

**BRIGHTWATER PARK AT WINDRIVER
DRAFT SUPPLEMENTAL
ENVIRONMENTAL ASSESSMENT
Loudon County, Tennessee**

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Symbols, Acronyms, and Abbreviations

BMP	Best Management Practice
CFR	Code of Federal Regulations
dB	decibel
dBA	A-weighted decibel
EIS	Environmental Impact Statement
EO	Executive Order
FRP	Flood Risk Profile
Ldn	Day-Night Sound Level
MSC	Maximum Shoreline Contour
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
TVA	Tennessee Valley Authority
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

CHAPTER 1 - PURPOSE OF AND NEED FOR ACTION

1.1 Introduction and Background

In 2002, Rarity Communities and LTR Properties submitted a request to the Tennessee Valley Authority (TVA) proposing to use TVA public land to construct Rarity Pointe Development for commercial recreation and residential purposes. In 2003, TVA completed an Environmental Impact Statement (EIS) to evaluate impacts associated with the proposed actions, which included use of a portion of the subject property for a small par-3 golf course. TVA decided to implement the preferred alternative, Alternative E, which included development of the par-3 golf course and the implementation of several mitigation measures, including a wetland mitigation plan. The mitigation plan location is within the project area and included the establishment of a permanent vegetated shoreline buffer zone around the peninsula and shoreline stabilization. The residential development was initiated, but some of the amenities, including the par-3 golf course, were not constructed.

In 2012, the entire development known as Rarity Pointe was purchased by WindRiver Management LLC (WindRiver). The WindRiver development is on Tellico Reservoir on the right descending bank of the Little Tennessee River at approximate Little Tennessee River mile 2.3 in Loudon County, Tennessee (Figure 1). WindRiver has requested 26a approval from TVA to construct shoreline stabilization, and a park along the shoreline abutting the backlying WindRiver development (previously named Rarity Pointe Development). Specifically, WindRiver proposes to develop a new recreation park, called Brightwater Park, located along the furthestmost point of the development (Figure 2). WindRiver is proposing to develop Brightwater Park and associated amenities (including an irrigation water intake) to provide recreation opportunities to residents of the development and the general public. The majority of the park would be located on TVA property which is below the 820 foot contour elevation.

The current request is an amendment to the original proposal which was reviewed in TVA's 2003 *Rarity Pointe Commercial Recreation and Residential Development on Tellico Reservoir Environmental Impact Statement* (EIS). TVA is preparing this supplemental Environmental Assessment (EA) to address the proposed revisions to the preferred alternative E in the 2003 EIS. The rest of the WindRiver development is outside the scope of the permit and is, therefore, also outside the scope of TVA's decision-making and thus outside the scope of this EA.

1.2 Purpose and Need

In order to construct Brightwater Park and install rip-rap stabilization at locations around the WindRiver development, TVA approval is needed for the proposed actions occurring on TVA property and/or within TVA's Section 26a jurisdiction. U.S. Army Corps of Engineers (USACE) approval is also needed under Section 10 of the Rivers and Harbors Act and section 404 of the Clean Water Act for the proposed stabilization and pier.

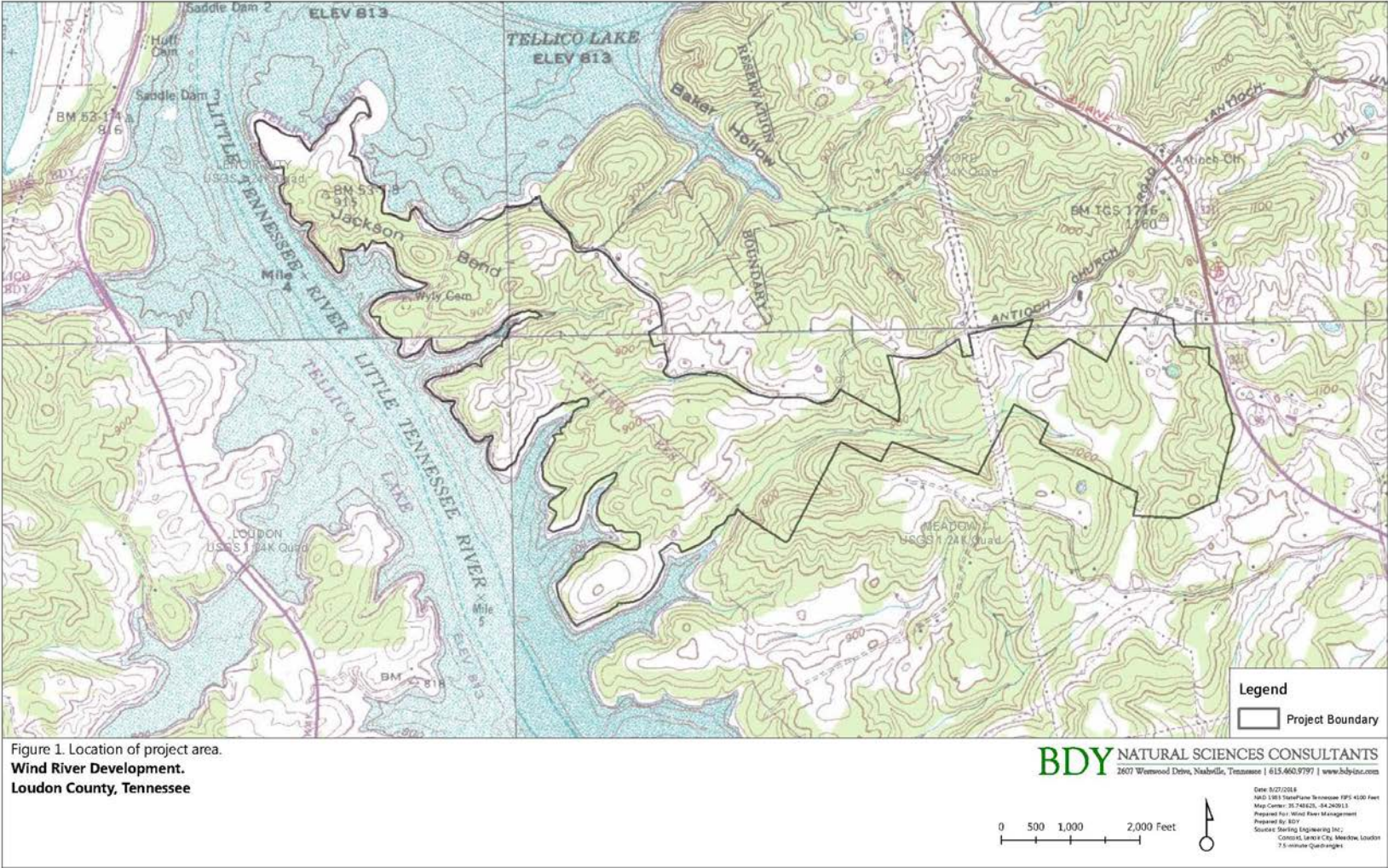


Figure 1. Location of project area.
Wind River Development.
Loudon County, Tennessee

Figure 1. WindRiver development on Tellico Reservoir

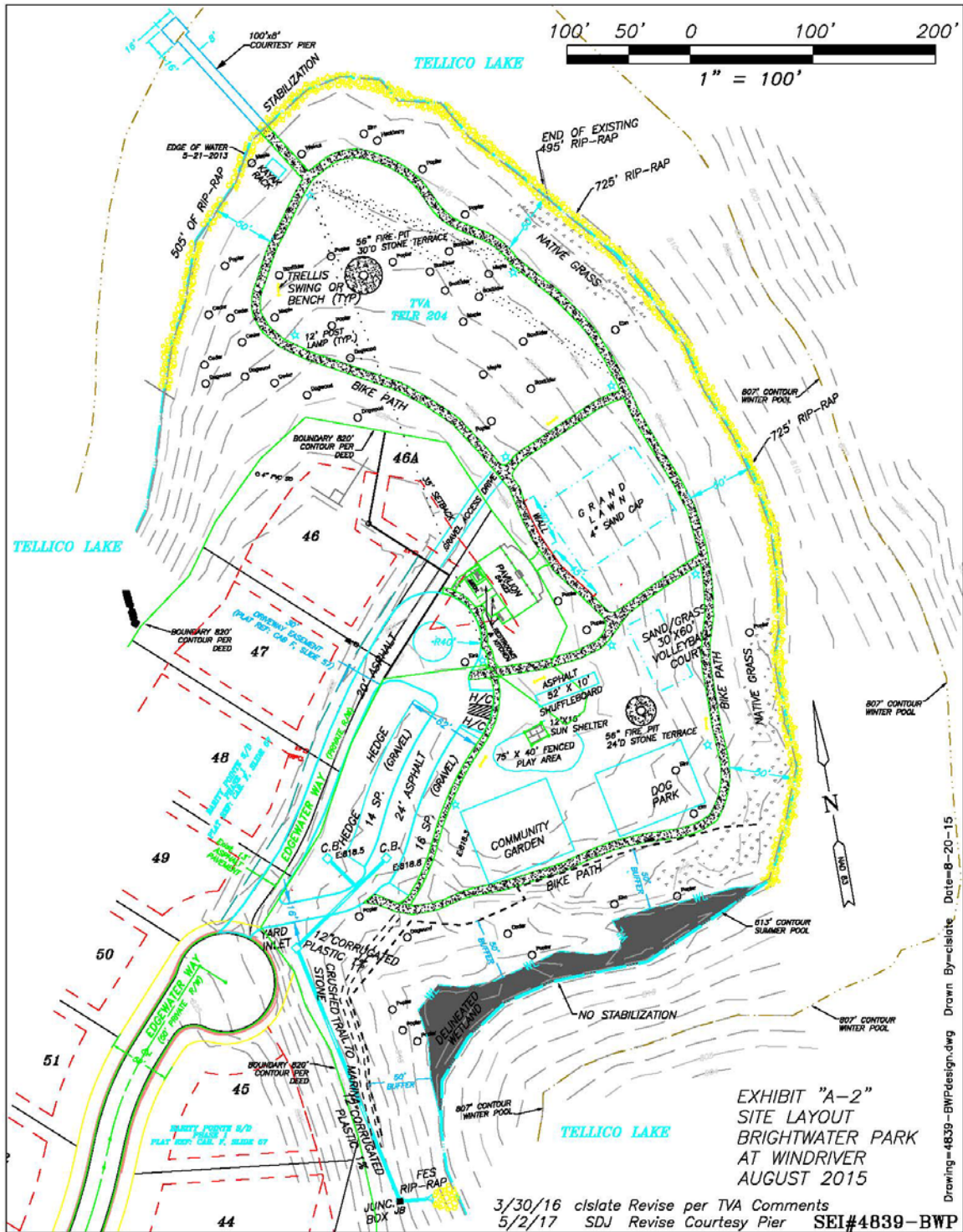


Figure 2. Brightwater Park at WindRiver development

1.3 Decision to be Made

Section 26a of the TVA Act of 1933, as amended, requires that TVA approval be obtained prior to the construction, operation, or maintenance of an obstruction affecting navigation, flood control, or public lands. Therefore, TVA's action would be to make a decision on the Section 26a approval request for the proposed park and associated amenities, shoreline stabilization, and water intakes and stormwater outfall.

The USACE and TVA have a Memorandum of Understanding that designates TVA as the Lead Federal Agency for conducting environmental reviews under the National Environmental Policy Act (NEPA) and other applicable federal laws and regulations for proposed work that may occur on property which is under TVA custody or control.

1.4 Scope of the Environmental Assessment

TVA has prepared this EA to comply with the National Environmental Policy Act (NEPA) and associated implementing regulations. TVA considered the possible environmental effects of the proposed action and determined that potential effects to the environmental resources listed below were relevant to the decision to be made; thus, the following environmental resources are addressed in detail in this Supplemental EA.

- Aesthetics
- Recreation
- Floodplains
- Wetlands
- Aquatic Ecology
- Terrestrial Ecology
- Water Quality
- Noise
- Historic and Archaeological Resources

1.5 Necessary Permits or Licenses

In addition to the necessary approvals from TVA, the following permits would be required for implementation of the proposed action:

- USACE Permit(s) pursuant to Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act for the discharge of fill material into the waters of the United States
- Aquatic Resource Alteration Permit/Water Quality Certification from the Tennessee Department of Environment and Conservation (TDEC) pursuant to Section 401(a)(1) of the Clean Water Act for proposed bank stabilization
- Coverage under Tennessee General National Pollutant Discharge Elimination System [NPDES] Permit for Discharges of Stormwater Associated with Construction Activities

1.6 Public Participation

The Brightwater Park at WindRiver Draft Supplemental EA was released for comment on May 31, 2017. The comment period closed on June 23, 2017. The Draft EA was posted on TVA's public NEPA review website and was transmitted to various agencies and organizations. A notice of availability including a request for comments on the Draft EA was also published in newspapers serving the Lenoir City, Tennessee area. Comments were accepted through June 23, 2017, via TVA's website, mail, and e-mail.

A total of nine comment letters, emails, and online comments were received from eight individuals and organizations. One individual provided more than one submission. The comment submissions were carefully reviewed and subdivided into 11 distinct comment statements. All letters and emails received during the comment period and TVA's responses are included in Appendix D.

CHAPTER 2 - ALTERNATIVES

This chapter presents descriptions of the proposed action and its alternatives, a brief comparison of their environmental effects, and TVA's preferred alternative.

2.1 Description of Alternatives

The following are summaries for each alternative proposed for this supplemental EA.

2.1.1 Alternative A – No Action Alternative

Under the No Action Alternative, TVA would not issue approval under Section 26a for the development of Brightwater Park and the associated amenities and facilities on approximately 5 acres of TVA land. The applicant would not be permitted to take any actions on TVA land below the 820 foot contour elevation except those previously authorized by TVA. The applicant would also not be permitted to install the proposed rip-rap stabilization. This alternative would not meet the needs of the applicant.

2.1.2 Alternative B – Section 26a Permit Approval

Under this alternative, TVA would issue a Section 26a permit for the development of Brightwater Park and the associated amenities and facilities on approximately 5 total acres of TVA land. With the permit, the applicant would construct Brightwater Park and associated amenities, and install the rip-rap stabilization as proposed.

