

Document Type: EA-Administrative Record
Index Field: Environmental Assessment
Project Name: Watts Bar Reservoir Tract
WBR-82 Bank Stabilization
Project
Project Number: 2015-8

**WATTS BAR RESERVOIR TRACT WBR-82 (IRON HILL
ISLAND) BANK STABILIZATION PROJECT
ENVIRONMENTAL ASSESSMENT**
Rhea County, Tennessee

Prepared by:
TENNESSEE VALLEY AUTHORITY
Knoxville, Tennessee

March 2016

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Purpose and Need for Action

TVA is proposing to place rock riprap along on the shoreline of Iron Hill Island (Tract WBR-82) on Watts Bar Reservoir in order to address severe erosion and undercutting of the island's shoreline. Approximately 490 feet of shoreline would be stabilized with rock riprap.

TVA is responsible for the management of public shoreline on Watts Bar Reservoir and for the protection of shoreline and aquatic resources, while providing reasonable public access. The proposal is intended to minimize the destabilization and erosion of the shoreline and banks of the island and the resultant turbidity and sedimentation of reservoir waters. Erosion of the shoreline is increasing, primarily due to the increasing presence of boats producing higher wakes on the reservoir. The proposal supports and is consistent with TVA's mission of environmental stewardship, the objectives for water resource management in the 2011 Natural Resources Plan (NRP), and TVA's management goals set forth in TVA's Watts Bar Reservoir Land Management Plan (RLMP) in 2009.

Proposed Action

The proposed stabilization project would consist of placing rock riprap along approximately 490 feet of the shoreline of Iron Hill Island, which is located on Watts Bar Reservoir, Tennessee River mile 539 (right bank), in Rhea County, Tennessee. Delivery and placement of the riprap would be by barge, see the attached project location map (Attachment 1). Most of the 490 feet of shoreline is approximately 5 feet high; the tallest portion of the bank is at the point of the island and is approximately 30 feet high. The banks of the island are covered with limited grass, forbs, and brush vegetation. See the attached plans (Attachment 2) and photos (Attachment 3). Photographs of the area below the shoreline depict nearly vertical cutbanks ranging from 5 to 30 feet in height and photographs of above the shoreline depict a moderate to steep hillside slope.

Rock riprap of sufficient size (generally 15 to 20 inches in diameter) to prevent washout would be placed on the shoreline such that the bottom of the riprap would be 2 feet below and the top would be 3 feet above the normal summer operating level (741 feet mean sea level). Where needed, the bank would be graded to produce a gentler slope. A filter fabric would be laid under the entire length of riprap and anchored to the ground; anchors would be placed slightly above the riprap on the bank. See the attached project design drawings (Attachment 2) for more details. In the future, the riprap installation may periodically require routine, minor maintenance (i.e., the addition of rock riprap at locations where sloughing has occurred). TVA proposes to conduct the work in the spring of 2016 and estimates that the work would be completed in less than one month.

Riprap is considered fill material and is therefore subject to Sections 401 and 404 of the Clean Water Act (CWA). Before implementing the project, TVA must obtain an Aquatic Resource Alteration Permit from the State of Tennessee, Department of Environment and Conservation (TDEC), under Section 401 of the Clean Water Act. TVA must also gain approval for the project from the U.S. Department of Army, Army Corps of Engineers (USACE), under Section 404. This project qualifies for USACE's Nationwide Permit for Bank Stabilization (NWP-13). Such approval is required when the waters of the United States (U.S.) could be altered by a project.

TVA is also considering taking no action (i.e., not placing riprap along the Iron Hill Island to stabilize the streamline erosion issues). Taking no action would not address these

resource condition issues nor would it help TVA achieve its goals and objectives for managing the public shoreline. Taking no action is included in this analysis to provide a baseline for comparison of project impacts and benefits. TVA also considered other stabilization methods (e.g. vegetation and bioengineering), but dismissed them from further consideration because the success of those methods in addressing critical erosion of such high banks is limited.

