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**WILSON DAM BASCULE BRIDGE REPLACEMENT
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT**
Colbert and Lauderdale Counties, Alabama

Prepared by:
TENNESSEE VALLEY AUTHORITY
Knoxville, Tennessee

April 2012

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Purpose and Need for Action

Wilson Dam was completed in 1925 and is located in Lauderdale County, Alabama, at Tennessee River Mile 259.4. The U. S. Department of War ceded control of Wilson Dam to the Tennessee Valley Authority (TVA) in 1933. Wilson Dam is included on the National Register of Historic Places (NRHP) and has been recognized as a National Historic Landmark (NHL) for its historic significance.

Wilson Dam contains a bascule¹ bridge that spans the upstream end of the original lock structure (see Figure 1). A new lock was constructed in 1959, and the original lock now serves as the auxiliary lock. The auxiliary lock is used to handle river traffic during regular maintenance of the main lock. A counterweight allows the bridge to tip up on a pivot to permit barge traffic to clear the original lock. The bascule bridge was designed to open to approximately 76 degrees; however, the bridge currently cannot open beyond 58 degrees and presents an obstruction for large navigation traffic passing through the auxiliary lock.

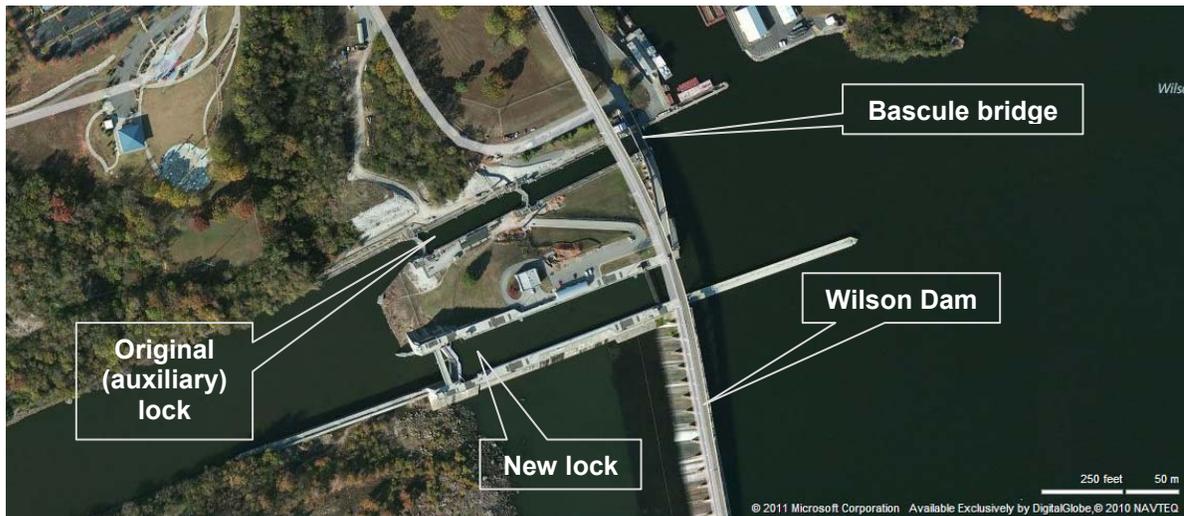


Figure 1. Aerial View of Wilson Dam, Locks, and Bascule Bridge

Originally, the bascule bridge carried vehicular and pedestrian traffic across Wilson Dam. However, an elevated roadway now spans both locks and provides general vehicular access across the dam. Until recently, the bascule bridge provided maintenance and equipment access to the main lock. Because of its age and degree of deterioration, the bascule bridge is no longer capable of providing safe access for heavy equipment. Thus, TVA and the U.S. Army Corps of Engineers (USACE) constructed a new fixed concrete access bridge to the main lock. Thus, the bascule bridge is now closed to the public and no longer used for equipment access.

¹ A bascule bridge is a drawbridge-type structure that is counterbalanced at one end. The Wilson bascule bridge spans the original navigation lock and was designed to tilt up to allow the passage of navigation traffic through the lock.

Proposed Action

TVA proposes to retire (and possibly physically remove) the bascule bridge with the intention of providing safe and efficient operation of the dam and the navigation locks. Retirement of the bridge would eliminate the need to maintain the bascule bridge's deteriorating operating mechanisms, as well as the need to raise the bascule bridge when the auxiliary lock is in operation. Because the bascule bridge cannot extend to a fully upright position (i.e., open to approximately 76 degrees) and presents an obstacle to large navigation traffic, its removal would facilitate faster lockage for commercial navigation traffic when the auxiliary lock is in service.