Brightwater Park: The park includes a gravel and asphalt parking area, two fire pits, a retaining wall, an irrigation water intake and pump installed under one canoe/kayak floating dock (attached to a fixed pier), lighting, electrical service, a community garden, a shuffleboard court, two pavilions, a fenced play area, a dog park, a picnic shelter, sidewalk and walkways, picnic tables, playground structures, a 12" high-density polyethylene (HDPE) outfall with headwall and rip-rap apron, and signage. The current request is an amendment to the original proposal for a par 3 golf course which was reviewed within the 2003 EIS.

Stabilization: Installation of approximately 6,360 linear feet of rip-rap along steeper portions of the shoreline of Tellico Reservoir which are actively eroding resulting in undermining of banks and loss of riparian vegetation (Figure 3). The majority of the rip-rap would be installed by barge. For the section of proposed stabilization fronting Parcel XTELR-236, due to WindRiver having no land rights in that location, the permit if approved would be granted pursuant to a separate partnership agreement between TVA and WindRiver (Figure 3).



Figure 3. Proposed areas of rip-rap stabilization at the WindRiver development (yellow box identified Parcel XTELR-11 and green box identifies Parcel XTELR-236)

2.2 Comparison of Alternatives

The environmental impacts of the alternatives are summarized in Table 2-1. These summaries are derived from the information and analyses provided in Chapter 3.

Table 2-1. Summary and Comparison of Alternatives by Resource Area

Resource Area	Impacts from Alternatives*	
	A (No Action)	B (Proposed Action)
Aesthetics	None	Minor
Recreation	None	Minor/Beneficial
Floodplains	None	Minor
Wetlands	None	None
Aquatic Ecology	None	Temporary and Minor
Terrestrial Ecology	None	Minor
Water Quality	None	Temporary and Minor
Noise	None	Temporary and Minor
Historic and Archaeological Resources	None	None

* Impacts listed in this table are considered adverse unless otherwise noted.

2.3 Identification of Mitigation Measures

Section 4.15 of the 2003 EIS presents mitigation measures associated with the alternatives evaluated in that analysis, and specifically with Alternative E, the preferred alternative. Those mitigation measures continue to apply to any actions still ongoing with respect to that analysis. New mitigation measures and mitigation measures from the 2003 EIS relevant to the current proposal are described below.

2.3.1 Aesthetics

The 2003 EIS included the commitment that fully shielded light fixtures or those with internal low-glare optics (so no light is emitted from the fixture at angles above the horizon) will be used in the development. This commitment would continue to remain in place with respect to the actions at Brightwater Park.

2.3.2 Floodplains

To minimize potential impacts to floodplains, the following measures would be implemented. No flood-damageable facilities or equipment would be located within the Brightwater Park grand lawn. The lawn would be kept as a grassy area which would not be expected to incur damage during a flood. The switch on the irrigation pump would be located at or above an elevation of 820 feet.

The minimum amount of rip-rap would be used while still meeting project objectives. The following commitments would be included in the final Section 26a approval and land use permit:

26a Permit conditions:

- The Brightwater Park sun shelter will remain open to the elements and may never be enclosed in the future. Any flood-damageable equipment stored in the sun shelter will be elevated to or above elevation 820 feet.
- For purposes of shoreline bank stabilization, all portions will be constructed or placed, on average, no more than two feet from the existing shoreline at normal summer pool elevation.
- For all electrical services permitted, including the electrical plug, a disconnect must be located at or above elevation 818.1 that is accessible during flooding.
- The floor elevation of the fixed courtesy pier will be a minimum of 2.0 feet above the normal summer pool elevation 813.0.
- The applicant should contact the local government official(s) to ensure that this facility complies with all applicable local floodplain regulations.
- Any excess excavated material not needed to grade Edgewater Road and the parking lot will be disposed of and contained on land lying and being above the 816.7-foot contour. Every precaution will be taken to prevent the reentry of the spoil material into the reservoir.

2003 conditions that continue to apply to the current actions:

- Any future facilities or equipment subject to flood damage will be located at or above elevation of 820 feet.
- Any future development proposed within the limits of the 100-year floodplain, elevation 816.7 feet MSL, will be consistent with the requirements of EO 11988.
- All future development will be consistent with the requirements of TVA's Flood Control Storage Loss Guideline.

2.3.3 Wetlands

Commitments related to wetlands from the 2003 EIS remain in place. WindRiver will continue to mitigate impacts to wetlands (W4 and W5) in the vicinity of Brightwater Park by implementing the wetland mitigation plan in Appendix C of the Final EIS (2003).

2.3.4 Terrestrial Ecology

In the stabilization areas, the only trees that would be removed are those already undermined and actively falling into the adjacent water. No trees greater than 3 inches in diameter at breast height would be removed.

2.3.5 Water Quality and Aquatic Ecology

BMPs would be implemented to control erosion and sedimentation to prevent adverse impacts on water quality and related aquatic ecology. Actions would also comply with state and local permit conditions.

A general construction storm water permit would be needed if more than 1 acre is disturbed. This permit also requires the development and implementation of a Storm Water Pollution Prevention Plan.

Any portable toilets used onsite would be pumped out regularly, and the sewage would be transported by tanker truck to a publicly-owned wastewater treatment works that accepts pump out.

Equipment washing and dust control discharges would be handled in accordance with BMPs described in the Storm Water Pollution Prevention Plan for water-only cleaning.

Any pesticide/herbicide use as part of construction or maintenance activities would have to comply with the TDEC General Permit for Application of Pesticides, which also requires a pesticide discharge management plan. In areas requiring chemical treatment, only USEPA-registered and TVA approved herbicides would be used in accordance with label directions designed in part to restrict applications near receiving waters and to prevent unacceptable aquatic impacts.

Additionally, the following commitment from the 2003 EIS still applies as a mitigation measure: a vegetated buffer zone of at least 50 feet will be retained by TVA and maintained along the shoreline from the summer pool level in order to maintain continuity on the site, and reduce possible impacts to water quality and wetlands. If the reservoir falls below the elevation of the intake, the applicant will be responsible for finding another source of raw water.

2.3.6 Historic and Archaeological Resources

Cultural resource site 40LD29 would be avoided for all construction activities. TVA would place a commitment within the permit that states that in the vicinity of cultural resource site 40LD346, rip-rap would be placed from the beach with no equipment allowed on top of the site and no bank shaping would be done. In addition, TVA would require that an archaeological monitor be present while work is being conducted in that area.

2.4 Preferred Alternative

TVA's preferred alternative is Alternative B, Section 26a Permit Approval. Alternative A, the No Action Alternative is discussed and analyzed as an alternative to this preferred alternative. Environmental impacts associated with Alternative B would be minor and slightly greater than impacts associated with Alternative A. However, Alternative B is the preferred alternative because it best suits the applicant's purpose and need.

CHAPTER 3 - AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the affected environment (existing conditions of environmental resources in the project area) and the anticipated environmental consequences that would occur from adoption of the alternatives described in Chapter 2.

3.1 AESTHETICS

3.1.1 Affected Environment

Appendix A presents the results of the visual resources impact assessment TVA conducted in 2016. That assessment includes a review of the visual impacts evaluated in the 2003 EIS, an assessment of the visual changes in the area since completion of that EIS, and a description of the current aesthetic setting. The 18-hole golf course, pro shop, inn, roads, and portions of the marina originally proposed and evaluated in the 2003 EIS were constructed as part of the Rarity Pointe development. All of the grading and clearing for the future residences is complete. Homes are also now present on the property. The view of the site from across the reservoir includes some vegetated areas, some houses, and some cleared areas. In a few places rip-rap has been installed along the shoreline under separate actions. In other places the shoreline is in a natural state lined with vegetation or local soils.

3.1.2 Environmental Consequences

3.1.2.1 *Alternative A – No Action*

Under the No Action Alternative, TVA would not issue approval under Section 26a for the applicant's proposal. No new environmental changes would occur as a result of TVA's action. Changes to the site may continue in accordance with the 2003 EIS and site development activities; however, these changes would be unrelated to the proposal currently being considered by TVA. Therefore, there would be no new impacts to visual resources under the No Action Alternative.

3.1.2.2 *Alternative B – Proposed Action*

Visual impacts associated with the proposed Rarity Pointe development, including the higher density housing, were analyzed in the 2003 EIS and are summarized in Appendix A. The current analysis focuses on potential impacts associated with Brightwater Park and implementation of the new rip-rap shoreline stabilization proposed by WindRiver.

Brightwater Park Visual Impacts

The development of Brightwater Park includes the installation of one fixed pier and attached floating dock. Of the actions occurring in Brightwater Park, the dock would be the most visible to those looking toward the project area from across the reservoir. No residential areas are located directly across the reservoir from the area where the dock would be installed. To viewers on the

reservoir, the presence of one additional dock would be similar to views in other portions of the reservoir. The construction of the other Brightwater Park amenities and features would be of a lower profile than the construction of new homes evaluated in the 2003 EIS.

The 2003 EIS also included the commitment that fully shielded light fixtures or those with internal low-glare optics (so no light is emitted from the fixture at angles above the horizon) will be used in the development. This commitment would continue to remain in place with respect to the actions at Brightwater Park.

Therefore, impacts to visual resources associated with the construction and operation of Brightwater Park and its associated amenities are considered minor and in accordance with the impacts evaluated in the 2003 EIS.

Stabilization Impacts

In order to assess potential impacts to visual resources due to the installation of rip-rap stabilization, photos were taken at key observation points where the rip-rap could be visible. Key observation points were selected based on sensitive receptors (such as historic sites listed on or eligible for the National Register of Historic Places, recreation areas, residences, etc.), or areas with the highest potential for experiencing impacts associated with viewshed changes (such as roadways, hiking trails, etc.). The photographs were processed and visual simulations were produced of the rip-rap at the key observation points. Appendix A includes the photographs, renderings, and results of the visual resources analysis for all key observation points.

Rip-rap Installation/Construction Impacts

Negative visual impacts would occur during construction. Large, bright-colored, heavy equipment would not blend with the shoreline, vegetation, and rolling terrain that dominate the viewshed from the key observation points. These objects would create a visual clash and noticeable contrast between the construction and the surrounding area.

Most of the key observation points are located across the reservoir from the WindRiver site. These areas are approximately 2000 feet from the proposed shoreline stabilization areas. Due to the distance of the observer to the construction sites, the juxtaposition of heavy equipment and natural scenery would be lessened, as the equipment in the distance would not appear as large in comparison to the overall viewshed.

The potential negative impacts would be temporary in both time and location as installation of the rip-rap would occur at various locations around the development at different points in time. Therefore, visual impacts associated with construction would be temporary (a few days to a few weeks) for an observer at a single vantage point.

Indirect visual impacts could occur along roads in the vicinity due to trucks delivering supplies to the site. These indirect impacts would also be temporary in nature lasting only for the construction period.

Overall, negative impacts to visual resources during rip-rap placement are considered minor due to the temporary nature of the process and the distance of most potential observers from the physical construction areas.

Rip-rap Appearance Impacts

The proposed shoreline stabilization using the placement of rip-rap would permanently alter the visual aspects of the viewshed at the WindRiver development site. Nine key observation points were chosen based on WindRiver's initial rip-rap placement estimates. High resolution photographs were collected in November 2015, and simulations of the new rip-rap were superimposed on the existing conditions. Appendix A, Figure 1 shows the location of the nine key observation points. Figures 2 through 19 show the original photograph and the viewshed impacts simulation in pairs.

Overall, along the western shore of the WindRiver development site, the addition of new rip-rap would not cause significant negative visual impacts due to the presence of existing, similar rip-rap, the distance from which most observers would see the new rip-rap, and the size and coloring of the new rip-rap. Although some views would be slightly altered, it would not constitute a significant change to the scenery. Therefore, visual resource impacts are anticipated to be minor.

3.2 RECREATION

3.2.1 Affected Environment

The proposed Brightwater Park area is part of a large parcel being developed for commercial recreation purposes. The proposed park is located on Tellico Reservoir, a popular recreational spot that includes amenities such as boat ramps, day-use areas, fishing opportunities, and campgrounds around the reservoir. The proposed Brightwater Park, originally intended for development of a par 3 golf course, is currently undeveloped. However, some dispersed recreation activity such as wildlife observation, shoreline fishing, or temporary boat mooring may take place on the proposed park land and adjacent shoreline. The proposed park will be available to WindRiver residents and to the general public.

3.2.2 Environmental Consequences

3.2.2.1 Alternative A – No Action

Under the No Action Alternative, TVA would not issue approval under Section 26a for the applicant's proposal. No environmental changes would occur as a result of TVA's action. Changes to the site may continue in accordance with the 2003 EIS and site development activities; however, these changes would be unrelated to the proposal currently being considered by TVA. Additionally, some dispersed recreation activity such as wildlife observation, bank fishing, or boat fishing might occur on the property or adjacent shoreline. No impacts would be anticipated to other recreation areas occurring in and around Tellico Reservoir.

3.2.2.2 Alternative B – Proposed Action

Under the action alternative, the proposed Brightwater Park would accommodate a variety of outdoor recreational activities and would likely be more attractive to a wider range of water-oriented uses compared to the golf course originally proposed for this area in the 2003 EIS. The changes associated with the park would increase recreational opportunities for the public in the Tellico Reservoir area and thus would constitute a minor, beneficial impact. Installation of the rip-rap would not affect recreation activities.

3.3 FLOODPLAINS

3.3.1 Affected Environment

A floodplain is the relatively level land area along a stream or river that is subjected to periodic flooding. The area subject to a one-percent annual chance of flooding (100-year flood) in any given year is normally called the 100-year floodplain. It is necessary to evaluate development in the 100-year floodplain to ensure that the project is consistent with the requirements of Executive Order (EO) 11988.

The proposed Brightwater Park would be located between Tellico River miles 2.4 and 2.8, right descending bank, in Loudon County, Tennessee. At this location, the 100-year flood elevation would be 816.7 feet, and the TVA Flood Risk Profile (FRP) elevation would be 818.1 feet. The FRP is the elevation of the 500-year flood that has been adjusted for surcharge at the dam. Surcharge is the ability to raise the water level behind the dam above the top-of-gates elevation. Top-of-gates elevation at Fort Loudoun and Tellico dams is 815.0 feet. Elevations are referenced to National Geodetic Vertical Datum 1929.

