

## **FINDING OF NO SIGNIFICANT IMPACT**

**And**

### **STATEMENT OF FINDINGS**

#### **Environmental Assessment, Supplement 3**

#### **Major Rehabilitation Evaluation Report Previously Approved and Revised Plans**

#### **Proposed Roller Compacted Concrete (RCC) Berm, and Measures**

#### **Center Hill Dam and Lake, DeKalb County, Tennessee**

1. The U. S. Army Corps of Engineers, Nashville District (Corps) has conducted an Environmental Assessment, Supplement 3 (EA) to address major rehabilitation and seepage repairs at the Center Hill Dam and Lake Project (Project). The Center Hill main dam is located at mile 26.6 on the Caney Fork River in DeKalb County, Tennessee. The saddle dam is located approximately 1,500 linear feet upstream, and east of the main dam. This EA was completed under the Project's original authority as authorized by the Flood Control Act of 1938 (Public Law (PL) 761, 75th Congress, 3rd Session) and the Rivers and Harbors Act of 1946 (PL 525, 79th Congress, 2nd Session). The purpose and need for federal action is to reduce the risk of dam failure and to consider revisions to project features in the previously approved 2006 Major Rehabilitation Evaluation Report (MRER) plan as described in the draft 2013 MRER Supplement. Provision for measures to address safety and improved monitoring for future seepage problems as part of on-going dam safety is also within the scope of this EA.
2. In accordance with Engineering Regulation 200-2-2 *Policy and Procedures for Implementing the National Environmental Policy Act (NEPA)*, a scoping letter dated February 13, 2012, was sent to members of the public and to agencies with jurisdiction by law or special expertise. The scoping letter described the proposed RCC Berm alternative and previously approved grout curtains, barrier wall, and cofferdam to address seepage at the saddle dam embankment. On August 27, 2012, a Notice of Availability (NOA) of the draft EA and unsigned FONSI was circulated to members of the public and to agencies with jurisdiction by law or special expertise for a 30-day review. Comments received from scoping and the NOA were considered and documented in the EA and are summarized in this FONSI.
3. Since August 2012, the scope of the EA has broadened. The EA described existing conditions, and evaluated potential impacts associated with the No Action (implement project features as described in the previously approved 2006 MRER plan), and the Proposed Action (implement revised project features as described in the draft 2013 MRER Supplement and added measures). On October 24, 2013, a second NOA of the draft EA and unsigned FONSI was circulated to members of the public and to agencies with jurisdiction by law or special expertise for a 30-day review. The No Action and Proposed Action alternatives are described in Paragraph 4 and Paragraphs 5 and 6 of this FONSI.
4. The No Action Alternative in the EA is to implement the previously approved 2006 MRER plan with no revisions to alternatives under the Left Rim, Right Rim and Abutment, Saddle Dam Embankment, and Entire Project Features. A "pure" No Action alternative as required under NEPA (where no federal action or work would be done) has already been evaluated in the 2006 EA Supplement 1 and is incorporated by reference. This is the without project condition for the Saddle Dam Embankment Project Feature (no grout curtains, barrier wall, and cofferdam) in the draft revised 2013 MRER plan supplement. The Left Rim Feature would construct the grout curtain at the left rim cave and plug the cave and downstream

sinkhole with concrete grout to stop water loss from Center Hill Lake. The Right Rim and Abutment Feature would grout the right rim and plug the upper and lower leaks at the main dam with concrete grout to stop water loss from Center Hill Lake. The Saddle Dam Embankment Feature would implement construction of grout curtains, a barrier wall, and cofferdam that has known dam failure modes, and does **not** meet reduced failure risk below the tolerable limit threshold. With a flood storage pool above elevation 692 feet, a saddle dam failure with a barrier wall would drop the pool to elevation 570 feet with a loss of 87% of Center Hill Lake. Flood storage, hydropower, recreation, water supply, fish and aquatic life, and water quality would be significantly and severely impacted with a saddle dam failure. Under No Action, the Entire Project Feature would implement maintenance grouting every 15 to 20 years over the entire Project.