The decisions before TVA are whether to retire the Wilson bascule bridge, including possible removal of the bridge, and the disposition of the bridge if it is to be removed. This supplemental environmental assessment (EA) was prepared to determine and document the potential environmental effects of various alternative options for the eventual disposition of the bascule bridge.

Background

The Wilson bascule bridge, which is approximately 148 feet long and 26 feet wide, spans the original lock, which is 60 feet wide and currently used as the auxiliary lock (see Figure 1). As shown in Figure 2, the bridge pivots on a trunnion mechanism mounted on a pylon-type structure. The distance from the bridge toe to the trunnion (i.e., the front span) is approximately 108 feet, while the heel-to-trunnion (back span) distance is approximately 39 feet. An electric motor drives a gear mechanism that travels along a curved gear track mounted in the foundation to raise the span.

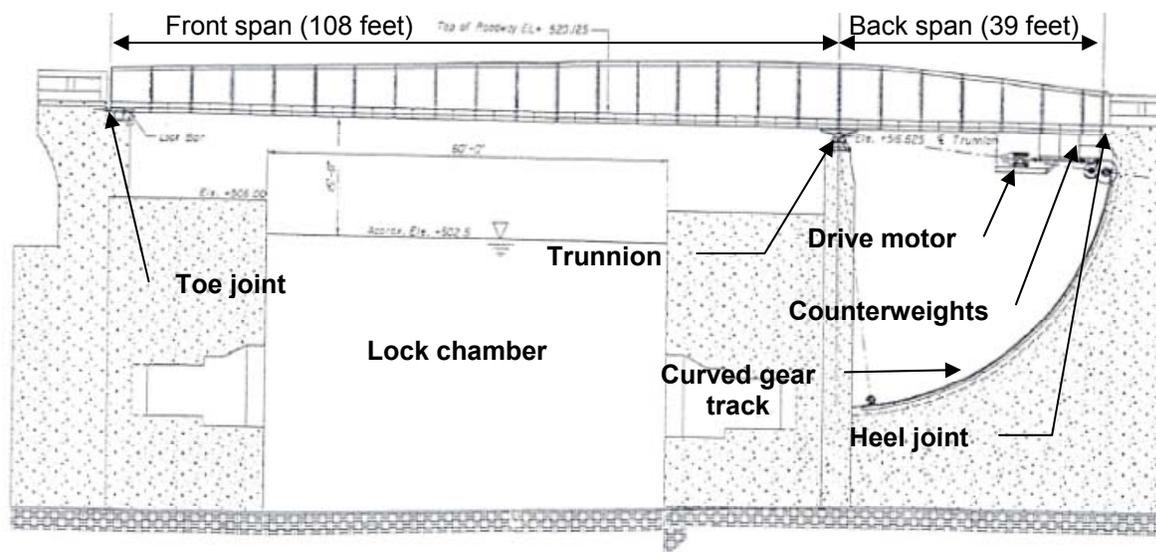


Figure 2. Side Elevation of the Wilson Bascule Bridge

Wilson Dam is located immediately north of the 3,036-acre TVA Muscle Shoals/Wilson Dam Reservation. The southern embankment of the dam fronts property controlled by TVA for the purpose of power generation. The property in the immediate vicinity of the northern end of the dam is used for public recreation and commercial purposes.

Other Environmental Reviews and Documentation

The EA entitled *Wilson Dam Bascule Bridge Replacement, Colbert and Lauderdale Counties, Alabama* (TVA 2008) documented the potential environmental effects of constructing a new fixed concrete bridge over the lower end of the auxiliary lock at Wilson Dam to provide equipment access to the main lock area. The eventual retirement and possible removal of the bascule bridge were acknowledged in that document. However, plans for disposition of the bascule bridge were incomplete at the time. This supplemental EA tiers from the 2008 EA.

The EA entitled *River Heritage Hotel, Wilson Dam Reservation in Lauderdale County, Alabama* (TVA 2003) documented the potential environmental effects of TVA granting a permanent easement over approximately 12 acres of the Wilson Dam Reservation (located at the north end of Wilson Dam) to the Public Park Authority of the Shoals for the purpose of constructing a hotel. The hotel opened in 2005.

The final environmental impact statement (EIS), *Muscle Shoals Reservation Development, Colbert County, Alabama*, (TVA 2011) addressed the environmental consequences of disposing of portions of the Muscle Shoals Reservation for various public and private uses.

