



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



COYOTE CREEK/CARBON CREEK 1 LEVEE SYSTEM

**LOS ANGELES COUNTY AND ORANGE COUNTY,
CALIFORNIA**

NLD SYSTEM ID # 3805010105

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

**FINAL SYSTEM RATING: MINIMALLY ACCEPTABLE
FINAL RATING DATE: JUNE 4, 2015**

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

SUBMITTED: JULY 2014
INSPECTED: MARCH 6 & APRIL 18, 2012

EXECUTIVE SUMMARY

This Executive Summary provides an introduction to the periodic inspection (PI), an overview of the Coyote Creek/Carbon Creek 1 Levee System, a summary of the major findings of the periodic inspection, and the overall rating for the system.

1.1 Scope and Purpose of Periodic Inspections

The purpose of the Coyote Creek/Carbon Creek 1 (CC/CC1) Levee System 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 Coyote Creek/Carbon Creek 1 (CC/CC1) Levee System is located in cities of Los Alamitos and Cypress, Orange County, California. The total length of the system is 15,283 feet (2.89 miles). The CC/CC1 Levee System is divided into two segments, the Coyote Creek Segment and the Carbon Creek Segment (Figure 1).

The Carbon Creek Segment is located in the city of Cypress, Orange County, California. It runs along the south (left) bank of Carbon Creek, beginning at the downstream side of Walker Street Bridge and extending to the downstream side of the Carbon Creek confluence, for a total distance of 10,625 feet (2.01 miles).

The Coyote Creek Segment is located in the city of Los Alamitos, Orange County, California. It runs along the east (left) bank of the Coyote Creek, beginning downstream of the Carbon Creek confluence and extending to the downstream side of the San Gabriel River Freeway (Interstate [I] 605), for a total distance of 4,658 feet (0.88 miles).

The CC/CC1 Levee System is a concrete lined trapezoidal channel. The CC/CC1 Levee System includes pump stations, bridge crossings, and side-drainage structures.

The Coyote Creek Segment and a portion of the Carbon Creek Segment were federally authorized and subsequently constructed by the US Army Corps of Engineers, Los Angeles District (USACE) between 1963 and 1964. Operation and maintenance responsibilities for these portions of the system were transferred to the Los Angeles Flood Control District (LAFCD) on 1 December 1964. The Los Angeles County Department of Public Works (LACDPW) has assumed the functions of the LAFCD. The Carbon Creek Segment was subsequently improved by the Orange County Flood Control District (OCFCD) and became part of the USACE Rehabilitation and Inspection Program (RIP; Public Law 98-99) on October 1996.

LACDPW submitted documentation for certification of their levees (including the Coyote Creek Segment) within FEMA's Provisionally Accredited Levees (PAL) program, on 15 October 2009

and are awaiting FEMA's accreditation. According to OCFCD, "On October 11, 2007, County of Orange entered into this agreement with FEMA. Carbon Creek Channel was not identified by FEMA as a levee for PAL."

1.3 Summary of Major Deficiencies Found

The Coyote Creek Segment was inspected on 6 March 2012 and the Carbon Creek Segment was inspected on 18 April 2012. Additionally, the U.S. Army Corps of Engineers (USACE) Los Angeles District (SPL) staff inspected the pump stations along the Carbon Creek Segment on May 7, 2013. The inspection of the pump stations, ratings, and recommendations are included as a separate Addendum to this report. During the periodic inspection of the system, several deficiencies were noted for which remedial actions are required. Each item of concern observed during the site inspection was rated "Unacceptable", "Minimally Acceptable", or "Acceptable."

1.3.1 Coyote Creek Segment

The following major unacceptable deficiencies were noted during the periodic inspection of the project features:

- Levee Embankments - Erosion/ Bank Caving: Erosion primarily on the landside slope caused by local surface runoff has progressed into the levee section.
- Interior Drainage System - Culverts/ Discharge Pipes: The condition of the pipes has not been verified using television camera videotaping or visual inspection methods within the past 5 years.
- Flood Damage Reduction Channel - Concrete Surfaces: Cracking, spalling, and/or missing concrete in localized areas within the channel was observed.

1.3.2 Carbon Creek Segment

The following major unacceptable deficiencies were noted during the periodic inspection of the project features:

- Interior Drainage System - Vegetation and Obstructions: Some side-drainage pipes are partially clogged with debris and trash.
- Interior Drainage System - Culverts/ Discharge Pipes: The condition of the pipes has not been verified using television camera videotaping or visual inspection methods within the past 5 years.
- Flood Damage Reduction Channel - Concrete Surfaces: Cracking, spalling, and/or missing concrete in localized areas within the channel was observed.
- Pump Stations- Operation, maintenance, and inspection records were not present at pump stations at the time of the field inspection. Records of training or refresher training for personnel were not present at the pump station either. There is no emergency power source available at the Los Alamitos High School Pumping Plant should the primary source fail. No record of megger testing was found for the pump stations.

1.4 Overall Rating

The Levee Safety Out-Brief Meeting was held on 14 November 2013. An engineering determination has concluded that the observed deficiencies would not prevent the system from performing as intended during the next flood event. Therefore, the Levee Safety Officer, Los Angeles District, has determined the overall system rating to be “Minimally Acceptable (M).”

A “Minimally Acceptable” system rating is defined as: 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, not to exceed two years, and to correct the Minimally Acceptable rated items so that they do not deteriorate further and become Unacceptable.



Legend

- Carbon Creek 1 Levee Segment
- Coyote Creek Levee Segment
- Leveed Area

0 0.4 0.8 Miles

Source: National Levee Database

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**LOCATION AND
LEVEED AREA MAP**



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Figure 1: Coyote Creek/Carbon Creek 1 Levee System