3.3.2 Environmental Consequences

As a federal agency, TVA is subject to the requirements of EO 11988, Floodplain Management. The objective of EO 11988 is “to avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative” (Executive Order 11988, Floodplain Management). The EO is not intended to prohibit floodplain development in all cases, but rather to create a consistent government policy against such development under most circumstances. The EO requires that agencies avoid the 100-year floodplain unless there is no practicable alternative.

3.3.2.1 Alternative A – No Action

Under Alternative A, TVA would not issue the 26a Permit and therefore, there would be no changes to the existing conditions found within the local floodplains. Changes to the site may continue in accordance with the 2003 EIS and site development activities; however, these changes would be unrelated to the proposal currently being considered by TVA. No impacts to floodplains beyond those addressed in the 2003 EIS would occur.

3.3.2.2 *Alternative B – Proposed Action*

The Flood Control Storage Zone is situated between the winter pool elevation and the TVA Flood Risk Profile (FRP) elevation, and is the volume of space available to store water during storm events. The Power Storage Zone is situated between the January 1 operating guide and the June 1 operating guide elevations, and is the volume of space available to store water for use in power generation. The Flood Control Storage Zone at this location would be that space between elevations 807.0 and 818.1. The Power Storage Zone would be that space between elevations 807.0 and 813.0. About 0.1 acre-foot of material would be excavated between elevations 815 and 818 to slope the grand lawn seating area. About 0.1 acre-foot of material would be placed between elevations 817 and 819 to grade the driveway and parking lot proposed along Edgewater Way.

The following activities would be located on TVA land, but above the FRP elevation: portions of the road and parking area, portions of the sidewalk/walkway, sun shelter, community garden, shuffleboard court, and dog park. The sun shelter must remain open to the elements and may never be enclosed in the future. Any equipment stored in the sun shelter would be elevated to or above elevation 820 feet.

The following activities would be located on TVA land below the FRP and above the 100-year flood elevation: portions of the sidewalk/walkway, cut and fill (with a net cut of 0.2 acre-feet) for the parking and sloping of the terrain, one retaining wall, sand volleyball court, electrical plug, portions of the lawn seating area, one fire pit, and one trellis swing. The sidewalk/walkway, sand volleyball court, portions of the lawn seating area, one fire pit, and trellis swing present no flood risk concerns. The retaining wall would retain the sidewalk/walkway on the western side of the lawn seating area at grade, while allowing for grading of the lawn seating area. The retaining wall and sand volleyball court would be considered recreational uses that should result in no significant impacts to the floodplain or the flood storage capacity.

The following activities would be located on TVA land below the 100-year flood elevation: portions of the sidewalk/walkway, kayak rack, excavation, light poles, one fire pit, one floating dock attached to a fixed pier, portions of the lawn, intake for irrigation, irrigation pump, and 6,360 linear feet of rip-rap. Consistent with EO 11988, sidewalks/walkways, minor cuts and fills, light poles, the fixed pier/floating dock, water intakes, and rip-rap are considered to be repetitive actions within the 100-year floodplain that should result in only minor impacts. The fire pit and kayak rack would not sustain damage in a flood and would have a negligible impact on floodplains. The lawn seating area would be considered a recreational use of the floodplain and would present only minor impacts to floodplains, provided no flood-damageable facilities or equipment are located below elevation 820. The lawn would be kept as a grassy area which would not be expected to incur damage during a flood. The irrigation pump would be located within the 100-year floodplain of Tellico Reservoir. The pump is a water intake, and water intakes are repetitive actions within the 100-year floodplain. To minimize adverse impacts, an electrical cutoff for the pump would be located at or above elevation 818.1 feet that is accessible during flooding.

According to information supplied by the applicant, about 1.3 acre-feet of rip-rap would be placed within the Flood Control Storage Zone, and about 0.4 acre-feet placed within the Power Storage Zone. The large volume of rip-rap is necessary due to the linear extent of the rip-rap—6,360 feet. Adverse impacts would be minimized because the least amount of rip-rap would be used while still meeting project objectives. Therefore, the rip-rap would comply with the Flood Control Storage Loss Guideline. There would be a loss of 2.7 acre-feet of Power Storage.

To minimize adverse impacts to floodplains, the following commitments would be included in the final Section 26a approval, Revised Record of Decision, and land use permit:

26a Permit conditions:

- The sun shelter will remain open to the elements and never be enclosed in the future. Any flood-damageable equipment stored in the sun shelter will be elevated to or above elevation 820 feet.
- For purposes of shoreline bank stabilization, all portions will be constructed or placed, on average, no more than 2.0 feet from the existing shoreline at normal summer pool elevation.
- For all electrical services permitted, including the electrical plug, a disconnect must be located at or above elevation 818.1 that is accessible during flooding.
- The floor elevation of the fixed portion of the courtesy pier will be a minimum of 2.0 feet above the normal summer pool elevation 813.0.
- The applicant should contact the local government official(s) to ensure that this facility complies with all applicable local floodplain regulations.
- Any excess excavated material not needed to grade Edgewater Road and the parking lot will be disposed of and contained on land lying and being above the 816.7-foot contour. Every precaution will be taken to prevent the reentry of the spoil material into the reservoir.

2003 Land Use Permit that continue to apply to the current actions:

- Any future facilities or equipment subject to flood damage will be located at or above elevation of 820 feet.
- Any future development proposed within the limits of the 100-year floodplain, elevation 816.7 feet MSL, will be consistent with the requirements of EO 11988.
- All future development will be consistent with the requirements of TVA's Flood Control Storage Loss Guideline.
- TVA retains the right to flood this area and TVA will not be liable for damages resulting from flooding.

By adhering to the commitments listed above, the proposed construction of Brightwater Park and installation of the rip-rap stabilization would be consistent with EO 11988 and would have no significant impact on floodplains or flood storage capacity.

3.4 WETLANDS

3.4.1 Affected Environment

Wetland surveys were conducted throughout the proposed development as part of the 2003 EIS. Ten wetlands were originally identified in the assessment area (Figure 3.4-1). The total acreage of the originally assessed wetlands was approximately 1.31 acre. Table 3.4-1 presents details of the wetlands as originally identified. Seven scrub-shrub wetlands were identified on the reservoir shoreline (W4, W5, W6, W8) and at the back of small coves where wet weather conveyances (WWC) enter the reservoir (W1, W2, W3). Another scrub-shrub wetland (W7) is located on the southern end of a small island just off the tip of Jackson Bend. Two emergent wetlands (W9, W10), each less than one tenth acre in size, were located on the fringe of an abandoned pond and a livestock pond, respectively. Wetlands W1 through W8 were identified on the TVA shoreline below the Maximum Shoreline Contour (MSC) at 820 feet elevation.

Subsequent wetland surveys conducted in 2015 and 2016 found wetlands W1, W4, W9, and W10 have been impacted by construction and clearing activities. Analysis of aerial photography shows that these activities occurred during the period of time the WindRiver property was under previous ownership (prior to 2012). W1 had been cleared/bushhogged. A site visit in February 2017 indicated clearing and mowing of wetland vegetation has ceased, and W1 has regrown a large portion of scrub-shrub and emergent vegetation; construction of a check dam above the site (downslope of the pool facility) and an increase in hydrologic input has subsequently lead to expansion of the original wetland. W4 was cleared and rip-rapped and no wetland characteristics remain; no recovery of this area is predicted. W9 and W10 were abandoned farm ponds with shoreline wetland fringes; these areas were filled for the 18-hole golf course construction. While all of W10 has been filled and no wetland characteristics remain, there is evidence that a wetland has reestablished along a WWC near the site of W9. While the vegetation in this area is currently being bushhogged, it could revert to a healthy emergent/scrub-shrub wetland if vegetation were allowed to regrow.

Initial wetland surveys conducted in 2003 indicated intermittent streams were the hydrological connections for W1, W2, and W3. Refinements in the identification and characterization of such features by USACE and Tennessee Department of Environmental and Conservation (TDEC) led the TVA biologist to reclassify these features as WWCs during the 2016 assessment. Hydrology in these wetlands is primarily driven by reservoir water levels, with a minor degree of input associated with stormwater from the WWCs. In 2003, W9 and W10 were described as having some connection with WWCs; these areas were filled for the 18-hole golf course construction prior to 2012. As described above, 2017 field surveys indicated the presence of a WWC and associated wetland near the location of what was W9.



Figure 3.4-1. Wetlands at the WindRiver development

Table 3.4-1. Wetlands at the WindRiver Development based on 2003 EIS

Wetland ID	Type ¹	Approximate Area (acres)	Location	Land Ownership ²
W1	PSS1E	0.52	Back of reservoir cove	TVA (below MSC 820)
W2	PSS1E	0.19	Back of reservoir cove	TVA (below MSC 820)
W3	PSS1E	0.05	Back of reservoir cove	TVA (below MSC 820)
W4	PSS1E	0.05	Shoreline on northeast side of Jackson Bend	TVA (below MSC 820)
W5	PSS1E	0.01	Shoreline on northeast side of Jackson Bend	TVA (below MSC 820)
W6	PSS1C	0.05	Shoreline on northeast side of Jackson Bend	TVA (below MSC 820)
W7	PSS1E	0.02	South end of small island at tip of Jackson Bend	TVA (below MSC 820)
W8	PSS1E	0.05	Small inlet within a cove on the southern shore of study area	TVA (below MSC 820)
W9	PEM1E	0.16	Abandoned pond at head of wet weather conveyance	WindRiver properties
W10	POWH/PEM1C	0.21	Farm pond in old field at head of wet weather conveyance	WindRiver properties

¹Classification codes as defined in Cowardin et al. (1979): f=farmed; C = Seasonally Flooded; E = Seasonally flooded/saturated; PSS1 = Palustrine emergent, persistent vegetation; PSS1=Palustrine, scrub-shrub, broadleaf deciduous vegetation; POWH=Palustrine, open water, permanently flooded.

²MSC = Maximum shoreline contour. TVA owns the land up to MSC 820-feet.

3.4.2 Environmental Consequences

3.4.2.1 *Alternative A – No Action*

Under the No Action Alternative, TVA would not issue approval under Section 26a for the applicant's proposal. Changes to the site may continue in accordance with the 2003 EIS and site development activities; however, these changes would be unrelated to the proposal currently being considered by TVA. No impacts to wetlands as a result of TVA's action would be anticipated.

3.4.2.2 *Alternative B – Proposed Action*

There are no direct wetland impacts associated with the action alternative to any of the wetlands identified during the 2016 assessment. As shown in Figure 3.4-1, proposed rip-rap installation will not occur in any wetland areas; sites proposed for rip-rap are heavily eroded, relatively steep bank areas. Improvements to Brightwater Park facilities were modified so as to avoid direct impacts to wetlands.

Indirect impacts from the action alternative are not anticipated for wetlands W1, W2, W3, W6, W7, and W8. However, indirect impacts may occur to wetland W5 with the development of

Brightwater Park. The proposed park is immediately adjacent to wetland W5 and uncontrolled stormwater and erosion could impact wetland W5. However, with the adherence to the National Pollution Discharge Elimination System (NPDES), Construction General Permit (CGP) issued for the project, and the use of standard construction Best Management Practices (BMPs) as identified in the Stormwater Pollution Prevention Plan (SWPPP), indirect impacts should be minor. Additionally, as part of the commitments from the 2003 EIS, a 50-foot vegetated buffer has been placed around wetland W5 (Appendix C).

Impacts due to the previous owner's construction activities were noted; however, these impacts are not associated with the current proposal.

3.5 AQUATIC ECOLOGY

3.5.1 Affected Environment

3.5.1.1 General Aquatic Habitat

A 2015 desktop review using aerial imagery documented no streams within the project area with the exception of the Little Tennessee River (Tellico Reservoir). This was confirmed in a 2016 site visit. Aquatic habitat in the littoral (near shore) zone is greatly influenced by underwater topography and back-lying land use. Underwater topography in the reach fronting the project area varies from moderately steep, with scattered small bluffs near the river channel, to typically shallower in coves, and areas further from the river channel. Rock is an important constituent of littoral aquatic habitat over much of the Jackson Bend shoreline, in either the form of bedrock outcrops or a mixture of rubble and cobble on steeper shorelines or gravel along shallower shorelines. Substrate and available aquatic habitat in coves and embayments also typically correspond to shoreline topography and vegetation.

3.5.1.2 Aquatic Threatened and Endangered Species

The Endangered Species Act provides broad protection for species of fish, wildlife, and plants that are listed as threatened or endangered in the United States or elsewhere. The Act outlines procedures for federal agencies to follow when taking actions that may jeopardize federally listed species or their designated critical habitat. The policy of Congress is that federal agencies must seek to conserve endangered and threatened species and use their authorities in furtherance of the Act's purposes. The State of Tennessee provides protection for species considered threatened, endangered, or deemed in need of management within the state other than those federally listed under the Endangered Species Act.

A query of the TVA Regional Natural Heritage database indicated that six federally listed endangered species (5 mussels, 1 snail), one federally listed threatened species (fish), and six state-listed aquatic species (4 fish, 1 mussel, 1 snail) are currently known from Loudon County, Tennessee (Table 3.5-1). Freshwater mussels listed as historical (>25 years old) suggests these species are very rare or no longer occur in this area of their former range. Additionally, only the blue sucker has been documented in Tellico Reservoir in the vicinity of the WindRiver property; the federally endangered pink mucket and sheepsnose mussels are known from the

mainstem of the Tennessee River below Fort Loudoun Dam. Furthermore, the federally listed Anthony’s riversnail and state-listed spiny riversnail are extirpated records and no longer occur within this portion of their former ranges. No suitable habitat for sensitive aquatic animals is known to occur within Tellico Reservoir near the project site; therefore, further evaluation of impacts to endangered or threatened aquatic species is not warranted.

