



# LEVEE DEFICIENCY CORRECTION PROCEDURES

USACE, LOS ANGELES DISTRICT  
LEVEE SAFETY PROGRAM

26 JANUARY 2016  
Revised 26 MARCH 2018

Deficiencies noted on the inspection checklist portion of the Periodic Inspection Report shall be addressed by the local sponsor. In order to return the levee system to an Active status in the Rehabilitation Program, or raise the levee system rating, the deficiencies shall be addressed in the following manner so that proof of deficiency correction can be established.

- a. Repair action should be taken to correct deficiencies identified in the Periodic Inspection Report.
- b. A complete report should be provided to the USACE Levee Safety Officer describing the action taken for each deficiency and should consist of a spreadsheet that includes the following columns: Levee System, Levee Segment (if applicable), Inspection ID, Project Station, Category, Rated Item, Original Rating, Deficiency Description, Deficiency Recommendation, Deficiency Photograph, Repair Photograph, and Repair Date / Status / Actions.
- c. The spreadsheet shall include all deficiencies noted in the Periodic Inspection report spreadsheet with an explanation of how the levee owner has addressed (or intends to address) the deficiency. For items not yet addressed, a new photo is not required, and no rating change for the item will be made until the corrective action is actually performed. The revised ratings will be used to consider whether a revised rating of the levee system or status in the Rehabilitation Program is warranted.
- d. In order to be considered, this report must be officially transmitted by letter on agency letterhead and signed by the Superintendent or Engineer of Record. Repairs must be completed under the direction of the signator of this letter, who shall be a Professional Civil Engineer registered in the relevant State. All repairs shall be consistent with the intent of the USACE drawings, specifications, operation and maintenance manual, and shall be made in accordance with standard engineering practice. No change or alternation shall be made to the levee while repairing any feature of the project. The USACE is available to provide repair advice and consultation.
- e. Repair photographs must be stamped with the date and latitude-longitude, taken from the same general location and direction as the deficiency photograph, and both shall be included in the submittal.
- f. Additional documentation, such as culvert video inspections and condition assessment reports, or compaction test results should be included as part of the submittal package, as appropriate, but do not replace the need for a photo on the spreadsheet for each deficiency. All supporting documents and photos must be clearly labeled and associated with the deficiency it applies to.



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- g. USACE Headquarters interim Vegetation Management Policy as of October 2017 states that until review and update of the vegetation guidelines is complete, USACE will “not require the removal of existing vegetation... unless the specific vegetation has been demonstrated to present an unacceptable safety risk” (e.g. can compromise the performance of the levee system or its foundation; impair or prohibit needed access for inspection or emergency activities; and/or pose other risks identified by risk assessments or analyses.
- h. Questions on the Levee Safety Program should be directed to the District Levee Safety Program Manager, Kristen Bedolla, P.E., G.E. at (213) 452-3603 or [Kristen.K.Bedolla@usace.army.mil](mailto:Kristen.K.Bedolla@usace.army.mil).
- i. All formal correspondence is to be addressed to the District Levee Safety Officer, Gary J. Lee, P.E., at 915 Wilshire Boulevard, Suite 930, Los Angeles, California, 90017-3489.
- j. An example cover letter and spreadsheet is attached. The spreadsheet, with levee specific deficiencies, is provided for the owner’s convenience in a DVD located in the front cover of each Periodic Inspection Report hard copy.

The above Levee Deficiency Correction Procedures have been reviewed and approved by the following individuals:

Mike Vahabzadeh  
Levee Deficiency Coordinator

Kristen Bedolla, P.E., G.E.  
Levee Safety Program Manager

Ronald K. Riach, P.E.  
Chief, Dam and Levee Safety

**DEPARTMENT OF PUBLIC WORKS**

*"To Enrich Lives Through Effective and Caring Service"*

**ADDRESS AND PHONE NUMBER**

February 19, 2014

Mr. Richard J. Leifield  
U.S. Army Corps of Engineers  
P.O. Box 532711  
Los Angeles, CA 90053-2325

Attention Ms. Jody Fischer, LSPM

Dear Mr. Leifield:

**XXX - LEVEE SYSTEM**

**LEVEE SYSTEM PERIODIC INSPECTION REPORT  
DEFICIENCY CORRECTION PROGRESS**

The above has been identified as a "Non-Levee" system and was rated as "Minimally Unacceptable" as detailed in the letter issued by the Corps dated November 6, 2012. We have been working to resolve issues found during the Periodic Inspections and have focused our efforts to correct "Unacceptable" items. We are pleased to report that all seven of the highest priority "U"s for this levee system have been corrected. The two drain inlets, in \_\_\_\_\_ County, without flapgates were identified as high priority "U"s. We will conduct an investigation to determine if a flapgate is required.

