significant ecosystem degradation. The lack of fresh water inflows into the Nueces Bay has resulted in hyper-saline conditions that have severely diminished the habitat quality of approximately 20,000 acres of the Nueces delta area. Additionally, existing surface and ground water supplies are not sufficient to assure an adequate water supply to balance the future water needs for both ecosystem and human uses. Finally, floods in 1998, 2002 and 2007 resulted in property and infrastructure damages.

There are five non-Federal study sponsors on this study with varying proportions of study sponsorship, including the San Antonio Water System, the city of Corpus Christi, the Nueces River Authority, the San Antonio River Authority, and the Guadalupe-Blanco River Authority.

4. QUALITY CONTROL PLAN

The Quality Control Plan (QCP) has broad application to most of the Fort Worth District General Investigations (GI) Planning functions. This QCP may be expanded, contracted, or otherwise modified based on the risk, cost, complexity and uniqueness of the effort being undertaken.

Basic Quality Control Concept

Quality control is assured by a multi-discipline, multi-layer, life-cycle approach. Successful Planning products are the result of the insights and expertise of a diverse array of professionals, including the active participation of local sponsors and representatives from other pertinent agencies. Work efforts are conducted either by A-E, other districts or by in-house technical staff. If the primary technical work is conducted outside the District, one layer of review will take place by the contractor before transmission the report is transmitted to the Fort Worth District. The District Study/Project Team members will conduct a second layer review of the contractor's work products. The next layer of review involves the Team Leaders or Section Chiefs of the Study Team members to assure some degree of completeness, correctness, and consistency since a portion of the functional responsibility for the end-product lies with the technical worker's first line leader or supervisor. This first-line supervisor is intimately involved in the progress of the effort and will not serve as the Technical Review Team Member for his/her discipline. Branch Chief and Division Chief level (overview/policy) reviews are also conducted and they tend to exhibit a greater degree of independence and objectivity than previous layers since they are not involved in the day-to-day production activities. This layer is routinely accomplished as Division Chiefs provide PRB recommendations and approvals. Written comments from the QCT will be addressed to the Study Team for resolution. These comments are compiled as part of the Quality Control Report to indicate the issues and concerns which were raised and addressed along the course of the study. Unusual issues or conflicts which cannot be resolved by the Study and Review Teams may be addressed to an appropriate resource in SWD for guidance.

Additional Quality Control Measures

In addition to the steps described above, three quality control meetings will be held during the course of the study. The purpose of these meetings will be for the Branch Chiefs and other team members to gain an understanding of what the study team has produced and provide comments and raise issues at the appropriate time. The review team members will provide their written comments on the main report at this time. The three briefings are:

1. Without-Project Conditions
2. With-Project Conditions
3. Alternative Selection (Note, this briefing will also include participants from SWD, HQUSACE, the non-Federal sponsor, and Federal and state environmental agencies).

5. REVIEW REQUIREMENTS

Initial QC will be handled within the Section or Branch performing the work or by staff in the corresponding sponsors' agency when it involves In-Kind Services. Each first line supervisor has the responsibility for the day-to-day quality control of those they supervise. As such, they are directly responsible for checking the day-to-day work of their subordinates and resolving any

issues that the review team members may raise. In addition, each technical element will schedule sufficient time for a technical review prior to their work products to be submitted in accordance with the approved PMP. In order to accomplish this, each technical element, both in-house and those of the non-Federal sponsors, as applicable, will conduct quality control on a continual basis with each major sub-product serving as a check point in the quality control process. This will ensure that any technical errors are found early and resolved while the material is fresh in the minds of those working on it. For work performed by a contractor, each contract scope of work will require the contractor to have a quality control approved by the district and several work progress updates prior to submission of the final product(s). The quality control plan and in-progress updates serve to ensure that the contractor is using technically sound practices, is proceeding in the direction that the Corps wishes, and raises any issues that may need to be resolved early in the process. Additional QC will be performed by the PDT during the course of completing the Feasibility Study.

Responsibility

The Review Team is required to certify the results of their review as indicated on the enclosed Certification Form within the Quality Control Report. Study Team members, Technical Managers, Project Managers and Functional Chiefs still retain responsibility for the quality and timely execution of study / project tasks in accordance with milestones, costs and commitments as identified in the PMP. The Review Team provides ancillary quality control, not replacement of existing responsibility for technically accurate, high-quality work products.