Table 3.5-1. Records of federal and state-listed aquatic animal species from Loudon County, Tennessee¹

Common Name	Scientific Name	Element Rank ²	Status ³	
			Federal	State (Rank) ⁴
Fishes				
Blotchside Logperch	<i>Percina burtoni</i>	H		NMGT (S2)
Blue Sucker	<i>Cycleptus elongates</i>	E		NMGT (S2)
Flame Chub	<i>Hemitremia flammea</i>	E		NMGT (S3)
Snail Darter	<i>Percina tanasi</i>	E	THR	PROT (S1)
Tangerine Darter	<i>Percina aurantiaca</i>	E		NMGT (S3)
Mussels				
Fanshell	<i>Cyprogenia stegaria</i>	H	END	END (S1)
Orange-foot Pimpleback	<i>Plethobasus cooperianus</i>	H	END	END (S1)
Pink Mucket	<i>Lampsilis abrupta</i>	E	END	END (S2)
Ring Pink	<i>Obovaria retusa</i>	E	END	END (S1)
Sheepnose	<i>Plethobasus cyphyus</i>	E	END	TRKD (S2S3)
Tennessee Clubshell	<i>Pleurobema oviforme</i>	H		TRKD (S2S3)
Snails				
Anthony’s River Snail	<i>Athearnia anthonyi</i>	X?	END	END (S1)
Spiny Riversnail	<i>Io fluvialis</i>	X		TRKD (S2)

¹Source: TVA Natural Heritage Database, queried on 11/16/15

²Element Rank: E = Extant; H = Historical; Element occurrence is greater than 25 years old; ? = Uncertain.

³Status Codes: END = Listed Endangered; THR = Threatened; NMGT = Listed in Need of Management; TRKD = Tracked by state Natural Heritage program.

⁴State Rank: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable

3.5.2 Environmental Consequences

3.5.2.1 Alternative A – No Action

General Aquatic Habitat

Under the No Action Alternative, TVA would not issue approval under Section 26a for the applicant’s proposal. Changes to the site may continue in accordance with the 2003 EIS and

site development activities; however, these changes would be unrelated to the proposal currently being considered by TVA. This alternative would not meet the needs of the applicant. No environmental changes would occur as a result of the implementation of the No Action Alternative.

Threatened and Endangered Species – Aquatic

As described in Subsection 3.5.1.2, no suitable habitat for sensitive aquatic animals is known to occur within Tellico Reservoir near the project site; therefore, further evaluation of impacts to endangered or threatened aquatic species is not warranted.

3.5.2.2 *Alternative B – Proposed Action*

General Aquatic Habitat

Installing rip-rap for shoreline stabilization may change small areas of aquatic habitat along Tellico Reservoir. Rip-rap would be placed on the bank which would modify the shoreline at normal and high water levels. However, rip-rap bank stabilization occurs throughout many areas of Tellico Reservoir. Because the purpose of rip-rap is to prevent future bank erosion. Additionally, BMPs for construction activities would control erosion and sedimentation to prevent adverse impacts on water quality and aquatic habitats and species. Other state and local permit conditions would also be applied. Impacts to aquatic habitat, therefore, be minor.

Threatened and Endangered Species – Aquatic

As described in Subsection 3.5.1.2, no suitable habitat for sensitive aquatic animals is known to occur within Tellico Reservoir near the project site; therefore, further evaluation of impacts to endangered or threatened aquatic species is not warranted

3.6 TERRESTRIAL ECOLOGY

3.6.1 Affected Environment

3.6.1.1 *Wildlife*

The proposed action would occur on lands that were previously surveyed in the summer of 2002 and described in the 2003 EIS (TVA 2003). At the time of survey, terrestrial animal species found within the project footprint were generally common with widespread distributions. No uncommon wildlife communities were observed within the project footprint. Since this survey was performed, the land surrounding the proposed site of the Brightwater Park has been cleared of most native forest, leaving only a strip of trees along the shoreline in most places. These shoreline areas are the locations of the proposed rip-rap stabilization actions. Aerial photos show that paved roads and grass or bare ground now comprise the majority of the surrounding upland areas. However, portions of the proposed site of the Brightwater Park (also known as Jackson Bend) still have remnants of an upland mixed hardwood-coniferous forest as described in Section 3.1 of the 2003 EIS. Recent photos of the site show a park-like setting with scattered mature trees amongst grasses and other groundcover. Common wildlife species

including migratory birds that may utilize such habitats are also described in Section 3.1 of the 2003 EIS.

Review of the TVA Regional Natural Heritage database in November 2015 indicated records of four caves within 3 miles of the project area, the nearest of which occurs approximately 0.8 miles away. No caves were identified during field review of the project footprint in 2002. No other unique or important terrestrial habitats were identified within the project area. Database searches also reported records of one heronry and one osprey nest within three miles of the proposed actions. Both of these records are greater than 2 miles from the action area. No heronries or osprey nests area known from the project action area.

3.6.1.2 Plants

The proposed action would occur on lands that have been previously surveyed and described in the 2003 EIS (TVA 2003). No uncommon or unique plant communities were observed during those surveys and all invasive terrestrial plant species present occurred in habitat and at densities typical of eastern Tennessee. As described previously, since the original survey, much of the land surrounding the area where the proposed action would take place has been cleared for residential development. The proposed site for Brightwater Park has also been cleared of most of the native forested vegetation. Aerial photos indicate that the site is now more open than in 2002. Since the area did not contain unique terrestrial habitat before the extensive clearing and development on and adjacent to the Brightwater Park site, the site is now most likely dominated by native and non-native plant species indicative of early successional habitats.

3.6.1.3 Threatened and Endangered Species – Wildlife

A review of terrestrial animal species in the TVA Regional Heritage database in November 2015 yielded records of one state listed species (hellbender) and one federally protected species (bald eagle) within three miles of the project footprint. No additional federally listed species are known from Loudon County, Tennessee. However, the U.S. Fish and Wildlife Service (USFWS) has determined that three federally listed species (gray bat, Indiana bat, and northern long-eared bat) all have the potential to occur in the county.

Hellbenders have been reported from the Little Tennessee River prior to creation of Tellico Dam and the resulting Tellico Reservoir. All of these records are over four decades old and are now considered historical. Impounded waters such as these are unlikely to provide suitable habitat for this species. In addition, proposed actions in Tellico Reservoir and the Little Tennessee River would be restricted to the shoreline around the project footprint. It is unlikely that the proposed actions would affect and hellbenders should they still exist in these water bodies.

Since the 2003 EIS was written, several listing changes have occurred to state and federally listed species found in the area. In 2007, the bald eagle was delisted from its previous federally threatened status. However it is still federally protected under the Bald and Golden Eagle Protection Act (USFWS 2013). Since the 2003 EIS, it was also determined by the Tennessee Wildlife Resources Agency that osprey should be removed from the Tennessee State list of animals in need of management. However, this species is still protected under the Migratory

Bird Treaty Act. Finally, in April of 2015, the northern long-eared bat was listed as federally threatened (USFWS 2015b). Species descriptions of hellbender, bald eagle, Indiana bat, and other state listed species with the potential to occur in the action area are found in Section 3.3 of the 2003 EIS. Additional records of these species as well as species descriptions for gray bat and northern long-eared bat can be found below.

Since the 2003 EIS, two additional bald eagle nests have been found upstream, both greater than one mile from the action area. One nest is located west of Tellico Dam along the Watts Bar Reservoir on the edge of a pasture. The other nest is located near Tellico Dam. Efforts to locate this nest in 2014 were unsuccessful. It is thought that this nest is no longer in existence as the tree in which it was built was in poor health. Another nest has likely been built in the vicinity, however, as is evident by the continued presence of juvenile and adult bald eagles in the vicinity. No bald eagle nests are known from the project footprint or the immediate surrounding area.

Gray bats roost in caves year-round and migrate between summer and winter roosts during spring and fall (Brady et al. 1982, Tuttle 1976). Bats disperse over bodies of water at dusk where they forage for insects emerging from the surface of the water (Harvey 1992). The closest gray bat record is known from a maternity hibernaculum approximately 10.3 miles from the project footprint. Four caves are known within three miles of the project footprint, the closest of which is 0.8 miles away. No other caves were observed during field surveys in 2002. Foraging habitat for gray bat exists over wetlands and Tellico Reservoir.

Indiana bats hibernate in caves in winter and use areas around the caves in fall and spring (for swarming and staging), prior to migration back to summer habitat. During the summer, Indiana bats roost under the exfoliating bark of dead and living trees in mature forests with an open understory, often near sources of water. Indiana bats are known to change roost trees frequently throughout the season, yet still maintain site fidelity, returning to the same summer roosting areas in subsequent years. This species forages over forest canopies, along forest edges and tree lines, and occasionally over bodies of water (Pruitt and TeWinkel 2007, Kurta et al. 2002, USFWS 2015a). The closest documented occurrence of Indiana bat is from a 2013 summer survey capture approximately 14.5 miles from the project footprint on Oak Ridge National Laboratory property in Anderson County, Tennessee. There are also many known summer roosting Indiana bat trees in Monroe County, Tennessee, approximately 15.2 miles away. There are four documented caves within three miles of the project area. No additional caves were observed during field surveys in 2002. Foraging habitat for Indiana bat exists throughout the project footprint over wetlands, forest fragments, Tellico Reservoir, and the Little Tennessee River. Suitable summer roosting habitat for Indiana bat may exist along the shoreline and in the proposed Brightwater Park area. The northern long-eared bat predominantly overwinters in large hibernacula such as caves, abandoned mines, and cave-like structures. During the fall and spring they utilize entrances of caves and the surrounding forested areas for swarming and staging. In the summer, northern long-eared bats roost individually or in colonies beneath exfoliating bark or in crevices of both live and dead trees. Roost selection by the northern long-eared bat is similar to Indiana bat; however, northern long-eared bats are thought to be more opportunistic in roost site selection. This species also roosts

in abandoned buildings and under bridges. Northern long-eared bats emerge at dusk to forage below the canopy of mature forests on hillsides and roads, and occasionally over forest clearings and along riparian areas (USFWS 2014). The closest northern long-eared bat record is from a cave approximately 10.2 miles from the project footprint. This cave is also a known gray bat maternity hibernaculum. A northern long-eared bat was also captured during the 2013 summer surveys on Oak Ridge National Laboratory property, approximately 14.5 miles away. There are four documented caves within 3 miles of the project area. No caves or other roosting structures were observed during field surveys in 2002 and aerial photo reviews in November 2015. Foraging habitat for Indiana bat exists throughout the project footprint over wetlands, forest fragments, Tellico Reservoir, and the Little Tennessee River. Suitable summer roosting habitat for northern long-eared bat may exist along the shoreline and in the proposed Brightwater Park area. .

3.6.1.4 Threatened and Endangered Species – Plants

No federally listed plant species and five state-listed plant species have been previously reported from within five miles of the proposed Brightwater Park and bank stabilization sites (Table 3.6-1). Brightwater Park and the bank stabilization sites were surveyed for federally and state-listed species in 2002 (TVA 2003). At that time there were no habitat for federally listed plant species on these parcels. No state-listed species were observed during surveys.

Table 3.6-1. Plant species of conservation concern known from within five miles of the Brightwater Park at WindRiver project area

Common Name	Scientific Name	Federal Status	TN State Status (Rank)
Spreading False-foxglove	<i>Aureolaria patula</i>	-	SPCO(S3)
American barberry	<i>Berberis canadensis</i>	-	SPCO(S2)
Mountain Honeysuckle	<i>Lonicera dioica</i>	-	SPCO(S2)
Large-leaf Pondweed	<i>Potamogeton amplifolius</i>	-	THR(S1)
Creekgrass	<i>Potamogeton epihydrus</i>	-	SPCO(S1S2)

Status codes: **SPCO** = Special Concern; **THR** = Threatened.

Rank Codes: **S1** = Extremely rare and critically imperiled in the state with 5 or fewer occurrences, or very few remaining individuals, or because of some special condition where the species is particularly vulnerable to extirpation; **S2** = Very rare and imperiled within the state, 6 to 20 occurrences; **S3** = Rare or uncommon with 21 to 100 occurrences; **S#S#** = Denotes a range of ranks because the exact rarity of the element is uncertain (e.g., S1S2).

3.6.2 Environmental Consequences

3.6.2.1 Alternative A – No Action

Wildlife

Under Alternative A (No Action Alternative), TVA would not issue a 26a permit for the proposed rip-rap stabilization or development of the Brightwater Park and associated amenities. Changes to the site may continue in accordance with the 2003 EIS and site development activities; however, these changes would be unrelated to the proposal currently being considered by TVA.

Clearing of vegetation would be minor occurring primarily where rip-rap would be installed. No trees greater than 3 inches in diameter would be removed. No direct or indirect impacts to wildlife in general or threatened and endangered species in particular would occur as a result of proposed actions.

Plants

Adoption of the No Action Alternative would not result in adverse impacts to the terrestrial ecology or to federal or state-listed plant species of the region. Parcels containing the proposed Brightwater Park and bank stabilization sites did not contain rare or unique plant communities with conservation value or federal or state-listed plant species in 2002; all plant communities observed were common throughout the region (TVA 2003). Since that survey, there has been further clearing and disturbance of plant communities on the park and stabilization sites. The likelihood of threatened and endangered plants colonizing the site in the intervening years since the original survey is negligible. The disturbed, early successional plant habitats would continue to change as a result of natural and human caused disturbance, but the changes would not be the result of implementation of the No Action Alternative. Additionally, changes to the site may continue in accordance with the 2003 EIS and site development activities; however, these changes would also be unrelated to the current TVA action.

3.6.2.2 *Alternative B – Proposed Action*

Wildlife

Under Action Alternative B, vegetation would be removed in order to place rip-rap along shoreline areas for stabilization purposes. Additionally, vegetation clearing and ground disturbance would occur throughout the proposed Brightwater Park area where various amenities are planned. No trees greater than 3 inches in diameter at breast height would be removed. Impacts to wildlife habitat would be limited to the disturbed areas. Any wildlife (primarily common, species habituated to human activity) currently using these already heavily disturbed areas may be displaced by increased levels of disturbance during construction actions, but it is expected that they would return to the project area upon completion of actions.

Clearing of some or all of the forested habitat in the proposed Brightwater Park would take place as part of the proposed actions. These areas of forest would be removed and landscaped around the proposed amenities. Construction-associated disturbances and habitat removal would disperse wildlife into surrounding areas in an attempt to find new food and shelter sources and to reestablish territories, potentially resulting in added stress or energy use to these individuals. In the event that surrounding areas are already overpopulated, further stress to wildlife populations presently utilizing these areas as well as to those attempting to relocate may result. Direct effects to some individuals that are immobile during the time of construction may occur, particularly if construction activities transpire during breeding/nesting seasons. However, this peninsula is unlikely to support populations of species because it has been heavily impacted by previous development. Thus, proposed actions are not likely to affect

populations of species common to the area. Species common to urban/developed areas are expected to populate the area upon completion of the actions.

