



**US Army Corps  
of Engineers** ®  
Los Angeles District



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**EAST TWIN CREEK 2 LEVEE SYSTEM**  
**SAN BERNARDINO COUNTY, CALIFORNIA**  
**NLD SYSTEM ID # 3805010079**

**PERIODIC INSPECTION REPORT NO 1**  
**GENERALIZED EXECUTIVE SUMMARY**

**FINAL SYSTEM RATING: MINIMALLY ACCEPTABLE**  
**FINAL RATING DATE: SEPTEMBER 23, 2013**

PERIODIC INSPECTION REPORT PREPARED BY TETRA TECH  
FOR THE U.S. ARMY CORPS OF ENGINEERS, LOS ANGELES DISTRICT

SUBMITTED: FEBRUARY 2013  
INSPECTED: JUNE 29, 2010, AND SEPTEMBER 15, 2010

## EXECUTIVE SUMMARY

This Executive Summary provides an introduction to the periodic inspection, an overview of the system, a summary of the major findings of the periodic inspection, and the overall rating for the system.

### 1.1 Scope and Purpose of this Periodic Inspection

The purpose of the Periodic Inspection is to identify deficiencies that pose hazards to human life or property. The inspection is intended to identify the issues in order to facilitate future studies and associated repairs as appropriate.

This assessment of the general condition of the levee system is based on available data and visual inspections. Detailed investigation and analysis involving hydrologic design, topographic mapping, subsurface investigations, testing, and detailed computational evaluations is beyond the scope of this levee system inspection.

### 1.2 System Summary

East Twin Creek 2 Levee System is located in the City of San Bernardino, in the County of San Bernardino, in the State of California. East Twin Creek 2 Levee System is located along the left/east bank of East Twin Creek (Figure 1). East Twin Creek 2 Levee System originally constructed by local interests but later improved by the United States Army Corps of Engineers (USACE). The East Twin Creek 2 Levee System levee embankment extends from approximately 3,074 feet upstream of 40th Street to the East Twin Creek Channel inlet structure at Marshall Boulevard, a distance of 8,670 feet. East Twin Creek 2 Levee System also includes a total of 127 feet of channel at its downstream limit along the left/east bank of East Twin Creek Channel. East Twin Creek 2 Levee System is locally operated and maintained by the San Bernardino County Flood Control District (hereafter the "County"). The National Levee Database (NLD) System ID Number for East Twin Creek 2 Levee System is 3805010079.

It should be noted that East Twin Creek 2 Levee System originally included two levee segments referred to as Segment 2A and Segment 2B. Segment 2A includes the entire levee embankment and floodwall described above which is now referred to as East Twin 2 Levee System. Segment 2B was considered to be the reach located along the left/east bank of Harrison Canyon starting slightly downstream of 40th Street and extending 1,527 feet downstream. Segment 2B is not considered in this report because it is inactive in the Rehabilitation and Inspection Program (RIP). As a result, Segment 2B was removed from East Twin Creek 2 Levee System. Although Segment 2B is no longer part of East Twin Creek 2 Levee System, the Segment 2B Periodic Inspection Report (PIR) and checklist can be found in Appendix IX of the East Twin Creek 2 Levee System Final Periodic Inspection Report No. 1.

### 1.3 Field Inspection and Summary of Major Deficiencies Found

East Twin Creek 2 Levee System was inspected on June 29, 2010, and September 15, 2010. The Local Sponsor representative met with the inspection team and assisted with granting access along the length of the levee. During the inspection of the system, several deficiencies were noted for which remedial actions are required. The following main deficiencies were noted during the inspection of the project features:

#### Levee Embankments

- Significant vegetation growth (brush, tall grass, and trees with trunks greater than 2 inches in diameter) was present within the vegetation-free zone. The vegetation-free zone extends 15 feet outward from both the landward and riverward toes of the levee.
- The greater part of the grouted and ungrouted stone revetment is covered by sediment pushed from the channel over the riverward levee slope. Additional encroachments in the form of earthen access roads within the system right-of-way could inhibit inspections and operations.
- Significant erosion gullies (i.e., more than 6 inches deep) have formed due to concentration of local runoff from the levee crown.

#### Interior Drainage System

- A chain-link fence was missing a fence post.
- The pipe associated with the diversion structure has not been visually inspected using videotaping by television camera or other visual-inspection method.

Tetra Tech presented an out-brief concerning Periodic Inspection No. 1 to the Los Angeles District Levee Safety Officer, reviewers of the draft report, and other interested USACE personnel. The USACE Los Angeles District has determined the overall system rating for the East Twin Creek 2 Levee System as described in section 1.4 below.

### 1.4 Overall System Rating

The Levee Safety Officer, Los Angeles District, has determined the overall system rating of East Twin Creek 2 Levee System to be “Minimally Acceptable.”

