DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

CESWF-PM-C

13 JUL 2011

MEMORANDUM FOR Commander, U.S. Army Corps of Engineers, Southwestern Division, Brigadier General Thomas W. Kula, (CESWD-PDP/Ms. Lanora Wright), 1100 Commerce Street, Dallas, TX 75242-1317

SUBJECT: Review Plans for Little Fossil Creek, Farmers Branch and Pecan Creek Section 205 Projects

1. Reference email and enclosures dated July 2011 regarding Review Plans for the above projects.

2. Fort Worth District Engineering Branch made an assessment that all three projects did not require a Type II Independent External Peer Review (IEPR) (Safety Assurance Review) in a Memo dated 28 Jan 2011. Concurrence from the Risk Management Center that a Type II IEPR was not needed was received on 1 July 2011.

3. The Agency Technical Review (ATR) for all three projects was conducted with an internal team of SWF Team Members from various disciplines with the ATR Team Leader being within the Fort Worth District.

4. Request approval of the Project Review Plan, concurrence with the assessment that a Type II IEPR is not necessary, and for an exception to the requirement for the ATR Team Leader to be from outside the home Major Subordinate Command.

5. The Point of Contact for this action is Mr. William W. Haferkamp, Program Manager, (817)886-1713.

RICHARD J. MURASKI, JR.
Colonel, EN
Commanding

4 Encls
1. Review Plan for Little Fossil Creek
2. Review Plan for Farmers Branch
3. Review Plan for Pecan Creek
4. Email from Risk Management Center (RMC) concerning Type II IEPR

( ) Approve
( ) Disapprove

Review Plan for
Pecan Creek Flood Control Project, Gainesville, Texas

Fort Worth District
U.S. Army Corps of Engineers

06 July 11

Table of Contents

1. Introduction

1.1. Project Information

Project Title: Pecan Creek Flood Damage Reduction Project, Gainesville, Texas.

Project Description: Pecan Creek originates approximately 6 miles north of the city and flows south through the central portion of the city to its confluence with Wheeler Creek, Redmond Branch, and the Elm Fork of the Trinity River. Pecan Creek is located within the Trinity River (Elm Fork) Watershed specifically in the Lake Lewisville Sub-Watershed in north Central Texas and is located primarily in Denton and Cooke Counties. Pecan Creek originates three miles northwest of Gainesville in north central Cooke County and runs southeast for eight miles to its mouth on the Elm Fork of the Trinity River, three miles south of Gainesville. Gainesville is the county seat of Cooke County and is located approximately 60 miles north of the Dallas/Fort Worth metropolitan area and approximately 7 miles south of the Oklahoma state line.

Section 205 of the 1948 Flood Control Act, as amended, provides the authority for the planning, design, and eventual construction of the project, and is being conducted by the U.S. Army Corps of Engineers, Fort Worth District. The City of Gainesville has experienced recurrent flooding from Pecan Creek, and requested assistance to address the flooding and subsequent adverse impacts in a letter to the Corps dated 28 February 2002. On April 9, 2003, a Feasibility Study Cost Sharing Agreement was executed. A Detailed Project Report and Integrated Environmental Assessment was completed and the recommended plan approved for implementation (plans and specifications / construction) on August 29, 2006. The Project Cooperation Agreement was approved on July 5, 2007 and executed on July 20, 2007.

The recommended plan is a grass-lined trapezoidal channel, approximately 7,860-feet in length including a 200-foot rock riprap transition at the upstream limit, and a 30-foot bottom width with 1 vertical on 3.5 horizontal side slopes. The plan also includes the relocation of approximately 720-feet of water lines, 1,490-feet of sanitary sewer lines, 900-feet of gas lines, 1,000-feet of telephone lines, and 1,000-feet of electric lines. In addition, seven existing bridges will be replaced: Garnett, Main, Broadway, California, Scott and Belcher Streets, and a foot-bridge. Three residential structures, one commercial structure, and two sheds will be also removed to accommodate construction.