Osprey and herons are known to nest in shoreline areas along Tellico Reservoir and the Little Tennessee River. No osprey nests or heronries are known from the project footprint. Removal of trees along the shoreline would be restricted to those smaller than 3 inches in diameter, thus no osprey or heronry habitat would be removed in association the proposed actions. Proposed actions are not expected to impact osprey or aggregations of migratory birds.

Plants

While adoption of the Action Alternative would result in minor disturbance of common plant species, it would not result in adverse impacts to the terrestrial ecology of the region. The proposed action would not significantly affect native plant communities because no such habitat is present on the site.

Threatened and Endangered Species - Wildlife

One state-listed and one federally protected terrestrial animal species were assessed based on documented presence within 3 miles of the project footprint. Additionally, three federally listed species have been assessed based on known or potential presence within Loudon County. All of these species have the potential to utilize the project area.

Hellbenders, as discussed previously, are unlikely to be present in Tellico Reservoir. It is also unlikely that the proposed actions would affect and hellbenders should they still exist in these water bodies.

Bald eagles may perch along the shoreline or foraging in Tellico Reservoir and the Little Tennessee River. However, only mature trees would be removed in association with the proposed action. Perching habitat would not be impacted by the proposed actions. Use of BMPs during rip-rap installation would minimize any impacts to the river and reservoir. Proposed actions would have no measurable effect on foraging eagles. In addition, the nearest bald eagle nest is approximately 1.4 miles from the proposed actions. No bald eagles or their nests would be impacted by the proposed actions associated with Alternative B.

No caves or other winter hibernacula for gray bat, Indiana bat, or northern long-eared bat exist in the project footprint or would be impacted by the proposed actions. However, suitable foraging habitat does exist for these species within the proposed project footprint over wetlands, forested shorelines, forest fragments, Tellico Reservoir, and the Little Tennessee River. As mentioned above, BMPs would be utilized along the shoreline to minimize impacts to these bodies of water. Minimal tree removal would occur in association with proposed actions as the project has committed to not removing any trees greater than 3 inches in diameter along the shoreline, and only removing two mature trees (which are not suitable habitat for bats) for the construction of the proposed Brightwater Park. Proposed actions would have no measurable effect on foraging bats. No suitable summer roosting habitat for Indiana bat or northern long-

eared bat would be impacted by the proposed actions. Gray bat, Indiana bat, and northern long-eared bat would not be impacted by the proposed actions.

Two additional species (southeastern shrew and sharp-shinned hawks) were addressed in the 2003 EIS. Habitat for both species exists along the vegetated shoreline in drainages and wetlands and areas of remaining mature forest. This habitat is restricted to narrow strips along the shoreline and thus is likely not high quality. Actions in these areas would be limited to removal of trees less than 3 inches in diameter where necessary to install rip-rap. These actions are not likely to affect any southeastern shrews or sharp-shinned hawks due to the limited availability and low quality habitat that exists in the action areas.

Threatened and Endangered Species – Plants

Adoption of Alternative B would have no effect on federal or state-listed plant species. As described previously, parcels containing the proposed Brightwater Park and bank stabilization sites did not support state or federally listed plants when surveyed in 2002 (TVA 2003). Since that survey, there has been further clearing and disturbance of plant communities on the park and stabilization sites. This disturbance would have served to further degrade the habitat. The likelihood of threatened and endangered plants colonizing the site in the intervening years since the original survey is negligible.

3.7 WATER QUALITY

3.7.1 Affected Environment

The proposed project is located on Tellico Reservoir on the Little Tennessee River (HUC 06010204) at approximate Little Tennessee River Mile 2.3 in Loudon County, Tennessee.

A 2015 desktop review using aerial imagery documented no streams in the project area with the exception of the Little Tennessee River (Tellico Reservoir).

As stated in the 2003 EIS, Tellico Dam is a multipurpose tributary project located on the Little Tennessee River, near its confluence with the Tennessee River, immediately downstream of Fort Loudoun Dam. Annual drawdown averages about 6 feet. At normal summer pool (813 feet above mean sea level), the surface area of the reservoir is 16,500 acres, the shoreline is about 310 miles in length, and water is impounded to about mile 31 of the Little Tennessee River. The summer volume is 414,600 acre-feet and the average annual discharge is approximately 5,700 cubic feet per second. Most of the discharge from Tellico Reservoir flows through the navigation canal into Fort Loudoun Reservoir. (TVA 2003)

TDEC classifies the streams in Tennessee by their designated uses. TDEC has listed the Little Tennessee River in the vicinity of the proposed project (from mile 0.0 to 19.0) for domestic water supply, industrial water supply, fish and aquatic life, recreation, livestock watering and wildlife, and irrigation. (TDEC 2013)

The federal Clean Water Act requires all states to identify all waters where required pollution controls are not sufficient to attain or maintain applicable water quality standards and to establish priorities for the development of limits based on the severity of the pollution and the sensitivity of the established uses of those waters. States are required to submit reports to the USEPA. The term “303(d) list” refers to the list of impaired and threatened streams and water bodies identified by the state.

The state of Tennessee has listed Tellico Reservoir as impaired (not supporting its designated uses) because of sediments contaminated by polychlorinated biphenyls (PCB). The state advises against eating catfish from Tellico because of PCB contamination. There are no other fish consumption advisories as of 2016. There were no swimming advisories for bacterial contamination on Tellico Reservoir as of 2016. (TDEC 2016)

TVA's Vital Signs Monitoring Program (VSMP) monitors two locations on Tellico Reservoir, the deep, still water near the dam and the middle part of the reservoir, usually on a two-year cycle. VSMP rated Tellico Reservoir poor in 2011. Tellico has rated either poor or at the low end of the fair range, except in 1994 when it scored slightly higher due primarily to improved chlorophyll concentrations. (TVA 2016)

Dissolved oxygen rated good at the mid-reservoir location and poor at the forebay due to low concentrations (less than 2 milligrams per liter) in the lower water column throughout summer. Historically, dissolved oxygen ratings at the forebay have fluctuated between good, fair and poor. Weather conditions and related changes in reservoir flows are a major factor in the differences that arise from year to year. Dissolved oxygen has consistently rated good at the mid-reservoir location.

Sediment quality rated fair at both monitoring locations because polychlorinated biphenyls (PCBs) were detected and arsenic concentrations were slightly above suggested background levels. Sediment quality rated good in most previous years, but the detection of pesticides (chlordane and aldrin) and/or elevated levels of arsenic have resulted in some fair ratings. Arsenic naturally occurs in the soils and concentrations in sediments deposited in the reservoir are generally near—slightly above or below—suggested background concentrations. The pesticides that were detected in Tellico Reservoir were banned from use in the 1970s and 1980s. However, they continue to be detected sporadically in sediments because of their persistence in the environment.

3.7.2 Environmental Consequences

3.7.2.1 *Alternative A – No Action*

Under the No Action Alternative, TVA would not issue approval under Section 26a for the applicant's proposal. Changes to the site may continue in accordance with the 2003 EIS and site development activities; however, these changes would be unrelated to the proposal currently being considered by TVA. This alternative would not meet the needs of the applicant. No environmental changes would occur as a result of the implementation of the No Action Alternative.

3.7.2.2 Alternative B – Proposed Action

Impacts (direct and indirect) to the water quality of Tellico Reservoir near the shoreline proposed for stabilization would occur as a result of implementation of Alternative B. Rip-rap would be placed on the bank which would modify the shoreline at normal and high water levels. However, rip-rap bank stabilization occurs throughout many areas of Tellico Reservoir and would prevent future bank erosion and sedimentation to the reservoir. Additionally, BMPs would be implemented to control erosion and sedimentation to prevent adverse impacts on water quality and related aquatic interests. Other state and local permit conditions would also be applied. Adverse impacts to water quality would, therefore, be minor. Compliance with the environmental commitments listed in the 2003 EIS would also avoid, reduce, or mitigate the potential water quality impacts. (TVA 2003)

Surface Runoff - Construction activities have the potential to temporarily affect surface water via storm water runoff. Soil erosion and sedimentation can clog small streams and threaten aquatic life. WindRiver would comply with all appropriate state and federal permit requirements. Appropriate BMPs would be followed, and all proposed project activities would be conducted in a manner to ensure that waste materials are contained, and the introduction of pollution materials to the receiving waters would be minimized. A general construction storm water permit would be needed if more than 1 acre is disturbed. This permit also requires the development and implementation of a Storm Water Pollution Prevention Plan.

Dredging – No dredging activities are included with the current review of the proposed Brightwater Park and rip-rap project. Any dredging activities not discussed in the 2003 EIS will require an additional environmental review and Clean Water Act permitting.

Domestic Sewage – Portable toilets would be provided for the construction workforce as needed. These toilets would be pumped out regularly, and the sewage would be transported by tanker truck to a publicly-owned wastewater treatment works that accepts pump out.

Equipment Washing and Dust Control – Equipment washing and dust control discharges would be handled in accordance with BMPs described in the Storm Water Pollution Prevention Plan for water-only cleaning.

Park Grounds Maintenance – Improper use of herbicides to control vegetation could result in runoff to streams and subsequent aquatic impacts. Therefore any pesticide/herbicide use as part of construction or maintenance activities would have to comply with the TDEC General Permit for Application of Pesticides, which also requires a pesticide discharge management plan. In areas requiring chemical treatment, only USEPA-registered and TVA approved herbicides would be used in accordance with label directions designed in part to restrict applications near receiving waters and to prevent unacceptable aquatic impacts. Proper implementation and application of these products would be expected to have no significant impacts to surface waters.

Water Quality Commitments from the 2003 EIS that also apply to the current actions:

- A vegetated buffer zone of at least 50 feet will be retained by TVA and maintained along the shoreline from the summer pool level in order to maintain continuity on the site, and reduce possible impacts to water quality and wetlands.
- To minimize pollutant loading and prevent spilling fuel or wastewater, any fuel storage or dispensing facility located temporarily or permanently on development project property will comply with TVA's 26s regulation § 1304.405 Fuel storage tanks and handling facilities, including the preparation and implementation of a Spill Prevention and Control Plan.
- If the reservoir falls below the elevation of the intake, the applicant will be responsible for finding another source of raw water.

Compliance with all applicable federal, state, and local laws and regulations and implementation of the commitments described above should minimize the potential impacts to water quality from the proposed project. Impacts would, therefore, be anticipated to be temporary and minor.

3.8 NOISE

3.8.1 Affected Environment

Noise is generally described as unwanted sound, which can be based either on objective effects (hearing loss, damage to structures, etc.) or subjective judgments (such as community annoyance). Sound is usually represented on a logarithmic scale with a unit called the decibel (dB). Sound on the decibel scale is referred to as sound level. The threshold of human hearing is approximately 0 dB, and the threshold of discomfort or pain is around 120 dB.

Noise levels are computed over a 24-hour period and adjusted for nighttime annoyances to produce the day-night average sound level (DNL). DNL is the community noise metric recommended by the USEPA and has been adopted by most federal agencies (USEPA 1974). A DNL of 65 A-weighted decibel (dBA) is the level most commonly used for noise planning purposes and represents a compromise between community impact and the need for activities like construction. (The A-weighted sound level, used extensively in the U.S. for the measurement of community and transportation noise, represents the approximate frequency response characteristic of the average young human ear.) Areas exposed to a DNL above 65 dBA are generally not considered suitable for residential use. A DNL of 55 dBA was identified by USEPA as a level below which there is no adverse impact. Additionally, to avoid potential long-term effects to hearing, USEPA established a 24-hour exposure level of 70 dBA (USEPA 1974).

Noise occurring at night generally results in a greater annoyance than do the same levels occurring during the day. It is generally agreed that people perceive intrusive noise at night as being 10 dBA louder than the same level of noise during the day. This perception is largely because background environmental sound levels at night in most areas are about 10 dBA lower than those during the day.

The Noise Control Act of 1972 directs federal agencies to comply with applicable federal, state, and local noise control regulations. The site is located outside of city limits and Loudon County does not have any applicable noise ordinances. The Tennessee Code Annotated does not contain any applicable noise restrictions or requirements. Given the site setting, typical current noise levels would be associated with landscaping machinery operating within the site boundaries, construction vehicles and small construction equipment, and automotive vehicles on the surrounding rural county roads.

3.8.2 Environmental Consequences

3.8.2.1 *Alternative A – No Action*

Under the No Action Alternative, noise receptors in the vicinity would continue to experience ambient noise from the environment, normal activities at the site, traffic, and recreational activities in the vicinity. Changes to the site may continue in accordance with the 2003 EIS and site development activities; however, these changes would be unrelated to the proposal currently being considered by TVA. No noise related impacts would be anticipated related to the existing ambient sounds.

3.8.2.2 *Alternative B – Proposed Action*

Construction activities at the site, including installation of rip-rap, would result in short-term increases in noise levels in the project area. This increase would typically occur between the hours of 7 am and 5 pm on weekdays. Construction noise associated with the installation of rip-rap would occur periodically as required. Noise sources would include a variety of construction equipment and construction activities. Table 3.8-1 describes noise emission levels for construction equipment expected to be used during the proposed construction activities. As can be seen from this table, the anticipated noise levels at 50 feet range from 75 dBA to 101 dBA based on data from the Federal Highway Administration (FHWA 2006).

Construction personnel, especially equipment operators, would use appropriate personal hearing protection to limit exposure and ensure compliance with federal health and safety regulations.

Following completion of construction activities, the ambient sound environment would be expected to return to near ambient levels. Because the construction of Brightwater Park includes the creation of new outdoor recreation venues, it is likely there would be elevated levels of human activities in these areas. This could result in elevated noise levels above the current ambient levels. The noise generated by the majority of these recreational activities would be within the levels experienced at similar venues. Noise would be anticipated to typically be below the 55 dbA level for which there is no adverse impact. Periodically noise levels may exceed this level (for example when there are events in which large crowds gather or speakers are used). While these events may generate noise above the 55 dbA level, these spikes would be short-term and would not be expected to reach levels that could cause significant impacts to human health.

Overall, noise impacts associated with the proposed actions are anticipated to be short-term and minor.