Permits, Licenses, and Approvals

No licenses or permits are required to undertake the proposed action, including disposal of the bascule bridge. However, because the bascule bridge is a component of an NHL that could be affected by the proposed action, those actions that could adversely affect the bridge are subject to review by the Alabama State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation, in accordance with the provisions of Section 106 of the National Historic Preservation Act.

Alternatives

From the standpoint of the National Environmental Policy Act (NEPA), there are four feasible alternatives. Under two of these, i.e., Alternative A (the No Action Alternative) and Alternative B, the bascule bridge would remain affixed to the lock at its current location. Under Alternatives C and D, the bascule bridge would be removed. These alternatives are presented below.

Alternative A - No Action

Under the No Action Alternative, TVA would leave the bascule bridge in place and continue to operate it as needed. In the short term, essential repairs would be needed, and a major overhaul would be necessary for long-term operation. Although the need to move heavy equipment over the bascule bridge has been eliminated by the construction of the new access bridge, the presence of the bascule bridge and the need to raise it when the auxiliary lock is in service could present an obstacle to commercial barge traffic using the auxiliary lock.

Alternative B - Permanently Fix the Bascule Bridge in an Upright Position

Under this alternative, the bascule bridge would be left in place in its current mounting. However, it would be raised and permanently fixed in the upright position. Due to problems with the gear mechanism, the bascule bridge will currently tilt only about 58 degrees in the upright position and will require repairs to the mechanism to raise the bridge to its full 76-degree upright position. Additionally, modifications to the lock wall and bridge mountings would be required to ensure that the supporting foundations could withstand the lateral

forces and safely support the bascule bridge in the upright position. Long-term routine maintenance, such as painting, and periodic inspections would be necessary under this alternative.

Alternative C - Remove the Bascule Bridge for Relocation or Interpretation

Under this alternative, TVA would remove the bascule bridge and most or all of its associated mechanisms from the auxiliary lock. Removal of the bascule bridge would begin with the removal of all attached hydraulic and electrical lines. The counterweight pit would be filled to the bottom of the structural steel with gravel. This gravel would be dumped from the roadway surface of the bascule bridge. The steel grating that serves as the bridge's road surface would be removed to provide access to the structural steel of the bridge. Two of the four floorbeams that support the cast iron counterweights in the back span (see Figure 2) would be removed to provide access to remove the counterweights. Once the counterweights are removed, the main girders would be cut near the center of the back span, and that section would be lifted clear by a crane mounted on a work barge. A second cut of the main girders would be made at the trunnion, and that section would be lifted out by crane. The bridge would be detached at the trunnion, and the forward span would be lifted out by crane. The removed sections would be placed on an adjacent work barge where they could be cut into smaller sections for transport. Transport from the site would likely be via flatbed trailer.

Once the bascule bridge is removed, the counterweight pit, which receives the back span of the bridge when it is tilted upward, would be filled to the existing road grade, and safety barriers would be installed adjacent to the auxiliary lock to block vehicular access from the old road surface. No concrete demolition is anticipated during bridge removal. All other deconstruction debris, including paint chips from the bridge, would be contained, collected, stored, and prepared for disposal in accordance with applicable federal, state, and local laws and with TVA regulations.

One option under this alternative is to reassemble the bridge span and to use the reconstructed superstructure as a pedestrian bridge or overlook. This would require the construction of appropriate abutments and piers to support the bridge. Because of the size of the support girders, the characteristics of the bridge deck, and the height of the sides, the bridge is not especially suited as a pedestrian bridge that would afford views to foot traffic. Also, proper ramps and other features would be required to make the bridge compliant with the *Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities*. The most likely site for relocation is in the vicinity of the visitor overlook, at the southern end of Wilson Dam. This site is TVA-controlled property and is part of the Wilson Dam Reservation. TVA would erect interpretive signage describing the function and operation of the bascule bridge. Regular maintenance, such as painting, and inspections would be necessary.

Another option under Alternative C is to place selected bridge components on public display at one or more locations around Wilson Dam. These displays would be accompanied by appropriate interpretive signage that describes the bascule bridge and its function. Some amount of regular maintenance would be necessary to maintain the displays.

Because removal of the bascule bridge, under Alternative C, would cause an adverse effect to an NHL, the selection and implementation of this alternative would require the establishment of a Memorandum of Agreement (MOA) between TVA and the Alabama SHPO, specific to this alternative.

Alternative D - Remove and Dispose of the Bascule Bridge

Similar to Alternative C, Alternative D involves removal of the bascule bridge superstructure and much or all of the operating mechanism. Removal of the bascule bridge in sections would follow the process described previously under Alternative C. The three main sections of the bridge would be removed by a barge-mounted crane and placed on a work barge, where they would be cut into smaller sections for transport.