Environmental Impacts

TVA has reviewed the proposed project and documented potential environmental impacts related to the project in the attached categorical exclusion checklist (Checklist, Attachment 4). The Checklist identifies the resources present in the project area and documents TVA's determination that the proposal would not significantly affect these resources.

As documented in the Checklist, the proposal would have no effect to endangered, threatened, or special status plant, aquatic, or wildlife species. TVA conducted a review of its Natural Heritage Database and found that no species were documented at or within at least one mile of the project location. The proposed bank stabilization would require the removal of trees. However, according to a review of the site photographs, no suitable habitat for the endangered Indiana bat (*Myotis sodalis*) or northern long-eared bat (*Myotis septentrionalis*) is located within the project area. Therefore, there would be no adverse impacts to federally listed species. There is one bald eagle nest located in the vicinity of the project area. However, the proposed action would be at a distance greater than 660 feet from the bald eagle nest. In addition, according to the database, no sensitive aquatic or terrestrial wildlife habitats occur adjacent to or within the project area.

A review of the National Register of Historic Places and the Tennessee Historical Commission viewer indicated that no historic properties exist within the project area or within its viewshed. In 2000, TVA performed an archaeological survey of the project area (Ahlman et al 2000). The exposed shoreline was subjected to a walkover survey and no cultural deposits or artifacts were identified. Photographs of the area below the shoreline depict nearly vertical cutbanks ranging from 5-30 feet in height and photographs of above the shoreline depict a moderate to steep hillside slope. Given the survey results, terrain characteristics and absence of the properties listed on the National Register of Historic Places and the Tennessee Historical Commission viewer, TVA find these factors provide a reliable basis for concluding that the project area or its viewshed contains no historic properties. The proposed action would have no effect to historic properties.

A review of the National Wetland Inventory database indicates that there are no wetlands at the location and there are no expected impacts to water flow or the river channel. The parcel is not located within or adjacent to a wildlife management, park, scenic, or heritage area. Because there are few riprap installations in this area of the reservoir, the riprap around Iron Hill Island may noticeably contrast with the natural appearance of shorelines within view of the island. Such visual impacts would be minor and would lessen over time as the riprap weathers.

The 100-year floodplain may be affected, although the stabilization structure falls under the guidelines of TVA's class review of repetitive actions within the 100-year floodplain. Accordingly, there is no practicable alternative that would avoid siting riprap in the floodplain. Navigation of the river system would not be impacted by the project. During construction, some soil erosion may occur or dredged or fill materials may be discharged and minor and temporary impacts may occur to riparian vegetation along the shoreline as

the riprap is placed. However, TVA would implement standard measures and apply best management practices in implementing the project in order to minimize or mitigate potential impacts of the project. While some erosion may occur during construction, the primary beneficial effect of the project will be the long-term reduction in erosion of the island's shoreline and in sloughing of its banks. Riprap along the island's shoreline may affect accessibility to the island by boaters as some may be unwilling to approach riprap. However, in most places on the island, there will be additional vertical-exposed shoreline that will provide access to the island for boaters without requiring them to traverse much riprap.

If TVA does not take action, the shoreline of Iron Hill Island would continue eroding and the undercutting and sloughing of banks would likely worsen. Erosion of the shoreline would continue to increase water turbidity and banks that are currently vertical or near vertical may be heightened by continued erosion. As portions of the bank slough into the reservoir, some vegetation would also become unstable and fall on to the shoreline. The portions of the shoreline that are more gently sloped may become vertical over time, with greater undercutting of the bank. Continued erosion and degrading conditions of the shoreline (e.g., an increase of vertical banks) is expected to make access to the island more difficult for recreationists, as it likely that shoreline currently used as access points become destabilized over time.

