



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



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**EAST TWIN CREEK 1 LEVEE SYSTEM**  
**SAN BERNARDINO COUNTY, CALIFORNIA**  
**NLD SYSTEM ID # 3805010082**

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

**FINAL SYSTEM RATING: MINIMALLY ACCEPTABLE**  
**FINAL RATING DATE: SEPTEMBER 15, 2013**

PERIODIC INSPECTION REPORT PREPARED BY URS GROUP, INC.  
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 1 Levee System is located in the City of San Bernardino, in the County of San Bernardino, in the State of California. East Twin Creek 1 Levee System starts at the intersection of Arrowhead Road and Waterman Avenue and extends along the west and south sides of Waterman Basin to East 40th Street. South of East 40th Street the levee extends along the right/west bank (looking downstream) of East Twin Creek to Marshall Boulevard (Figure 1). The East Twin Creek 1 Levee System levee embankment totals approximately 10,955 feet in length. East Twin Creek 1 Levee System also includes a total of 127 feet of channel along the right/west bank of East Twin Creek Channel. East Twin Creek 1 Levee System was federally authorized and subsequently constructed by the United States Army Corps of Engineers (USACE). It is now entirely 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 1 Levee System is 3805010082.

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

The 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.
- Erosion/bank caving of the riverward levee embankment was observed.
- Significant erosion gullies (i.e., more than 6 inches deep) have formed on the landward and riverward levee slopes of the earthen levee due to concentration of local runoff on the levee crown.

### **Interior Drainage System**

- The condition of the overflow pipe has not been verified using videotaping by television camera or other visual-inspection method within the past five years.

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 1 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 1 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 1 LEVEE SYSTEM  
 FINAL PERIODIC INSPECTION REPORT NO. 1

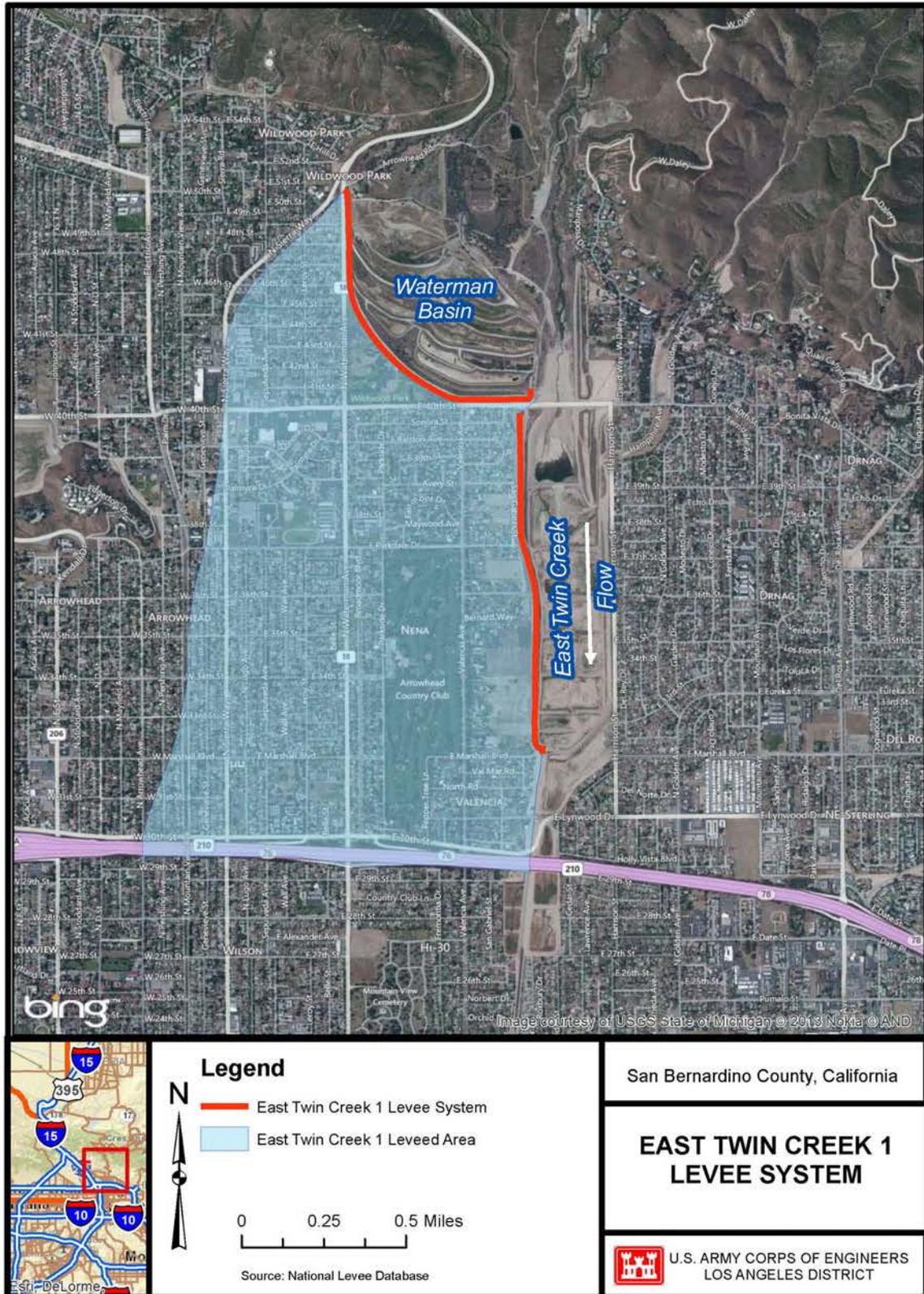


Figure 1: East Twin Creek 1 Levee System

Note: This NLD Leved Area supersedes the leved area shown in the PI Report.