Table 3.8-1. Maximum noise levels at 50 feet for common construction equipment

Equipment Type	Maximum Noise Level (L _{max}) at 50 Feet (dBA, slow ¹)
Backhoe	78
Clam Shovel (dropping)	87
Compactor (ground)	83
Concrete Truck	79
Crane	81
Dozer	82
Dump Truck	76
Excavator	81
Flat Bed Truck	74
Generator	81
Grader	Not applicable
Pickup Truck	75
Impact or Vibratory Pile Driver	101
Warning Horn	83

Source: FHWA 2006

¹ Slow response as measured on the A scale of a sound level meter or time-weighted average.

3.9 HISTORIC AND ARCHAEOLOGICAL RESOURCES

3.9.1 Affected Environment

With regards to cultural resources, the area of potential effects (APE) is taken as the affected environment for purposes of this EA. TVA determined the area of potential effects (APE) for archaeological resources to be the locations of the proposed Brightwater Park, associated amenities including the proposed fixed pier and floating dock, and the rip-rap stabilization areas. The architectural APE is the 0.5 mile radius surrounding the project area and within the visual line of sight of the proposed project area.

A desktop review was conducted to identify potentially eligible archaeological sites within the APE. Two sites, Site 40LD29 and Site 40LD346, were identified within the project APE. Site 40LD29 is a prehistoric site. A homestead is also depicted at this location on the TVA land acquisition maps. TVA archaeologists conducted a field reconnaissance of 40LD29 in 2015. A portion of the APE (approximately 4.5 acres) had been disturbed, including clearing of vegetation and removal of some soils, between the completion of the 2003 EIS and prior to TVA’s current environmental review. Although artifacts were identified during the field

reconnaissance, due to the extensive ground disturbance TVA was unable to discern if any intact archaeological deposits had existed prior to the disturbance. TVA contracted with New South Associates, Inc. to conduct a geophysical survey and archaeological assessment of 40LD29 to more thoroughly assess the extent of the damage and evaluate the eligibility of the site for the National Register of Historic Places (NRHP). This assessment determined that very little of the prehistoric component of site 40LD29 is still present in this area and that the historic component does not retain physical integrity (the structure was razed upon TVA's acquisition of the land for the creation of Tellico Reservoir). TVA has determined that the portion of 40LD29 where the grading took place no longer contains intact deposits and therefore does not contribute to the NRHP eligibility of 40LD29.

Other portions of 40LD29 lay outside of the disturbed area. Within the undisturbed portion of 40LD29, TVA archaeologists identified approximately 11 potential prehistoric features and two prehistoric artifacts. Based on these observations, TVA finds the undisturbed portion of 40LD29 may retain intact archaeological deposits. These intact deposits exist in the undisturbed portion of 40LD29 and this area falls outside of the APE for this undertaking.

TVA staff archaeologists conducted a field reconnaissance survey for the new pier location and stabilization. No historic properties were identified at the proposed pier location. One previously recorded archaeological site was located in an area proposed for bank stabilization. Site 40LD346 was characterized as a late 19th to mid-20th century historic scatter by Thomas (2000) and was recommended ineligible for the NRHP. TVA and the Tennessee State Historic Preservation Officer, in consultation, determined the site to be ineligible in 2000. However, recent visual inspection of the shoreline and shovel tests conducted during TVA's field reconnaissance indicates that intact deposits associated with 40LD346 may be present above the cut bank.

TVA contracted with Tennessee Valley Archaeological Research (TVAR) to perform a Phase I architectural survey of the architectural APE. This analysis was conducted to determine if the proposed action would affect historic viewsheds for any eligible historic assets located within 0.5 mile of the proposed project area. The only historic architectural resource identified in the architectural APE was Wylly Cemetery. TVAR finds that Wylly Cemetery does not meet the criteria of eligibility for the NRHP under Criterion A, B or C and that the cemetery's eligibility under Criterion D is undetermined. Therefore, there are no eligible architectural assets within the architectural APE that could be impacted by the proposed actions.

3.9.2 Environmental Consequences

3.9.2.1 *Alternative A – No Action*

Under the No Action Alternative, TVA would not issue approval under Section 26a for the applicant's proposal. No environmental changes would occur as a result of the implementation of the No Action Alternative other than changes that have already occurred. As described previously, one historic property, 40LD29, was identified within the area that had been disturbed since the 2003 survey. TVA archaeologists determined that the portion of 40LD29 where the

grading took place no longer contains intact deposits and therefore does not meet NRHP eligibility requirements. Therefore, no impacts to cultural resources would be anticipated under the No Action Alternative.

3.9.2.2 Alternative B – Proposed Action

The survey work determined that very little of the prehistoric component of site 40LD29 is still present in the APE and that the historic component does not retain physical integrity due to razing that occurred upon TVA's acquisition of the land for the creation of Tellico Reservoir. TVA has determined that this portion of the site no longer contains intact deposits and therefore does not contribute to the eligibility of 40LD29. Intact deposits exist in the undisturbed portion of 40LD29 and this area falls outside of the APE for this undertaking. TVA has recommended and the applicant has concurred that this site should be avoided for all construction activities. Intact deposits associated with 40LD346 remain and TVA would place a commitment within the permit that states that the installation of rip-rap at this location would be placed from the water with no equipment allowed on top of the site and that no bank shaping would be done. In addition, TVA would require that an archaeological monitor be present while work is being conducted in that area.

TVA, in consultation with the Tennessee State Historic Preservation Officer, finds that with the above mentioned commitments no cultural resources would be affected by the proposed undertaking.

3.10 CUMULATIVE IMPACTS

Cumulative impacts are defined in the Council on Environmental Quality's regulations at 40 C.F.R. § 1508.7 as follows:

Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Past actions that have already occurred and present actions are integrated into the existing baseline conditions discussed above. Future projects in the project vicinity include construction of additional residences on the vacant lots throughout the WindRiver development. The following sections address reasonably foreseeable future actions at the WindRiver site and in the immediate vicinity.

3.10.1 Aesthetics

Cumulative impacts associated with aesthetics would result from the combined installation of rip-rap and the construction of additional residences on the property. The impacts associated with the construction of the residences were evaluated in the 2003 FEIS. The cumulative contribution associated with the installation of the rip-rap would be minor in comparison to the

impacts from construction of the residences. Therefore, cumulative impacts to aesthetics as a result of the combined actions would also be minor.

3.10.2 Recreation

The construction of planned residences on the WindRiver property would likely result in an increased use of recreation resources in and around Tellico Reservoir due to the minor increase in population in this area. The proposed actions of constructing Brightwater Park could also result in an increase in use of recreation resources on and around Tellico Reservoir; this could also result in more congestion of these resources due to the larger numbers of users. Therefore, cumulative impacts to recreation resources could occur as a result of the combined actions, but these impacts would be minor.

3.10.3 Floodplains

The construction of additional residences on the WindRiver property would occur above the FRP and above the 100-year floodplain. Therefore, there would be no impact to floodplains as a result of those activities, and thus no cumulative impacts to floodplains in association with the proposed actions.

3.10.4 Wetlands

Wetland areas would be avoided during construction of the additional residences. Therefore, there would be no impact to wetlands as a result of those activities, and thus no cumulative impacts to wetlands in association with the proposed actions.

3.10.5 Terrestrial Ecology

Cumulative effects of the project on common wildlife species are expected to be negligible. Most of the land immediately adjacent action areas has previously been impacted by human activities. Remaining habitat is confined to relatively narrow strips of woodlands and vegetation along the shoreline. Proposed actions would thin habitat along the shoreline. No trees greater than 3 inches in diameter would be removed. The Brightwater Park area has already been heavily impacted by removal of midstory and understory growth and thinning of trees and no longer provides habitat for many species in need of more secluded forested habitat. At present, the existing habitat is not likely to provide much habitat for wildlife; thus, the proposed actions would not have any additional measurable effects on wildlife. Species common to urban/developed areas are expected to populate the area upon completion of the actions.

3.10.6 Water Quality and Aquatic Ecology

Construction of residences on the WindRiver property, construction of Brightwater Park, and installation of the rip-rap would all have the potential to impact water quality through runoff and erosion. All construction would occur above the FRP and above the 100-year floodplain, and no in-water work would occur. For the current proposed actions, rip-rap would be placed on the bank which would modify the shoreline at normal and high water levels. Rip-rap bank stabilization occurs throughout many areas of Tellico Reservoir and would prevent future bank

erosion. BMPs to control erosion and sedimentation and other state and local permit conditions would reduce impacts to minor levels. Additionally, the application of rip-rap on eroding banks should stabilize the banks and reduce erosion potential. Sedimentation added to the reservoir from stabilized banks should also be reduced. Compliance with the environmental commitments listed in the 2003 EIS would also avoid, reduce, or mitigate the potential adverse water quality and thus, aquatic ecology impacts. Therefore, cumulative adverse impacts to water quality and aquatic ecology would be anticipated to be minor.

3.10.7 Noise

Construction of residences on the WindRiver property, construction of Brightwater Park, and installation of the rip-rap would all result in noise above ambient levels. These noise impacts would be minor and isolated in the vicinity of individual construction activities. Noise impacts are not additive and therefore overlapping construction activities would not result in an increased, cumulative noise impact. Construction noise associated with all of these activities is minor, intermittent, and temporary. Cumulative impacts from noise would also be minor, intermittent, and temporary.

3.10.8 Historic and Cultural Resources

As no historic or cultural resources would be affected by the proposed actions, there would also be no cumulative impacts to historic or cultural resources as a result of implementation of either alternative.

3.11 Unavoidable Adverse Environmental Impacts

The selected alternative would not cause any unavoidable adverse environmental impacts.

3.12 Relationship of Short-Term Uses and Long-Term Productivity

Short-term uses are those that generally occur on a year-to-year basis. Examples are wildlife use of forage, timber management, recreation, and uses of water resources. Long-term productivity is the capability of the land to provide resources, both market and nonmarket, for future generations. Long-term impacts would be those that last beyond the life of the project.

The proposed action would remove vegetation and cover portions of the site with rip-rap. It would also convert a grass and vegetation covered area into a public use park. Short-term impacts to productivity could include disruptions to wildlife in the vicinity of the project area (both terrestrial and aquatic) as a result of construction notice and temporary disturbances. Installation of the rip-rap and construction of the park would cause a minor long-term loss of productivity and wildlife habitat. Installation of the rip-rap would also minimize erosion and siltation along the shoreline potentially benefiting water quality and could improve long-term productivity within the reservoir. Over time, these impacts would be relatively minor.

3.13 Irreversible and Irretrievable Commitments of Resources

As used here, irreversible commitments of resources include the use or consumption of non-renewable resources because of a decision or implementing a proposed action. For example,

extracting ore is an irreversible commitment. Irretrievable commitments involve the use or commitment of resources for a period of time, even a long period. An example of an irretrievable resource commitment is the loss of timber production on a newly cleared transmission line right-of-way through a previously forested area. In that case, removal of the transmission line and the right-of-way would eventually result in the restoration of forestland and timber productivity.

Implementation of the proposed action in awarding the 26a permit would not result in any irreversible or irretrievable commitments of resources.

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Appendix A – Visual Resources Analysis

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Brightwater Park and Stabilization Activities

Visual Resources Impact Assessment

5.1 Background

In 2003, TVA completed the *Rarity Pointe Commercial Recreation and Residential Development on Tellico Reservoir Environmental Impact Statement* (EIS) to evaluate impacts associated with the proposed actions for the Rarity Pointe development. The Rarity Pointe development was purchased by WindRiver in 2012. The existing conditions section of the 2003 EIS described the setting and landscape of the WindRiver project area as “a rural ridge and valley countryside where the reservoir is the dominant scenic feature. The east bank is forested with one rock bluff just downstream of the project site. The back-lying lands have a pastoral character where woodlands are seen intermixed with farmsteads, pastures, and scattered homes. It is a notable contrast to the suburban character of residential areas in Tellico Village on the west bank. The approximately 118 acres of . . . land are moderately sloping woodland ridges that form peninsulas along the eastern bank of Lower Jackson Bend. The natural woodland character of this land has pleasing attributes but no uniquely distinct physical features.” (TVA 2003) In addition, the TVA 2000 Land Plan identified the 118 acres sold to Rarity Pointe as a major residential viewshed, due to the location of Tellico Village, across the lake from the proposed development.

The 2003 EIS also describes the property on the north end of the peninsula as: “a prominent peninsula about a mile long . . . with a series of moderately sloping woodland ridges similar to the TVA parcels upstream. The wooded shoreline and coves along the west side are similar to those along the TVA parcels. Tree cover on the tract was about 40 percent moderate sized hardwood, with the balance consisting of relatively young pine and a few small meadow areas. The overall visual character is in transition because project construction has begun. Trees have been removed in several large areas and exposed earth slopes and heavy equipment operations are visible in the planned lodge, marina, and residential areas. The natural character of this tract has typical reservoir landscape attributes but no unique physical features, so the scenic attractiveness is common. Due to construction, the attractiveness is declining along with visual tranquility and harmony. Scenic integrity has been moderately high, but is declining at the same pace as the expanding construction and development alterations. Visual sensitivity is high and the overall scenic value class has been good but is declining.” For the south end of the peninsula: “The remaining project lands (323 acres) are back-lying properties with a rolling pastoral area of moderately steep ridges separated by gently sloping drainages that border the TVA parcels and extend east to U.S. Highway 321. About a third of the tract is open meadow and the balance is a mix of hardwood and pine stands with a few farmstead buildings remain on the tract. The landscape character of the back-lying land is typically pastoral with no uniquely distinct physical features, so the scenic attractiveness is common. Scenic integrity is moderate since human alteration is noticeable but not dominant. Visual sensitivity is moderate and the overall scenic value class is fair.”

The 2003 EIS resulted in the sale of the TVA parcels to the Rarity Pointe developer, with substantial mitigation to minimize visual impacts. Mitigation measures in the 2003 EIS included

commitments to minimize night-sky lighting and a 50 foot vegetated buffer along the shoreline of the TVA parcel, and the exchange of 256 acres to the south of the development, which would be permanently protected from development.

The golf course, pro shop, inn, roads, and portions of the marina were constructed as part of the originally proposed Rarity Pointe development. A few homes are also now present on the tract. All of the grading and clearing for the residences was completed, significantly altering the landscape and consequently the visual resources in the vicinity. Currently, some residences have been constructed and the other areas have been cleared for development. Photo 1 illustrates the existing visual aspect of the WindRiver site. Although the site has been cleared of most of the shrubs and trees within the interior of the site, the rolling terrain and the remaining trees on the shoreline allow the site to blend into the surrounding landscape. Construction has occurred more slowly than originally anticipated, therefore, visual impacts/changes associated with the development have also occurred more slowly.