The proposal is limited in scope and designed to improve degraded conditions along shoreline in this area of Watts Bar Reservoir. The potential adverse impacts of the project, when added to adverse impacts from other activities within the immediate area, would be insignificant. TVA regularly considers shoreline stabilization projects in Watts Bar reservoir. TVA also regularly considers proposals by property owners on the reservoir for minor structures or docks which may include the installation of riprap to stabilize the shoreline along the property. Cumulatively, these stabilization projects would change the character of small portions of the reservoir's shoreline but would have beneficial overall impacts – though very diffuse in reach – because of decreased erosion and water turbidity and improved recreational access. The cumulative impacts associated with these stabilization projects have also been described in the environmental review of the NRP and RLMP.

Agencies and Persons Consulted

Authorization to begin work is dependent on TVA obtaining the necessary permits. Because this project involves alteration of waters of the U.S., TVA requires a permit from TDEC under Section 401 of the Clean Water Act before implementing the proposal. TVA would obtain USACE's NWP-13. TVA will secure a permit from TDEC and will notify USACE at least two weeks prior to start of work so that USACE can issue a Notice to Navigation Interests.

TVA Preparers

Freddie Bennett – Land Use and Watershed Specialist
Kelvin Young – Heritage Review and Watershed Specialist
Marianne Shuler – Archaeologist
Nicole Berger – Navigation Review
Loretta McNamee – Contract NEPA Specialist

References

Ahlman, T., S. Frankenberg, N. Herrmann. 2000. *Archaeological Reconnaissance Survey of Tennessee Valley Authority Lands on the Watts Bar Reservoir*. Knoxville: University of Tennessee, Department of Anthropology.

Attachments

Attachment 1 – Project Location Maps

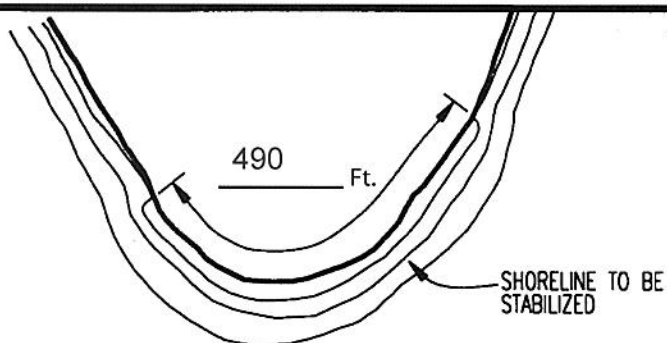
Attachment 2 – Proposed Project Plans

Attachment 3 – Site Photographs

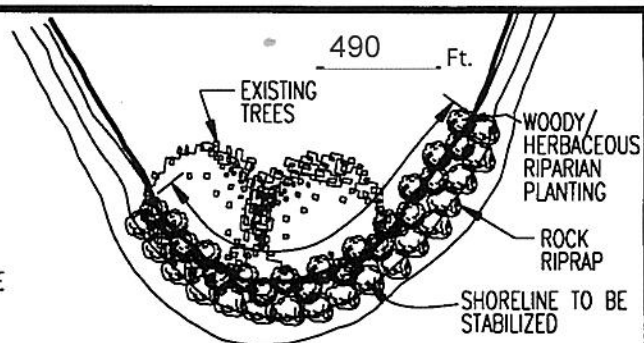
Attachment 4 – Categorical Exclusion Checklist 33118