5. The Proposed Action Alternative is to implement the revised 2013 MRER Supplement plan with revisions to alternatives under the Left Rim, Right Rim and Abutment, Saddle Dam Embankment, and Entire Project Features. The revised Left Rim Feature would not complete the grout curtain at the left rim cave. The left rim cave and downstream sinkholes would not be plugged with concrete grout. The revised Right Rim and Abutment Feature would not grout the right rim and plug the upper and lower leaks with concrete grout. The experts believe is that grouting and plugging the caves, leaks, and sinkholes could cause deleterious groundwater pressure on other portions of the cave systems in the left and right rims. Grouting and plugging would address water loss from Center Hill Lake, but this is not a dam safety concern and is therefore unwarranted. The revised Saddle Dam Embankment Feature would implement construction of a new dam safety and engineering preferred seepage repair alternative - Roller Compacted Concrete (RCC) Berm. The RCC Berm is more reliable, robust, easier to build and inspect, less costly, can be over-topped, and meets reduced failure risk below the tolerable limit threshold. With a flood storage pool above elevation 692 feet, a saddle dam failure with an RCC Berm would preserve Center Hill Lake to elevation 658 feet with a loss of 33% of Center Hill Lake. Flood storage would be markedly reduced, and hydropower would be limited. At this elevation, Center Hill Lake would maintain recreation, water supply, fish and aquatic life, and water quality. The revised Entire Project Feature would be dropped. A reanalysis revealed no credible failure modes in the left or right rims. The main dam would be protected by a barrier wall, and the saddle dam would be protected by an RCC Berm. Maintenance grouting for the entire project every 15-20 years is not warranted.

6. The Proposed Action would also implement measures to address safety and continued monitoring for future seepage problems as part of the on-going dam safety program. These measures are: 1) Left Rim Cut Stabilization, 2) Sinkhole Repairs, 3) Dam Safety Clearing, 4) Spring Culvert and Weir Repairs, and 5) Upper and Lower Leak Weir Repairs. The Left Rim Cut Stabilization and Sinkhole Repairs would stabilize ground surfaces to allow safe access to, and monitoring of, hill slope stability and sinkhole development. The Dam Safety Clearing is necessary to meet compliance with dam safety guidance and to facilitate required dam safety inspections on the groin structure downstream of the main dam. Spring Culvert and Weir Repairs, and Upper and Lower Leak Weir Repairs, are necessary to provide continuous and accurate flow measurements and monitoring for future seepage problems as part of a long term, on-going dam safety monitoring plan for future seepage.

7. The Corps is proposing a land exchange on lands under the control of the Corps and the Edgar Evins Tennessee State Park (Park). The proposed exchange involves two parcels, each consisting of 3.47 acres. The land exchange is necessary to implement the proposed RCC Berm Alternative (Revised Saddle Dam Embankment Feature). When the exchange is executed, the Corps would own the land occupied by the proposed RCC Berm. The land the Corps proposes to transfer is currently leased to the Park and includes the Park's visitor center and observation tower. The Park supports the land exchange because the Park would own the land that contains Park facilities. The remaining State land located below the saddle dam would remain in State ownership. The Corps would seek a permanent easement for the access road to the base of the saddle dam through Park property and would be responsible for road improvements, maintenance, and

repair. Natural resources on the Corps and Park properties that would be affected by the proposed RCC Berm Alternative are addressed in the EA.

