

**FINDING OF NO SIGNIFICANT IMPACT
PROPOSED DAM SAFETY MODIFICATIONS LEWISVILLE DAM
ELM FORK OF THE TRINITY RIVER
LEWISVILLE, TEXAS**

Description of Action. The United States Army Corps of Engineers (USACE) has prepared an Environmental Assessment (EA) to assess the potential environmental consequences resulting from implementation of proposed dam safety modifications to the Lewisville Dam on the Elm Fork of the Trinity River in Lewisville, Texas. Lewisville Dam and Lake were initially authorized by the Rivers and Harbors Act of 1945 (Public Law 79-14) for improvements on the Trinity River and tributaries for navigation, flood control, and allied purposes. The Water Supply Act of 1958, as amended, (43 United States Code § 390b) provided for storage and made it available for municipal and industrial water supply. The Rivers and Harbors Act of 1965 (Public Law 89-298, 79, Stat. 1091) modified the authorization provided by Rivers and Harbors Act of 1945 by requiring a reevaluation report for any navigation features. Engineering Regulation 1110-2-1156 (final March 31, 2014) prescribes the guiding principles, policy, organization, responsibilities, and procedures for implementation of risk-informed dam safety program activities and a dam safety portfolio risk management process within the USACE.

The purpose of the Proposed Action is to minimize the potential for dam failure by addressing deficiencies at the Lewisville Dam. The Proposed Action accomplishes this by addressing the seepage deficiencies, spillway weir instability, and apron failure at the Lewisville Dam for safe and effective functioning at authorized capacity, while reducing the risk to the downstream public to tolerable levels. The Proposed Action is needed to establish the Lewisville Dam as a safe facility that meets USACE risk reduction guidelines for existing dams and allows the project to continue providing the benefits for which it was authorized.

The Lewisville Dam is currently functioning as designed, and the probability of failure is remote. While failure is a remote probability, the risk to human life and property should failure occur is high enough to warrant action to address the identified deficiencies. While none of the potential failure modes (PFMs) identified are likely to occur, the proposed modifications focus on the “risk driving” PFMs. Under the Proposed Action, the USACE would reduce risk of dam failure from seepage deficiencies at two different locations by constructing downstream inverted filter berms with associated collection trenches for seepage flow at each location. The USACE would reduce the risk of dam failure associated with spillway instability by constructing post-tensioned anchors with an upstream geomembrane cutoff to support the spillway structure, overlay the apron on the downstream side of the spillway, and construct two barrier walls downstream of the spillway to prevent the apron panels from moving and to reduce channel scour and erosion during spillway flow events.

Three additional PFMs have been incorporated into the Proposed Action. While these three PFMs are not risk driving, their inclusion takes advantage of construction

efficiencies and does reduce the overall risk of failure. To reduce risk associated with erosion at the outlet conduit, the USACE would construct a new conduit to reduce stress from high volume flows. To reduce risk associated with slides on the upstream side of the embankment, the USACE would increase the embankment berm to a 4:1 upstream slope and a maximum elevation of 537 feet above sea level. The berm would be reinforced at the base with riprap to reduce wave erosion. The USACE is requiring the City of Lewisville to relocate waterlines that currently encroach on the embankment to reduce the risk of embankment erosion from a waterline rupture. After the modifications to the embankment are complete, the USACE would also establish a 50-foot wide "vegetation clear zone" adjacent to the embankment where vegetation would be regularly mowed.

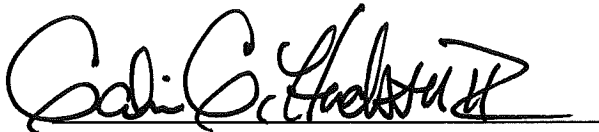
In order to accomplish the identified risk reduction measures, access roads, staging areas, and borrow sites needed for construction, are included as part of the Proposed Action. There would be two designated borrow sites, one 56.4 acres and the other 32.1 acres. The locations of the borrow sites were chosen based on having geotechnically suitable fill material and the least adverse impacts to existing resources and activities within the Project Area. Upon construction completion, any excess fill material would be returned to the borrow sites, and the sites would be graded to be as consistent with the existing surrounding topography, as possible. After the borrow areas have been graded, the USACE would implement habitat measures to create enhanced savanna habitat. The habitat measures would include the seeding of native forbs and grasses, as well as the planting of mast-producing trees and flowering shrubs. The intent of the plantings would be to create a landscape more consistent with historic prairie and savanna conditions, as well as to foster habitat suitable for various pollinator species. No compensatory mitigation is proposed or required for this action.

The proposed dam safety modifications would reduce the risk of dam failure to within the USACE's full tolerable risk guidelines. Construction is proposed to begin in early 2018 and continue in phases through mid-2024. The Proposed Action would occur on the Lewisville Dam and adjoining lake project lands located south of the embankment.

Anticipated Environmental Effects. Through the planning process, the USACE developed and analyzed eight options for implementing the Proposed Action. However, because the potential impacts associated with the each option were virtually identical, the USACE is moving forward with only one action alternative. The USACE also considered the No Action Alternative. Under the No Action Alternative, no dam safety modifications would be implemented, and the risk associated with dam failure would persist. While the probability of dam failure would remain remote, there would be increased adverse consequences in the event of dam failure as a result of the increasing population within the Study Area.

Implementation of the Proposed Action would not result in significant impacts on the social, economic, or human, and natural environment. No adverse impact on any species that are proposed or listed as threatened or endangered under the Endangered Species Act would occur. Beneficial impacts to biological resources, and specifically savanna habitat and pollinators, would occur with the implementation of the habitat measures. No significant geological, water resources, public health and safety, air quality, cultural, utilities, recreation, transportation, socioeconomics and environmental justice, or climate impacts would occur. The Proposed Action would impact 10.5 acres of waters of the U.S., including up to 1.0 acre of permanent impacts to emergent wetlands, 4.4 acres of temporary impacts to emergent wetlands, and 5.1 acres of permanent impacts to open water. After the proposed modifications are complete, the impacted areas would return to pre-construction conditions. Long-term effects of the Proposed Action would be beneficial.

Facts and Conclusions. Based on a review of the information contained in this EA, it is concluded that the implementation of the Lewisville Dam Safety Modifications in Lewisville, Texas is not a major federal action which would significantly affect the quality of the human environment within the meaning of Section 102(2)(c) of the National Environmental Policy Act of 1969, as amended.



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31 MAY 17

Date