

## **U.S. ARMY CORP OF ENGINEERS, ALBUQUERQUE DISTRICT GUIDANCE ON PROPOSED MODIFICATIONS TO FLOOD RISK REDUCTION PROJECTS**

1. **PURPOSE.** This information has been compiled to provide general guidance regarding engineering, operation and maintenance aspects of construction within the critical area of Flood Risk Reduction Projects (FRRP) constructed by the U.S. Army Corps of Engineers (USACE) and those FRRP in the USACE Public Law (PL) 84-99 Rehabilitation and Inspection Program (RIP). The critical area for a levee (where any construction activity is taking place) is generally considered to extend from 300 feet riverward to 500 feet landward of a FRRP's centerline. In some instances the critical area is extended beyond 500 feet if any impact on the FRRP can be identified. The critical area for levees is typically defined in the project specific Operations and Maintenance (O&M) Manual, but remains as mentioned above for those not defined. For dams, there is no such general rule regarding the critical area.
2. **RESPONSIBILITIES.** Local sponsors are the owners of the FRRP and are responsible for controlling all construction activity which occurs within the critical area. The Engineer-Of-Record (EOR) or the Design Engineer for the proposed modification is ultimately responsible to ensure that the modification does not adversely impact the operation or integrity of the FRRP. USACE provides engineering review to ensure that any construction activity within or near the FRRP does not reduce the level of protection, and to assure there are no detrimental impacts to the FRRP from the proposed modification that may affect the continued integrity of the FRRP.
3. **SUBMITTAL ADMINISTRATION.**

**a. Certification of No Adverse Impact.** The EOR for the proposed modification must demonstrate and state that the proposed modification does not adversely impact the operation or integrity of the FRRP. The cover letter for the submittal package should include this certification and be signed and sealed by the EOR.

**b. Transmittal.** Submittals regarding proposed modification are to be processed through the appropriate local sponsor of the FRRP. The local sponsor should review the submittal to ensure that the submittal package is complete, and that they have no objections to the proposal prior to forwarding it on to USACE.

Submittals may be sent directly to the USACE, Albuquerque District, CESPA-RCO, Readiness and Operations Contingency Branch, 4101 Jefferson Plaza, NE 87109, provided that the submittal is coordinated with, and a copy provided to the local sponsor. No reviews will proceed without permission of the local sponsor. If needed, a point of contact with a local sponsor may be obtained from the Readiness Branch at 505-342-3686.

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**c. Copies.** The number of copies of the submittal required for the engineering review varies depending upon the scope and magnitude of the proposed work and the FRRP's features impacted. As a general rule, three (3) complete printed sets of documents should be provided to USACE. If additional copies are necessary, the EOR will be notified. Half-size drawings are ideal. **In addition to the printed copies, the entire submittal should be provided in a PDF digital format.**

**d. Review Schedule.** The sponsor and EOR should allow six (6) to eight (8) weeks for USACE coordination, scheduling, comment development and consolidation, and mailing of comments for each submittal review. Failure to provide a complete submittal package can result in denial of the proposed modification.

Review duration should be considered by the EOR within the construction documents when design and/or submittals are required as part of the construction contract. If the EOR and/or sponsor believe an expedited review is warranted, a letter requesting an expedited review (with suspense date), stating the justification, should be provided. Expedited reviews will not be performed for poorly prepared or incomplete submittals.

**e. Other Required USACE Reviews.** The focus of this guidance is solely on review of modifications to FRRPs to assess potential impacts to the operation or integrity of a FRRP. The EOR is responsible for coordinating with other offices within USACE if other reviews, approvals, or permits are required (e.g., impacts to navigation structures, floodplain/floodway assessments or regulatory approval).