An Independent Technical Review (ITR) was completed during the feasibility study by District staff members with no involvement on the Project Delivery Team (PDT). The PDT satisfactorily addressed all ITR comments. The proposed project was designed to a level of protection which reasonably maximized annual net benefits, i.e., the difference between project benefits (monetary reduction in flood damage) and project (implementation) costs when both are expressed in annualized terms. The proposed project generally provides for a 50-year level of protection meaning a flood event with a 2% annual chance exceedence will remain within the modified channel. For the 1%

annual chance exceedence, a number of structures will be inundated; however, a smaller number and less depth. The life safety risk associated with the proposed project is low

By the very nature of earthen, grass-lined, channel modification projects, safety risks will either remain static or otherwise be lowered with project implementation, since frequencies of flood inundation will be significantly reduced. Likewise, with respect to the non-structural buyout plan, safety risks will either remain static or otherwise be lowered, with project implementation, since the affected occupants are inherently removed from the area posing those safety risks. This project also provides reductions in safety risks associated with roadway crossings, since bridges will be overtopped significantly less frequently.

The total project cost was estimated at $8,324,400 (October 2005 price level). Annual costs were estimated at $502,700. The project provides annual flood-damage reduction benefits of $676,300 and has a benefit-cost ratio and net benefits of 1.3 to 1.0 and $171,200, respectively. The recommended plan reduces 86-percent of the annual damages. Remaining annual damages with the project are estimated at $107,000.

The plans and specifications were completed using an AE contractor, HDR, Inc. The in-house Project Delivery Team was responsible for developing the scope of work, product technical review (35-, 65-, 95-, and 100-percent plans and specifications), and technical guidance. A Value Engineering Study was completed in March 2008 and a number of minor revisions to the plan were recommended and implemented. During the plans and specifications, the project was modified in the following manner: 1) The bridge at Belcher Street will be removed but not replaced. 2) A gabion wall 200-feet in length with a maximum height of about 7-feet will be constructed. 3) Approximately 9,000-feet of sanitary sewer line will now be relocated. The estimated total project cost (December 2010 price level) is now $10,238,870.

To date, the city has acquired all the necessary real estate, relocated the water line and private utilities, and replaced two bridges. The relocation of the sanitary sewer line is underway. Currently activity is underway to award the remaining construction contract for the channel modification and remaining bridges.

Quality Control Review Team

2. Requirement

This Review Plan was developed in accordance with EC 1165-2-209, which established the procedures for ensuring the quality and credibility of U.S. Army Corps of Engineers (USACE) documents through independent review. The EC's outline includes three levels of review: Quality Control, Agency Technical Review, and Independent External Peer Review.

This project has a very low life safety risk because it is a channel improvement project where the designed flood capacity remains in the channel. Consequently, the Agency Technical Review performed by the District on the AE design at 35 / 65 / 95 percent, and final design adequately addressed all life safety issues.

Recon

Technical Review performed by the District on the AE design at 35 / 65 / 95 percent, and final design adequately addressed all life safety issues.

This Review Plan will be reviewed by the PDT and approved by the Southwestern Division Major Subordinate Command. After approval, this Review Plan will be posted on the Fort Worth District website at: www.swf.usace.army.mil.

3. References

- EC 1165-2-209, Civil Works Review Policy, 31 Jan 2010
- ER 1110-2-1150, Engineering and Design for Civil Works Projects, 31 Aug 1999
- ER 1110-1-12, Engineering and Design Quality Management, 21 Jul 2006
- WRDA 2007 H. R. 1495 Public Law 110-114, 8 Nov 2007
- EC 1105-2-410, Review of Decision Documents, 22 Aug 08
- Army Regulation 15–1, Committee Management, 27 November 1992 (Federal Advisory Committee Act Requirements)
- National Academy of Sciences, Background Information and Confidential Conflict Of Interest Disclosure, BI/COI FORM 3, May 2003

