

## PERIODIC INSPECTION REPORT

**DALLAS FLOODWAY  
TRINITY RIVER  
DALLAS, DALLAS COUNTY, TEXAS  
REPORT NO. 9  
3-5 DECEMBER 2007  
I – EXECUTIVE SUMMARY**

**1.1 EXECUTIVE SUMMARY.** The Dallas Floodway project protects the CoD, Texas, a major metropolitan area with a population in excess of 1.2 million people. Located along the Elm Fork, West Fork and Trinity Rivers, the Dallas Floodway includes 22.6 miles of levees: 11.7 miles on the East levee and 10.9 miles along the West levee. The East levee protects the Stemmons Corridor (a major transportation route through the City) and parts of Downtown Dallas and the Central Business District from flooding on the Trinity River, while the West levee protects a large portion of West Dallas.

These levees were originally constructed by the CoD in the early 1930s in response to extreme flooding along the Trinity River in 1908. Originally constructed with 2.5H:1V side slopes, a maximum height of 35 feet and a crown width of 6 feet, the levee system was modified by USACE in the late 1950s by expanding the levee cross-section, flattening the levee side slopes and increasing the crest width to 16 feet. Additionally, improvements to the interior drainage system were also made at that time. Originally authorized to provide flood protection to a level of SPF + 4 feet, major urban development and land-use changes in the area since the project was completed in 1958 have reduced that level of protection. Restoration of the authorized level of flood protection will require providing more height on both the East and West Levees.

In 1999 at the direction of Congress, two additional systems were added to the Dallas Floodway: Rochester Levee, which protects residential and commercial interests in East Dallas; and the Central Wastewater Treatment Plant (CWWTP) Levee, which protects critical infrastructure in South Dallas.

A periodic inspection (PI) of the Dallas Floodway project was performed on 3-5 December 2007. This inspection was the 9<sup>th</sup> PI for the East and West Levee systems, and the 1<sup>st</sup> PI for both the Rochester and the CWWTP Levee systems. The inspection was conducted using procedures utilized during all past PIs of the project (i.e., 'legacy' type inspections), and did not incorporate the Levee Inspection Checklist distributed in June 2007. When the report documenting the inspection and findings was being written, it was determined that failure to use the new inspection checklist was inappropriate. Therefore, information from the legacy inspection was transferred to the new inspection template. During this transfer, it became apparent that the more subjective ratings from previous inspections of the Floodway would be replaced by ratings determined in accordance with the very specific language and rating criteria described on the checklist. As a result, significant deficiencies were documented that resulted in unacceptable ratings for each of the 4 systems in the Floodway, and for the Dallas Floodway project overall. Items that generated unacceptable ratings include:

- Insufficient crest height rendering the East and West Levees incapable of successfully accommodating the Standard Project Flood without overtopping

- Significant encroachments and penetrations that impact the integrity and performance of the levees, as well as inhibit access for O&M, surveillance, and flood fighting purposes
- Damaged gate closures
- Unstable structures
- Severe desiccation cracking of the levees
- Erosion
- Vegetation
- Siltation
- Channel instability

In addition to numerous unacceptable ratings, it was determined that the Dallas Floodway does not meet current USACE design criteria regarding relevant factors of safety for embankment stability and seepage gradients.

It is noted that the results of the inspection identify negative impacts during base flood (100-year event) conditions which would jeopardize performance of project features to reliably function as authorized. This is a significant concern that may have a substantial negative impact on FEMA flood mapping of the areas outside the levees and the residents and businesses protected by those levees.

According to the Inspection Report Template, the East Levee, West Levee, Rochester Levee, and the CWWPT Levee systems had one or more items rated as unacceptable. Since there is a significant number of deficiencies that would prevent the systems from performing as intended, the overall rating for the Dallas Floodway project is unacceptable.