8. Pursuant to Section 7 of the Endangered Species Act (ESA), as amended, coordination with the US Fish and Wildlife Service (USFWS) was initiated by scoping letter. The U.S. Fish and Wildlife Service (USFWS) responded on March 14, 2012 and noted that potential summer roost habitat for the federally endangered Indiana bat (*Myotis sodalis*) may exist in the potential RCC Berm alternative impact area and could be altered by the proposed action. The USFWS provided final responses by letter dated September 25, 2012 to the first NOA. The Corps determined that there would be No Effect to nine historical, federally listed freshwater mussels due to the lack of suitable habitat in the project area. The Corps determined that there would be No Effect on Price's potato-bean (*Apios priceana*) due to no records and no observance. The Corps determined that there would be No Effect on the recently recovered bald eagle (*Haliaeetus leucocephalus*) because there were no nests in the project area. The USFWS concurred with a No Effect determination for the federally listed mussels, Price's potato-bean, and the bald eagle. Further coordination and a bat survey of the project area found no presence of the Indiana bat (*Myotis sodalis*) even though summer habitat exists within the proposed RCC Berm footprint. The gray bat (*Myotis grisescens*) was present within the proposed RCC Berm footprint. Based on the survey, the Corps determine a May Effect, Not Likely to Adversely Affect the Indiana and gray bats. The USFWS determined that protective measures in the EA would minimize impact to the Indiana and gray bats and concurred with the Corps' determination for both bat species. Requirements of Section 7 of the ESA have been fulfilled as documented by letter dated September 25, 2013.

9. Pursuant to the Fish and Wildlife Coordination Act (FWCA) of 1958, coordination with the USFWS, the Tennessee Wildlife Resources Agency (TWRA) and the Tennessee Division of Natural Areas (DNA) was initiated by scoping letter. The DNA responded on June 27, 2012, and provided a list of state and federally listed species, and state species deemed in need of management. TWRA raised concerns that the timber rattlesnake (*Crotalus horridus*), a state species deemed in need of management, may be present in the impact footprint. During August 13-15, 2012, the TWRA collected and relocated a timber rattlesnake from the RCC Berm footprint. In an email dated October 3, 2012, TWRA stated that the agency had no objection to the proposed project. In an email dated October 18, 2012, the DNA noted that no impacts to the indicated rare plants were anticipated. The DNA also reported that during the timber rattlesnake relocation, Allegheny woodrats (*Neotoma magister*), a state species deemed in need of management, were observed within the impact footprint. DNA requested that the Corps consult with TWRA to determine if any additional protective measures are warranted for this population. On July 31, 2013, DNA updated the rare species database review to include the Allegheny woodrat. Coordination is on-going with these resource agencies. Provisions of the FWCA have been met.

10. Section 106 of the National Historic Preservation Act of 1966 requires that each federal agency take into account the effects of its undertakings on historic properties included in or eligible for listing in the National Register of Historic Places. According to correspondence dated 16 May 2012 from the Tennessee Historical Commission (THC), the proposed project would not adversely affect any property that is eligible for listing in the National Register of Historic Places. THC has no objection to the implementation of the proposed RCC Berm Alternative.

11. In accordance with ER 1165-2-132, a Phase I Environmental Site Assessment (ESA) was completed on Park property within the RCC Berm footprint. A Phase II ESA was completed in the area where the Park stockpiled and burned pressure treated wooden timbers preserved with chromate copper arsenate (CCA). After the timbers were disposed in an approved landfill, soil samples were collected. Arsenic, copper, chromium, and polycyclic aromatic hydrocarbons (byproducts of fuel burning) concentrations were elevated above the local background range on Park property in the area used for burning the wood wastes. Except for arsenic, none of the contaminants pose an unacceptable risk to

human health. The Corps is coordinating with the Tennessee Division of Remediation (DOR) that regulates remediation of contaminated sites. The Corps is requesting that the arsenic contaminated soil be removed by the State to eliminate risk to human health. If not removed, the contaminated soil would be covered in place to reduce the risk of human exposure. Currently the contaminated area is fenced and avoided. The State acknowledges that the contaminated soil is on State Park property. Coordination and collaboration with DOR is on-going. Pending DOR review, the contaminated soil will be removed or be managed in situ. There are no unresolved issues.

