



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



**NEEDLES “S” STREET LEVEE SYSTEM
SAN BERNARDINO COUNTY, CALIFORNIA
NLD SYSTEM ID # 3805030008**

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

**FINAL SYSTEM RATING: MINIMALLY ACCEPTABLE
FINAL RATING DATE: AUGUST 2014**

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

SUBMITTED: JANUARY 2014
INSPECTED: JULY 27, 2011 AND OCTOBER 24, 2012

EXECUTIVE SUMMARY

This Executive Summary provides an introduction to the periodic inspection (PI), an overview of the Needles “S” Street 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 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 Needles “S” Street 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 are beyond the scope of this levee system inspection.

1.2 System Summary

Needles “S” Street Levee System is located in the County of San Bernardino, California. Needles “S” Street Levee System is comprised of three levee segments: Eagle Pass Levee Segment, Needles 1 Levee Segment, and Needles 2 Levee Segment. The National Levee Database Number (NLD No.) for the Needles “S” Street Levee System is 3805030008.

Eagle Pass Levee Segment is located in an unincorporated area approximately 6 miles southwest of the City of Needles. Eagle Pass Levee Segment serves to intercept and deflect the Standard Project Flood (SPF) into and along “S” Street Wash; then into Airport Wash, which flows into the Colorado River south of the City of Needles. Eagle Pass Levee Segment includes two deflection levees and one diversion levee. Each deflection levee is 400 feet in length, and the diversion levee is 1,250 feet in length. Needles “S” Street Levee System was federally authorized and subsequently constructed by the U.S. Army Corps of Engineers, Los Angeles District (USACE LAD). Needles “S” Street Levee System is now entirely operated and maintained by the San Bernardino County Flood Control District (hereinafter the “County”). The NLD No. for the Eagle Pass Levee Segment is 3804030009.

Needles 1 Levee Segment is located in the City of Needles. Needles 1 Levee Segment forms a collector levee that collects runoff along the Sidewinder Wash and the “S” Street Wash, and then funnels this runoff into the “S” Street Channel. The inspection limits were redefined to include a portion of the “S” Street Channel that has a levee embankment on the landward side. The inspection limits were redefined to include the left/west half of the “S” Street Channel from the channel inlet to the Atchison, Topeka, and Santa Fe (ATSF) railroad bridge, a distance of 523 feet. The “S” Street Channel is a reinforced concrete rectangular channel, with compacted fill behind the channel wall. The compacted fill behind the channel wall was treated as a levee embankment for inspection and reporting purposes. Needles 1 Levee Segment was federally authorized and subsequently constructed by the USACE LAD. It is now entirely operated and maintained by the County. The NLD No. for Needles 1 Levee Segment is 3804010032.

Needles 2 Levee Segment is located in the City of Needles. Needles 2 Levee Segment forms a collector levee that collects runoff along the “S” Street Wash and funnels it into the “S” Street Channel. The inspection limits were redefined to include a portion of the “S” Street Channel that

has a levee embankment on the landward side. The inspection limits were redefined to include the right/east half of the "S" Street Channel from the inlet to the ATSF railroad bridge, a distance of 516 feet. The "S" Street Channel is a reinforced concrete rectangular channel, with compacted fill behind the channel wall. The compacted fill behind the channel wall was treated as a levee embankment for inspection and reporting purposes. Needles 2 Levee Segment was federally authorized and subsequently constructed by the USACE LAD. It is now entirely operated and maintained by the County. The NLD No. for Needles 2 Levee Segment is 3804010031.

The Needles "S" Street Leveed Area is shown in Figure 1.

1.3 Summary of Major Deficiencies Found

The periodic inspection of the Eagle Pass Levee Segment was conducted on October 24, 2012. The local sponsor representatives met with the inspection team and assisted with granting access along the length of the levee. The periodic inspection of the Needles 1 Levee Segment and Needles 2 Levee Segment was conducted on July 27, 2011. During the inspection of the levee system, deficiencies were noted for which remedial actions are required. The following main deficiencies of the project features were noted during the periodic inspection:

- Eagle Pass Levee Segment:
 - Erosion has occurred at the toe of the riverward slope along both Deflection Levee 1 and Deflection Levee 2. The erosion threatens the stability and integrity of the levees.
 - Erosion gullies up to 36 inches in depth were observed along the Eagle Pass Diversion Levee.
- Needles 1 Levee Segment:
 - 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.
 - There was an unauthorized earthen access ramp constructed over the grouted stone revetment on the riverward slope.
 - For a horizontal distance of 50 feet, the backfill located over the toe of the riverward slope, as shown in the as-built drawings, was excavated and was pushed up onto the riverward slope. This unauthorized activity has exposed the toe-down protection.
 - Due to the concentration of local runoff, erosion gullies greater than 6 inches in depth were present on the landward slope.
 - For a horizontal distance of 250 feet, the centerline of the levee crown was observed to be as much as 12 inches lower than the top of the grouted stone revetment. It appeared that the material on the crown had been pushed to the landward edge of the levee crown.
 - The chain-link fence located along the top of the channel was damaged.
- Needles 2 Levee Segment:
 - 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.

