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NORRIS LAKE SERENITY, LLC (TENNESSEE VUES AT NORRIS LAKE) RECREATION EASEMENT AND SECTION 26A APPROVAL
DRAFT ENVIRONMENTAL ASSESSMENT

Claiborne County, Tennessee

Prepared by:
TENNESSEE VALLEY AUTHORITY
Knoxville, Tennessee

November 2025

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Symbols, Acronyms, and Abbreviations

ACHP	Advisory Council on Historic Preservation
ACS	American Community Survey
ARAP	Aquatic Resource Alteration Permit
AST	Above-ground storage tank
BMP	Best Management Practice
CAA	Clean Air Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
dB	decibels
dBA	A-weighted decibels
dbh	Diameter at breast height
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act of 1973
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
HAPs	Hazardous Air Pollutants
HUC	Hydrologic Unit Code
IPaC	Information for Planning and Consultation
Ldn	Day-night Level
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NLEB	Northern Long-Eared Bat
NNL	National Natural Landmark
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OSHA	US Occupational Safety and Health Administration
PM	Particulate Matter
RCRA	Resource Conservation and Recovery Act
RLMP	Reservoir Land Management Plan
SAV	Submerged Aquatic Vegetation
SPCC	Spill Prevention, Control, and Countermeasure
SWPPP	Stormwater Pollution Protection Plan
TDEC	Tennessee Department of Environment and Conservation
TDOT	Tennessee Department of Transportation
TVA	Tennessee Valley Authority
TWRA	Tennessee Wildlife Resources Authority
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
WOTUS	Waters of the United States
WQC	Water Quality Certification
WWC	Wet Water Conveyance

CHAPTER 1 – PURPOSE AND NEED FOR ACTION

1.1 Introduction and Background

Norris Lake Serenity, LLC (the Applicant) has applied for a Shoreline Construction Permit under Section 26a of the Tennessee Valley Authority (TVA) Act and a 30-year easement under 40 U.S.C. § 1314 associated with development of a commercial marina and associated infrastructure (the Project) on approximately 62.67 acres of private land, land within the TVA flowage easement, and inundated TVA property (the Project Area). The Project is located along the Norris Reservoir on the Clinch River in Claiborne County, Tennessee (see Figure 1-1). Within the Project Area, the proposed Project would include 1,216 public boat slips, a floating marina store, fuel docks, a wave break, utilities to service the boat slips, porticos, a boat ramp, and access roads and associated infrastructure. TVA's action includes approval of the construction of proposed facilities within TVA's flowage easement and inundated TVA property, as well as approval of a 30-year easement for operation of the commercial marina.

The Project Area has approximately 6,230 feet of frontage on the north bank of the Clinch River on the Norris Reservoir between river miles 135 and 136. Land cover and use within the Project Area includes deciduous and mixed forests and a network of logging trails and gravel roads.

1.2 Purpose and Need

The Applicant's purpose and need is to develop a commercial marina and associated facilities within a larger mixed-use community development along Norris Reservoir. TVA's purpose and need for action is to decide whether to grant a Section 26a permit for shoreline construction activities and approve an easement for commercial recreational use of TVA property as part of the Applicant's proposed commercial marina development project on Norris Reservoir.

Section 26a of the TVA Act requires TVA approval prior to the construction, operation, or maintenance of any dam, appurtenant works, or other obstructions affecting navigation, flood control, or public lands or reservations across, along, or in the Tennessee River or its tributaries. TVA's Section 26a jurisdiction extends to the limits of the Tennessee River watershed. On TVA reservoirs, that jurisdiction typically applies to the limits of the 500-year floodplain or to the upper limits of TVA's flowage rights, whichever is higher. Flowage rights refer to certain rights, usually in the form of an easement over a certain area, purchased by TVA from landowners that grant TVA the right to flood or submerge land within the easement area for a prescribed period of time, typically associated with the land around reservoirs. Within the Project Area, TVA's jurisdiction corresponds to its flowage rights, which extend up to the 1,044-foot contour elevation.

Because the proposed development includes activities that would be located on TVA property within a TVA flowage easement, TVA has Section 26a jurisdiction over portions of the Project Area and must consider whether to approve or deny the Section 26a permit application.

TVA's Land Policy (2007) governs the management of public lands to maximize public enjoyment, flood control, navigation, power production and economic growth. Consistent with 40 U.S.C. § 1314 the Land Policy states that TVA shall consider leasing or granting limited easements for the development of commercial recreation facilities or public

recreation purposes if the property is so designated in a reservoir land management plan and the site remains suitable for recreational uses and a continued need exists for such use. Accordingly, as part of consideration and review of the Proposed Action, TVA must also consider whether to approve or deny an easement for the development and use of a commercial marina on TVA property.