Purdue University has expressed an interest in acquiring certain portions of the bascule bridge structure for research purposes. Thus, under this alternative, TVA would donate portions of the main girder and floor beams to Purdue. Purdue would be responsible for removing these structural members from the site. Removal of these donated materials would likely be via a large flat-bed trailer.

Implementation of this alternative would constitute an adverse effect to an NHL. Because Alternative D was the most feasible alternative, TVA and the Alabama SHPO established an MOA, specific to this alternative, to satisfy TVA's responsibilities under Section 106 of the National Historic Preservation Act. The MOA identifies the operational stipulations for removing and disposing of the bascule bridge under Alternative D. The MOA is included as Appendix A.

Preferred Alternative

TVA's preferred alternative is Alternative D - Remove and Dispose of the Bascule Bridge.

Affected Environment and Anticipated Impacts

Site Description

Wilson Dam, which impounds a portion of the Tennessee River, was completed in 1925 and is over 100 feet tall and nearly 0.75 mile in length. The highway over the dam connects the cities of Florence and Muscle Shoals. Wilson Dam impounds Wilson Reservoir, which extends approximately 15.5 miles upstream to Wheeler Dam. On the downstream side of the dam, both the new lock and the auxiliary lock discharge into the Florence Canal.

The bascule bridge is original to Wilson Dam and is located over the auxiliary lock (see Figure 1) near the northern end of the dam. Adjacent TVA property is used for public recreation and for commercial purposes. The physical environmental conditions at Wilson Dam and the immediate area were described in the 2008 EA. Because those conditions have not changed, detailed descriptions of existing conditions are not reiterated here.

Impacts Evaluated

As documented in the 2008 EA, TVA determined that the following resources would not be affected by the construction of the proposed access bridge: threatened and endangered plants and terrestrial animals; terrestrial life; wetlands, prime farmland; noise; and recreation. Because the bascule bridge is located near the new access bridge, and because of the similarity of the nature of the two actions, TVA finds that the retirement of the bascule bridge, including its removal, would also not affect those resources.

Potential effects of retiring the bascule bridge were analyzed with respect to cultural resources, visual resources, navigation and dam operations, water quality, solid waste, land use, terrestrial and aquatic life, managed areas, and floodplains. Results of these analyses are described below.

Cultural Resources

Wilson Dam is listed on the NRHP and is an NHL, as designated by the U.S. Department of the Interior. Section 110 of the National Historic Preservation Act addresses federal agency responsibilities in actions affecting NHLs. The Area of Potential Effect (APE) for historic properties is provided as Figure 11 in the 2008 EA.

Adoption of Alternative A (No Action) or Alternative B (fix the bridge in an upright position) would have no effect on the Wilson Dam NHL, since the existing bascule bridge would remain in place and virtually intact. However, under Alternative B, the bascule bridge would be rendered inoperable. Alternatives C and D involve removal of the bascule bridge. As determined in the 2008 EA, removal of the bascule bridge would constitute an adverse effect on the Wilson Dam NHL. In accordance with Section 106 of the National Historic Preservation Act, TVA and the Alabama SHPO developed an MOA (see description of Alternative D above). Stipulations listed in the MOA call for TVA to document the bascule bridge by providing copies of construction drawings and historic photographs of the bridge to the University of North Alabama for curation, along with the removal and donation of certain portions of the bridge structure to Purdue University for research purposes. Removal and disposal of the bascule bridge, in accordance with the stipulations of the MOA, would adequately mitigate the effects of the proposed action to historic resources.

Visual Resources

In the lowered position, the bascule bridge is generally obscured from public view, both from the bank and from the roadway over Wilson Dam. However, recreational boaters in the immediate vicinity, and passengers on vessels passing through the lock, have views of the bridge. In the raised position, the bascule bridge is visible from the elevated roadway over Wilson Dam and is slightly more visible from upstream and downstream locations.

Because there would be no change in the physical characteristics or operation of the bascule bridge under the No Action Alternative, adoption of this alternative would not result in any visual changes in the vicinity of the bascule bridge.

Under Alternative B, the bascule bridge would be permanently affixed in the raised position and would be somewhat visible from upstream and downstream vantage points and from the roadway. A 1959 photograph of the bridge in its fully raised position is provided as Figure 3. Although the bridge would be in this position permanently, the visual changes under this alternative would not be a significant change in the current visual setting and character.