4. Summary of Required Level of Review

District Quality Control (DQC):

- Purpose: Review of science and engineering work products
- Managed by: AE Project Manager
- Performed by: AE Technical Team Members
- Required for: All work products, reports, evaluations, and assessments
- Documentation: DrChecks

Agency Technical Review (ATR):

- Purpose: Ensure the quality and credibility of the government's scientific information and verify compliance with National Environmental Policy Act (NEPA) and other environmental compliance documents
- Managed by: District Project Manager
- Performed by: District Senior Technical Team Members, preferably recognized subject matter experts
- Required for: Design Documentation Reports and Plans & Specifications
- Documentation: DrChecks and Review Report
- Review Management Organization: Southwestern Division MSC

Type II IEPR (Safety Assurance Review):

- Purpose: Ensure that the project as designed and constructed does not represent a significant life safety risk to the community
- Managed by: Risk Management Center (RMC)
- Performed by: SWF Engineering Branch's assessment of the project concluded that a Type II IEPR was not required for the Little Fossil Creek Project. This was documented in a Memo dated 28 Jan 2011. All documentation was sent to the

RMC for concurrence. In an email dated 1 Jul 2011 the RMC agreed with the assessment and concurred that a Type II IEPR was not required.

5. Execution Plan

5.1 District Quality Control

Given the relatively simple nature of the project and the low life safety risk, the AEs Quality Control provided the appropriate level of technical review ensuring the project design provides the stated protection and will function as designed. The independent technical review conducted during the feasibility phase and the value engineering study conducted during the plans and specifications phase greatly assisted this process with the early identification of topics addressed during design. More importantly, the design and plans and specifications were completed using a highly qualified AE firm with significant experience resolving local flooding and drainage issues and solutions in Gainesville. The AEs Quality Control team was highly qualified, experienced in flood risk management projects, and were involved in every facet of the design process from contractor scope development, technical review of submittals, and back-checks. Their reviews were critical and comprehensive.

5.2 Agency Technical Review

The Pecan Creek Project was designed by an AE firm and reviewed by District staff members who are considered USACE technical experts. Reviews were conducted at 35 / 65 / 95 percent, and final design. Quality checks and reviews occurred during the project development process, and was performed by technical experts within the District but not engaged in the original work. The internal review process was focused on fulfilling project quality requirements as defined in the Project Management Plan (PMP). DrChecks was the application of choice to satisfy documentation requirements and record maintenance in accordance with MSC and district quality manuals. This project has a very low life safety risk because it is a channel improvement project where the designed flood capacity remains in the channel.

5.3 Value Engineering Study

A Value Engineering Study was conducted by Olympic Associates Company on the Pecan Creek Project in March of 2008. Findings are documented in a VE Study Summary Report on file at SWF. Three different cost saving proposals were documented and discussed including changing the proposed channel alignment, changing the treatment of the channel slopes and reducing the cost of spoils handling from the channel excavation.

6. Cost Estimate:

- **DQC:** The DQC review is complete and was paid for as part of the design costs. The quality control reviews were conducted by the AE and documented in DrChecks.
- **ATR:** The ATR reviews are complete and were paid for as part of the design costs. Reviews were conducted by USACE technical experts and documented in DrChecks.
- **Type II IEPR:** Since the project is a channel modification/permanent evacuation project where it is anticipated the designed flood control capacity will remain within the modified channel, the project has received a determination that there is no life safety risk; therefore no additional IEPR reviews will be required.

7. Project Schedule:

Significant Items Completed to Date:

Feasibility Phase:	Jan 2006
VE Study:	Mar 2008
DQC, ATR:	Mar 2011
Corrected Final Plans and Specifications:	May 2011
BCOE Certification:	Jun 2011

Remaining Project Tasks and Expected Completion Dates:

Request for Proposal to 8A Contractor:	08 Jul 2011
Award Construction Contract:	19 Sep 2011