1.3 Decisions to be Made

The primary decisions TVA must make are whether to grant Section 26a approval for shoreline construction activities and a 30-year easement for the operation of a commercial marina by the Applicant. TVA's Section 26a jurisdiction is implemented through Section 26a regulations (18 CFR 1304) and the 1999 Shoreline Management Policy. Public law 40 U.S.C. § 1314 allows TVA to grant easements for various uses, including recreation.

This Environmental Assessment (EA) was prepared to inform TVA decision makers and the public about the environmental consequences of implementing the Proposed Action. TVA will use this EA to support the decision-making process and to determine whether an Environmental Impact Statement (EIS) should be prepared or whether a Finding of No Significant Impact (FONSI) may be issued.

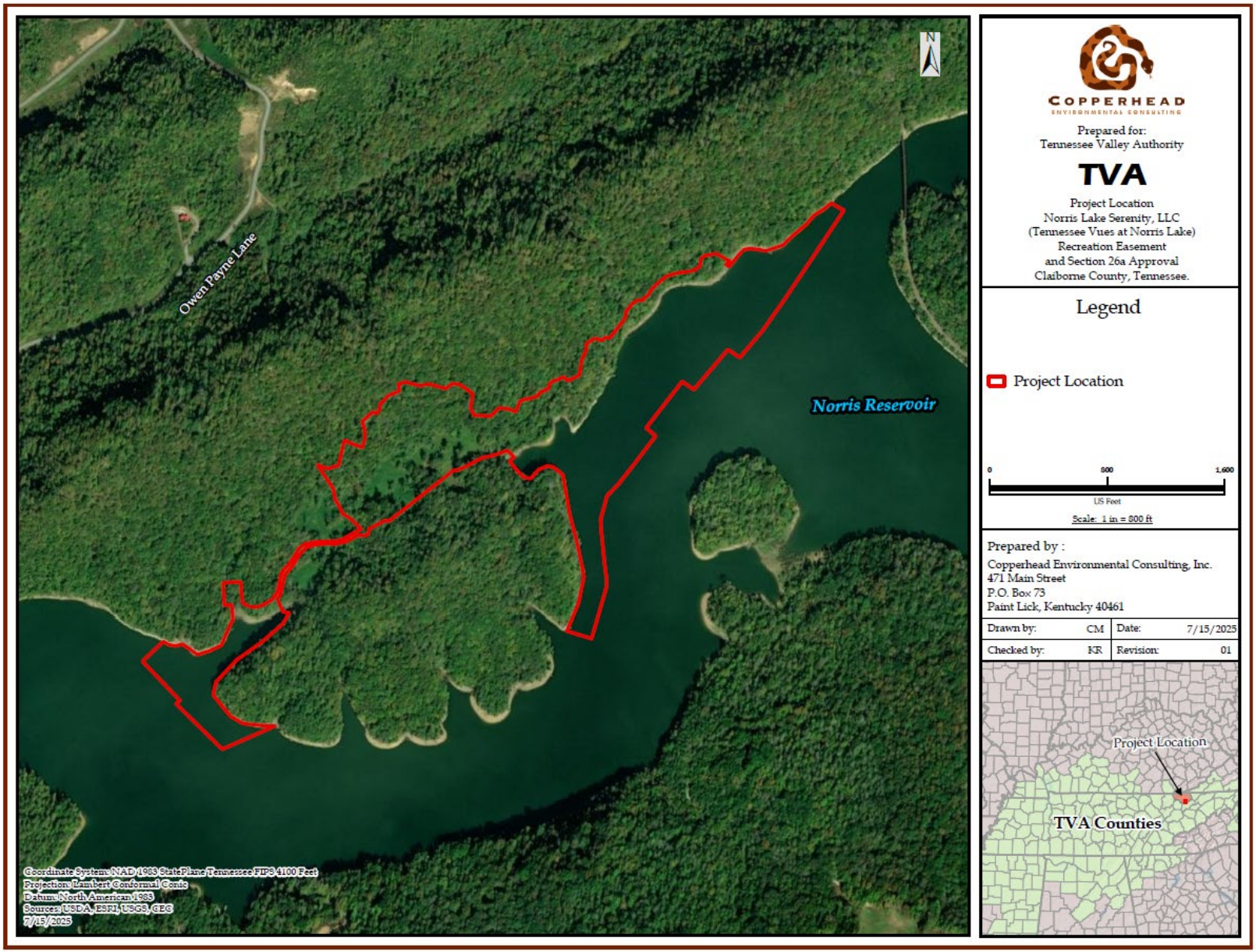

Figure 1-1. Project Location Map

1.4 Related Environmental Reviews and Consultation Requirements

During the preparation of this EA, TVA consulted with several federal and state agencies.

