



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



BALLONA CREEK 1 LEVEE SYSTEM
LOS ANGELES COUNTY, CALIFORNIA
NLD SYSTEM ID # 3805010034

PERIODIC INSPECTION REPORT NO 1
GENERALIZED EXECUTIVE SUMMARY

FINAL SYSTEM RATING: MINIMALLY ACCEPTABLE
FINAL RATING DATE: NOVEMBER 18, 2013

PERIODIC INSPECTION REPORT PREPARED BY URS GROUP, INC.
FOR THE U.S. ARMY CORPS OF ENGINEERS, LOS ANGELES DISTRICT

SUBMITTED: AUGUST 2012
INSPECTED: NOVEMBER 2-3, 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

The Ballona Creek 1 (BC1) Levee System, shown in Figure 1, is located in the County of Los Angeles, California, and is part of the Los Angeles County Drainage Area (LACDA). The National Levee Database System ID for BC1 Levee System is 3805010034.

The BC1 Levee System comprises two levee segments:

- Ballona Creek 1a Levee Segment (BC1a Levee Segment)
- Ballona Creek 1b Levee Segment (BC1b Levee Segment)

The BC1 Levee System, along with other similar works in the LACDA, was authorized initially by the Emergency Relief Act of 1935 to provide drainage and flood control. On June 30, 1937, this levee system was transferred to the more comprehensive project adopted in the Flood Control Act of June 22, 1936. Portions of the Ballona Creek channel were improved under the provisions of the Flood Control Act of 1941.

The USACE Los Angeles District and the Los Angeles County Flood Control District (LACFCD) entered into a Project Cooperation Agreement (PCA) on August 7, 1995, as required by Public Law 99-622. The LACFCD is ultimately responsible for operating and maintaining all the non-federal features of the LACDA and is required to ensure that all features operate as intended during flood events per the PCA. The Los Angeles County Department of Public Works (LACDPW) has assumed the functions of the LACFCD. The LACDPW is the Local Sponsor for the BC1a Levee Segment. The USACE Los Angeles District is the Local Sponsor for the BC1b Levee Segment.

1.3 Field Inspection and Summary of Major Deficiencies Found

The field inspection for the BC1 Levee System was conducted November 2 and 3, 2010. No representatives from LACDPW nor the USACE Los Angeles District participated in the field inspection. The Local Sponsors show an active response to operation and maintenance of the project; however, some deficiencies were noted and remedial actions are required. The unacceptable main system deficiencies are:

Levee Embankments

- **Non-Compliant Vegetation Growth:** The growth of non-compliant vegetation 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.
- **Encroachments:** Encroachments in the form of side drains, buildings, facilities, utilities, poles, retaining walls, irrigation lines, manholes, boat launches, wooden piers, concrete piers, and fences were present on the landside slope and near the crown of the levee. In addition, the grouted riprap on the riverside slopes was not shown on as-built drawings and is by definition an encroachment. The Levee Embankments checklist was used to record (1) any side drain that was shown on available as-built drawings but was not found during the field inspection and for which no approved permit for removal was found and (2) any side drain that was found during the field inspection but was not shown on the as-built drawings nor permitted by the USACE (this may include side drains where changes have occurred, such as change in pipe material, change in diameter/size, or fewer or more pipes/conduits). Side drain encroachments are important because they may have been removed or installed using unacceptable methods that could cause seepage and erosion along the pipe/conduit or leakage of water and backfill into the pipe/conduit. A total of 10 side drains were identified as encroachments.
- **Erosion/Bank Caving:** Erosion on the landside and riverside slopes and crown was identified. This erosion was typically caused by broken irrigation pipes or drainage runoff from the crown.
- **Cracking:** Cracking was observed on the paved access road on the crown of the levee.
- **Culverts/Discharge Pipes:** See Culverts/Discharge Pipes under the Interior Drainage System heading for details.
- **Revetments other than Riprap:** Cracks, spalls, and holes was observed in the grouted riprap revetment on the riverside slope.

Floodwalls (Including Riverside Retaining Walls)

- **Non-Compliant Vegetation Growth:** Large trees and vegetation growth was observed along walls.
- **Encroachments:** Encroachments by irrigation lines and utilities were observed.
- **Concrete Surfaces:** Spalling and cracking of concrete walls was observed, primarily at fence post embedments.

Interior Drainage System

- **Vegetation and Obstructions:** Vegetation and debris obstructed drainage outlets.
- **Culverts/Discharge Pipes:** Documentation of the interior condition of the pipes (via video or visual inspection methods) was not provided.
- **Flap Gates/Flap Valves/Pinch Valves:** Flap gates were obstructed by vegetation and in some cases, flap gates were missing.