Enclosed is a detailed table with before and after photographs and a description of the repairs made to address the items noted in the Periodic Inspection Report. We will also be sending you a link with the enclosures. The analysis of the deficiencies and construction of the repairs were completed under the supervision of a California Registered Professional Civil Engineer.

We have responded to comments received from Ms. Jody Fischer and her staff and appreciate her guidance in resolving them.

If you have any questions or need additional information, please contact me at \_\_\_\_\_ or your staff may contact \_\_\_\_\_

Mr. Richard J. Leifield  
February 19, 2014  
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Very truly yours,

Director of Public Works













Assistant Deputy Director  
Flood Maintenance Division

Enc.

bc:

EXAMPLE








# XXX1 - Deficiencies Corrections Status

Levee System	Levee Segment	Inspect_ID	Project Station	Levee Station	Category	Rated Item	Original Rating	Revised Rating	Remarks	Inspection Action	Inspection Pictures	Completed Work	Comments	USACE Status
SGR1		USACE_CESPL_SG10_2010_a_0006	028+49	003+57	Levee Embankments	8. Depressions/ Rutting	U (C)	A	2 depressions, 14" deep at ls edge of the levee crown.	Repair depressions. Animal burrowing is possibly creating the depressions.			Deficiency Addressed - 9/10/13 - Burrows repaired and long term animal control program implemented. 5 man crew removed loose soil around the deficiency. Using a pneumatic tamper the crews completed 5 passes with the equipment to compact underlying soil and fill the burrows. 2 sack slurry was placed by hand to match existing surface.	07/01/2014 - Rating changed to Acceptable. Deficiency corrected by local sponsor.
SGR1		USACE_CESPL_SG10_2010_a_0016	033+92	009+71	Levee Embankments	12. Riprap Revetments & Bank Protection	U (C)	A	Significant riprap displacement with exposure of bedding observed in two areas.	Replace riprap revetment.			Deficiency Addressed - 9/12/13 5 man crew. Using a gradall the crews repaired the existing riprap and compacted the underlying soil. Placing 10 tons of 8" rock to interlock into the existing riprap and cover the exposed bedding.	07/01/2014 - Rating changed to Acceptable. Deficiency corrected by local sponsor.
SGR1		USACE_CESPL_SG10_2010_a_0018	034+29	010+08	Levee Embankments	12. Riprap Revetments & Bank Protection	U (C)	A	Significant riprap displacement with exposure of bedding observed.	Replace riprap revetment.			Deficiency Addressed - 9/12/13 5 man crew. Using a gradall the crews repaired the existing riprap and compacted the underlying soil. Placing 10 tons of 8" rock to interlock into the existing riprap and cover the exposed bedding.	07/01/2014 - Rating changed to Acceptable. Deficiency corrected by local sponsor.
SGR1		USACE_CESPL_SG10_2010_a_0171	245+02	220+16	Levee Embankments	6. Erosion/ Bank Caving	U (C)	A	Erosion has occurred on the ls slope due to collapsed animal burrows and runoff from the crown. Erosion appears to have progressed into the levee section.	Repair erosion. The impact of the erosion on the safety of the levee system needs to be evaluated.			Deficiency Addressed - 8/27/13 - Burrows repaired and long term animal control program implemented. 3 man crew. Using a gradall the crews repaired the erosion and then completed 5 passes with the equipment to compact underlying soil.	07/01/2014 - Rating changed to Acceptable. Deficiency corrected by local sponsor.
SGR1		USACE_CESPL_SG10_2010_a_0336	536+15	512+32	Flood Damage Reduction Channel	5. Concrete Surfaces	M	A	Concrete lined rs slope settlement of up to 2" observed at the slab joint. Top of Levee	Repair to eliminate the soft surface exposure to the river.			Deficiency Addressed - 9/20/13 5 man crew. Crews sawcut and opened the void to remove loose soil. Crews then compacted the base material and dowelled into the adjacent concrete slabs to interlock rebar for the new section into the remaining slabs. Concrete was hand mixed and poured to fill the void.	07/01/2014 - Rating changed to Acceptable. Deficiency corrected by local sponsor.
SGR1		USACE_CESPL_SG10_2010_a_0495	702+28	677+57	Levee Embankments	6. Erosion/ Bank Caving	U (C)	A	Erosion has occurred on the ls slope for a length of 50 ft due to collapsed animal burrows and runoff from the crown. Erosion appears to have progressed into the levee section.	Repair erosion. The impact of the erosion on the safety of the levee system needs to be evaluated.			Deficiency Addressed - 8/21/13 - Burrows repaired and long term animal control program implemented. 3 man crew. Using a gradall the crews repaired the erosion and then completed 5 passes with the equipment to compact underlying soil.	07/01/2014 - Rating changed to Acceptable. Deficiency corrected by local sponsor.

