

Central Valley Flood Protection Board
Meeting July 28, 2023

INFORMATIONAL BRIEFING

8A. Cache Creek Unit 1 – Yolo Bypass Unit 2 – Knights Landing Unit 1 Levee System
Presentation of United States Army Corps of Engineers Levee Inspection Results

BRIEFING SUMMARY

Background

The United States Army Corps of Engineers (USACE) performed a levee inspection in August 2021 (previous inspection in 2012) for the Cache Creek Unit 1 – Yolo Bypass Unit 2 – Knights Landing Unit 1 Levee System (NLD ID 5205000411). The Local Maintaining Agencies (LMA) for the system are the Department of Water Resources (DWR) Sacramento Maintenance Yard and Knights Landing Ridge Drainage District. This federal levee system is 19.6-mile long. The system is located about 5 miles north of the City of Woodland and protects the region near Knights Landing (Figure 1 and Figure 2). Board staff received a final inspection report on June 29, 2023, and subsequently provided an electronic copy of the report to the levee maintainers.

An electronic copy of the report can be retrieved at the following link:

<https://cadwr.box.com/s/7jroskrhmk5mdvf1dg65xjrj1bwg0qfix>

The levee system received unacceptable ratings and does not have an approved Letter of Intent (LOI). Therefore, this levee system is **INACTIVE** under the Public Law (PL) 84-99 Rehabilitation Program. The LMAs have developed an LOI and the Board approved transmittal to USACE on July 29, 2022. The LOI is currently under review at USACE's Division office.

The inspection results are summarized in USACE's report card (Figure 3), and the inspection report card comparison chart is also provided (Figure 4).

Staff's Analysis

The report identified a total of 116 unacceptable encroachments. Ninety-seven (97) encroachments were rated unacceptable yellow and nineteen (19) were rated unacceptable red as further explained below. According to USACE current inspection standards, the unacceptable pink criterion is no longer used and is replaced with unacceptable yellow. This is reflected in the report cards. Unacceptable yellow identifies unacceptable encroachments that are **not likely** to prevent levee performance during the next flood event. Unacceptable red identifies unacceptable encroachments that are **likely** to prevent levee performance during the next flood event.

The report found:

- 97 unacceptable yellow items,
 - 13 are for gas lines, pipes, and culverts (13.4 percent);
- 19 unacceptable red items,
 - 17 are for gas lines, pipes and culverts (89.5 percent).
 - 13 of these pipes did not have a waterside positive closure and did not have video or inspection records, the majority of these facilities were flagged for lack of a waterside positive closure or lack of inspection records, two (2) will be addressed by Board's Pipe Prioritization Program,
 - four (4) are being inspected or addressed through DWR's Deferred Maintenance Program including the 1 pipe with integrity issues.

As shown in Figure 4, the maintainers have improved in several areas including: flood preparedness, slope stability, animal control, vegetation growth, seepage, etc. However, in one of the segments, sod cover and settlement have worsened since the last inspection. Furthermore, the submitted LOI states that “measures currently being implemented include the correction of deficiencies as part of routine maintenance activities to reduce risk while developing a SWIF. These actions include increased vegetation management; increased debris removal near pipes; increased visual inspection of pipes; removal of remnant spur levees in set-back locations; and corrective permitting actions.”

Figure 1. Vicinity Map. Levee system is about 5 miles north of the City of Woodland and south of Knights Landing (Source: USACE National Levee Database).

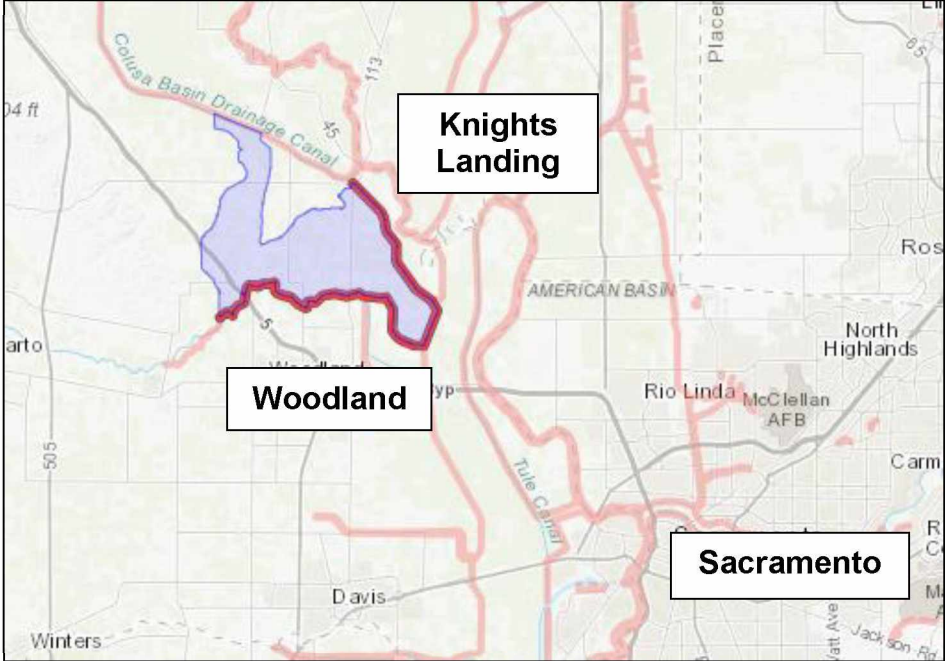


Figure 2. Cache Creek Unit 1 – Yolo Bypass Unit 2 – Knights Landing Unit 1 Levee System (Source: USACE National Levee Database).