TVA initiated consultation with the Tennessee Historical Commission in compliance with Section 106 of the National Historic Preservation Act (NHPA) on November 4, 2025, to address potential adverse effects to cultural resources. Additional details are provided in Section 3.13 and in Appendix A.

Several activities associated with the Proposed Action Alternative were addressed in TVA's programmatic consultation with the United States Fish and Wildlife Service (USFWS) on routine actions and federally listed bats in accordance with the Endangered Species Act (ESA) Section 7(a)(2), which was completed in April 2018 and updated in 2023 and 2024. For those activities with potential to affect bats, TVA committed to implementing specific conservation measures. These activities and associated conservation measures are identified in the TVA Bat Strategy Project Screening Form (Appendix B and summarized in Section 2.3). See Section 3.19 for species-specific details.

TVA identified the following environmental reviews that are related to the Proposed Action. The contents of these related reviews help describe the affected property and are incorporated by reference as appropriate.

Norris Reservoir Land Management Plan - Final Environmental Assessment (2001)

The Norris Reservoir Land Management Plan (RLMP) was approved by the TVA Board of Directors in September 2001. The Norris RLMP addresses the management of TVA-owned public land surrounding Norris Reservoir.

In the Norris RLMP Final EA, TVA considered two alternatives for managing land around the Norris Reservoir. Under Alternative A, or the No Action Alternative, TVA would continue to use the existing Norris Reservoir Land Forecast System to manage TVA public land. Under Alternative B, the Allocation Alternative, TVA would use the proposed Norris Plan to guide future land use decisions. A common feature of both alternatives is the categorization of residential and flowage easement shoreline. On September 18, 2001, TVA posted in the Federal Register (Volume 66, Number 181) that it was adopting the proposed reservoir land management plan for Norris Reservoir.

Shoreline Management Policy Final Environmental Impact Statement (1999)

TVA's Shoreline Management Policy FEIS was released in November 1998 and was approved by the TVA Board of Directors on April 21, 1999. The Record of Decision for the FEIS was published in the Federal Register on June 4, 1999. The Shoreline Management Policy establishes a Valleywide policy to improve the protection of shoreline and aquatic resources while allowing reasonable access to the water.

In the Shoreline Management Policy FEIS, TVA considered seven alternatives for managing residential shoreline development impacts in the Tennessee Valley. The TVA Board adopted a modified Blended Alternative, in which TVA seeks to balance residential shoreline development, recreation use, and resource conservation needs in a way that maintains the quality of life and other important values provided by its reservoir system. The Record of Decision was published in the Federal Register on June 4, 1999 (Volume 64, Number 107). The Proposed Action would be consistent with this policy.

1.5 Scope of the Environmental Assessment

TVA is considering whether to approve or deny the Applicant's request to obtain Section 26a approval for shoreline construction activities and an easement for recreational use of TVA-managed property. To ensure that the potential impacts of the Project are properly analyzed, the EA will address resources present within the entire 62.67-acre Project Area, although TVA's permitting authority applies to the approximately 55.79 acres of flowage easement and inundated TVA property. While TVA does not have jurisdiction over the remaining 6.88 land-based acres, activities in these areas are considered connected actions under the National Environmental Policy Act (NEPA) and are addressed in this EA.

TVA prepared this EA to comply with NEPA and TVA's procedures for implementing it at 18 CFR part 1318. TVA reviewed the Proposed Action and Section 26a permit application and identified the following issues to be evaluated in detail in the EA:

- Land Use and Prime Farmland
- Geology and Groundwater
- Noise and Vibration
- Air Quality
- Visual Resources
- Socioeconomics
- Public Health and Safety
- Hazardous Materials and Solid Waste
- Utilities and Service Systems
- Natural and Managed Areas
- Parks and Recreation
- Transportation
- Cultural and Historic Resources
- Vegetation
- Wetlands
- Surface Water
- Floodplains
- Aquatic Ecology
- Terrestrial Zoology

The following resource was considered but ultimately dismissed from further analysis in the EA:

- Navigation: Commercial navigation extends 61 miles up the Clinch River from its mouth; the Project Area is located between river miles 135 and 136. As such, coordination with the U.S. Coast Guard regarding impacts on commercial navigation is not needed. In its review of the Applicant's plans, TVA also determined that the Project would not obstruct the navigational capacity of Norris Reservoir, therefore, a US Army Corps of Engineers permit pursuant to Section 10 of the Rivers and Harbors Act of 1899 is not needed. For these reasons, impacts on navigation require no further analysis. Impacts to recreational boating will be addressed in Section 3.11.