*A Minimally Acceptable System is where one or more items are rated as Minimally Acceptable or one or more items are rated as Unacceptable and an engineering determination concludes that the Unacceptable items would not prevent the segment/system from performing as intended during the next significant runoff event.*

The Local Sponsor will be notified of the overall rating of the levee system by letter with instructions to correct the “Unacceptable” rated items as soon as possible, and correct the “Minimally Acceptable” rated items within two years so that they do not deteriorate further and become “Unacceptable.”

## **1.5 Leveed Area Revision**

On June 13, 2013, the leveed area was revised per signature of the Levee Safety Officer and is shown on Figure 1. This leveed area supersedes the leveed area in the Periodic Inspection Report No. 1.

EAST TWIN CREEK 2 LEVEE SYSTEM  
 FINAL PERIODIC INSPECTION REPORT NO. 1

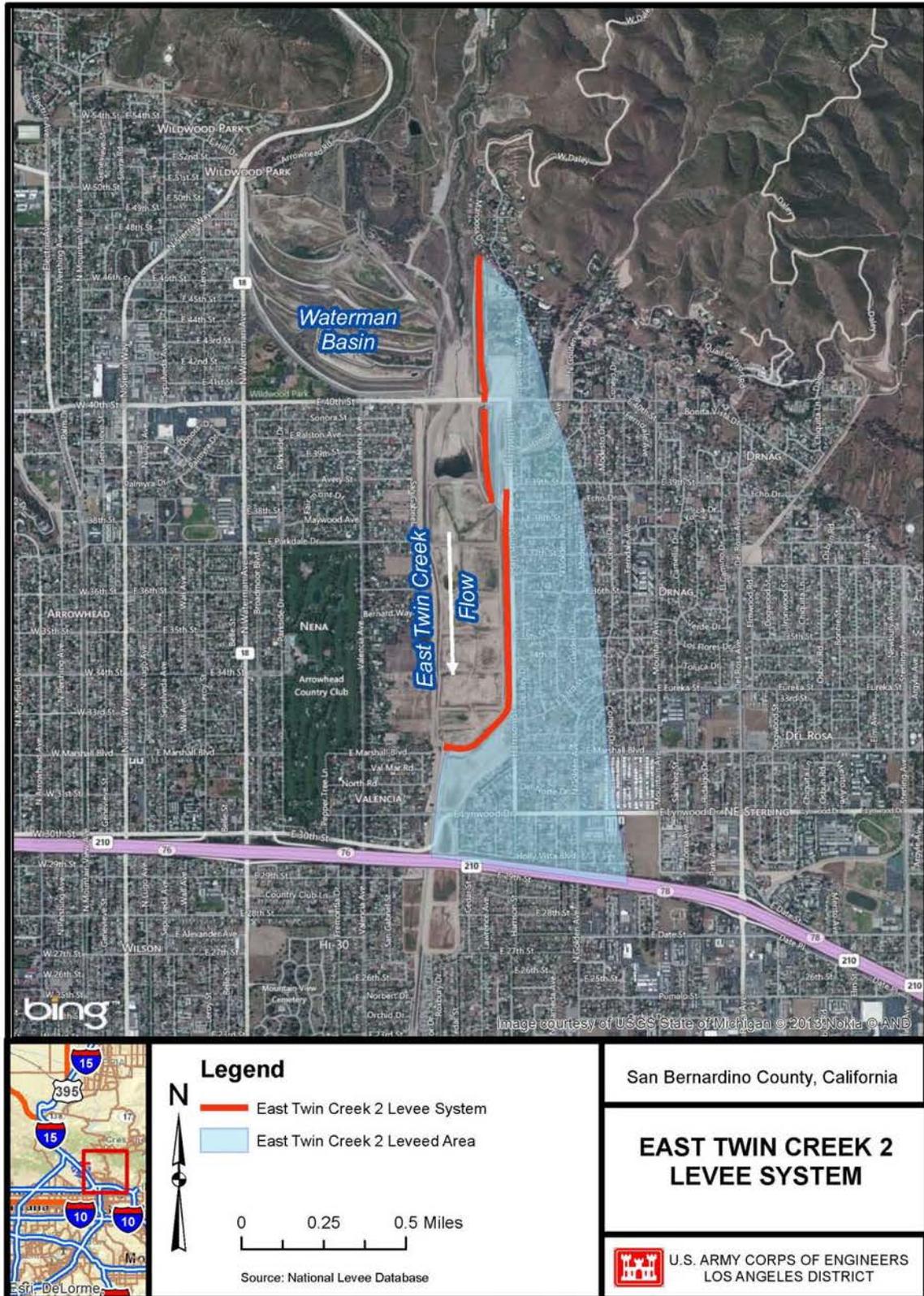


Figure 1: East Twin Creek 1 Levee System

Note: This NLD Leveed Area supersedes the leaved area shown in the PI Report.