Attachment 1 – Project Location Maps

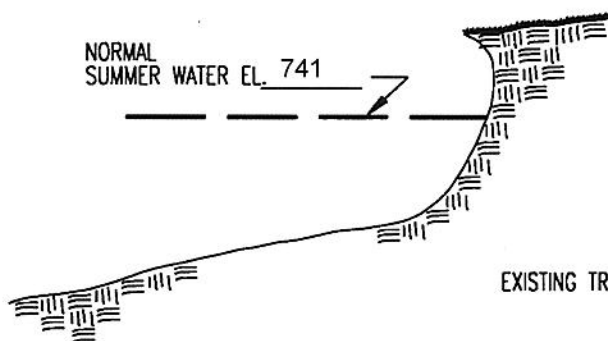
Attachment 2 – Proposed Project Plans



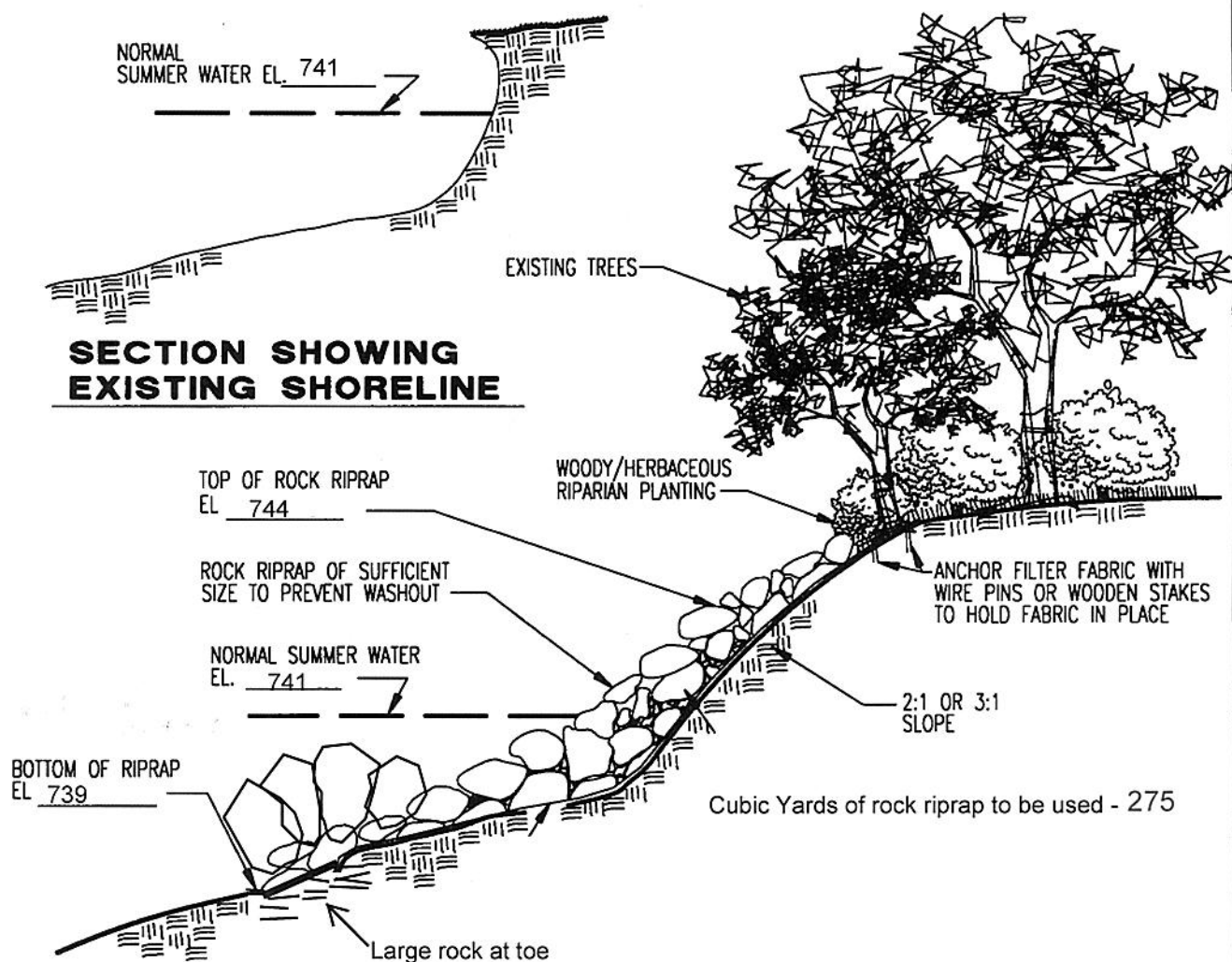
**PLAN SHOWING
EXISTING SHORELINE**



**PLAN SHOWING
STABILIZED SHORELINE**



**SECTION SHOWING
EXISTING SHORELINE**



SECTION SHOWING STABILIZED SHORELINE



ROCK RIPRAP w/ OPTIONAL VEGETATION

PROJECT LOCATION INFORMATION:

