

Summary of Substantial Changes from Version 4 of the Interim Levee Design Criteria for Urban and Urbanizing Areas in the Sacramento-San Joaquin Valley

The Draft Urban Levee Design Criteria, dated November 15, 2011, contain the following substantial changes as compared to Version 4 of the Interim Levee Design Criteria for Urban and Urbanizing Areas in the Sacramento-San Joaquin Valley, dated December 15, 2010:

- Changed name to Draft ULDC to reflect that these are draft final criteria applicable throughout California
- Clarified that the criteria are intended to be useful for application throughout California, on a voluntary basis outside of the Sacramento-San Joaquin Valley
- Modified the document's format to further identify specific topics
- Added figures to improve clarity
- Modified and added definitions for *assurance*, *flood risk*, *hydraulic top of levee*, *level of (flood) protection*, *minimum top of levee*, *penetration*, and *vegetation management zone*
- Added guiding principles for:
 - emergency response plans
 - security plans
 - operation and maintenance
 - findings based on evolving criteria
- Criteria that were formerly "under development" are put forth as proposed criteria and guidance
- Clarified the difference between criteria and guidance
- Renamed the Modified FEMA Approach and Modified Corps Approach to the FEMA Approach and Corps Approach, respectively, to reflect that these approaches are followed without any significant change
- Added new subsections, with criteria and guidance, entitled:
 - *Minimum Top of Levee* – levee crown elevation requirements to assure water containment
 - *Soil Sampling, Testing, and Logging* – considerations in soil sampling, testing, and logging
 - *Interfaces and Transitions* – considerations to prevent weak points where features change
 - *Burrows* – measures for controlling and repairing animal burrows in levees
- Added criteria and/or guidance for:
 - water surface superelevation on the outside of stream channel bends
 - freeboard levees and considerations when the 200-year water surface is near top of bank
 - slope instability locations on levees and potential for progressive slope failure
 - post-earthquake remediation plans to quickly reestablish 10-year flood protection
 - access roads, turnouts, and ramps along levees
 - erosion considerations for dispersive soils
 - security plans for detection, deterrence, physical security, and intrusion interdiction
 - flood safety plans to facilitate emergency response, flood fighting, evacuation, and recovery
- Modified criteria and/or guidance for:
 - minimum bridge clearance above the design water surface elevation
 - right-of-way and requirements for access and visibility
 - encroachments and their assessment, remediation, and permitting
 - penetrations and their assessment, remediation, and permitting
 - levee vegetation and its management on levees, including short levees
 - sea level rise and guidance from the Ocean Protection Council
- Removed criteria and/or guidance for:
 - overtopping flows on levees with insufficient height (now to be addressed as an exception)
 - procedures (now included as a draft attachment)
- Expanded the list of references