

CHAPTER 8

Discussions, Conclusions, and Recommendations

DISCUSSIONS

The Wharton Interim Feasibility Study is one of two interim studies being conducted as the first phase of the Lower Colorado River Basin studies. Initial Basinwide efforts were started in May 2000, with the Wharton Interim being initiated in September 2004. The purpose of the study was to address the significant flooding issues that have plagued the city of Wharton since its establishment in 1846.

After the significant Colorado River flood event in 1998, which caused millions of dollars in damages to homes, schools, and businesses, governments at all levels became interested in helping the city of Wharton to find a workable solution. The Lower Colorado River Authority became the lead non-Federal agency, with the Texas Water Development Board providing additional monetary support.

The city of Wharton is vintage small town Texas. The citizens are friendly, the pace and lifestyle are less hectic than their big city counterparts, and their fiscal matters have historically been dealt with in a conservative manner. However, Wharton can be differentiated from other small towns when discussing significant flooding problems. Heretofore, the problems have been considered by some to be too great for feasible, practical resolution. Only in recent years has the technology existed to reasonably and adequately analyze the complex flow regime in and around Wharton. As a result, it was discovered that Wharton's flooding problems could be addressed in a cost effective manner.

Two different types of storm scenarios contribute to Wharton flood problems. Most recently, it is the waters from the upstream areas of the Colorado River watershed that have presented most of the problems as evidenced in October 1998 and again in November 2004. Under this scenario, it is possible that the city would receive little to no rainfall during an event, but still suffer tremendous flood damages. The second scenario is tied to intense, localized events, which cause significant losses along the Caney Creek and Baughman Slough drainage paths. Both scenarios were addressed in order to devise a comprehensive flood solution.

The NED plan was identified as a series of levees placed on the east bank of the Colorado River and Baughman Slough, together with an array of interior drainage facilities targeted to efficiently evacuate floodwaters from the Caney Creek storage areas. All features of the plan were fully optimized, when possible.

Study coordination was maintained throughout the course of the study by conducting monthly management meetings with stakeholders from all Federal, city, and state agencies. As the plan formulation progressed, the Wharton City Council was kept apprised of the study progress, with the Project Manager providing briefings at City Council meetings. The City was pleased with the results of the formulation process, and has embraced the selection of the NED plan as the Recommended Plan.

The first cost of the Recommended Plan is estimated to be approximately \$27.7 million. This amount includes an estimated cost of \$1 million for fish and wildlife mitigation. The project is expected to reduce flood damages within the study area by an average of \$3.64 million annually. If costs are annualized and compared to the benefits, there are annual net benefits of approximately \$1.95 million, and a benefit to cost ratio of 2.2.

Without of the project, over two-thirds of the city is located within the flood zone designated by FEMA as "Zone A", which equates closely to the 1% exceedance (100-year) floodplain. Implementation of the Recommended plan would essentially remove the city from this floodzone. Flood insurance would become optional for most residents, and its cost for premiums would be greatly reduced, resulting in benefits directly to the residents, whether or not significant storm events occurred.

The planning process for this study followed the traditional sequence, with identifying problems and opportunities, inventory and forecast, then followed by plan formulation. During the later stages of formulation when the recommended plan started to take shape, the city of Wharton expressed their satisfaction and concurrence and with the direction of the study. However, they also believed that their flooding risk was too great for them to follow the Federal process in its entirety. Instead, the City sought approval under Section 104 of WRDA 1986 to construct a portion of the project in advance of the remainder. Specifically, they sought to construct an identified feature of the project, which would address a particularly problematic flood prone area. The feature, known as the Santa Fe ditch, would be constructed with 100% non-Federal funding. If this feature were eventually to become part of an authorized Federal project, the city would receive full credit for their work performed.

CONCLUSIONS

The following conclusions were reached based on the results of the investigations conducted for this study.

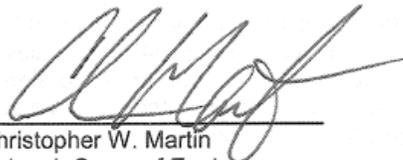
- 1) A significant need exists to provide flood damage reduction within the Wharton study area.
- 2) The Recommended Plan can provide affordable and economically viable flood damage reduction through the use of a system of levees, a channel modification, and associated drainage facilities.
- 3) The City of Wharton has fully endorsed the Recommended Plan, and has agreed to serve as the ultimate local sponsor for the project. The total project first cost is estimated at \$27,674,000, of which 35%, or \$9,686,000 would be the responsibility of the local sponsor. Their expression of support is evidenced by their pursuit of construction for the Santa Fe Ditch utilizing 100% non-Federal funds, in advance of the remainder of the Federal project.
- 4) According to an Environmental Assessment, no significant environmental impacts would occur as a result of implementation of the Recommended Plan. Therefore, A Finding of No Significant Impact (FONSI) has been prepared and is included herein.
- 5) Further evaluation for purposes of design efficiencies will be conducted during the preconstruction, engineering and design (PED) phase. A Value Management process will be deployed during the PED phase. The results of these studies may alter the project materials, design, costs, and ultimately the cost apportionment or amount of Federal participation in the project.

RECOMMENDATIONS

I recommend that the flood damage reduction measures identified as the Recommended Plan for the Wharton study area be authorized for construction.

This recommendation is made with the provision that prior to project implementation the non-Federal sponsors shall enter into a binding Project Cooperation Agreement (PCA) with the Secretary of the Army to perform the items of local cooperation, as specified in Chapter 5 of this document.