STREAM NAME TN River SUBDIVISION NAME N/A
RESERVOIR NAME Watts Bar LOT NUMBER Tract No. WBR-82
MILE MARKER 539R MAP NO. Topo 124NW: DStage 15D

(APPLICANT'S NAME)

TENNESSEE VALLEY AUTHORITY

Attachment 3 – Site Photographs





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Attachment 4 – Categorical Exclusion Checklist 33118

Categorical Exclusion Checklist for Proposed TVA Actions

Categorical Exclusion Number Claimed	Organization ID Number RLR273348	Tracking Number <i>(NEPA Administration Use Only)</i> 33118
Form Preparer Freddie C Bennett	Project Initiator/Manager Freddie C Bennett	Business Unit P&NR - Reservoir Property & Resource Mgmt
Project Title WATTS BAR RESERVOIR - IRON HILL ISLAND BANK STABILIZATIOLN PROJECT		Hydrologic Unit Code
Description of Proposed Action <i>(Include Anticipated Dates of Implementation)</i> For Proposed Action See Attachments and References		<input type="checkbox"/> Continued on Page 3 <i>(if more than one line)</i>
Initiating TVA Facility or Office		TVA Business Units Involved in Project
Location <i>(City, County, State)</i> For Project Location see Attachments and References		

Parts 1 through 4 verify that there are no extraordinary circumstances associated with this action:

Part 1. Project Characteristics

Is there evidence that the proposed action...	No	Yes	Commitment	Information Source for Insignificance
1.Is major in scope?	X			Bennett, Freddie C. 08/07/2015
2.Is part of a larger project proposal involving other TVA actions or other federal agencies?	X			Bennett, Freddie C. 08/07/2015
* 3.Involves non-routine mitigation to avoid adverse impacts ?	X		No	Bennett, Freddie C. 08/07/2015
4.Is opposed by another federal, state, or local government agency?	X			Bennett, Freddie C. 08/07/2015
* 5.Has environmental effects which are controversial?	X			Bennett, Freddie C. 08/07/2015
* 6.Is one of many actions that will affect the same resources?	X			Bennett, Freddie C. 08/07/2015
7.Involves more than minor amount of land?	X			Bennett, Freddie C. 08/07/2015

*If "yes" is marked for any of the above boxes, consult with NEPA Administration on the suitability of this project for a categorical exclusion.

Part 2. Natural and Cultural Features Affected

Would the proposed action...	No	Yes	Permit	Commitment	Information Source for Insignificance
1.Potentially affect endangered, threatened, or special status species?	X		No	No	For comments see attachments
2.Potentially affect historic structures, historic sites, Native American religious or cultural properties, or archaeological sites?		X	No	No	For comments see attachments
3.Potentially take prime or unique farmland out of production?	X		No	No	Bennett, Freddie C. 08/07/2015
4.Potentially affect Wild and Scenic Rivers or their tributaries?	X		No	No	Bennett, Freddie C. 08/07/2015
5.Potentially affect a stream on the Nationwide Rivers Inventory?	X		No	No	Bennett, Freddie C. 08/07/2015
6.Potentially affect wetlands?	X		No	No	For comments see attachments
7.Potentially affect water flow, stream banks or stream channels?	X		No	No	For comments see attachments
8.Potentially affect the 100-year floodplain?		X	No	No	For comments see attachments
9.Potentially affect ecologically critical areas, federal, state, or local park lands, national or state forests, wilderness areas, scenic areas, wildlife management areas, recreational areas, greenways, or trails?	X		No	No	For comments see attachments
10.Contribute to the spread of exotic or invasive species?	X		No	No	For comments see attachments
11.Potentially affect migratory bird populations?	X		No	No	For comments see attachments
12.Involve water withdrawal of a magnitude that may affect aquatic life or involve interbasin transfer of water?	X		No	No	Bennett, Freddie C. 08/24/2015
13.Potentially affect surface water?	X		No	No	Bennett, Freddie C. 08/24/2015
14.Potentially affect drinking water supply?	X		No	No	Bennett, Freddie C. 08/24/2015
15.Potentially affect groundwater?	X		No	No	Bennett, Freddie C. 08/24/2015
16.Potentially affect unique or important terrestrial habitat?	X		No	No	For comments see attachments
17.Potentially affect unique or important aquatic habitat?	X		No	No	For comments see attachments