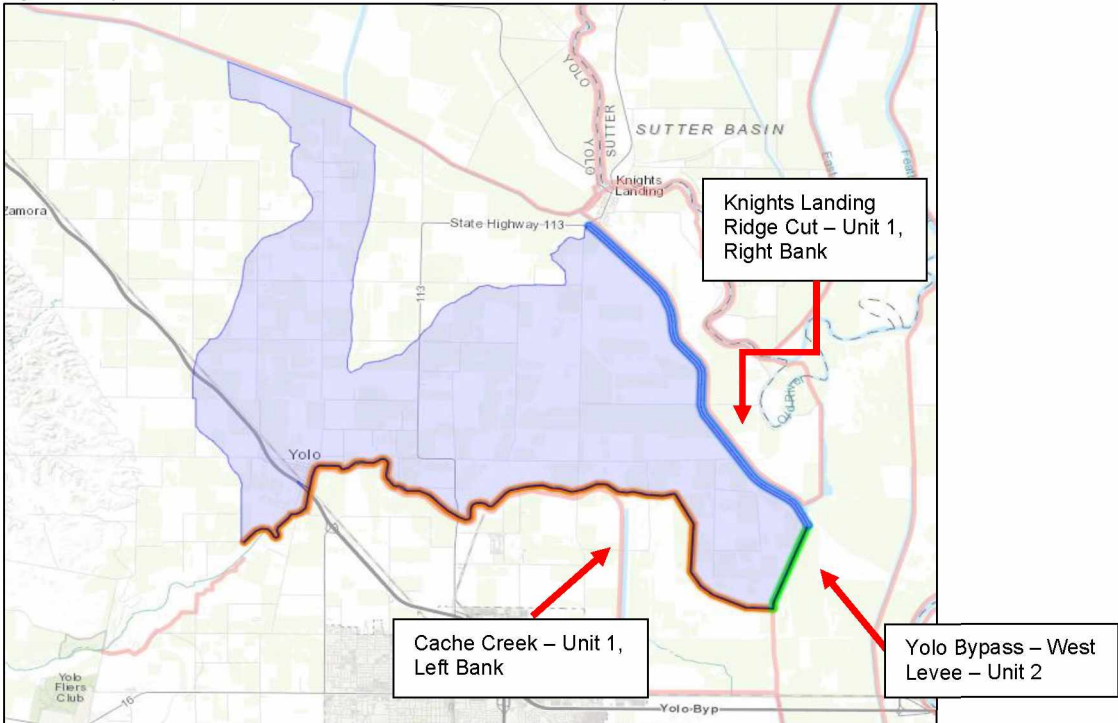


Figure 3. Final USACE Inspection Report Card for the levee segments. The system was inspected and rated as unacceptable; the levee system has a draft LOI in review, thus the system is **INACTIVE** in the PL84-99 Rehabilitation Program.

System: Cache Crk U1 - Yolo Bypass U2 - Knights Landing U1 LOI Submitted to USACE: Yes Approved SWIF/LOI: No PL 84-99 RP Eligibility: Inactive		Cache Creek - Unit 1, left bank (CCK1)			Knights Landing Ridge Cut - Unit 1, right bank (KNT1)			Yolo Bypass - West Levee - Unit 2 (YBW2)															
General	Operations and Maintenance Manuals	A	A	A																			
	Emergency Supplies and Equipment	A	A	A																			
	Flood Preparedness and Training	A	A	A																			
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	U	U																			
	Closure Structures	NA	NA	NA																			
	Slope Stability	A	A	A																			
	Erosion/Bank Caving	M	U	A																			
	Animal Control	M	M	A																			
	Culverts/Discharge Pipes	NA	NA	NA																			
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA																			
	Levee Embankments - Other Items	Vegetation Growth	M	M	A																		
Sod Cover		U	A	M																			
Settlement		U	M	M																			
Depressions/Rutting		M	M	A																			
Cracking		M	U	M																			
Riprap Revetments & Bank Protection		A	A	M																			
Revetments other than Riprap		A	NA	NA																			
Seepage		A	A	A																			
Legend					*Includes Unacceptable observations not likely to prevent performance in next flood event. Also includes Unacceptable conditions that have not been corrected within the established time frame (shown in pink within the inspection reports).																		
A Acceptable		M*			Likely prevents performance in next flood event / Inactive																		
M Minimally Acceptable		U			RP Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)																		
U Unacceptable																							
NA Not Applicable																							

Figure 4. Report Card Comparison from 2012 to 2021 Inspections.

		Cache Ck - YB - KL Levee System Comparison from 2012 to 2021 USACE Inspection					
		Cache Creek - Unit 1, left bank (CCK1)	Knights Landing Ridge Cut - Unit 1, right bank (KN1)	Yolo Bypass - West Levee - Unit 2 (YBW2)			
General	Operations and Maintenance Manuals	A	A	A			
	Emergency Supplies and Equipment	A	A	A			
	Flood Preparedness and Training	A	A	A			
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	U	U			
	Closure Structures	NA	NA	NA			
	Slope Stability	A	A	A			
	Erosion/Bank Caving	M	U	A			
	Animal Control	M	M	A			
	Culverts/Discharge Pipes	NA	NA	NA			
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA			
Levee Embankments -	Vegetation Growth	M	M	A			
	Sod Cover	U	A	M			
	Settlement	U	M	M			
	Depressions/Rutting	M	M	A			
	Cracking	M	U	M			
	Riprap Revetments & Bank Protection	A	A	M			
	Revetments other than Riprap	A	NA	NA			
	Seepage	A	A	A			

Improved
No change
Worse
Changed from NA to Rated