The recommendations contained herein reflect the information available at this time and current Departmental policies governing formulation of individual projects. They do not reflect program and budgetary priorities inherent to the formulation of a national Civil Works construction program nor the perspective of higher review levels within the Executive Branch. Consequently, the recommendations may be modified before they are transmitted to the Congress as proposals for authorization and implementation funding. However, prior to transmittal to the Congress, the sponsor, the state, interested Federal agencies, and other parties will be advised of any modifications and will be afforded the opportunity to comment further.



Christopher W. Martin
Colonel, Corps of Engineers
District Engineer

FINDING OF NO SIGNIFICANT IMPACT

LOWER COLORADO RIVER BASIN PHASE I, TEXAS WHARTON COMPONENT

At the request of the Lower Colorado River Authority (LCRA), and under authority of an August 4, 1936, resolution by the Committee on Commerce, Section 4 of the August 26, 1937, River and Harbor Act, and Section 6 of the March 2, 1945 River and Harbor Act the U.S. Army Corps of Engineers (Corps) conducted an Interim Feasibility-Level Report and Integrated Environmental Assessment to identify water and water-related land resource needs of the City of Wharton floodplains within the Lower Colorado River Basin, Texas. This Environmental Assessment was tiered from the Final Programmatic Environmental Impact Assessment for Flood Damage Reduction and Ecosystem Restoration, Lower Colorado River Basin, Colorado River, Texas, August 2005. The LCRA, in cooperation with the City of Wharton and with partial funding by the Texas Water Development Board (TWDB), provided non-Federal sponsor support for the Wharton Component of the Lower Colorado River Phase I, Texas Project.

Alternatives considered while evaluating the flooding problem within the city of Wharton included structural and non-structural alternatives as well as the No Action Alternative. Structural alternatives included combinations of levees, floodwalls, channel modifications and diversion pipe/channels. Non-structural alternatives included buyouts. The Recommended Plan consists of structural features in the form of earthen levees and accompanying sumps, floodwalls, a channel enlargement, storm drain type drainage structures and an open cut ditch. Most of the project features would be implemented in three different drainage areas: Colorado River, Baughman Slough and Caney Creek.

Recommended Plan features associated with the Colorado River would include the construction of 20,310 feet of levees, 19,010 feet of floodwalls and seven sump areas. The seven sumps would occupy 140 acres. Recommended features in Baughman Slough would include 6,610 feet of levees, 380 feet of floodwalls, 4,780 feet of channel modification and two sump areas of approximately 44 acres. Recommended features in Caney Creek would include placement of reinforced concrete pipes and approximately 10,700 feet of open cut ditch.

Implementation of the Recommended Plan would adversely affect approximately 65 acres of riparian/hardwood forests (148 average annual habitat units (AAHU) using 4 species), 129 acres of grassland (193 AAHU using 3 species) and 10 acres of wetlands (12 AAHU using 3 species). Another 171 acres of grasslands would be used for disposal areas. The recommended mitigation plan includes creating forest, shrub, and wetland habitat within the sump areas. All of the grasslands would be reseeded after construction ends unless they are being used as additional project features such as woodlands. The plan would also create approximately 85 acres (151 AAHU) of forest habitat and 10 acres (16 AAHU) of wetland habitat as is the most cost effective mitigation plan. The U.S. Fish and Wildlife Service has recommended purchasing and preserving existing woodlands as mitigation instead of creating habitat in the sump areas. However, this would be more expensive and Corps regulations require selection of the most cost effective plan.

The Recommended Plan has been reviewed in accordance with Section 404 of the Clean Water Act. Approximately 10 acres of Waters of the United States would be impacted and would be mitigated under the recommended mitigation plan. Water Quality Certification was obtained from the Texas Commission on Environmental Quality on October 6, 2006.

Executive Order 11988, Floodplain Management, was considered during the development of the Recommended Plan. There are no practical alternatives to achieve the project purposes of flood damage reduction without placing fill within the floodplain. Excavated material requiring disposal would be placed in approved landfills for the types of materials involved. Excess material excavated from the sumps would be placed on upland pasturelands to be determined during the

detailed design phase. Executive Order 11990, Protection of Wetlands, was also considered and impacts to wetlands would be fully mitigated to ensure no net loss of wetlands. Executive Order 12898, Environmental Justice, was considered during the development of the Recommended Plan. Low income and minority populations do exist in the city of Wharton, but the Recommended Plan would only benefit all residents so there would not be any adverse effects to minority or low income populations.

Cultural resources compliance issues are being coordinated with the Texas State Historic Preservation Office (SHPO). No cultural resources are expected to be impacted as a result of implementation of the project components along the Colorado River; however sump areas and project features along Baughman Slough need to be studied further during detailed design to ensure compliance with environmental laws and regulations. A programmatic agreement (PA) is being negotiated with the SHPO to ensure compliance with Section 106 of the National Historic Preservation Act. The Recommended Plan has been coordinated with the United States Fish and Wildlife Service. The Recommended Plan would not impact Federally-listed threatened or endangered species. Texas Parks and Wildlife Department as concurred with the project determinations.

Based upon review of the information contained in the Environmental Assessment and results of coordination, I have concluded that the recommended plan will not have a significant adverse effect on the human environment within the meaning of Section 102(2)(c) of the National Environmental Policy Act of 1969, as amended. In addition, construction of the project will not constitute a major Federal action of sufficient magnitude to warrant preparation of an Environmental Impact Statement.



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