Part 3. Potential Pollutant Generation

Would the proposed action potentially (including accidental or unplanned)...	No	Yes	Permit	Commitment	Information Source for Insignificance
1.Release air pollutants?	X		No	No	Bennett, Freddie C. 08/24/2015
2.Generate water pollutants?	X		No	No	Bennett, Freddie C. 08/24/2015
3.Generate wastewater streams?	X		No	No	Bennett, Freddie C. 08/24/2015
4.Cause soil erosion?		X	No	No	For comments see attachments
5.Discharge dredged or fill materials?		X	Yes	No	For comments see attachments
6.Generate large amounts of solid waste or waste not ordinarily generated?	X		No	No	Bennett, Freddie C. 08/24/2015
7.Generate or release hazardous waste (RCRA)?	X		No	No	Bennett, Freddie C. 02/04/2016
8.Generate or release universal or special waste, or used oil?	X		No	No	Bennett, Freddie C. 08/24/2015
9.Generate or release toxic substances (CERCLA, TSCA)?	X		No	No	Bennett, Freddie C. 08/24/2015
10.Involve materials such as PCBs, solvents, asbestos, sandblasting material, mercury, lead, or paints?	X		No	No	Bennett, Freddie C. 08/24/2015
11.Involve disturbance of pre-existing contamination?	X		No	No	Bennett, Freddie C. 08/24/2015
12.Generate noise levels with off-site impacts?	X		No	No	Bennett, Freddie C. 08/24/2015
13.Generate odor with off-site impacts?	X		No	No	Bennett, Freddie C. 08/24/2015
14.Produce light which causes disturbance?	X		No	No	Bennett, Freddie C. 08/24/2015
15.Release of radioactive materials?	X		No	No	Bennett, Freddie C. 08/24/2015
16.Involve underground or above-ground storage tanks or bulk storage?	X		No	No	Bennett, Freddie C. 08/24/2015
17.Involve materials that require special handling?	X		No	No	Bennett, Freddie C. 08/24/2015

Part 4. Social and Economic Effects

Would the proposed action...	No	Yes	Permit	Commitment	Information Source for Insignificance
1.Potentially cause public health effects?	X			No	Bennett, Freddie C. 08/24/2015
2.Increase the potential for accidents affecting the public?	X			No	Bennett, Freddie C. 08/24/2015
3.Cause the displacement or relocation of businesses, residences, cemeteries, or farms?	X			No	Bennett, Freddie C. 08/24/2015
4.Contrast with existing land use, or potentially affect resources described as unique or significant in a federal, state, or local plan?	X			No	Bennett, Freddie C. 08/24/2015
5.Disproportionately affect minority or low-income populations?	X			No	Bennett, Freddie C. 08/24/2015
6.Involve genetically engineered organisms or materials?	X			No	Bennett, Freddie C. 08/24/2015
7.Produce visual contrast or visual discord?	X			No	Bennett, Freddie C. 08/24/2015
8.Potentially interfere with recreational or educational uses?	X			No	Bennett, Freddie C. 08/24/2015
9.Potentially interfere with river or other navigation?		X	No	No	For comments see attachments
10.Potentially generate highway or railroad traffic problems?	X			No	Bennett, Freddie C. 08/24/2015

