

**FORT LOUDOUN RESERVOIR – SECTION 26a APPROVAL FOR  
SHORELINE STABILIZATION – LAKESHORE PARK FORESHORE DIKE -  
ADOPTION OF THE ENVIRONMENTAL ASSESSMENT (EA) PREPARED BY  
THE UNITED STATES ARMY CORPS OF ENGINEERS (USACE) AND  
FINDING OF NO SIGNIFICANT IMPACT (FONSI)**

**Purpose, Need, and Background**

Between Tennessee River Mile (TRM) 640.0R and 640.4R, shoreline erosion is jeopardizing the facilities and resources within Lakeshore Park. The park, owned and managed by the city of Knoxville, Parks and Recreation Department, is located along and just upstream of the mouth of Fourth Creek in Knoxville, Knox County, Tennessee. Among other amenities, the park includes a 2.25-mile greenway trail, small golf course, and ball fields along its eastern boundary which borders the Tennessee River, Fort Loudoun Reservoir. Substantial public investment has been made in the park's infrastructure. Shoreline erosion, occurring along this park boundary, is threatening this infrastructure; in particular, golf course, paved walking trail, fences, and light poles, and the narrow riparian shoreline buffer zone.

USACE authorized pursuant to Section 14 of the Flood Control Act of 1946, as amended, conducted a shoreline protection study, and has recommended construction of a foreshore dike to address the shoreline erosion problem. USACE would construct the dike. The existing conditions and potential impacts of two proposed alternatives are presented in a cooperatively developed EA attached hereto and incorporated by reference. USACE served as the lead agency and Tennessee Valley Authority (TVA) was a cooperating agency in this environmental review. USACE also served as the lead federal agency, acting on behalf of TVA, in carrying out consultation under Section 106 of the National Historic Preservation Act. USACE signed its FONSI and Finding of Compliance for this action on September 12, 2003.

Along most of the park shoreline TVA owns flowage easement up to elevation 820 mean sea level (msl) on Fort Loudoun Reservoir. No TVA fee-owned land would be involved. If approved, TVA would authorize the proposed action alternative under Section 26a of the TVA Act. Similarly, USACE would authorize the proposed action alternative under Section 10 of the River and Harbors Act and Section 404 of the Clean Water Act (CWA). Additionally, Section 401 of the CWA requires water quality certification (WQC) from the Tennessee Department on Environment and Conservation (TDEC) before a federal permit for an activity resulting in a discharge could be issued. TDEC issued a WQC to USACE and the city of Knoxville on September 8, 2003.

**Alternatives Considered and Analyzed in Detail**

Originally, alternative ways to address the problem included riprap, bioengineering, and vinyl sheet piling. These alternatives were eliminated from further consideration because: 1) work would have required destruction of existing vegetation, 2) insufficient

bank width to achieve the minimum slope necessary for rock placement was available, 3) soft armoring (i.e., bioengineering with vegetation) would likely not have stopped the shoreline erosion, or 4) substantial additional environmental disturbance would have occurred during construction or armor installation.

Therefore, only construction of a foreshore dike, the Action Alternative, and a No Action Alternative are considered in the EA.

#### Foreshore Dike Alternative

Under the Action Alternative, approximately 26,948 tons of stone would be placed along 2913.3 feet of Fort Loudoun Reservoir shoreline to provide protection from further erosion. Approximately 26,948 tons of stone would be placed along the shoreline, of which 24,254 tons would be placed below ordinary high water (813 msl). Design plans for the foreshore dike, which includes bottom and top of dike widths and elevations as well as piping to allow for fish passage, are included in the attached EA. The dike would be constructed to dissipate wave action and construction would not involve disturbing the existing bank. Access for vehicles and equipment would be via Northshore Drive onto existing paved roads into the park and over a short portion of the greenway trail. Only about 400 feet of new access road would be temporarily constructed ending in the wintertime drawdown zone. A riverward access road would be constructed of clean rock and, upon completion, become the base of the foreshore dike.

#### No Action Alternative

Under the No Action Alternative, no steps would be taken to address the erosion problem occurring along the riverbank. Shoreline erosion would continue and pose an eventual greater threat to park land and facilities; possibly render some of the structures unusable. The adjacent shoreline fence and walking trail are especially vulnerable.