12. Executive Order (EO) 11990, Protection of Wetlands, directs federal agencies to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. Implementation of the Proposed Action would result in unavoidable impact to a 0.13-acre wetland on Park property. The wetland would be mitigated via an approved mitigation bank, in-lieu fee program, and/or permittee responsible. Mitigation would ensure no net loss of wetlands and comply with the EO.

13. The Office of Policy and Planning, Commissioner's Office, Department of Environment and Conservation (TDEC) responsible for implementing Section 401 of the Clean Water Act (CWA) responded on October 23, 2012. TDEC reported that the land exchange was approved by the State Building Commission. TDEC also noted that an individual Aquatic Resource Alternation Permit (ARAP) and a Tennessee General NPDES Permit for Discharges of Stormwater Associated with Construction Activities (CGP) would be required. In accordance with the Clean Water Act (CWA), on November 8, 2012, a public notice for CWA Section 401 water quality certification was issued to the public for a 30-day review by the Tennessee Division of Water Resources (DWR). The Corps received 401 Water Quality Certification in the form of ARAP NRS.12.227 on January 9, 2013. The Corps has a current CGP and Stormwater Pollution Prevention Plan (SWPPP) for Seepage and Rehabilitation repairs for the entire Project (TNR171208). The Corps would provide DWR an updated Project CGP and SWPPPs prior to ground disturbance. Appropriate construction best management practices would be implemented to ensure compliance with the CGP and SWPPP. The Tennessee Department of Transportation (TDOT) responded on September 28, 2012 and provided contact information if it is determined that TDOT right-of-way will be impacted by the project.

14. The Proposed Action is in compliance with EO 11988 Floodplain Management, Corps Cut & Fill Guidelines, EO 12898 Environmental Justice; Farmland Protection Policy Act; Clean Air Act, and CWA.

15. The EA did not reveal any significant impacts resulting from implementing the draft 2013 Revised MRER Plan, the proposed RCC Berm alternative and measures (Proposed Action). The combined impact footprints cover 235 acres. The loss of a 0.13 acre of wetland would be mitigated via an approved mitigation bank, in-lieu fee program, and/or permittee responsible mitigation. Approximately 450 linear feet of Moss Hollow Branch would be temporary covered. The stream would be restored to pre-construction condition. There would be some short-term and temporary loss, and minimal permanent loss of vegetation from tree removal. Permanent lost of forest habitat would be replaced with equivalent acreage in onsite disposal areas. Forest habitat affected by both temporary and permanent tree loss would be stabilized with warm season grasses, planted with native tree species seedlings, and allowed to regenerate into forest habitat via natural succession.

16. I have evaluated this project in accordance with the guidelines promulgated by the Administer of the Environmental Protection Agency pursuant to Section 404(b)(1) of the Clean Water Act. No significant adaptations of Section 404 (b)(1) guidelines were made relative to this evaluation. Based on that evaluation, I have determined the Proposed Action, to comply with the guidelines with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects to the aquatic ecosystem.

17. I have reviewed the Environmental Assessment Supplement 3, Major Rehabilitation Evaluation Report, Previously Approved and Revised Plans, Proposed Roller Compacted Concrete (RCC) Berm, and Measures. I have reviewed the No Action and Proposed Action Alternatives. I have reviewed public and agency comments. In light of the general public interest, I have determined that implementing the Proposed Action – implement the revised 2013 MRER Supplement plan with revisions to alternatives under the Left Rim, Right Rim and Abutment, Saddle Dam Embankment, and Entire Project Features, and implement measures to address safety and continued monitoring for future seepage problems as part of the on-going dam safety program, would not constitute a major Federal action significantly affecting the quality of the human environment within the meaning of NEPA of 1969, as amended. Accordingly, I have concluded that an Environmental Impact Statement is not required for the Proposed Action. Furthermore, having weighed the potential benefits that may be accrued as a result of implementing the Proposed Action against reasonable foreseeable detrimental effects, I have concluded that the Proposed Action, as described the EA Supplement 3, is in the public interest.

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Date

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John L. Hudson  
Lieutenant Colonel  
Corps of Engineers  
District Engineer