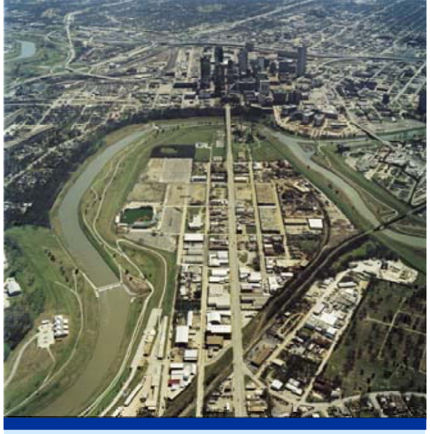

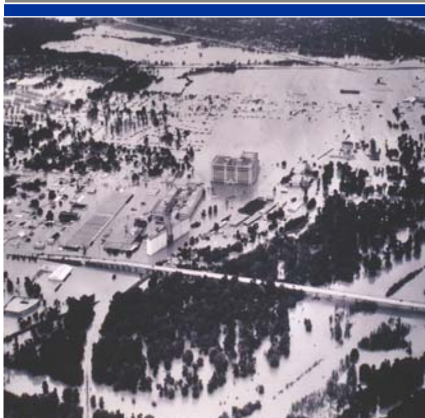

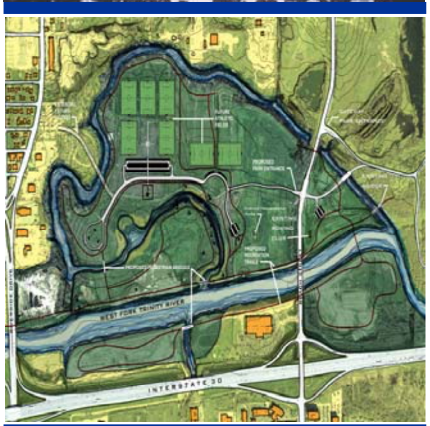

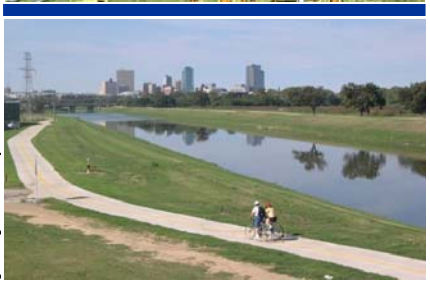

Rendering Image courtesy of CDM

Upper Trinity River Central City Fort Worth, Texas

Final Supplement No. 1 to the Final Environmental Impact Statement

Prepared by:
U.S. Army Corps of Engineers
Fort Worth District

March 2008

Interior Drainage

Drainage of the interior area must be provided for conditions when the isolation gates are closed. Approximately 612 acres of land would drain to this interior area; storm sewers and surface grading would be required to convey surface runoff in this area. During normal flow conditions, runoff would drain freely to the West Fork through open isolation gates. During high flow conditions, the isolation gates would be closed and runoff would be confined to the interior area.

Three alternative approaches for providing drainage for interior areas were considered, including gravity discharge, storage of flow, or pumping via a stormwater pump station. The Community Based Alternative incorporates a combination of these approaches to provide storm drainage for the interior area. Gravity discharge would be used when the isolation gates are open; however, gravity flow is not feasible during floods because the design maximum water level in the bypass channel would be higher than in the interior area. During these conditions, a combination of storage and pumping would be used. The interior water feature could provide about 270 acre-feet (equivalent to 88 million gallons) of flood storage by allowing the water level to rise up to 528 feet.

City of Fort Worth drainage criteria are based on the ability to convey flow from a 100-year event. To meet these requirements, the interior area footprint would require a pumping capacity of 300 cfs and 250 acre-feet of storage. Based on these requirements, the proposed pumping and storage system would provide more than two feet of free board between the maximum water level and the minimum building foundation construction elevation of 530 feet NGVD.

A stormwater pump station is proposed for construction on the east side of the interior area near the TRWD gate. During major flood events, the isolation gates would be closed and excess interior drainage would be pumped. The pump station would house four pumps with 100 cfs capacity per pump. One pump would be a spare pump, allowing maintenance to be performed without reducing the capacity of the pump station below 300 cfs at any time. Routine inspection of pump capacity and maintenance would be part of the project sponsor's O&M obligations and subject to annual audit by USACE.

Hydraulic Mitigation

Construction of the bypass channel as proposed in the Community Based Alternative would require the mitigation of floodplain storage, referred to as "valley storage" to compensate for the increased hydraulic efficiency of the bypass channel. Valley storage loss caused by the construction of the bypass channel would be comprised of two components. First, routing the existing Clear Fork and West Fork through the bypass channel in comparison to the existing configuration would reduce the total length of river channel, resulting in less in-line floodplain storage. Second, during high flow scenarios (100-year and SPF conditions), the shorter channel length would also create a drawdown effect on water surface elevations in the Clear Fork and West Fork upstream of the bypass channel. This drawdown effect would also effectively reduce the upstream valley storage.

The amount of valley storage mitigation required for the Community Based Alternative was determined by hydraulic modeling analyses and compliance with the criteria established by the regional Corridor Development Certificate guidelines. The hydraulic analyses quantified the approximate volume of valley storage that would be lost as 5,250 acre-feet (8.47 million cubic yards), without mitigation. Of this, an estimated 2,850 acre-feet would be lost due to the creation of the