Under Alternatives C and D, the bascule bridge would be removed. Because the bridge is not generally visible from most local vantage points, the absence of the bridge would not likely be noticeable, and any changes in the visual character of the lock would be minor under either of these two alternatives. Under Alternative C, use of the bascule bridge as an overlook would constitute a minor beneficial effect in that it could provide additional opportunities to view Wilson Dam. Although the local visual setting of the overlook site would be altered by the presence of the relocated bridge, the general visual character of the area is not expected to be significantly altered under Alternative C.

Navigation and Dam Operations

Under the No Action Alternative, the bascule bridge would remain in place and would continue to be operated on an as-needed basis. Repairs to the bascule bridge's operating system would be necessary to ensure reliable operation, even in the short term. Failure of

the bridge to be raised properly during periods when the auxiliary lock is in use would effectively halt commercial traffic at Wilson Dam until the main lock could be returned to service. Under Alternative B, permanently fixing the bridge in its full upright position of 76 degrees would essentially prevent this situation. However, even if the bascule bridge were fixed in the full upright position, adequate clearance could pose a problem for unusually tall or large vessels or tows locking through the auxiliary lock. Although the failure of the bascule bridge's operating machinery and supporting structures under Alternative B is unlikely, such an event could jeopardize the safe operation of the lock, and could possibly become a hazard to the safe operation of the dam.



Figure 3. Wilson Bascule Bridge in Fully Raised Position, 1959

Historically, the average time required for barges to pass through the auxiliary lock has been considerably longer than that required to transit the main lock, due to the need to raise and lower the bascule bridge between tows and the slow operation of the bridge. Removal of the bascule bridge, under Alternative C or D, would effectively eliminate much of this delay; and, lock-through times for the auxiliary lock would be slightly reduced under either of these two alternatives, compared to current conditions at the auxiliary lock. Removal of the bascule bridge under Alternative C or D would be timed to avoid operational effects to the main lock. Thus, minor beneficial effects to navigation or dam operations are likely under Alternative C or D.

Water Quality

Spills from equipment are a potential pathway for surface water contamination under any of the alternatives. Implementation of Alternatives A and B would require long-term, periodic maintenance of the bascule bridge structure and would likely require locating equipment at or near the bridge site, which is adjacent to surface waters. As stated in the 2008 EA, control measures would be implemented to prevent the discharge or loss of potential

pollutants to the reservoir and to contain and properly dispose of all wastes, accidental spills, surface runoff, and other potential contaminants.

Under Alternatives C and D, the back span of the bascule bridge, which is not located over water, would be cut into two sections and removed by crane. The front span, which spans the auxiliary lock, would be removed by crane and placed on a work barge, where it would be cut into sections. Protective screens or barriers would be placed around work areas to prevent foreign objects and debris from falling into adjacent surface waters.

Implementation of Alternative C would likely involve site preparation such as grading and other ground-disturbing activities at the bridge relocation site. Appropriate best management practices (BMPs) would be implemented to prevent soil erosion, sedimentation, and surface runoff from construction and site preparation for the relocated bridge. Because appropriate measures would be in place to prevent contamination of surface water, actions under any of the alternatives are not likely to affect surface water quality.

Solid Waste

Under Alternatives A and B, the bascule bridge would remain in place. Any solid waste generated under Alternative A or B would be associated with necessary repairs to the operating mechanism and with regular maintenance activities. Solid wastes generated under either of these two alternatives would be disposed of properly, and the amount of solid waste generated would be minor and insignificant.

Under Alternatives C and D, the bascule bridge would be removed. The entire bascule bridge, including the operating mechanism and counterweights, weighs approximately a million pounds (500 tons). Of this total, the structural steel weighs about 300 tons, and the cast iron counterweights weigh approximately 200 tons. Under Alternative C, the bridge span (but not the counterweights) would be relocated and reassembled. The cast iron counterweights would be recycled. Removal and disposal of the bridge under Alternative D would generate approximately 500 tons of solid waste. With the exception of structural bridge members provided to Purdue University for research purposes, virtually all of the ferrous metals (i.e., as much as 300 tons of steel bridge structure and the 200 tons of cast iron counterweights) would be recycled. Materials that could not be recycled would be disposed of at an appropriate approved landfill. Thus, the amount of solid waste requiring disposal in a landfill would be minor under either of these two alternatives. Bridge removal is expected to generate only a *de minimis* amount of hazardous waste or materials requiring special handling. Any such waste would be contained, collected, stored, and prepared for disposal in accordance with applicable federal, state, and local laws and with TVA procedures.