- Global Climate Change: Potential effects related to global climate change were considered and determined to be negligible because of the nature of the action.

1.6 Scoping and Public Involvement

TVA Public Land Management completed a 30-day public comment period as part of the Commercial Recreation Easement process. The notice was posted in the *Claiborne Progress* on May 21, 2025, and requested public comments regarding potential impacts on

environmental or historic resources and to identify any other issues associated with the proposed Project. Three comments were received. Substantive topics raised by commenters are addressed in this EA.

The draft EA was made available for a 30-day public review period on November 20, 2025. The availability of the draft EA was announced in a media release posted on TVA's website. TVA will review any comments received and address them as appropriate in the final EA, which will also be made available to the public.

1.7 Necessary Permits or Licenses

All necessary permits, permit modifications, licenses, and approvals would be obtained by the Applicant for activities it implements within the 62.67-acre Project Area. The list below identifies additional regulations, programs, permits, approvals, or other authorizations from federal, state, or local authorities that may be required before the Project Area could be developed for specific uses by the Applicant:

- A National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity (CGP) is required under Section 402 of the Clean Water Act for discharge of pollutants found in stormwater runoff associated with construction activities that disturb one or more acres into Waters of the U.S. (WOTUS) or Waters of the State of Tennessee. The development and approval of a Stormwater Pollution Prevention Plan (SWPPP) is a component of this permit. Construction Best Management Practices (BMPs) to minimize impacts to water quality would be outlined in the SWPPP. The Applicant is applying for an NPDES permit from the Tennessee Department of Environment and Conservation's (TDEC) Division of Water Resources.

- Should hydrostatic test discharges occur, the Applicant would be required to obtain coverage under the 2021 NPDES General Permit for Discharges of Hydrostatic Test Water (TN670000).

- A US Army Corps of Engineers Section 404 permit for discharge of dredged or fill material into WOTUS.

- An Aquatic Resource Alteration Permit (ARAP), which also operates as TN's Section 401 Water Quality Certification, for alterations to streams, rivers, lakes, or wetlands.

- A TVA Section 26a permit is required for shoreline construction activities like docks, marinas, or shoreline stabilization.

- A Claiborne County floodplain development permit would be required for development within the Clinch River 100-year floodplain.

- A Claiborne County building permit is required for permission to construct, enlarge, or remodel a building in an unincorporated area of the county.

- For ongoing operations of the marina, the Applicant would be required to obtain a Tennessee Multisector Stormwater Permit (TMSP), Sector Q.

CHAPTER 2 – ALTERNATIVES

Two alternatives are under consideration: Alternative A – the No Action Alternative, and Alternative B – the Proposed Action Alternative. Below are descriptions of both alternatives, a table comparing the alternatives, and the identified Preferred Alternative.

2.1 Description of Alternatives

2.1.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not grant Section 26a approval for shoreline construction activities or an easement to operate the proposed marina. As a result, no proposed facilities would be constructed within the TVA flowage easement or TVA inundated reservoir property. This alternative does not meet the Applicant's purpose and need for the Project. However, it does provide a benchmark for comparing the environmental impacts of the implementation of the Action Alternative.

2.1.2 Alternative B – Proposed Action Alternative

Under the Proposed Action Alternative, TVA would grant Section 26a approval for shoreline construction activities and a 30-year easement for operation of the proposed commercial marina. The proposed Project would be constructed on approximately 62.67 acres along the Norris Reservoir in Claiborne County, Tennessee (see Figure 2-1). The Project Area consists of approximately 12.89 acres of private land within the TVA flowage easement, 42.9 acres of inundated TVA property, and 6.88 acres of private land where proposed activities are considered connected actions under NEPA and are addressed in this EA. The 30-year easement would cover 42.9 acres of inundated TVA property in TVA Tract Nos. NR-106 and NR-102, all below the 1,020-foot contour elevation (normal summer pool). The Section 26a approval would apply to the 55.79 acres of flowage easement and inundated TVA property.

