



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



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# **LYTLE CREEK (MUSCOY GROIN NO. 4) LEVEE SYSTEM**

**SAN BERNADINO COUNTY, CALIFORNIA  
NLD SYSTEM ID # 3805010081**

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

**FINAL SYSTEM RATING: UNACCEPTABLE  
FINAL RATING DATE: JULY 25, 2014**

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

SUBMITTED: AUGUST 2013  
INSPECTED: JUNE 9 AND NOVEMBER 23, 2010

## EXECUTIVE SUMMARY

This Executive Summary provides an introduction to the periodic inspection (PI), an overview of the Lytle Creek (Muscoy Groin No. 4) Levees 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 this 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

Lytle Creek (Muscoy Groin No. 4) Levee System (hereafter “Muscoy Groin No. 4 Levee System”) is located in the City of Muscoy, in the County of San Bernardino, in the State of California. Muscoy Groin No. 4 Levee System is comprised of two separate federally authorized projects: Muscoy Groin No. 4 Levee and Devil Creek Diversion Channel. The upstream end of the system is located about 900 feet upstream of the confluence of Cajon and Devil Creek. The levee runs along the left/east bank of Devil and Cajon Creek for a total length of approximately 4,100 feet. The part of Devil Creek Diversion Channel project that is within the levee system was built on top of the upstream 887 feet of the Muscoy Groin No. 4 Levee. Muscoy Groin No. 4 Levee System (including Devil Creek Diversion Channel) 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 Number (NLD No.) for Muscoy Groin No. 4 Levee System is 3805010081.

Figure 1 shows the Lytle Creek (Muscoy Groin No. 4) Levee System extents and leveed area.

### 1.3 Summary of Major Deficiencies Found

The levee system was inspected on June 9, 2010, and November 23, 2010. The local sponsor representative met with the inspection team and assisted with granting access along the length of the levee. During the periodic inspection of the system, several deficiencies were noted for which remedial actions are required. The following main deficiencies were noted during the periodic inspection of the project features:

- Levee Embankments
  - Long-term degradation of Cajon Creek has extended into the levee prism.
  - As a result of long-term degradation along Cajon Creek, gabions placed at the toe of the riverward levee slope have been undermined and have failed.
- Flood Damage Reduction Channels

- The grouted stone apron at the outlet of Devil Creek Diversion Channel at its confluence with Cajon Creek is being undermined. The erosion has degraded the invert of Cajon Creek to an elevation lower than the levee toe.

#### **1.4 Overall Rating**

The Levee Safety Out-Brief Meeting was held on March 23, 2011. An engineering determination has concluded that the observed deficiencies would prevent the system from performing as intended during the next significant runoff event. Therefore, the Levee Safety Officer (LSO), Los Angeles District, has determined the overall system rating of Lytle Creek (Muscoy Groin No. 4) Levee System to be “Unacceptable.” An “Unacceptable” system rating is defined as:

*One or more System Components are rated Unacceptable and require immediate correction. An engineering determination has concluded that the Unacceptable System Components identified seriously impair the functioning of the levee system, would prevent the system from performing as intended, and pose unacceptable risk to public safety.*

The Local Sponsor will be notified of the overall rating of the levee system by 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 and coordinated between the USACE and the Local Sponsor. Once the Critically Unacceptable deficiencies are corrected by the sponsor and verified by the USACE, the system rating will be revised to “Minimally Acceptable.”

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FINAL PERIODIC INSPECTION REPORT NO. 1

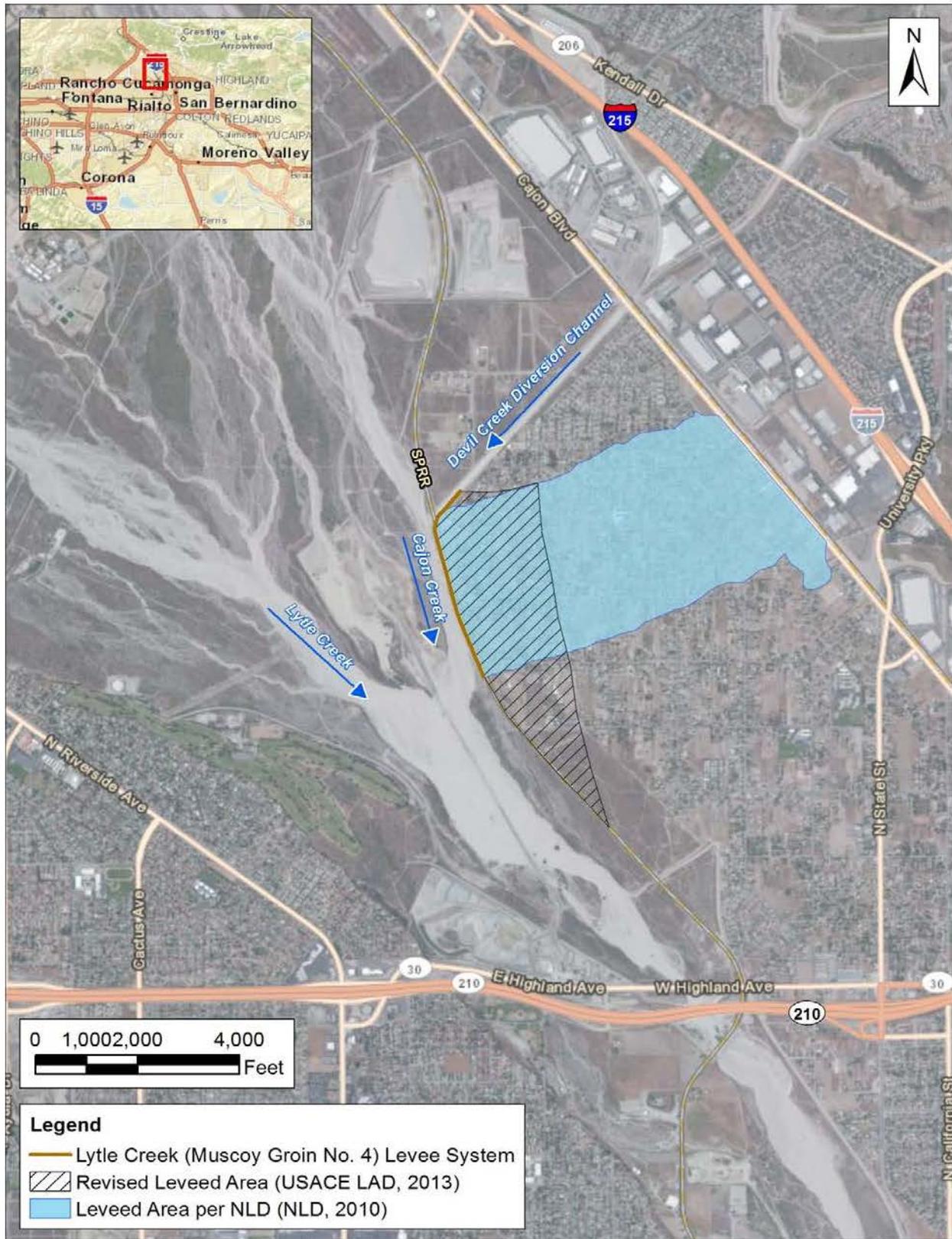


Figure 1: Lytle Creek (Muscoy Groin No. 4) Levee System