Inspection requirements as related to the Operation and Maintenance Manual and the Code of Federal Regulations

Ryan Larson, PE Flood Protection and Navigation Section Sacramento District February 28, 2018





US Army Corps of Engineers BUILDING STRONG®

# **Code of Federal Regulations**

#### 33 CFR 208.10

### Local flood protection works; maintenance and operation of structures and facilities

- ► Levees
- Floodwalls
- Drainage structures
- Closure structures
- Pumping plants
- Channels and floodways
- Miscellaneous facilities





## O&M- What, when, and why

#### • 33 CFR 208.10:

 "The structures and facilities constructed by the United States for local flood protection shall be continuously maintained in such a manner and operated at such times and for such periods as may be necessary to obtain the maximum benefits."





## O&M- Who and where

- The entity that furnishes assurances to maintain and operate the flood control works in accordance with regulations shall appoint a "Superintendent."
- The Dept of Army will furnish an O&M Manual for each completed project to assist in carrying out obligations



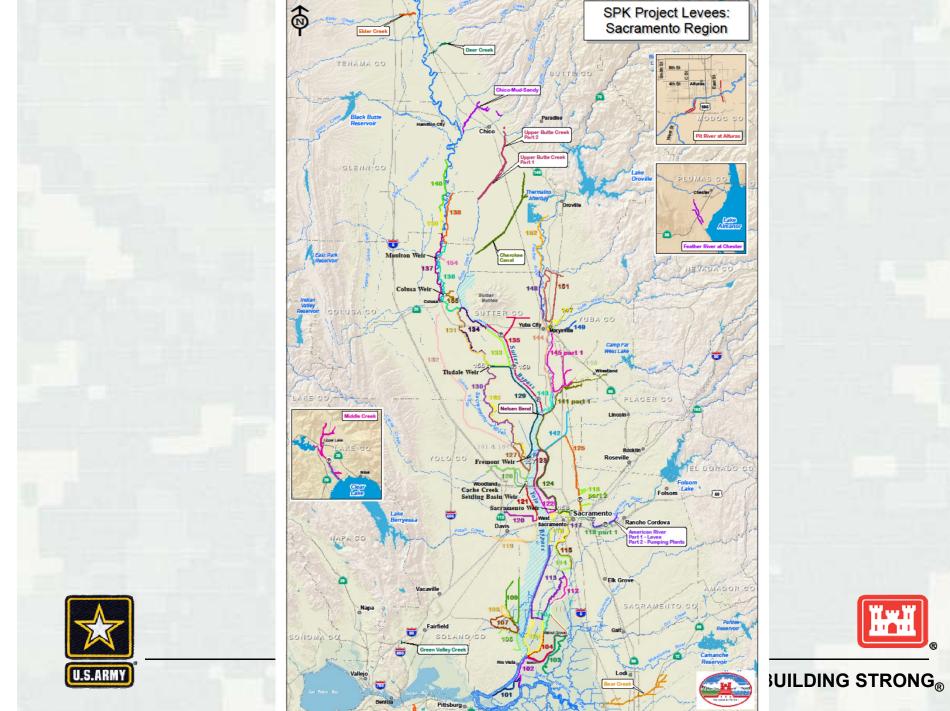


# **O&M** Manuals

- Sacramento River Flood Control Project
  Lower San Joaquin River Levees, Lower San Joaquin River and Tributaries Project, California
  - Standard Manuals with Supplements- further define Operations and Maintenance requirements.









# **O&M Manuals**

 Current Engineer Regulation (ER) for preparing O&M Manuals
 ER 1110-2-401

### Defines:

- Repair- considered to entail those activities of a routine nature that maintain the project in a well kept condition
- Replacement- covers those activities taken when a worn out element or portion thereof is replaced
- Rehabilitation- refers to a set of activities as necessary to bring a deteriorated project back to its original condition.





#### O&M Requirements vs. PL84-99 Eligibility

 All requirements as written in the O&M Manual For levees, A or MA ratings in:

- Encroachments
- Closure Structures
- Slope Stability
- Erosion/Bank Caving
- Animal Control
- Culverts/Discharge
  Pipes
- Underseepage Relief Wells/ Toe Drainage Systems



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	System: XYZ System Rating: Minimally Acceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Active	505ment A	Segment B	contract C	Segmento				
P General	Operations and Maintenance Manuals	Α	Α	A	A				
	Emergency Supplies and Equipment Flood Preparedness and Training	A	A	A	A			Ⅰ	
	Encroachments	A	A M	A M	A M				
Levee - Items Affecting PL 84-99 RP Eligibility	Closure Structures	A	NA	NA	NA			┨───┤	
	Slope Stability	M	A	A	A			1 1	
	Erosion/Bank Caving	A	M	A	M			<b>I</b> 1	
Levee cting P Eligi	Animal Control	A	A	A	A			<b>I</b> 1	
Cti Lev	Culverts/Discharge Pipes	NA	NA	NA	NA			1 1	
Affe	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA	NA			1 1	
	Vegetation Growth	A	M	M	M				
at a	Sod Cover	Α	Α	Α	м			1 1	
me	Settlement	Α	Α	Α	Α				
ank	Depressions/Rutting	Α	М	Α	м				
Levee Embankments Other Items	Cracking	Α	Α	Α	Α				
	Riprap Revetments & Bank Protection	NA	NA	NA	NA				
	Revetments other than Riprap	NA	NA	NA	NA				
	Seepage	Α	Α	Α	Α				
	Legend A Acceptable	м	Includes Unacceptable observations not likely to prevent performance in event.						
	M Minimally Acceptable U Unacceptable NA Not Applicable	U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe / Inactive						
		U Likely prevents performance in next flood event / Inactive Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)							



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## Inspections

- Immediately prior to the beginning of the flood season
- Immediately following each major high water period
- Otherwise, intervals not exceeding 90 days





# **Questions/ Discussion**





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