### **Impact Assessment**

#### Foreshore Dike Alternative

Only a minor amount of shoreline vegetation would be disturbed for access road construction; therefore, dike installation would have little or no affect on wildlife. Because it would be covered with water during the summer when boaters are more numerous, the dike probably would not be noticed by fishermen or others passing by on the river. After a short while, fine sediments would discolor the stone and dull its colors. By the following winter drawdown, colors of exposed rock would likely have blended with the earthen tones of their surroundings, making the dike less noticeable. From the greenway trail, aesthetics would only be temporarily impacted during construction. The shoreline fence and vegetated riparian zone would shield the dike from landward view.

A short portion of greenway walking trail would be used for construction access. The trail and users would be detoured around the construction site. Use of the nearby small golf course could be temporarily disrupted. However, because of fewer recreational activities in the park in winter, recreation impacts caused by dike construction would be minor. Because of the width of the Tennessee River in this area, construction noise impacts on wildlife and residents across the river are also expected to be minor. Because construction best management practices would be implemented and work would occur during winter pool drawdown, impacts on water quality and aquatic life would be minimal. Because of expected increases in numbers and diversity of shoreline terrestrial plants and macroinvertebrates or other aquatic organisms on the dike structure, long-term impacts on aquatic life would be anticipated to be beneficial.

Installation of fish passageways through the dike piping would decrease the likelihood of fish becoming trapped as the water level rises and falls.

For compliance with Executive Order 11988 (Floodplains Management), the placement of riprap (rock) structure is considered to be a repetitive action in the floodplain that generally results in only minor floodplain impacts. Since no federally or state-listed threatened or endangered species are known from the vicinity of the project, none would be affected. No wetlands occur along the potentially affected shoreline. There would be no impacts from minor amounts of noise generated during wintertime construction. Placement of the dike would provide protection for archaeological site 40Kn9 from further erosion while not effecting remaining deposits. Therefore, the Tennessee State Historic Preservation Officer (SHPO) concurred with USACE's finding that no National Register of Historic Places (NRHP) listed or eligible properties would be affected by the undertaking.

#### No Action Alternative

Under the No Action Alternative, shoreline erosion would continue. No effects on wildlife (including threatened or endangered species), recreation or aesthetics are expected. Under this alternative, continued erosion, sedimentation and turbidity would negatively affect water quality and aquatic life. Continued shoreline erosion would likely result in eventual loss of any remaining portions of archaeological site 40Kn9.

#### **Public Involvement**

On February 14, 2001, USACE sent a scoping letter to local, state, and federal governmental agencies with responsibilities for activities in the study area, or otherwise having an interest in the project. USACE also issued joint USACE/TVA public notice No. 03-09 dated February 21, 2003, describing the proposed action. The draft EA was circulated to those who responded to the scoping letter and to local, state and federal governmental agencies.

Three scoping responses were received. TDEC issued a WQC to USACE and the city of Knoxville on September 8, 2003 (see letter in Appendix 1 of the attached USACE EA). Since no federally or state-listed threatened or endangered species are known from the vicinity of the project, none would be affected (see reference to conversation with U.S. Fish and Wildlife Service (USFWS) below and conversation record in Appendix 2 of the attached USACE EA). By letter of April 25, 2002, the Tennessee SHPO indicated that no NRHP listed or eligible properties, including archaeological site 40Kn9, would be affected by the undertaking (see letter in Appendix 2 of the attached USACE EA). In a letter dated February 23, 2001, the city of Knoxville indicated its support for the project.

Three responses were received following review of the draft EA. These responses are in Appendix 2 of the attached USACE EA. By phone, on February 25, 2003, Mr. Gerald Miller stated that Environmental Protection Agency had no concerns or questions. The Tennessee Department of Agriculture indicated that this project would prevent erosion and support the project. By letter dated March 11, 2003, USFWS, stated that the draft EA was adequate and concurred with the finding of no effect to endangered and threatened species.

## **Cumulative Impacts**

Because development of the surrounding area is mostly nearing completion, including new residential development progressing along Fourth Creek upstream of Lakeshore Park, little or no additional foreseeable future residential or commercial development is anticipated in the area. Within the park, there are no plans to construct additional facilities or further develop the land base within the next several years.

