



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

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**VENTURA RIVER 1 LEVEE SYSTEM**  
**VENTURA COUNTY, CALIFORNIA**  
**NLD ID # 380510086**

**PERIODIC INSPECTION REPORT NO 1**  
**GENERALIZED EXECUTIVE SUMMARY**  
**8 JUNE 2012**

**FINAL RATING: MINIMALLY ACCEPTABLE**  
**FINAL RATING DATE: 13 MARCH 2012**

PERIODIC INSPECTION REPORT PREPARED BY: FUGRO WEST, INC.  
SUBMITTED: JUNE 2011  
INSPECTED: 25-26 MAY 2010

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## EXECUTIVE SUMMARY

This Executive Summary provides an introduction to the periodic inspection, 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 INSPECTION

Fugro has been authorized by the U.S. Army Corps of Engineers (USACE/Corps), Los Angeles District (L.A. District) to perform a Periodic Inspection (PI) of the Ventura River 1 Levee System (VR-1) in Ventura County, California. The purpose of the PI is to verify proper operation and maintenance, evaluate operational adequacy and structural stability, review design criteria to identify changes in current design standards, identify features to monitor over time, and improve the ability to communicate the overall condition. Levee certification is not part of this scope of work. The project is being funded under the American Reinvestment and Recovery Act.

### 1.2 SYSTEM SUMMARY

VR-1 is the reach of the Ventura River Levee system that has been designated by the Corps for PI, and consists of an approximate 2.65-mile-long stone-revetted left (east) bank levee that extends from the Pacific Ocean (Station 10+95) to the intersection with Canada de San Joaquin, where it continues approximately 1,100 feet along the left (south) bank of Canada de San Joaquin (Station 150+57). VR-1 provides flood control for the western portion of the City of San Buenaventura (Ventura) and adjacent areas along the Ventura River in Ventura County, California. Construction of the levee was completed by the Corps' L.A. District in December 1948. Other system features include: 15 culverts and side-drainage structures; the Southern Pacific Railroad (SPRR) Main Line Bridge crossing; the U.S. Highway 101 crossing; State Route 33 and Main Street crossings; the Stop-log Closure Structure at the SPRR (Ojai Branch) crossing; and Floodwalls #1 and #2. The Ventura County Watershed Protection District, or VCWPD (County), formerly known as the Ventura County Flood Control District (VCFCD), is the local agency responsible for the operation and maintenance of the levee. Figure 1 shows the location of VR-1.

### 1.3 SUMMARY OF MAJOR DEFICIENCIES FOUND

The VR-1 field inspection was conducted on May 25 and May 26, 2010. Several system deficiencies were observed and documented during the field inspection. Some of the primary deficiencies observed include the following:

#### 1.3.1 Levee Embankments:

- Significant vegetation growth, particularly trees and bushes greater than 2 inches in diameter, was observed on both the riverward and landward sides of the levee within the vegetation-free zone. The vegetation threatens the operation and integrity of the levee.
- Several unpermitted encroachments were observed within the easement areas that are likely to negatively impact the integrity of the levee. Encroachments that will require permitting include seven non-Corps built culverts and side-drainage

structures, Floodwalls #1 and #2, the U.S. Highway 101 and State Route 33 crossings, an industrial development at the final upstream 200 feet of the levee, concrete k-rails, and utilities.

- Erosion zones were observed on both the riverward and landward side levee slopes, and the levee integrity may be threatened. Erosion zones consist of undercutting of the revetment and deterioration of access ramps on the riverward side.
- Areas of minor to significant riprap displacement and stone degradation were observed along the levee, and may pose a threat to the integrity of the levee in the event of a flood. For example, there was no riprap observed along the entire riverward side of multiple access ramps. Localized areas were observed along the levee where the riprap has degraded or deteriorated into 2- to 12-inch fragments. Other areas of displacement appear to be the result of human interference where the stone has been moved for the purpose of creating levee access locations.

### **1.3.2 Floodwalls:**

- Floodwalls not shown on as-built plans that will require permitting include the approximate 550-foot-long Floodwall #1 and approximate 1,050-foot-long Floodwall #2.
- Active erosion and scouring were observed beneath Floodwall #1 during the field inspection, which may lead to structural instabilities before the next inspection.

### **1.3.3 Interior Drainage System**

- A total of eight Corps-built and seven non-Corps-built, unpermitted culverts and side-drainage structures were observed during the field inspection. The County has provided as-builts plans for one culvert. Information regarding design and construction of the remaining six unpermitted culverts and side-drainage structures was not included in the documents reviewed.
- Several of the side-drainage structures contain debris and heavy sediment that has impaired the channel flow capacity and has blocked more than 10 percent of the culvert opening at the outfalls.
- A dirt access road, slurry sack headwalls and under-drains are unpermitted encroachments between the side-drainage structures and the riverbed. While these unpermitted features may enhance operations, maintenance, and emergency access within the riverbed, in some cases they appear to inhibit adequate drainage from the structures.
- Unpermitted 3-foot-long x 2-foot-wide catch basins with metal grates were observed within 15 feet of the landward side toe across from four side-drainage structure outfalls. We could not confirm in the field whether or not those catch basins are modified inlets at ponding areas for the side-drainage structures. The size and capacity of each catch basin is unknown.
- Significant damage and obstructions were observed at the outlet of the Abandoned 30-inch CMP Drain. In addition, information regarding the interior condition of the pipes (via video camera or visual inspection methods) was not provided.

- The slide gate at the inlet for the Abandoned 30-inch CMP Drain is heavily corroded and inoperable.

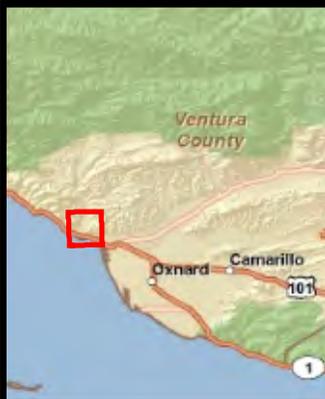
#### **1.4 OVERALL SYSTEM RATING**

The final rating for the system is “Minimally Acceptable”.

A Minimally Acceptable System is where 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 flood event.

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This levee system inspection was based on observations of field conditions and available data at the time of the inspection. The condition of any levee system depends on numerous and constantly changing internal and external conditions and is evolutionary in nature. It is incorrect to assume the present condition of the levee system will continue to represent the condition of the levee system in the future. Only through continued inspection, maintenance, repair, and rehabilitation can there be a reasonable chance that unsafe conditions can be avoided.



**Legend**

-  Levee
-  Leveed Area



0 0.25 0.5 Miles



VENTURA RIVER  
VENTURA COUNTY, CA

**Ventura River Levee System**



CORPS OF ENGINEERS  
LOS ANGELES DISTRICT

Figure 1