Photo 1: View of the WindRiver site from Tellico Village, facing east.

Photo 2 shows three homes on the WindRiver site. With the maintenance of the 50 foot vegetative buffer and the terrain variations, the view from this vantage point retains its pastoral attributes. The sense of a natural vista and wide-open spaces has been preserved due to the low density of the homes and the remaining vegetation. The view of the water, hills, and trees is not significantly broken up by the visible houses.



Photo 2: View of the WindRiver development site, from Tellico Village, facing northeast.

Overall, existing views of the development site are consistent with a rural setting. These views of the reservoir and natural setting would be enjoyed by the residents of Tellico Village, persons visiting the Tellico Dam reservation and boaters and hikers in and around Tellico Lake. Part of this scenery is the shoreline visible between the water and the adjacent vegetation. Due to the distance of most observation points from the opposite shoreline, this visual strip is almost invisible. In some locations a thin stripe of reddish earth can be seen. In other areas, rip-rap installed under previous actions can be seen. Photo 3 shows an area with natural shoreline and Photo 2 above shows an area with existing rip-rap. This small section of shoreline does not present a visual encumbrance to the viewer. As it is small and surrounded by water and trees, the eye travels over it towards the skyline over the trees.



Photo 3: An example of natural shoreline at the WindRiver development.

5.2 Impact Assessment

5.2.1 Alternative A – No Action

Under the No Action Alternative, TVA would not issue approval under Section 26a for the applicant's proposal. No new environmental changes would occur as a result of TVA's action. Changes to the site may continue in accordance with the 2003 EIS and site development activities; however, these changes would be unrelated to the current TVA action. Therefore, there would be no new impacts to visual resources under the No Action Alternative.

5.2.2 Alternative B – Proposed Action

Visual impacts associated with the proposed Rarity Pointe development, including the higher density housing, were analyzed in the 2003 EIS as described above. Although these impacts were considered negative, they were minimized through mitigation. No significant changes to the development are proposed and therefore the visual impacts associated with the majority of Brightwater Park are not reevaluated. However, the current proposal includes additional shoreline stabilization which was not evaluated in the 2003 EIS. Therefore, the current analysis focuses on potential impacts associated with Brightwater Park and implementation of the new rip-rap shoreline stabilization proposed by WindRiver.

5.2.2.1 *Brightwater Park Visual Impacts*

The development of Brightwater Park includes the installation of two floating docks. Of the actions occurring in Brightwater Park, the docks would be the most visible to those looking toward the project area from across the reservoir. No residential areas are located directly across the reservoir from the area where the docks would be installed. To viewers on the reservoir, the presence of two additional floating docks would be similar to views in other portions of the reservoir. The construction of the other Brightwater Park amenities and features would be of a lower profile than the construction of new homes evaluated in the 2003 EIS. Therefore, impacts associated with the current proposed actions would be less than analyzed in the 2003 EIS.

The 2003 EIS also included the commitment that fully shielded light fixtures or those with internal low-glare optics (so no light is emitted from the fixture at angles above the horizon) will be used in the development. This commitment would continue to remain in place with respect to the actions at Brightwater Park.

Therefore, impacts to visual resources associated with the construction and then operation of Brightwater Park and its associated amenities are considered minor and in accordance with the impacts evaluated in the 2003 EIS.

5.2.2.2 *Stabilization Measures Impacts*

In order to assess potential impacts to visual resources due to the installation of rip-rap stabilization, photos were taken at key observation points where the rip-rap could be visible. Key observation points were selected based on sensitive receptors (such as historic sites listed on

or eligible for the National Register of Historic Places, recreation areas, residences, etc.), or areas with the highest potential for experiencing impacts associated with viewshed changes (such as roadways, hiking trails, etc.). High resolution photographs were taken from each of the key observation points. The photographs were processed and visual simulations were produced of the rip-rap at the key observation points. Appendix A presents the photographs and results of the visual resources analysis for all key observation points.

Rip-rap Installation/Construction Impacts

General aspects of rip-rap construction would include heavy machinery, rock piles, barges, and dump trucks. For the barge-based construction, silt fencing would be placed in the water to prevent siltation and erosion. Subsequently, rock would be placed behind the silt fence and allowed to settle. The silt fence would be removed after the potential for silt to travel downstream and/or away from the immediate project site has passed.

Negative visual impacts would occur during construction. The insertion of heavy equipment and other construction aspects would disrupt the scenery. Large, bright-colored, human-made items would not blend with the shoreline, vegetation, and rolling terrain that dominate the viewshed from the key observation points. These objects would create a noticeable contrast between the construction and the surrounding area.

Most of the key observation points are located across the reservoir from the WindRiver site. These areas are approximately 2000 feet from the proposed shoreline stabilization areas. Due to the distance of the observer to the construction sites, the juxtaposition of heavy equipment and natural scenery would be lessened, as the equipment in the distance would not appear as large in comparison to the overall viewshed. The space between the potential observers and the actual construction would soften the conflicting sensations.

The potential negative impacts would be temporary and spaced out along the shoreline. A barge installing silt fencing and rip-rap would most likely not remain in place for long as it is not a complex process. The barge would travel along the shoreline placing rip-rap and leave the area when that section was complete. Therefore, visual impacts associated with construction would be temporary (a few days to a few weeks) for an observer at a single vantage point.

Indirect impacts could occur along roads in the vicinity due to trucks delivering supplies to the site. These indirect impacts would also be temporary in nature lasting only for the construction period.

Overall, negative impacts to visual resources during rip-rap placement are considered minor due to the temporary nature of the process and the distance of most potential observers from the physical construction areas.

Rip-rap Appearance Impacts

The proposed shoreline stabilization using the placement of rip-rap would permanently alter the visual aspects of the viewshed at the WindRiver development site. Nine key observation points

were chosen based on WindRiver's initial rip-rap placement estimates. High resolution photographs were collected in November 2015, and simulations of the new rip-rap were superimposed on the existing conditions. Appendix A Figure 1 shows the location of the nine key observation points and Figures 2 through 19 show the original photograph and the viewshed impacts simulation in pairs.

Overall, along the western shore of the WindRiver development site, the addition of new rip-rap would not cause significant negative visual impacts due to the presence of existing, similar rip-rap, the distance from which most observers would see the new rip-rap, and the size and coloring of the new rip-rap. Although some views would be slightly altered, it would not constitute a significant change to the scenery. Therefore, visual resource impacts are anticipated to be minor.

5.3 Summary

In conclusion, the impacts to aesthetic and visual resources associated with the actions at Brightwater Park and installation of the rip-rap stabilization measures would be minor and similar or less than the impacts evaluated in the 2003 EIS.

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Appendix B – Cultural Resources Consultation

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TENNESSEE HISTORICAL COMMISSION
STATE HISTORIC PRESERVATION OFFICE
2941 LEBANON PIKE
NASHVILLE, TENNESSEE 37243-0442
OFFICE: (615) 532-1550
www.tnhistoricalcommission.org

September 7, 2016

Mr. Clinton Jones
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902

RE: TVA, ARCHAEOLOGICAL RESOURCES REPORT, WIND RIVER SUBDIVISION/SITE
40LD29, UNINCORPORATED, LOUDON COUNTY, TN

Dear Mr. Jones:

In response to your request, we have reviewed the archaeological report of investigations and accompanying documentation submitted by you regarding the above-referenced undertaking. Our review of and comment on your proposed undertaking are among the requirements of Section 106 of the National Historic Preservation Act. This Act requires federal agencies or applicants for federal assistance to consult with the appropriate State Historic Preservation Office before they carry out their proposed undertakings. The Advisory Council on Historic Preservation has codified procedures for carrying out Section 106 review in 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739).

Considering the information provided, we concur that no archaeological resources eligible for listing in the National Register of Historic Places will be affected by the Wind River Subdivision facilities (park, bank stabilization, and two fixed piers). If project plans are changed or archaeological remains are discovered during project construction, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act. Questions or comments may be directed to Jennifer Barnett (615) 741-1588, ext. 105.

Your cooperation is appreciated.

Sincerely,

E. Patrick McIntyre, Jr.
Executive Director and
State Historic Preservation Officer

EPM/jmb

**Appendix C – Wetland Mitigation Plan
from the 2003 EIS**

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Rarity Pointe Mitigation Plan

1. Introduction

The mitigation plan is designed to replace and offset shoreline wetlands and wildlife habitat impacts, to stabilize the shoreline, to provide water quality protection, and, as additional benefits, to establish a diverse native plant community and provide aesthetic interest. The mitigation plan consists of shoreline stabilization and the establishment of a permanent vegetated shoreline buffer zone around the peninsula on Lower Jackson Bend that will contain the Rarity Pointe par-3 golf course. The west boundary of the mitigation area will be on a straight line extending out to the shoreline from the residential lot line between lots 47 and 48. The east boundary will be on a straight line extending out to the shoreline from the residential lot line between lots 40 and 41 (Attachment xx). A minimum 50-foot wide buffer measured from the normal summer pool elevation (813 feet above msl) will be established. In certain locations where changes in the par-3 golf course configuration are feasible, or native herbaceous vegetation can be incorporated into the fairway design, the buffer will be wider than 50 feet, up to a maximum of 150 feet. The buffer adjoining wetland W5 will begin at the wetland boundary instead of the top of the bank.

2. Shoreline Stabilization

Shoreline stabilization will consist of hard-armoring and establishment of native shrub species to prevent further shoreline erosion. From the west buffer zone boundary north along the shoreline to a point to be established by survey, shoreline stabilization will consist of bank reshaping and contouring, and placement of filter fabric and rock rip-rap. This work will require the use of equipment to perform the bank shaping/contouring work and installation of rock rip-rap. From this point to the east buffer zone boundary, shoreline stabilization will consist of hand-placement of rock rip-rap. This work will require the use of a bobcat or similar small equipment to transport the stone. No bank shaping or recontouring will be done in this area. The shoreline stabilization work will be conducted during the Tellico Reservoir winter drawdown period so that all of the heavy equipment work can be done from the bottom of the bank in order to protect the desired existing vegetation in the buffer zone. A TVA representative with expertise in shoreline stabilization will be onsite to provide technical assistance during the shoreline stabilization work.

Shoreline Stabilization Procedure

West Section:

1. Perform bank contouring to produce a stable slope on which to place the rock. Regrade the bank to a uniform, stable slope with a maximum 1.5h : 1v slope, preferably 2h : 1v.

Rarity Pointe Commercial Recreation and Residential Development on Tellico Reservoir

2. Prepare the subgrade to the required lines and grades.
3. Compact any fill required in the subgrade to a density approximating that of the surrounding undisturbed material.
4. Spread any soil material removed to an upland location at least 150 feet from any surface water. Seed, fertilize, and straw-mulch the spread soil immediately.
5. Excavate a keyway at the toe of the regraded slope to form a stable base for the placement of rock riprap. The bottom of the keyway must be at the 811.5 to the 812 foot elevation.
6. Cover the newly regarded sloped with 10 ounce nonwoven filter fabric from the bottom of the keyway to the top of the bank. Overlap the edges by at least 12 inches, and space anchor pins/pegs every 3 feet along the overlap. Care must be taken not to damage the cloth when placing the riprap. If damage occurs, remove the stone and repair the sheet by adding another layer of filter material with a minimum overlap of 12 inches.
7. Rock class and gradation must be approved by TVA prior to commencement of work.
8. Machine place appropriately sized durable, rock riprap from the keyway to the top of the bank. Place rock riprap so that it forms a dense, well-graded mass of stone with a minimum of voids. Place rock riprap to its full thickness and height in one operation. Do not place stone by dumping through chutes or other methods which cause segregation of stone sizes. The exact distance along the shoreline to perform bank contouring and machine placement of riprap will be marked in the field by TVA, however, it is approximately 650 to 700 feet.
9. The finished slope will be a minimum of 1.5 h to 1v, and will be free of pockets of small stone or clusters of large stones. Hand placing of rock may be necessary to achieve the proper distribution of stone sizes to produce a relatively smooth, uniform surface.
10. Native riparian woody species will be selectively established on the top of the riprap bank (see Buffer Zone Vegetation section).

East Section

1. Hand-cut and remove selected woody species from the bank and top of bank. Woody plants that are to remain undisturbed will be marked by TVA. Unmarked woody plants can be removed.
2. Excavate by hand or small machine a keyway at the toe of the bank to form a stable base for the placement of rock riprap. Bottom of the keyway should be at the 812 foot elevation.
3. Hand place appropriately sized durable, rock riprap from the keyway to the top of the bank. Place rock riprap so that it forms a dense, well-graded mass of stone with a minimum of voids. Carefully place rock riprap around the stems of the remaining woody vegetation, making sure that there are a minimum of voids. Place rock riprap to its full thickness and height in one operation.
4. Native, riparian woody species will be selectively established on the top of the riprap bank (see Buffer Zone Vegetation section).

3. Buffer Zone Vegetation Plan

Establishment of the 50-foot vegetated buffer will consist of retention of some of the existing woody species, hand-removal and mechanical removal of selected plants, application of selected EPA-approved herbicides to control invasive exotic plant species; and planting of native shrubs and herbaceous species. Methods for long-term maintenance of the vegetated buffer zone include annual or biannual mowing, selective pruning of shoreline shrubs, and selective use of herbicides to control invasive, exotic species and certain native species such as poison ivy. Any herbicides used must be EPA-approved for use in aquatic areas and be applied according to label directions. Herbicide applications will be conducted only by state-certified pesticide applicators.

Table 1 presents a list of native woody and herbaceous plant species that can be planted or seeded in the buffer zone, the planting location (shoreline, wetland, or upland buffer zone), and the form in which they can be purchased (e.g., container-grown, bare-root seedling, seed). This is not a complete list of species that would be suitable for this area and additions can be made. Any species additions made by the applicant, however, must not be planted in the buffer zone until they are approved by TVA. While not all of these species may be used due to availability and other species may be added, the goal will be to use at least 80% of the listed and approved species in order to provide diversity and increase the likelihood of success of the planting plan (e.g., The impact of the failure of two or three species is of less consequence to overall plan success as the number of species planted/seeded increases).