Land Use

Adoption of Alternative A, B or D would not involve the use of any land parcels, as all actions would occur on site at Wilson Dam. Relocation and reassembly of the bascule bridge under Alternative C would likely occur on the Wilson Dam Reservation. Relocation of the bridge to the Muscle Shoals Reservation is unlikely because the bridge would be physically removed from the immediate vicinity of its original location and because the long-term control of the Reservation by TVA is subject to change. Because the Wilson Dam Reservation is public land, no significant changes in land use are anticipated under Alternative C.

Terrestrial and Aquatic Life

Actions under Alternatives A, B, and D would be restricted to the immediate area of the auxiliary lock. Thus, there would be no potential effects to terrestrial plants and animals from actions performed under these alternatives. Relocation of the bascule bridge under Alternative C would involve a small amount of land (less than five acres). Bridge relocation to the Wilson Dam overlook area would not adversely affect terrestrial wildlife or plants, as this area currently provides minimal habitat. No federally listed or state-listed threatened or endangered terrestrial plants or animals are known to occur in the vicinity of the overlook. Thus, there would be no effects to listed terrestrial species under any of the alternatives. Likewise, no actions under any of the alternatives are expected to facilitate the establishment or spread of invasive exotic species.

As stated in the 2008 EA, eighteen federally listed aquatic animals and three state-listed mussels are known to occur within ten miles of Wilson Dam (see Attachment C in the 2008 EA). The tailwater below Wilson Dam is designated by the U.S. Fish and Wildlife Service as a nonessential experimental population for thirteen federally listed mussels and one federally listed snail. Because spill prevention measures and appropriate BMPs would be implemented, no potential effects to water quality and local aquatic life, including threatened and endangered aquatic species, are expected under any of the alternatives.

Managed Areas

As documented in the 2008 EA, the Wilson Dam Tailwater Restricted Mussel Harvest Area extends from Wilson Dam downstream to Seven Mile Island. However, it does not extend into the Florence Canal and the area immediately downstream of the auxiliary lock. With the implementation of appropriate measures to protect water quality, actions to retire the bascule bridge under any of the action alternatives would have a minor and insignificant effect on this managed area. Current operation of the bascule bridge does not adversely affect the Restricted Mussel Harvest Area, and implementation of the No Action Alternative is not expected to cause any additional effects to this managed area.

Veteran's Memorial Park is located near the north end of Wilson Dam. The 2008 EA concluded that low levels of noise from bridge construction could temporarily affect park users; but, that these impacts would be insignificant because this type of noise is typical of the lock area. Noise associated with the retirement of the bascule bridge, including removal of the structure under Alternatives C and D, would likely result in similar effects. Continued operation of the bridge under the No Action Alternative would not generate additional noise above existing levels. Thus, no significant adverse effects to the use of or opportunities at Veteran's Memorial Park are anticipated under any of the alternatives.

Floodplains

TVA is subject to the requirements of Executive Order 11988 (Floodplain Management). The 100-year flood elevation upstream of Wilson Dam is 508.0 feet mean sea level. The Wilson Dam Overlook is well above the 100-year floodplain. Therefore, relocation of the bascule bridge to the overlook, under Alternative C, would not adversely floodplain values or functions. Under all of the action alternatives, the primary lift crane would be located on a work barge. However, some additional equipment (e.g., portable generators and maintenance equipment) necessary under any of the alternatives could be placed along the sides of the auxiliary lock, possibly within the 100-year floodplain. Because this equipment would be mobile and temporarily located onsite, no adverse effects to floodplains are anticipated under any of the alternatives.

Cumulative Impacts

Although Wilson Dam is a Natural Historic Landmark, it has undergone necessary changes and updates that have slightly altered its appearance. Implementing any of the action alternatives would cause a minor, insignificant cumulative alteration of the visual and historic character of the dam. No cumulative effects to other environmental resources are anticipated under any of the alternatives.

Mitigation Measures

The standard environmental protection procedures described in the Wilson Dam Bascule Bridge Replacement EA (TVA 2008) would remain in effect. These measures include: utilization of appropriate BMPs to minimize potential effects to aquatic life; implementation of control measures, including the installation of screens or barriers, to prevent the discharge or loss of potential pollutants or debris to the reservoir and to contain accidental spills, surface runoff, or other potential contaminants; and proper disposal of all wastes.

In accordance with the stipulations stated in the MOA between TVA and the Alabama SHPO, effective as of April 17, 2012, TVA would implement the following non-routine measures to reduce the potential for adverse environmental effects in removing and disposing of the bascule bridge.