# XXX1 - Deficiencies Corrections Status

Levee System	Levee Segment	Inspect_ID	Project Station	Levee Station	Category	Rated Item	Original Rating	Revised Rating	Remarks	Inspection_Action	Inspection Pictures	Completed Work	Comments	USACE Status
SGR1		USACE_CESPL_SG10_2010_a_0550	751+69	727+97	Levee Embankments	6. Erosion/ Bank Caving	U (C)	A	Erosion has occurred near the toe of the ls slope due to collapsed animal burrows, animal activities and runoff. Erosion appears to have progressed into the levee section.	Repair erosion. The impact of the erosion on the safety of the levee system needs to be evaluated.			Deficiency Addressed - 8/28/13 - Erosion/Burrows repaired and long term animal control program implemented. Using a gradall the crews repaired the erosion/burrows and then completed 5 passes with the equipment to compact underlying soil. Impact of erosion on the safety of the levee system is minimal and will be monitored.	07/14/2014 - Updated photo provided on 07/10. Rating changed to Acceptable. Deficiency corrected by local sponsor. Corrugated sheet metal and CMU block apparently placed by adjacent property owner. County will follow up as an encroachment. 07/07/2014 - Updated comment received from the County. Updated photograph to be provided within approximately 1 week. 07/01/2014 - Requested updated information from County. Comment does not match deficiency. Also requested information on corrugated metal and CMU at base of chain link fence visible in photo.
SGR1		USACE_CESPL_SG10_2010_a_0577	830+51	806+40	Levee Embankments	12. Riprap Revetments & Bank Protection	U (C)	A	Significant riprap displacement with exposure of bedding observed.	Replace riprap revetment.			Deficiency Addressed - 9/6/13 5 man crew. Using a gradall the crews repaired the existing riprap and compacted the underlying soil. Placing 10 tons of 8" rock to interlock into the existing riprap and cover the exposed bedding.	07/01/2014 - Rating changed to Acceptable. Deficiency corrected by local sponsor.
SGR1		USACE_CESPL_SG10_2010_a_0694	874+50 - 882+85	848+15 - 857+03	Levee Embankments	6. Erosion/ Bank Caving	U (C)	A	Erosion has occurred on the ls slope due to collapsed animal burrows and runoff from the crown. Erosion appears to have progressed into the levee section.	Repair erosion. The impact of the erosion on the safety of the levee system needs to be evaluated.			Deficiency Addressed - 9/5/13 - Burrows repaired and long term animal control program implemented. 3 man crew. Using a gradall the crews repaired the erosion and then completed 5 passes with the equipment to compact underlying soil.	07/01/2014 - Rating changed to Acceptable. Deficiency corrected by local sponsor.
SGR1		USACE_CESPL_SG10_2010_a_0785	947+84	924+80	Levee Embankments	6. Erosion/ Bank Caving	U (C)	A	Erosion has occurred on the ls slope due to collapsed animal burrows and runoff from the crown. Erosion appears to have progressed into the levee section.	Repair erosion. The impact of the erosion on the safety of the levee system needs to be evaluated.			Deficiency Addressed - 8/21/13 - Burrows repaired and long term animal control program implemented. 3 man crew. Using a gradall the crews repaired the erosion and then completed 5 passes with the equipment to compact underlying soil.	07/01/2014 - Rating changed to Acceptable. Deficiency corrected by local sponsor.
SGR1		USACE_CESPL_SG10_2010_a_0871	1013+36 - 1014+54	989+91 - 991+00	Levee Embankments	12. Riprap Revetments & Bank Protection	U (C)	A	Significant riprap displacement with exposure of bedding observed.	Replace riprap revetment.			Deficiency Addressed - 9/16/13 5 man crew. Using a gradall the crews repaired the existing riprap and compacted the underlying soil. Placing 30 tons of 8" rock to interlock into the existing riprap and cover the exposed bedding.	07/01/2014 - Rating changed to Acceptable. Deficiency corrected by local sponsor.

