



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



LOS ANGELES RIVER 6 LEVEE SYSTEM

LOS ANGELES COUNTY, CALIFORNIA
NLD SYSTEM ID NO. 3806010073

PERIODIC INSPECTION REPORT NO. 1
GENERALIZED EXECUTIVE SUMMARY

FINAL SYSTEM RATING: UNACCEPTABLE
FINAL RATING DATE: SEPTEMBER 30, 2016

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

SUBMITTED: JULY 2016
INSPECTED: APRIL 8, 2013 TO APRIL 11, 2013

EXECUTIVE SUMMARY

This Executive Summary provides an introduction to the periodic inspection (PI), an overview of the Los Angeles River 6 (LAR6) Levee System, a summary of the major findings of the PI of the system, and the overall rating for the system.

1.1 Scope and Purpose of Periodic Inspections

The purpose of the LAR6 Levee System PI 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 LAR6 Levee System is located in the Cities of Los Angeles and Glendale, in Los Angeles County, in the State of California. The National Levee Database (NLD) shows the LAR6 Levee System (NLD System ID No. 3806010073) along the left (east) bank of the Los Angeles River, from approximate Station 339+00 at the confluence with Verdugo Wash near the State Route (SR) 134 Bridge crossing, to approximate Station 153+40 located at approximately Silver Lake Boulevard, for a total length of approximately 18,560 feet (3.52 miles). The Location and Leveed Area Map (Figure 1.1) shows the levee system alignment recommended by this PI and in the NLD.

The LAR6 Levee System includes 8 grade stabilizers, 5 bridge crossings, 1 utility crossing, 3 floodwalls, and 40 side-drainage structures. The system is a combination of a trapezoidal and rectangular channel. The trapezoidal section consists of grouted stone and concrete paved revetments, a “natural bottom” (placed stone or earthen channel bottom) and reinforced concrete invert, and either a concrete or grouted stone channel toe protection. The rectangular section consists of a reinforced concrete invert and a reinforced concrete cantilever wall.

The LAR6 Levee System is a part of the Los Angeles County Drainage Area (LACDA) Project. According to the Operation, Maintenance, Repair, Replacement, and Rehabilitation (OMRR&R) Manual (USACE SPL, 1999), the LACDA Project was authorized by the Emergency Relief Appropriation Act of April 8, 1935, and later transferred to the Flood Control Act of June 22, 1936. No agreement for local cooperation has been signed. The U.S. Army Corps of Engineers, South Pacific Division, Los Angeles District (USACE SPL) is responsible for operating and maintaining the LAR6 Levee System as well as the channel improvements associated with the levee system. Construction of the levee improvements was completed by USACE SPL in 1940.

USACE SPL staff conducted an additional field visit of the LAR6 Levee System on July 14, 2015 to address uncertainties in the extent of the levee reaches, obtain supporting photos of specific portions of the interior drainage system deficiencies, and re-evaluate various deficiencies with new information regarding levee classification. The results and information gathered from the field visit

have been incorporated into this report. The field visit notes and trip report can be found in Appendix IV of this report.

1.3 Summary of Major Deficiencies Found

The Periodic Inspection (PI) No. 1 of the LAR6 Levee System was conducted from April 8 to 11, 2013 with a representative from the USACE SPL Operations Branch. 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. The following major deficiencies were noted during the PI No. 1:

- Levee Embankments:
 - Non-Compliant Vegetation Growth: Significant vegetation, including trees with trunks up to 36 inches in diameter, were observed on the landside of the levee crown 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 for which permits were not located were identified; these included drainage structures, power transmission towers, utility vaults, fencing, and a retaining wall.
 - Depressions/Rutting: A large 30 foot by 4 foot by 3 foot deep depression that will pond water was observed at the riverside crown.
 - Cracking: Cracking in the asphalt access road caused by uplifting from tree roots was observed.
 - Revetments other than Riprap: Sections of grouted stone revetment was found to be missing and/or damaged along the riverside slope and toe. Loss of toe protection and erosion of the underlying soils has resulted in a 30 foot by 10 foot by 4 foot deep hole and damage of the lower slope revetment.
 - Underseepage Relief Wells/Toe Drainage System: Drainage relief holes are damaged and need to be repaired to their as-built condition. They are heavily vegetated and need to be maintained. Inspection of the drainage relief holes needs to be conducted to ensure functionality.
- Interior Drainage System:
 - Vegetation and Obstructions: Significant obstruction such as vegetation, debris, or sediment have blocked more than 10% of a culvert opening.
 - Fencing and Gates: Fencing was observed to be damaged, missing, or obstructing maintenance accessibility.
 - Concrete Surfaces: Concrete cracking and spalling with exposed rebar was observed on wingwall of a drainage structure.
 - Monolith Joints: A 2 inch x 3 foot deep void in the joint between the headwall/wingwall and grouted stone on one of the drainage structures was observed.
 - Culverts/Discharge Pipes: The interior condition of the pipes has not been verified using television camera videotaping or visual inspection methods within the past 5 years.

LOS ANGELES RIVER 6 LEVEE SYSTEM
FINAL PERIODIC INSPECTION REPORT NO. 1

- Flap Gates/Flap Valves/Pinch Valves: Flap gates were found to be missing, damaged, of unknown operability, bolted shut, or propped open.
- Floodwalls:
 - Encroachments: Encroachments to the floodwalls for which permits were not located were identified; these included drainage pipes, fencing, and a 16 inch diameter utility line.
 - Concrete Surfaces: Concrete surface deterioration and spalling with exposed rebar was observed on a floodwall.
- Flood Damage Reduction Channels:
 - Vegetation and Obstructions: Heavy vegetation growth in the channel invert is impairing channel flow capacity. Vegetation was also observed growing in and/or adjacent to the grade stabilizers.
 - Encroachments: Encroachments for which permits were not located were identified; these included utility vaults, power transmission towers, a pocket park, and fencing. Large tree roots causing cracking and uplift on the asphalt access road and depressions were observed.
 - Concrete Surfaces: Concrete surface deterioration and spalling was observed on the riverside toe and apron. Exposed rebar was observed on the riverside revetment.
 - Revetments other than Riprap: Several sections of the concrete toe protection adjacent to the channel invert are severely damaged. Large sections have been undermined and broken off from the rest of the toe protection. The continued undermining of the toe can create voids under the grouted stone slopes, and can affect slope stability.

1.4 Overall Rating

The Levee Safety Out-Brief Meeting was held on September 3, 2015. An engineering determination has concluded that the observed deficiencies could prevent the LAR6 Levee System from performing as intended during the next significant runoff event. Therefore, the Levee Safety Officer, Los Angeles District, has determined the overall system rating of the LAR6 Levee System to be “Unacceptable.”

An “Unacceptable” system rating is defined as, “One or more items are rated as Unacceptable and would prevent the segment/system from performing as intended, or a serious deficiency noted in past inspections (which had previously resulted in a minimally acceptable system rating) has not been corrected within the established timeframe, not to exceed two years.”

The local sponsor, USACE SPL, Asset Management Division, Operations Branch, will be notified of the overall rating of the levee system via letter with instructions to correct Critically Unacceptable rated items immediately, Unacceptable rated items as soon as possible, and to correct the Minimally Acceptable rated items within two years so that they do not deteriorate further and become Unacceptable. Because this levee system is rated as “Unacceptable,” a public notice will be prepared by the USACE. Once the Critically Unacceptable deficiencies are corrected by the USACE, the system rating will be revised to “Minimally Acceptable.”

LOS ANGELES RIVER 6 LEVEE SYSTEM
 FINAL PERIODIC INSPECTION REPORT NO. 1