Checklists

Previously developed checklists will be used in the quality control process to assist the reviewer, but will not be used to replace that reviewer's technical expertise or judgment. The checklists are designed to assist the reviewer in ensuring that the report contains the minimum amount of material necessary to make decisions and that any conclusions drawn in the report are based on the information provided. Each reviewer will document their comments in DrChecks, which is a computer software program that allows collation of comments, responses, and issue resolution in a Web-based format. At a minimum, each comment will refer to the page and paragraph in question, the nature of the problem, where guidance can be found which applies to the problem, and if possible, a suggested solution to the problem. Once all the comments are input in DrChecks, they will be reviewed by the person responsible for the product to resolve. Responses to each comment will provide, at a minimum, what was done to correct the deficiency and where the deficiency was corrected, or a justification for why the deficiency was not corrected. The package of comments and responses will be attached to the final submission as a sub-appendix. It is the responsibility of the section supervisor responsible for the product to review the comments and responses to ensure that all issues are resolved.

Independent Technical Review

The Independent Technical Review (ITR) process 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 (Mississippi Valley Division) to review all products. The ITR point-of-contact at the Mississippi Valley Division is Dave Vigh (CEMVD-RB-T). In addition, given the significant Water Supply and Management component to this study,

coordination with the appropriate PCX for this (Southwestern Division) is also anticipated. The products to be reviewed for this study would include documentation for the major decision points in the study, such as the Feasibility Scoping Meeting (FSM) at the end of Phase 1, In Progress Reviews (IPR), as appropriate, and the Alternative Formulation Briefing (AFB). Since this quality control will occur 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, given that 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, 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.

External Peer Reviews

EC1105-2-408 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. 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).

For the Nueces River and Tributaries study, it is recommended that the study incorporate EPR outside the Corps, as the scope and technical complexity probably warrant an External Peer Review (EPR). As a result, the Review team will focus on:

- Assumptions
- Methods, procedures, models and materials used in the analysis based on the study/project scope
- Alternatives evaluated
- Appropriateness of data used and level of data obtained
- Reasonableness of the results, including whether the product meets the customers needs consistent with law and existing policy
- Completeness of preliminary design and support documents.
- Spot checks for interdisciplinary coordination.

Planning Models

Model certification is required for any model used to make a planning decision that has not already been certified for use. The Nueces River and Tributaries Feasibility Study will utilize models developed by the USGS and EPA for analyzing surface and groundwater interactions, which are very important in the Nueces Basin, which is underlain by four aquifer zones, including the Edwards, Carrizo-Wilcox, Gulf Coast, and Trinity. 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 models have been certified for use by their agency for this type of analysis.

6. REVIEW COSTS

ITR costs for the FSM are estimated to be approximately \$30,000. 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 percent federally funded. Cost estimates for the EPR will be developed prior to submission of the Draft Feasibility Report.

6. PUBLIC COMMENT

Public involvement is incorporated throughout the Feasibility Study process. Two public meetings were held in the Spring of 2006 - Corpus Christi, Texas on April 20th and Uvalde, Texas on May 9th - to inform the public that the study was underway, explain the U.S. Army Corps of Engineers primary missions and study process, and solicit any feedback the public wanted to provide. In addition, the Project Manager, who is responsible for providing the key communication role regularly attends meetings of the Nueces Environmental Advisory Committee to provide status of study components. These meetings are open to the interested public.

In addition, a study web site has been developed and pertinent study information is posted on the site for public perusal. A portal to this site provides 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. The completed Reconnaissance Report for the Nueces River Basin is currently available on the Fort Worth District's Website at <http://www.swf.usace.army.mil> and as part of the study's Communication Plan, all project related documents will be placed on the websites as they are completed.

Finally, as part of the National Environmental Policy Act (NEPA), a series of public meetings will be held to solicit input from the public and provide the public opportunities to comment on study related documents, i.e. the Draft Feasibility Report, the Programmatic Environmental Impact Statement, etc. Right now formal initiation of the NEPA process is scheduled to begin in FY 2009.

7. DISSEMINATION OF PUBLIC COMMENT

It is anticipated that minutes of the Public Involvement Meetings will be disseminated to the Peer Review Team following the meetings. This will allow the public response to be available to the ITR team.

8. 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 Environmental Restoration 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 the feasibility study.