Part 5. Other Environmental Compliance/Reporting Issues

Would the proposed action...	No	Yes	Commitment	Information Source for Insignificance
1.Release or otherwise use substances on the Toxic Release Inventory list?	X		No	Bennett, Freddie C. 08/24/2015
2.Involve a structure taller than 200 feet above ground level?	X		No	Bennett, Freddie C. 08/24/2015
3.Involve site-specific chemical traffic control?	X		No	Bennett, Freddie C. 08/24/2015
4.Require a site-specific emergency notification process?	X		No	Bennett, Freddie C. 08/24/2015
5.Cause a modification to an existing environmental permit or to existing equipment with an environmental permit or involve the installation of new equipment/systems that will require a permit?	X		No	Bennett, Freddie C. 08/24/2015
6.Potentially impact operation of the river system or require special water elevations or flow conditions??	X		No	Bennett, Freddie C. 08/24/2015
7.Involve construction of a new building or renovation of existing building (i.e., major changes to lighting, HVAC, and/or structural elements of building of 2000 sq. ft or more) on which TVA will pay/pays the utilities??	X		No	Bennett, Freddie C. 08/24/2015

Parts 1 through 4: If "yes" is checked, describe in the discussion section following this form why the effect is insignificant. Attach any conditions or commitments which will ensure insignificant impacts. Use of non-routine commitments to avoid significance is an indication that consultation with NEPA Administration is needed.

An ☒ EA or ☐ EIS Will be prepared.

Based upon my review of environmental impacts, the discussion attached, and/or consultations with NEPA Administration, I have determined that the above action does not have a significant impact on the quality of the human environment and that no extraordinary circumstances exist. Therefore, this proposal qualifies for a categorical exclusion under Section 5.2. _____ of TVA NEPA Procedures.

Project Initiator/Manager Freddie C Bennett	Date 02/04/2016
TVA Organization UNKN	E-mail fcbennet@tva.gov
	Telephone

Environmental Concurrence Reviewer

Erica Fritz Wadl 03/01/2016

Signature

Preparer Closure

Freddie C Bennett 03/03/16

Signature

Other Environmental Concurrence Signatures (as required by your organization)

Signature

Signature

Signature

Signature

Other Review Signatures (as required by your organization)

Attachments/References

Description of Proposed Action Continued from Page 1

TVA is proposing to stabilize 490 feet of eroding shoreline using rock riprap on Watts Bar Reservoir tract WBR-82 (Iron Hill Island). Filter fabric will be applied where practical and the rock will be placed by barge. Where there is deep under cutting of the bank, minor reshaping may occur. Also, some trees may have to be removed to accommodate placement of the rock. Controlling erosion enhances water quality by reducing sedimentation; it improves aesthetics and reduces property loss; and it has a positive impact on aquatic habitat since silt from erosion can cover the graveled bottom where fish spawn. Reviewers' comments will be used in preparation of an abbreviated EA as this proposed action does not qualify as a Categorical Exclusion under our current environmental procedures for permitting TVA projects.

Project Location Continued from Page 1

Rhea, TN, Watts Bar Reservoir - Tract WBR-82 (PT 254) - Tennessee River Mile 539R - D Stage Map - 15D - Topo Map 124NW (Ten Mile) - Rhea County, TN

CEC General Comment Listing

1. NO COMMENT TEXT
By: 26a Added Comment
2. NO COMMENT TEXT
By: 26a Added Comment
3. NO COMMENT TEXT
By: 26a Added Comment
4. NO COMMENT TEXT
By: 26a Added Comment
5. NO COMMENT TEXT
By: 26a Added Comment

CEC Comment Listing

Part 2 Comments

1. There are seven federally listed and four state listed aquatic species within 10 miles of the proposed actions. Most populations of state and federally listed aquatic species were extirpated after the completion of Watts Bar Dam. Habitat at the proposed site is not suitable for the various state and federally listed aquatic species known to occur in the vicinity. Due to the location of the proposed actions there will be no adverse effects on any protected aquatic species.