TVA is aware of one other action with the potential to cumulatively affect resources in the area. Improvements are currently underway to widen I-40/75 in the Fourth Creek watershed upstream from Lakeshore Park. In 2001, TVA participated as a cooperator in development of an EA with the Federal Highway Administration and Tennessee Department of Transportation which evaluated the affects of improvements along a 3.4-mile section of Interstate 40/75 from west of North Winston Road to east of Papermill Road. Within this stretch of highway, improvements are underway on a 1.6-mile section of I-40/75 between Papermill Road and Wesley Road in the Fourth Creek watershed. Improvements were also recently completed along Weisgarber Road between Papermill Road and Middlebrook Pike. Substantial earth disturbance has occurred associated with these projects and best management practices and are being implemented at both sites. TDEC imposed mitigation measures to minimize impacts to Fourth Creek and two small tributary streams. These included onsite measures such as sediment retention basins, silt fences, staked hay bales, and tree planting, as well as and payment to Tennessee in-lieu fee program. Successful implementation of these mitigation measures will reduce the potential for cumulative water quality impacts from both the dike construction project and the highway construction projects.

Neither USACE nor TVA anticipates actions that would adversely affect water quality, aquatic life or shallow water habitat, cultural resources, recreation, or aesthetics in the area of the proposed Lakeshore Park foreshore dike.

Furthermore, there does not appear to be other proposed actions that would cumulatively affect park resources in the Fourth Creek embayment area or this portion of the reservoir. With the use of standard practices and the additional mitigation measures proposed, the Lakeshore Park project, in combination with past, present, and reasonably foreseeable future actions, would not lead to further adverse trends or degradation of water or other natural or cultural resources on Fort Loudoun Reservoir or the surrounding area. Because of environmental protection commitments and mitigation requirements that are normally placed on TVA and USACE permit approvals, cumulative effects to resources in the watershed are substantially reduced and are anticipated to be minor.

## **Mitigation**

USACE will utilize routine measures to protect water and air quality and archaeological resources during construction of the foreshore dike. These include use of Best Management Practices, limiting the removal of shoreline vegetation, replanting disturbed areas with native species, and wetting of haul roads to minimize fugitive dust emissions. No additional measures are necessary to avoid significant environmental impacts.

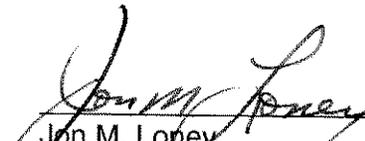
### **TVA Review**

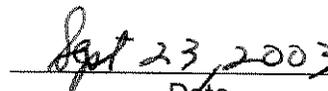
TVA field inspected the site on July 9, 2003, and examined the proposed construction access roadway and shoreline in front of which the dike would be constructed. On August 30, the shoreline was viewed from the water. The eroded shoreline varies in width from about 3 to 12 feet from the fence and edge of the walking trail along the river. A foreshore dike adjacent to the shoreline would protect the area from further erosion. Sound construction, engineering practices and environmental protection measures would be incorporated into plans to avoid or minimize adverse long-term impacts. This would include any special conditions stipulated in TDEC's Section 401 WQC. Once the shoreline bank stabilization is completed, long-term affects on water quality are expected to be beneficial. The dikes would also serve as additional aquatic habitat. No additional erosion would likely threaten the park infrastructure or archaeological site 40Kn9.

Accordingly, TVA concurs that impacts associated with the proposed foreshore dike construction as described in the attached USACE EA would be insignificant. TVA also believes that the EA adequately addresses both short- and long-term potentially negative and beneficial impacts of dike construction.

### **Conclusion and Findings**

TVA has critically and independently reviewed the impacts assessed in the USACE Lakeshore Park Foreshore Dike EA and confirmed its findings. The scope, alternatives considered, and contents of the EA are adequate and the impacts on the environment, including approval of plans under Section 26a of the TVA Act, have been adequately addressed. TVA has decided to adopt the USACE EA. The USACE EA and associated FONSI of September 12, 2003, are attached and incorporated by reference. Based on the cooperatively developed USACE EA, TVA concludes that the issuance of Section 26a permit approval for this project would not be a major federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required.

  
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Date