### **4. ENGINEERING ASSESSMENT.**

**a. Designers Responsibility.** The EOR should utilize the most recent USACE design and construction guidance prior to beginning design for a modification to a FRRP. The EOR must also coordinate with the local sponsor and become familiar with features of the FRRP in the vicinity of the proposed work. This includes reviewing the existing O&M Manual and any design documents for the project. This information should be available from the local sponsor. Common features of FRRPs include earthen embankments, flood walls, stability berms, underseepage berms, rock slope protection, foreshore and landward blankets, pressure relief wells, collector pipes, toe drains, drainage structures and ditches, energy dissipaters, drop structures, ponding areas, closure structures, pump stations, levee ramps, levee turnouts, and monitoring instrumentation.

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The EOR must fully address the proposed modification's impact on the FRRP. The types of potential impact to the FRRP will vary depending on the type and magnitude of the proposed modification and includes, but is not limited to seepage (through and under), stability (earthen and structural), ponding area storage, and hydraulic conveyance (channels, drainage structures, and ditches, erosion protection, sedimentation trends, energy dissipation). The EOR needs to consider both the temporary construction case and the permanent or long-term cases when assessing impact to the FRRP and its ability to function under a flood event.

**b. Required Information.** The submittal needs to demonstrate and state that the proposed modification does not adversely impact the operation or integrity of the FRRP. The submittal package will include, but is not limited to, the following:

- **Cover Page.** The cover page for each submittal must clearly identify the official FRRP name, brief description and purpose of the modification, location of the modification by the FRRP stationing, EOR point of contact, and date of submittal.
- **Technical Assessment.** This assessment should consist of a narrative describing the proposed modification and its impact to the FRRP (e.g., level of protection, erosion protection, slope stability, through-and under-seepage, drainage, instrumentation, etc.) and any proposed mitigation measures, if necessary. The narrative should reference, by sheet or page number, the appropriate drawings, figures, etc. (Note that many times large drawing packages are submitted and only a few sheets are pertinent to the FRRP. The narrative needs to direct the reviewer to the pertinent sheets/information). Information provided in the technical assessment should include:
  - **-O&M Manual Information.** Include pertinent text and drawings from the FRRP's O&M Manual.
  - **-Design Information.** Include pertinent analysis, text and drawings from the design documents for the FRRP.
  - **-Engineered drawings.** Include drawings that fully illustrate existing conditions, proposed modifications, and the associated changes to the FRRP (e.g., general location plan showing the FRRP, plans, profiles, cross sections, and details)
  - **-Specifications.** Include technical construction specifications related to the proposed modification.
  - **-Supporting Data.** Include supporting engineering calculations, analysis, data, and other information as appropriate.
- **Operations & Maintenance, Rehabilitation, and Ownership Assessment.** The EOR will include a discussion on ownership of the modification and the party responsible for future operations and maintenance and any future rehabilitation of the feature. The assessment will

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also include a narrative describing the required routine and non-routine operation and maintenance requirements for the proposed modifications and any changes in operation or maintenance of the FRRP due to the proposed modification. The EOR also needs to consider and discuss any consequences/impact to the project from the operation of the modification (e.g., when should gates be closed and what happens when the gates are closed?).

The EOR is responsible for developing an addendum to the FRRP's O&M Manual following the construction of any modification. Guidance on preparation and submittal of an O&M Manual Addendum is provided as a separate document.

1. **INTERIOR DRAINAGE ASSESSMENT.** Interior drainage is generally not a USACE responsibility after project completion. This normally falls under the local sponsor or another local agency or governing body. The EOR should coordinate and address proposed alterations which may increase or reroute (redistribute) interior run-off. In general, USACE located and sized drainage structures through levees and flood walls based on drainage areas, storage areas, and run-off quantities at the time the federally FRRP was being designed for construction. Changes such as pavements, sewer lines, excavation, and filling may increase the interior run-off or reroute the run off such that the designed drainage structures can no longer effectively discharge without induced interior ponding/flooding. Residual ponding areas for the 1% chance exceedence event should be delineated on maps. Any changes to the ponding elevation should be noted.
2. **REFERENCE MATERIALS.** USACE reference materials are accessible through the internet at <http://www.usace.army.mil/inet/usace-docs> . A phone number is provided for ordering at this site also.

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