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

9. REPORTS

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

CHECKLIST FOR REVIEW OF FEASIBILITY REPORTS

1. Has the study been conducted in accordance with and fully responsive to the study authority?
2. Is the study area, as defined, reasonable and consistent with the study authority?
3. Have the areal extent and severity of the water-resources problems and without-project conditions been clearly documented?
4. Are current findings consistent with prior phases of study? Have intervening external factors (such as regulation changes, significant storm events, etc.) jeopardized previous logic, analyses and conclusions?
5. Have the assumptions and rationale for the without-project condition been explicitly stated and are they reasonable?
6. Are planning objectives clearly identified?
7. Were the views of non-Federal interests solicited and considered in the plan formulation process?
8. Have all reasonable structural and non-structural plans, including a no-action plan, been considered? Do they fully address the identified problems and needs?
9. Was the plan formulation analysis conducted in accordance with accepted techniques and appropriate guidelines and regulations?
10. Was the environmental work conducted in accordance with appropriate techniques, guidelines and regulations?
11. Was the economic/benefit analysis conducted in accordance with accepted techniques, guidelines and regulations?
12. Has the NED plan been identified? Is it the selected/recommended plan?
13. For environmental restoration efforts, was a cost effectiveness and incremental analysis accomplished? Was resource significance defined?
14. Is there a rationale for a locally-preferred plan or non NED recommended plan?
15. Does the recommended plan meet the customer's needs and has the position of the sponsor been explicitly conveyed?
16. Have upstream and downstream effects of the recommended plan been identified?
17. Have all known benefits been included in the benefit estimate? Have high-priority benefits been identified?
18. Have economic methodologies and assumptions been explained in sufficient detail?

19. Is the evaluation of each alternative based on the difference between the without-project and with-project conditions?
20. Have risk and uncertainty been addressed in accordance with ER 1105-2-101?
21. Has the necessary coordination been conducted and documented in accordance with the National Environmental Policy Act of 1969 (NEPA) and ER 200-2-2?
22. Have HTRW considerations been addressed?
23. Is the proposed project recommendation consistent with current administration policies?
24. Does the over-all Planning report adequately display study assumptions, and findings, as well as and clearly represent a firm basis for the recommendation?

QUALITY CONTROL REPORT
NUECES RIVER AND TRIBUTARIES
FEASIBILITY STUDY

Overview

This report synthesizes the Quality Control and Review Process to be employed during the conduct of the Nueces River and Tributaries Feasibility Study. In light of the changes in review functions on the Division and Headquarters levels in recent years, the responsibility for review of technical products rests with the district. In accordance with current Corps policies, this ITR team is comprised of members from another Corps District.

Study Team and Review Team Assignments

Discipline	Project Delivery Team Member (Name)	Review Team Member (Name)
Project Manager / Plan Formulation		TBD
H&H		TBD
Civil Design	TBD	TBD
Structural Design	TBD	TBD
Geotechnical	TBD	TBD
Cost Estimating	TBD	TBD
Economic Analyses	TBD	TBD
Cultural Analysis	TBD	TBD
Environmental Analysis		TBD
Real Estate	TBD	TBD
HTRW	TBD	TBD
Recreation	TBD	TBD

QUALITY CONTROL REPORT

NUECES RIVER AND TRIBUTARIES FEASIBILITY STUDY

Documentation of Technical Review Process

Meetings Attended by Review Team

Date	Review Team Member	Issue	MFR Attached
1			
2			
3			
4			

Review Team Comments for Interim and Final Submittals

Date	Review Team Member	Issue	Resolution
1			
2			
3			
4			

Additional Comments Attached

Key Items Addressed by Review Team

- a) Validity of technical assumptions
- b) Methods and procedures used in the analyses
- c) Reasonable alternatives were addressed
- d) Appropriateness of data used
- e) Reasonableness of the results and responsiveness to customer needs

If a formal checklist has been used by the reviewer, it is attached.

QUALITY CONTROL REPORT

NUECES RIVER AND TRIBUTARIES FEASIBILITY STUDY

Certification by Review Team Members

I certify that the study and review process required to be performed under my 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

NUECES RIVER AND TRIBUTARIES FEASIBILITY STUDY

Statement of Technical and Legal Review

Completion of Independent Technical Review

The District has completed the General Investigation of the **(Insert Name of Study Here)** 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

NUECES RIVER AND TRIBUTARIES BASIN 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