There is one federally listed terrestrial animal species found within 3 miles of the proposed actions. No listed terrestrial animal species occur in the vicinity of the proposed actions. The proposed actions will include the removal of trees. However, according to site check photos no suitable Myotis habitat is being removed. Therefore, there will be no adverse effects to Myotis species.

There are three state listed plant species found within 5 miles of the proposed actions. Due to the nature of action and location, the proposed actions will have no effect on any protected plant species.

By: Kelvin Young 09/04/2015
Files: Heritage_Species_List2.pdf 09/04/2015 100.78 Bytes
2. A review of the National Register of Historic Places and the Tennessee Historical Commission viewer indicated that no historic properties exist within the project area or within its watershed. In 2000, TVA performed an archaeological survey of the project area and the exposed shoreline was subjected to a walkover survey and no cultural deposits or artifacts were identified. Therefore, TVA finds the undertaking will have no effect to historic properties. (see attached "CEC33118_RLR273348_65465_section106.pdf" for supporting documentation).
By: Marianne M Shuler 02/29/2016
Files: CEC33118_RLR273348_65465_Section106.pdf 02/03/2016 1,606.23 Bytes
8. Cleared by criteria: In accordance with TVA's previous review of certain repetitive actions in the 100-year floodplain which was determined there were no practicable alternative that would avoid siting in the floodplain, the shoreline stabilization project is expected to have insignificant potential effects.

By: Freddie C Bennett

08/07/2015

9. There are three Managed areas (MABR) and two Heritage Sites (SBR) located in the vicinity. However, due to the nature and location of the proposed actions these sites will not be affected.
By: Kelvin Young 09/04/2015
10. The proposed actions will not contribute to the spread of exotic or invasive species.
By: Kelvin Young 09/04/2015
11. There is one bald eagle nest located in the vicinity. The proposed actions will occur at a distance greater than 660ft from this nest. There is also one wading bird colony located in the vicinity. The proposed actions will have no effect on migratory birds.
By: Kelvin Young 09/04/2015
16. There are no caves located in the vicinity. Due to the nature of the proposed actions there will be no effect on these sites.
By: Kelvin Young 09/04/2015
17. No unique aquatic habitat areas are known from the vicinity of the proposed actions.
By: Kelvin Young 09/04/2015
6. No wetlands occur at the site.
By: Kelvin Young 09/04/2015
7. There will be no effect on water flow or existing condition of the stream channel or stream bank.
By: Kelvin Young 09/04/2015
- Part 3 Comments
4. Rock riprap, placed on the stream banks, will be beneficial in controlling erosion which enhances water quality by reducing sedimentation. It has a positive impact on aquatic habitat since silt from erosion can cover the graveled bottom where fish spawn.
By: Freddie C Bennett 08/24/2015
5. The placement of rock riprap on the stream bank to control erosion will be installed in accordance with the issued permit General Standards and Conditions and is expected to have insignificant potential effects.
By: Freddie C Bennett 08/24/2015
- Part 4 Comments
9. This project will not pose any threat to navigation. We therefore, recommend approval of the requested permit contingent that the work would be conducted as proposed. Please see attached navigation comments.
By: Nicole Berger 02/29/2016
Files: 273348wbr - 26a - Tennessee River Mile 539.0 R-TVA - Watts Bar.doc 08/31/2015 25.50 Bytes

CEC Permit Listing

Part 3 Permits

5. Section 404 Permit (¿404 Clean Water Act)
By: Freddie C Bennett 08/24/2015

CEC Commitment Listing