1. **DOCUMENTATION OF THE BASCULE BRIDGE AT TVA'S WILSON DAM**
TVA shall provide copies of the original design/construction drawings of the Wilson Bascule Bridge and operating mechanism, in addition to historic and current photographs of the bascule bridge and operating mechanism. TVA shall provide one (1) hard copy and one (1) archival grade CD/DVD of the documentation to the University of North Alabama Special Collections department for curation. TVA shall complete the tasks associated with Stipulation 1 prior to the removal of the bascule bridge.
2. **RETENTION OF PORTIONS OF THE BASCULE BRIDGE GIRDER AND BEAM MEMBERS FOR RESEARCH**
TVA shall retain one (1) 20'-30' section of the main girder and two (2) full sections of floor beams for donation to Purdue University for the purpose of research on the failure mechanisms of built up girder (beam) members. TVA shall complete the tasks associated with Stipulation 2 prior to the disposal of materials from the bascule bridge removal.
3. **CHANGES IN PROJECT SCOPE**
Should TVA change the project scope subsequent to the execution of this MOA, TVA, in consultation with the Alabama SHPO, will assess the APE and revise if applicable, identify and evaluate any new historic properties within that revised APE (or properties not otherwise addressed under this MOA), and further consult with Alabama SHPO to assess project related effects to any historic properties determined eligible for listing in the NRHP and to resolve any adverse effect.

TVA Preparers

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Agencies and Others Consulted

Alabama Historical Commission, Montgomery, Alabama

References

Tennessee Valley Authority. 2003. *River Heritage Hotel, Wilson Dam Reservation in Lauderdale County, Alabama* Environmental Assessment, Knoxville, Tennessee. Available online at: <<http://www.tva.gov/environment/reports/shoals/fonsi.htm>>

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Tennessee Valley Authority. 2011. *Muscle Shoals Reservation Redevelopment, Colbert County, Alabama*. Environmental Impact Statement. Knoxville, Tennessee. Available online at: <http://www.tva.gov/environment/reports/muscle_shoals/index.htm>

Attachments

Attachment A - Memorandum of Agreement

Attachment A - Memorandum of Agreement

MEMORANDUM OF AGREEMENT

PURSUANT TO 36 CFR PART 800 BETWEEN THE TENNESSEE VALLEY AUTHORITY
AND THE ALABAMA STATE HISTORIC PRESERVATION OFFICER

FOR THE REMOVAL OF THE BASCULE BRIDGE AT TVA'S WILSON DAM, A NATIONAL
HISTORIC LANDMARK

LAUDERDALE COUNTY, ALABAMA

WHEREAS the Wilson Bascule Bridge was constructed ca. 1920 by the U.S. Army as part of Wilson Dam for the purpose of transporting employees, materials, and civilians across the Tennessee River and the original Wilson Lock; and

WHEREAS TVA assumed ownership of Wilson Dam and the bascule bridge in May 1933, with the signing of the TVA Act; and

WHEREAS TVA constructed a larger lock and raised the roadway above Wilson Dam in 1959, reducing river traffic through the original lock and removing civilian roadway traffic from the bascule bridge; and

WHEREAS TVA continued to use the bascule bridge as the primary means of employee/visitor travel to and from the Lock Operations Building and continued to operate the bascule bridge and the auxiliary lock during times of heavy river traffic or during maintenance outages on the newer lock; and

WHEREAS in 1966, Wilson Dam was nominated to the National Register of Historic Places as a National Historic Landmark (NHL); and

WHEREAS TVA, in 2007, initiated consultation with the Alabama State Historic Preservation Office (AL SHPO) and other consulting parties on the construction of a new fixed bridge over the lower auxiliary lock at Wilson Dam and the eventual disposition of the original bascule bridge (the undertaking); and

WHEREAS TVA, in consultation with the AL SHPO and other consulting parties, delineated the area of potential effects (APE), as that term is defined in 36 CFR § 800.16(d), for this undertaking to be the viewshed of the existing bascule bridge; and

WHEREAS TVA has documented the boundary of that APE on topographic maps attached to this MOA and made a part of it by reference as Appendix A; and

WHEREAS TVA constructed a new fixed bridge over the lower chamber of the original lock using the 1959 service bridge alignment and bridge abutment for the purposes of reducing safety risks and improving reliable transportation to and from the Lock Operations Building, in consultation with the AL SHPO; and

WHEREAS TVA retired the bascule bridge from service upon the opening of the new fixed bridge in 2010; and