Shoreline zone:

1. Plant selected woody plant species (shrubs) at the top of the rock riprap and in a ten-foot wide area extending landward from the top of the riprap. The planting stock will be either bare-root or container-grown. The shrubs will be planted in the appropriate numbers and spacing for the species and the planting area.
2. No fertilizers will be used.
3. The shrubs will be planted immediately upon completion of the riprap placement.

Buffer zone:

1. TVA will mark the plants that are to remain undisturbed. Remove unmarked woody plants from the buffer zone through a combination of hand-clearing and mechanical clearing. These plants include the invasive, exotic species, privet (*Ligustrum sinense*), autumn olive (*Eleagnus umbellata*), and mimosa (*Albizia julibrissin*). To control regrowth and stump sprouting, appropriate herbicides may

Rarity Pointe Commercial Recreation and Residential Development on Tellico Reservoir

be applied to the stumps using hand-held application equipment (backpack or hand-carried sprayers).

Do not disturb the aboveground or belowground parts of woody species that marked to remain.

2. Prepare the site for seeding in late summer with disk harrow or bog harrow, followed by disking and rolling to prepare seedbed. In some areas, it may not be possible to use mechanical means of clearing. In these areas, site preparation will consist of a combination of hand-clearing and herbicide applications.
3. Following mechanical site preparation, apply appropriate herbicides to the remaining herbaceous vegetation and vines in the buffer zone, being careful to avoid getting spray on the leaves of the existing shrubs and trees. A follow-up herbicide treatment in about two weeks may be necessary to control regrowth before seeding.
4. Plant the seed in late fall, after the first killing frost, and when the soil is not wet. Hydroseed or hand seed warm-season grasses and wildflowers. If hand-seeding, the seed should be mixed with a carrier of similar weight (i.e., sawdust, vermiculite). Following the hand-broadcast of seed the field should be lightly worked to cover the seed with 1/4" of soil and the soil packed with a roller harrow or yard roller.
5. Do not fertilize if hand-seeding. If hydroseeding, a low nitrogen content (0.10 – 0.25 lbs/acre) fertilizer may be applied as part of the hydroseed mixture. None of the hydroseeding mixture shall come in contact with surface waters.
6. The buffer zone may be watered during the establishment year. Following the establishment year, no watering is needed, and would tend to encourage undesired species, such as Japanese honeysuckle (*Lonicera japonica*).

3. Maintenance

Shoreline Shrub Zone:

Maintenance should be required in the shoreline shrub zone only to remove tall growth and to remove certain invasive, exotic species.

- a. Some of the shrubs may eventually reach heights that restrict the view of Tellico Reservoir from the par-3 golf course. In this eventuality, these shrubs may be selectively pruned using hand equipment. At no time, however, will any of the shrubs be pruned to below the height of five feet
- b. Certain, invasive, exotic species are to be discouraged as they will outcompete the existing and planted species, and will further contribute to the spread of these species in the Tellico Reservoir area. These plant species are listed in Table 2. These species may be removed by hand-removal (digging out the plant by hand), by hand-cutting and stump application of an approved herbicide, or

by very careful foliage application of herbicides using hand-held equipment. Any herbicide applications in the buffer zone must be approved in writing by TVA and performed by certified applicators.

Warm Season Grass – Wildflower Zone:

During the first two years when the warm season grasses and wildflowers are becoming established, undesired species may grow in the buffer zone. Management of undesired species may require hand-pulling, mowing, and/or herbicide applications. If mowing is used, mow just above the tops of the desired plant, and no lower. Only herbicides appropriate for the area should be used to avoid killing the planted grasses and wildflowers. The person in charge of maintenance of this area must call a TVA Watershed Team biologist prior to mowing or applying herbicide in the first year to determine the appropriate height of the mowing blade to avoid cutting the desired plants and to select the appropriate herbicide.

After the first year, it is only necessary to mow once every other year to keep woody species in check. Mowing should only be done after a hard killing frost in the fall because early mowing will destroy flowering stalks or flower buds. Do not mow the area lower than 8 inches. Mowing too low will destroy the ability of the plant to store adequate nutrients for subsequent bloom.

Table 1. Native species suitable for planting at the Rarity Pointe mitigation site				
Common name	Scientific name	Growth form	Planting zone	Planting form
Buttonbush	<i>Cephalanthus occidentalis</i>	Shrub	Shoreline top of riprap; Wetland	Bare-root; container
Bushy St. John's wort	<i>Hypericum densiflorum</i>	Shrub	Shoreline top of riprap; Wetland	Container
Silky dogwood	<i>Cornus amomum</i>	Shrub	Shoreline top of riprap; Wetland	Bare-root; container
Rose mallow	<i>Hibiscus moscheutos</i>	Shrub	Shoreline top of riprap; Wetland	Container
Virginia willow	<i>Itea virginica</i>	Shrub	Shoreline top of riprap; Wetland	Container
American beauty berry	<i>Callicarpa americana</i>	Shrub	Shoreline – upland edge	Container
Carolina rose	<i>Rosa carolina</i>	Shrub	Shoreline – upland edge	Container
Fragrant sumac	<i>Rhus aromatica</i>	Shrub	Shoreline-upland edge	Container
Dwarf sumac	<i>Rhus copallina</i>	Shrub	Shoreline – upland edge	Container
Red buckeye	<i>Aesculus parva</i>	Shrub	Shoreline – upland edge	Container
Hydrangea	<i>Hydrangea arborescens</i>	Shrub	Shoreline – upland edge	Container

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Azalea sp.	Rhododendron sp.	Shrub	Shoreline – upland edge	Container
Eastern gamagrass	Tripsacum dactyloides	Grass	Upland buffer	Seed
Little bluestem	Schizachyrium scoparium	Grass	Upland buffer	Seed
False boneset	Brickellia eupatorioides	Herbaceous wildflower	Upland buffer	Seed
Butterfly weed	Asclepias tuberosa	Herbaceous wildflower	Upland buffer	Seed
Lance-leaved coreopsis	Coreopsis lanceolata	Herbaceous wildflower	Upland buffer	Seed
Black-eyed susan (perennial)	Rudbeckia hirta	Herbaceous wildflower	Upland buffer	Seed
Purple coneflower	Echinacea purpurea	Herbaceous wildflower	Upland buffer	Seed
Bergamot	Monarda didyma and/or Monarda fistulosa	Herbaceous wildflower	Upland buffer	Seed
Dense blazing-star	Liatris spicata	Herbaceous wildflower	Upland buffer	Seed
Smooth penstemon	Penstemon sp.	Herbaceous wildflower	Upland buffer	Seed
Beardtongue	Penstemon digitalis	Herbaceous wildflower	Upland buffer	Seed
Smooth aster	Aster laevis	Herbaceous wildflower	Upland buffer	Seed
Asters	Aster spp.	Herbaceous wildflower	Upland buffer	Seed
Showy goldenrod	Solidago speciosa	Herbaceous wildflower	Upland buffer	Seed
Cup plant	Silphium perfoliatum	Herbaceous wildflower	Upland buffer	Seed
Summer phlox	Phlox paniculata	Herbaceous wildflower	Upland buffer	Seed
Sunflowers	Helianthus spp.	Herbaceous wildflower	Upland buffer	Seed
Primrose	Oenothera sp.	Herbaceous wildflower	Upland buffer	Seed
Mistflower	Eupatorium coelestinum	Herbaceous wildflower	Buffer – wetland edge	Seed
Swamp milkweed	Asclepia incarnata	Herbaceous wildflower	Buffer – wetland edge	Seed

APPENDIX D – PUBLIC COMMENTS AND RESPONSES

APPENDIX D - PUBLIC COMMENTS AND RESPONSES

INTRODUCTION

A Draft Environmental Assessment (EA) for the Brightwater Park at WindRiver was released for comment on May 31, 2017. The comment period closed on June 23, 2017. The Draft EA was transmitted to various agencies and organizations. The Draft EA was posted on TVA's public National Environmental Policy Act (NEPA) review website. A notice of availability including a request for comments on the Draft EA was published in newspapers serving the Lenoir City, Tennessee area. Comments were accepted through June 23, 2017, via TVA's website, mail, and e-mail.

A total of nine comment letters, emails, and online comments were received from eight individuals and organizations. One individual provided more than one submission. All letters and emails received during the comment period are included at the end of this appendix. The comment submissions were carefully reviewed and subdivided into 11 distinct comment statements. TVA's responses to the topics and issues raised in the comment submissions are provided below.

Comments in Support of Brightwater Park at WindRiver

Comment 1: I support the idea of a community garden, a dog park, fire pits, a pavilion, picnic tables, sidewalks within the park and the stabilization of the shoreline. I like the idea of a natural looking, environmentally friendly space. (*Commenter: Linda Anello*)

Response: Comment noted.

Comment 2: I recently bought a piece of ground in Windriver July of 2016. Planning on building the beginning of 2018. I have always loved the community and when I was touring everything I honestly fell in love with the idea and plans they had for Brightwater Park. I can see myself, my family and friends spending tons of time at that park. Whether it be kayaking or fishing from the pier to having picnics and dinners out there, it has always seemed like the perfect setting for a park. I've talked with other property owners and they have been excited for some time now for the possibility of having the park finally be developed as well. I sincerely hope TVA allows Windriver and Mr. Ayers to develop Brightwater Park into the vision that has always seemed like a perfect plan in continuing to show the beauty of the land here in Windriver. (*Commenter: Matthew Collins*)

Response: Comment noted.

Comments Objecting to Brightwater Park and/or the Floating Docks at Brightwater Park

Comment 3: Don't like the idea of a public park in WindRiver. It was supposed to be a private community. (*Commenter: Billy Ray and Sinda Daugherty*)

Response: Comment noted. The deed to the former TVA land known as Tract No. XTELR-11 (see Figure 3) designates it for commercial recreation use, therefore, reasonable public access to the park is a requirement.

Comment 4: Don't agree with a pier going out for courtesy dock – again private community! This promotes a rowdy, drunken atmosphere. (*Commenter: Billy Ray and Sinda Daugherty*)

Response: Comment noted. See response to Comment 3.

Comment 5: Due to security and safety issues we oppose the building of piers at Brightwater Park. (*Commenter: Ronda Middleton*)

Response: Comment noted. See response to Comment 3. A portion of the park lies on TVA public land below the 820 foot contour elevation and provides general public access along the shoreline. Safety and security measures can be put in place by the applicant to ensure public health and safety, however, general accessibility open to the general public is a requirement as well.

The floating dock would be built in accordance with all applicable Section 26a Conditions with respect to safety. Additionally, federal, state, and local regulations would also apply.

Comment 6: My concern and objection comes with building piers at the park. In my opinion this opens the door to some security concerns for the residents. There is a large marina very close by and one reason we chose WindRiver was the fact that you could not build your own personal boat dock. I think that rule is in keeping with the health and beauty of the lake. I realize the public would have to have some way to access the park, so I suggest it should be through the front gates only. This entrance would help give residents a better feeling of security and would be fair to everyone. (*Commenter: Linda Anello*)

Response: Comment noted. See comment 5

Comments Regarding Fees/Costs at/of Brightwater Park

Comment 7: Though it sounds like a beautiful park, it seems that it discriminates against low income families that will not be able to pay a fee every time they want to enjoy a park on TVA land. Do the fortunate residents in the WindRiver Golf community also have to pay a fee? I recognize that the fee is for the privilege of crossing through the golf community but parks on

TVA land should be built to encourage families living in apartment complexes and in homes without large yards to have welcoming access to the outdoors. The idea of this park seems to benefit the already fortunate families living in the golf community while discouraging others to enjoy it. Even if there is no fee for boat access, few low income families have a boat. The fee alone is enough to tell others that ‘we do not really want you here and that you are not truly welcome at this park’.

I’m always in favor of parks but more consideration needs to be given to the idea of a fee for our children and families. Let’s make everyone welcome on TVA land and parks. Enough trees and TVA land has already [been] taken from the local community in favor of this exclusive golf club community. We should all be responsible and loving enough to do [the] right thing for our whole community. Everyone in Loudon County should benefit from the park equally. (*Commenter: GERALYN SLAYBAUGH*)

Response: If WindRiver decides to charge a fee for the general public to access the park, residents of the WindRiver community would be required to pay the same fee. Several water-based recreation amenities on TVA land within the vicinity of WindRiver are also available for public access without charge .

Comment 8: How would WindRiver be able to charge a fee for using the proposed recreation area if it is TVA property? (*Commenter: Sue Tinder*)

Response: The adjacent backlying private property, tract XTELR-11, above the 820 foot contour was sold by TVA designated for commercial recreation use, and the deed provides the owner of that property with rights to access and utilize shoreline property for commercial recreation use, subject to TVA approval.

Comment 9: Is the reason they can charge an admission fee because the land was deemed commercial or does it matter whether it is commercial or residential regarding a fee? (*Commenter: Michael Colacone*)

Response: See response to Comment 8.

Comment 10: In reading the article in the News-Herald and the Request for Public Comment, I see no mention of who or what entity is to pay for the proposed park in Loudon County at the WindRiver development. Although the project is purported to be “public”, with only kayak access, it will be essentially a lovely, private, play area for the WindRiver residents. If the development pays for it, that is fine. If my taxpayer dollars pay for it, I strongly object. However, there is a public road that runs alongside the WindRiver golf course. If that road provided true public access, then my objections would be removed. I feel this project may be an effort by WindRiver developers to get very nice amenities paid for by the public without practical public access. (*Commenter: Carol Lovegood-Hiers*)

Response: WindRiver Management LLC would pay for the development of the proposed Brightwater Park. Public access to Brightwater Park would be either via the main entrance gate or the floating dock.

General Comments about Brightwater Park

Comment 11: Is most of the project below the 820 contour line at WindRiver? (*Commenter: Michael Colacone*)

Response: Subsection 3.3.2.2 describes the location of various park facilities in relation to the TVA flood risk profile, and 100-year floodplain elevation. Approximately 5 acres of land including the majority of Brightwater Park and its various amenities would be located fully or partially below the 820 foot contour. Additionally, conditions of the 26a permit pertaining to features below 820 feet elevation are described in Subsection 3.3.2.2. A majority of the rip-rap stabilization would be placed below the 820 foot contour.