Flood Damage Reduction Channels

- **Vegetation and Obstructions:** Non-compliant vegetation within the channel obstructed flow in the channel.
- **Concrete Surfaces:** Spalling, cracking, and upheaval of the concrete slope revetment was observed. In addition, there were missing sections of concrete slope revetment.
- **Flap Gates/Flap Valves/ Pinch Valves:** See Flap Gates/Flap Valves/Pinch Valves under the Interior Drainage System heading for further details.
- **Revetments other than Riprap:** See same rated item under the Levee Embankments heading for details.

URS 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 BC1 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 Ballona 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 Locals Sponsors will be notified of the overall rating of the levee system by letter with instructions to correct the “Unacceptable” rated items immediately, and correct the “Minimally Acceptable” rated items within two years so that they do not deteriorate further and become “Unacceptable.”

1.5 Revision to Extent of Levee

It was determined that the BC1 downstream levee extent is actually at station 40+00, and the remaining downstream structure is a navigation structure. As a result, this downstream reach will be removed from the National Levee Database. The Navigation Branch of USACE Los Angeles District is the local sponsor for the BC1b levee segment.

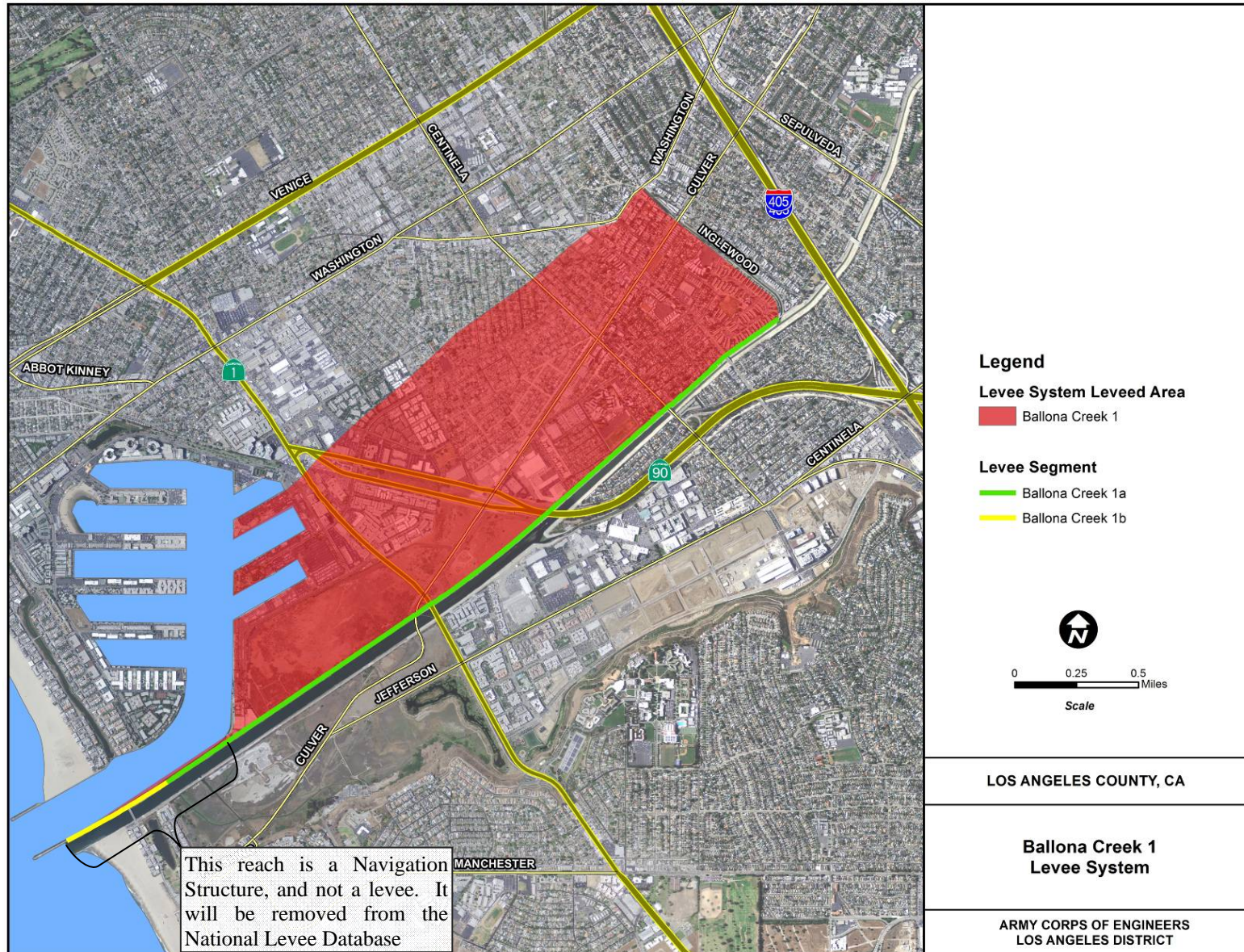


Figure 1. Ballona Creek 1 Levee System