# XXX1 - Deficiencies Corrections Status

Levee System	Levee Segment	Inspect_ID	Project Station	Levee Station	Category	Rated Item	Original Rating	Revised Rating	Remarks	Inspection_Action	Inspection Pictures	Completed Work	Comments	USACE Status
SGR1		USACE_CESPL_SG10_2010_a_0969	1079+82 - 1083+10	055+57 - 1059+37	Levee Embankments	1. Unwanted Vegetation Growth	U (C)	A	Significant vegetation (large trees) present near the toe of ls slope.	Remove vegetation.			Deficiency Addressed - 9/24/13 - all vegetation was removed. 5 man crew. Crews used handtools to remove vegetation flush with grade. Completed under the Soft Bottom Channel clearing program. Vegetation removal comply's with CDFG permit.	07/01/2014 - Rating changed to Acceptable. Deficiency corrected by local sponsor. NOTE that vegetation was cut off flush with the ground surface. Roots were not removed. Levee height is minimal at this location.
SGR1		USACE_CESPL_SG10_2010_a_1022	108+09 - 148+74	082+93 - 123+28	Levee Embankments	6. Erosion/ Bank Caving	U (C)	A	Erosion has occurred on the ls slope due to collapsed animal burrows and runoff from the crown. Erosion appears to have progressed into the levee section.	Repair erosion. The impact of the erosion on the safety of the levee system needs to be evaluated.			Deficiency Addressed - 9/6/13 - Impact of erosion on the safety of the levee system is minimal. 3 man crew. Using a gradall the crews repaired the erosion and then completed 5 passes with the equipment to compact underlying soil.	07/01/2014 - Rating changed to Acceptable. Deficiency corrected by local sponsor.
SGR1		USACE_CESPL_SG10_2010_a_1252	989+87	966+61	Interior Drainage System	11. Flap Gates/Flap Valves/ Pinch Valves	U (C)	A	72" RCP side drain. FG not provided.	Provide flap gate.			"No Flap Gate Needed" Project 565 - Line F - 275-565-D1.1 - The plan station for this 72" RCP connection is at Station 989+87. According to ACOE design calculations, the water surface elevation appears to be 7.93 at Station 995+99 and 9.26 at Station 938+00. Therefore, the design water surface at Station 989+87 appears to be 8.07. Based on available information, two manhole covers and a catch basin inlet were built below the channel design water surface; however the as built drawing show that said manholes have pressure manhole shafts and covers and the inlet has a flap gate installed. All remaining inlets and MH's are constructed at a sufficient height to not allow water from the river to be pushed back into the protected area. Therefore NO flap gate at lateral drain outlet.	07/01/2014 - USACE Permit No. SPL-408-2014-048. Review is currently delayed due to ICW funding limitations.
SGR1		USACE_CESPL_SG10_2010_a_1257	1042+16	1018+71	Interior Drainage System	11. Flap Gates/Flap Valves/ Pinch Valves	U (C)	U (NC)	36" CMP side drain. FG not provided.	Provide flap gate.		N/A	"No Flap Gate Needed" City of Pico Rivera Beverly Pico Drain Unit-1 -Dwg. 714-D1.3. According to available information the 36" CMP lateral drain was abandoned and sealed at the upstream end, hence No flap gate is required. The seal was field verified to be intact.	07/01/2014 - Rating changed to U, non-critical. Per local sponsor, the drain has been abandoned and sealed at the upstream end. The 36-inch CMP through the levee embankment / foundation needs to be slurry filled or removed. USACE Permit No. SPL-408-2014-049.