Figure 2-1 displays the preliminary master plan for the proposed development within the Project Area. The proposed Project would achieve the Applicant's purpose of developing a commercial marina and associated facilities within a larger mixed-use community development along Norris Reservoir.

Construction would occur in three phases as summarized below:

Phase I

- A main dock consisting of approximately 400 boat slips of varying sizes
- A 10,000-square foot floating marina store
- An eight-inch water line, an eight-inch sewer line, gas, electrical, and telecommunications lines
- Four fuel pumps located on two fueling docks with gas lines running from storage tanks located above the 1,044-foot contour elevation
- An aluminum walkway (12-feet wide by 92-feet long)
- A 12,000-square foot land-based portico

- A concrete boat ramp 36 feet wide by 120 feet long with a floating dock 12 feet wide by 120 feet long
- A wave wall dock (wave break)
- Parking areas with spaces for 67 trucks with trailers and 221 cars
- Marina store and restaurant located on the main dock.
- Installation of rip rap for shoreline stabilization

Phase II

- Approximately 424 boat slips of varying sizes
- An aluminum walkway
- A 12,000-square foot land-based portico
- Water and electric lines
- A roadway used for access to phase II of the marina
- Planting of the shoreline using native plants for stabilization

Phase III

- Approximately 200 boat slips of varying sizes on the west side of the development
- Approximately 192 boat slips of varying sizes on the east side of the development
- An aluminum walkway
- A 12,000-square foot land-based portico
- Water and electric lines
- A roadway used for access to phase III of the marina
- Installation of rip rap for shoreline stabilization

If the Section 26a approval is granted, construction of Phase I is anticipated to begin in late-2026. Because the timelines for Phase II and III construction would be based on demand, the Applicant anticipates that Phase II would begin around early 2029 and Phase III in early 2032. TVA would review final plans prior to each Phase of construction to ensure consistency with the analysis of this EA and its associated decision.

Grading and development of road, utility, and landscape infrastructure would be conducted to support the Project. Typical grading and construction equipment for land development and installation of infrastructure would be used (e.g., excavators, bulldozers, skid steer loaders, motor graders, trenchers, scrapers, etc.). Grading below the 1,044-foot elevation contour would be associated with the docks and supporting facilities, walkways, the marina store, and the restaurant. This would occur during the initial phase of development. The Applicant's plans include 3,262 cubic yards of excavation and 1,456 cubic yards of fill below the 1,044-foot contour.

Some pilings would be driven into the shore side of the dock where the water depth is low enough and pile driving conditions are workable. However, most of the anchoring for the dock system would be winches with cables, fairleads to direct the cables underneath the flotation, and "dead men" anchors on the reservoir bottom. Pending final Project engineering plans, these anchors would be secured in one of two ways: (1) using concrete footers placed on the riverbed; or (2) a helical system that would be affixed to the riverbed

below the marina. Concrete footers would require about 2.6 million pounds of concrete placed on the reservoir bottom to hold the docks.

The wave wall dock would extend a few feet deeper into the reservoir than the docks and would not be anchored to the bottom of the reservoir. It would be located on the outer edge of the last line of docks to dissipate the presented waves with a series of steel angles that turn the incoming wave energy onto itself and neutralize the forces. Given the shallow depths of operation of the wave wall, there should be minimal impact on the water flow below 3-5 feet deep.

Grading and other ground-disturbing construction activities would require clearing approximately 4.78 acres of trees.

Water, sewer, gas, and electrical services entering the interior of the Project Area would be installed underground with sufficient protective cover. No connection to existing on-site transmission lines, nor use of existing transmission structures, is planned.

Construction of one of the parking areas would result in unavoidable impacts to wetland W001 (0.02 acres). Wetland W001 is presumed to be an isolated and non-jurisdictional feature, and no permits or mitigation would be required. See Section 3.15 for additional details.