- There was an unauthorized earthen access ramp constructed over the grouted stone revetment on the riverward slope.
- Due to the concentration of local runoff, an erosion gully greater than 6 inches in depth was present on the landward slope.

1.4 Overall Rating

The Levee Safety Out-Brief Meeting was held on August 7, 2013. An engineering determination has concluded that the observed deficiencies would not 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 to be “Minimally Acceptable.”

A “Minimally Acceptable” system rating is defined as, “One or more items are rated Minimally Acceptable or one or more items are rated 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.”

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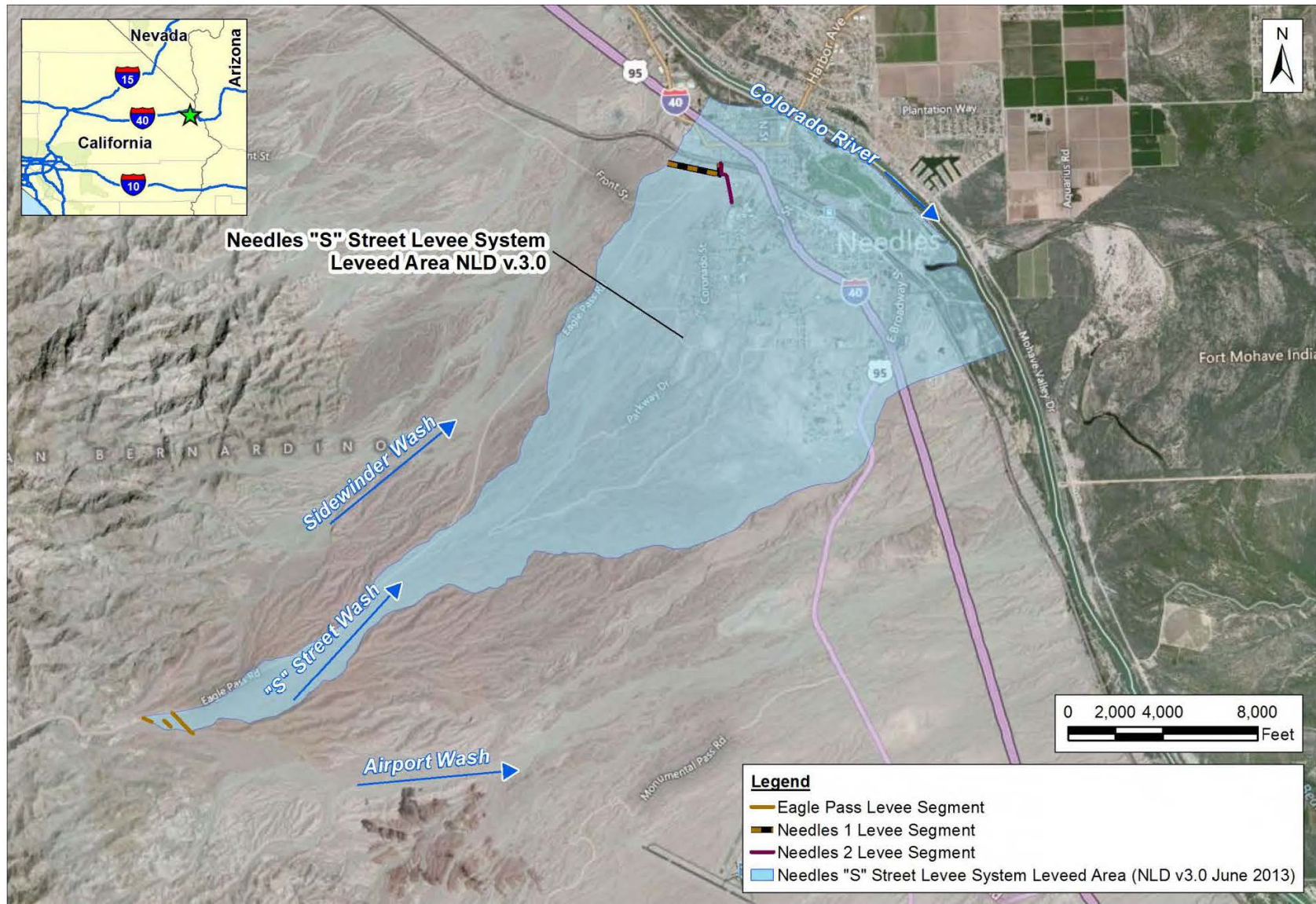


Figure 1: Needles "S" Street Levee System