



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



---

**INDIAN BEND WASH 1  
LEVEE SYSTEM  
MARICOPA COUNTY, ARIZONA  
NLD SYSTEM ID NO. 3805020006**

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

**FINAL SYSTEM RATING: MINIMALLY ACCEPTABLE**

**FINAL RATING DATE: SEPTEMBER 27, 2016**

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

SUBMITTED: SEPTEMBER 2016  
INSPECTED: JANUARY 8, 2014

## EXECUTIVE SUMMARY

This Executive Summary provides an introduction to the Indian Bend Wash 1 (IBW1) Levee System Periodic Inspection Report No. 1, 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 Periodic Inspections

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 IBW1 Levee System is located on the west bank of the Indian Bend Wash from Station 115+37 (approximately 1,600 feet upstream from McKellips Road) to the downstream limit at Station 24+00 (approximately 775 feet downstream of State Highway 202) at the confluence of Indian Bend Wash and Salt River, a distance of 9,137 feet (1.73 miles). It is located in the State of Arizona, in Maricopa County, in the cities of Tempe and Scottsdale. Figure 1 shows the IBW1 Levee System and leveed area as depicted in the National Levee Database (NLD). The NLD No. for the IBW1 Levee System is 3805020006.

The IBW1 Levee System consists of an earthen levee embankment and a trapezoidal channel with the riverside slope armored with stone and covered with landscape fill. Other features along the IBW1 Levee System include a low flow channel, concrete masonry unit walls, retaining walls, 10 conduits associated with the side-drainage structures, 3 drop structures, 3 bridge crossings, utility crossings, and landscaping.

The IBW1 Levee System is a part of the Indian Bend Wash Project, which was authorized by the Flood Control Act of 1965, 79 Statute 1073, Public Law 89-298, 89th Congress, 1st Session, approved on October 27, 1965 and amended by the 1974 Water Resources Development Act. Construction of the levee improvements was completed by the USACE on November 10, 1977 (Operation and Maintenance [O&M] Manual, USACE, 1982). This levee system is operated and maintained by the Flood Control District of Maricopa County (FCDMC) in accordance with the local cooperation agreement for the Indian Bend Wash Project on September 23, 1974 (O&M Manual, USACE, 1982).

### 1.3 Summary of Major Deficiencies Found

The PI No. 1 of the IBW1 Levee System was conducted on January 8, 2014, and representatives from the FCDMC were present. 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 PI No. 1.

- Levee Embankments:
  - Non-Compliant Vegetation Growth: Significant vegetation growth consisting of brush and trees with trunks greater than 2 inches in diameter was observed during the PI near

the levee embankments, within the vegetation free zone (VFZ). The VFZ extends 15 feet outward from both the landward and riverward toes of the levee. The vegetation appears unlikely to impair adequate levee system inspection or to present a serious obstacle to flood-fighting activities. Decaying roots could result in preferential seepage pathways in and under the levee embankments.