WHEREAS TVA, in consultation with the AL SHPO explored options for the bascule leaf and/or portions of the operating machinery to include removal and interpretation or adaptive reuse nearby or fixing the bascule leaf in the upright position permanently; and

WHEREAS TVA determined through site feasibility and engineering/safety assessments of the proposed alternatives that relocation was unfeasible and that fixing the bascule leaf permanently in the upright position to be unsafe; and

WHEREAS TVA proposes to remove the bascule leaf and portions of the operating system and fill or encapsulate the trunnion pit; and

WHEREAS consistent with the documentation standards in 36 CFR § 800.11(e), TVA has provided to the AL SHPO and other consulting parties documentation of the adverse effect this undertaking may have on the aforementioned NHL; and

WHEREAS archaeological site identification and evaluation studies have been conducted and there are no known prehistoric archaeological sites eligible for listing in the National Register of Historic Places (NRHP) and no known Native American sacred sites or human remains within the APE;

NOW, THEREFORE, TVA and AL SHPO agree that the undertaking shall be implemented in accordance with the following stipulations to satisfy TVA's responsibilities under Section 106 of the *National Historic Preservation Act* (NHPA). TVA's Federal Preservation Officer, or the designee thereof, shall act for TVA in all matters concerning the administration of this Agreement.

STIPULATIONS

TVA shall ensure that the following stipulations are implemented:

1. DOCUMENTATION OF THE BASCULE BRIDGE AT TVA'S WILSON DAM

TVA shall provide copies of the original design/construction drawings of the Wilson Bascule Bridge and operating mechanism, in addition to historic and current photographs of the bascule bridge and operating mechanism. TVA shall provide one (1) hard copy and one (1) archival grade CD/DVD of the documentation to the University of North Alabama Special Collections department for curation. TVA shall complete the tasks associated with Stipulation 1 prior to the removal of the bascule bridge.

2. RETENTION OF PORTIONS OF THE BASCULE BRIDGE GIRDER AND BEAM MEMBERS FOR RESEARCH

TVA shall retain one (1) 20'-30' section of the main girder and two (2) full sections of floor beams for donation to Purdue University for the purpose of research on the failure mechanisms of built up girder (beam) members. TVA shall complete the tasks associated with Stipulation 2 prior to the disposal of materials from the bascule bridge removal.

Wilson Dam Bascule Bridge Removal

3. CHANGES IN PROJECT SCOPE

Should TVA change the project scope subsequent to the execution of this MOA, TVA, in consultation with the AL SHPO, will assess the APE and revise if applicable, identify and evaluate any new historic properties within that revised APE (or properties not otherwise addressed under this MOA), and further consult with AL SHPO to assess project related effects to any historic properties determined eligible for listing in the NRHP and to resolve any adverse effect.

4. ADMINISTRATIVE CONDITIONS

- a. If TVA has not implemented stipulations 1 through 4, in whole or in part, within ten (10) years from the date of this MOA's execution, this MOA shall be terminated. Upon termination of this MOA, TVA and the AL SHPO will resume consultation pursuant to 36 CFR §§ 800.3 through 800.7 to resolve any adverse effects upon historic properties resulting from the undertaking.
- b. The signatories of this MOA may agree to amend the terms of the MOA. Such amendment will take the form of an Amended MOA, and it shall be effective upon being signed by TVA and the AL SHPO. This MOA will be appended as an attachment to the Amended MOA.
- c. Should the AL SHPO object within thirty (30) days after receipt of any documents provided for review pursuant to this MOA, TVA shall consult with AL SHPO to resolve the objection.
- d. If signatories to this MOA object on the basis that the terms of this MOA cannot be carried out, or are not being carried out, the signatories shall consult to seek an amendment to the MOA that will resolve this objection. Signatories may terminate the MOA by giving written notice to TVA thirty (30) days prior to such termination. TVA shall either execute a new MOA pursuant to 36 CFR § 800.6(c) or request the comments of the Advisory Council on Historic Preservation pursuant to 36 CFR § 800.7(a).

The execution of this MOA by TVA and AL SHPO, and implementation of its terms, evidence that TVA has taken into account the effects of the undertaking on historic properties, and TVA has complied with its obligations under Section 106 of the *NHPA*.

SIGNATORIES:

TENNESSEE VALLEY AUTHORITY

By: *Anda Ray*

Date: *March 29, 2012*

Anda Ray, Senior Vice President

Wilson Dam Bascule Bridge Removal

THE ALABAMA STATE HISTORIC PRESERVATION OFFICER

By:  Date: 4/17/12

Frank White, Alabama State Historic Preservation Officer