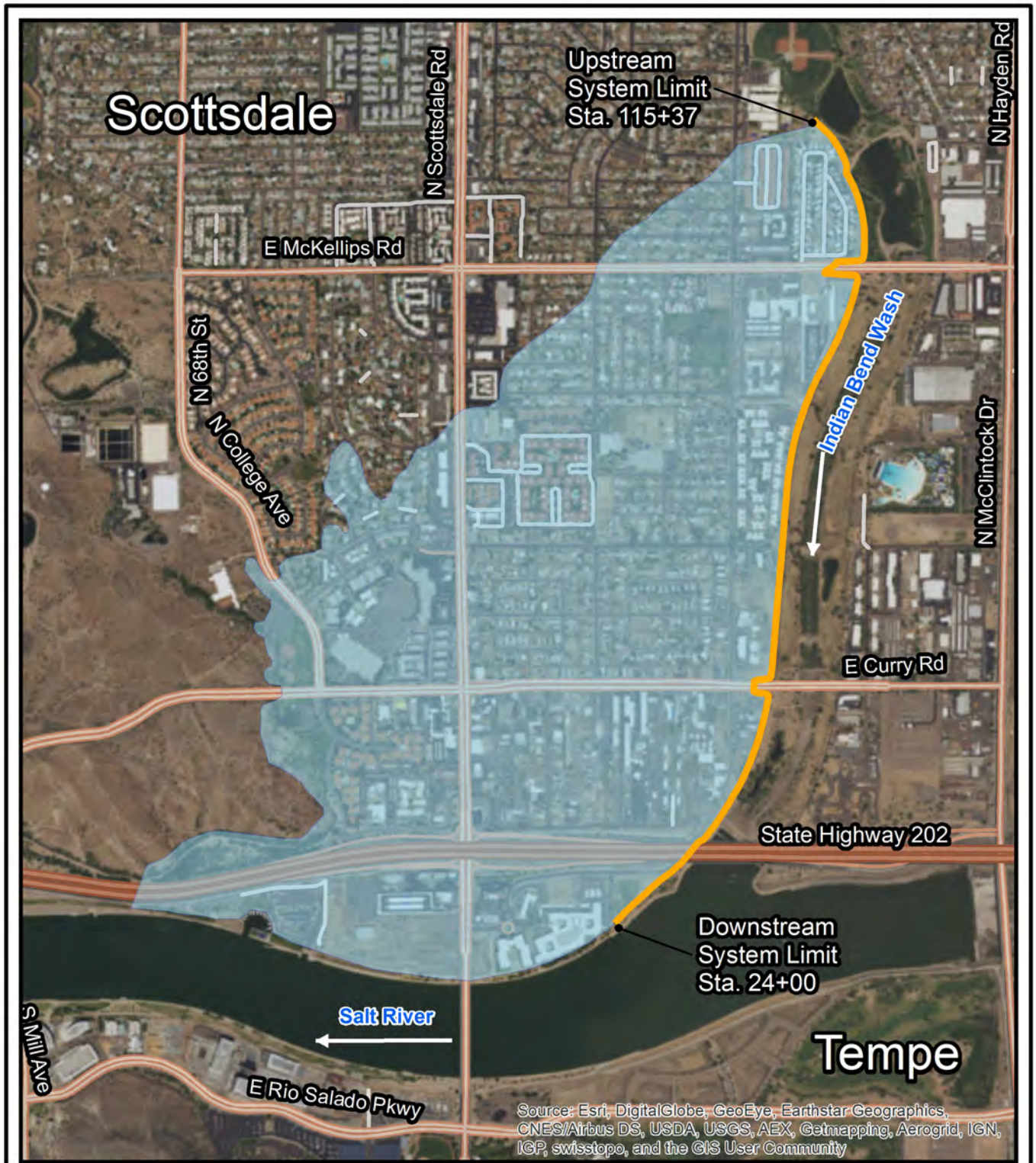
- Erosion/Bank Caving: Erosion was observed along the crest of the landside slope.
- Depressions/Rutting: A depression on the landside slope was observed.
- Animal Control: There were animal burrows observed on the landside slope and levee crest.
- Interior Drainage System:
  - Vegetation and Obstructions: Sediment and debris was observed blocking the inlet of a side drain.
  - Tilting, Sliding or Settlement of Concrete and Sheet Pile Structures: Cracking and uplifting of the concrete apron at the outlet of a side drain was observed.
  - Culverts/ Discharge Pipes: The condition of the pipes has not been verified using television camera videotaping or visual inspection methods within the past five years.
  - Flap Gates/Flap Valves/Pinch Valves: The condition of the flap gates was not observed during the periodic inspection.

#### 1.4 Overall Rating

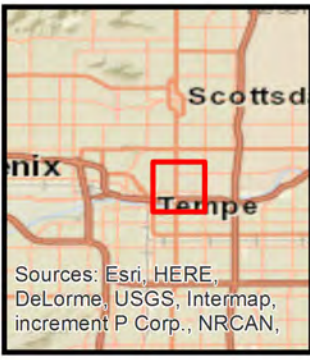
The Levee Safety Out-Brief Meeting was held on June 18, 2015 for the IBW1 Levee System. An engineering determination has concluded that the observed deficiencies would not prevent the system from performing as intended during the next significant event. Therefore, the Levee Safety Officer, Los Angeles 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 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 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.



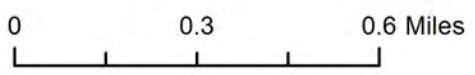
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN,

**N Legend**

- Levee System
- Leveed Area (NLD)



**INDIAN BEND WASH 1 LEVEE SYSTEM PERIODIC INSPECTION REPORT NO. 1**

**LOCATION AND LEVEED AREA MAP**

U.S. ARMY CORPS OF ENGINEERS  
LOS ANGELES DISTRICT

Figure 1