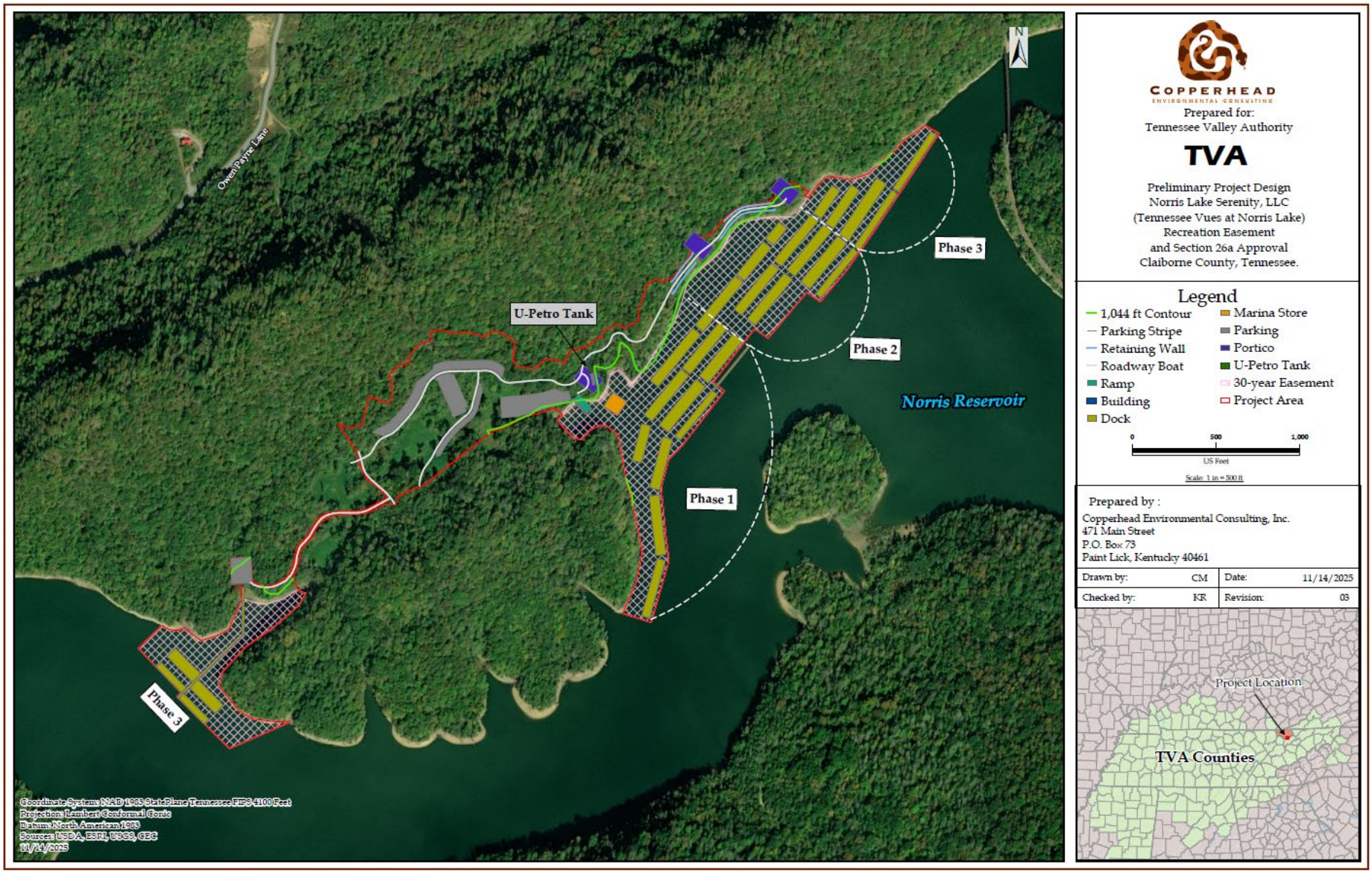

Figure 2-1. Overview of Proposed Project

2.1.3 Alternatives Considered but Eliminated From Further Discussion

No other alternatives were identified for the Project.

2.2 Comparison of Alternatives

Impacts evaluated may be beneficial or adverse and may apply to the full range of natural, aesthetic, historic, cultural, and socioeconomic resources within the Project Areas of each alternative and within the surrounding areas. Impact severity is dependent upon their relative magnitude and intensity and resource sensitivity. In this document, four descriptors are used to characterize the level of impacts in a manner that is consistent with TVA's current practice. In order of degree of impact, the descriptors are as follows:

- No Impact (or Effect) – Resource not present or, if present, not affected by Project alternatives under consideration.
- Minor – Environmental impacts are not detectable or are so minor that they would not noticeably alter any important attribute of the resource.
- Moderate – Environmental impacts are sufficient to alter noticeably, but not to destabilize, important attributes of the resource.
- Major – Environmental impacts are clearly noticeable and are sufficient to destabilize important attributes of the resource.

A comparison of the environmental consequences associated with each alternative is presented in Table 2-1.

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

Resource Area	Impacts From No Action Alternative	Impacts from Proposed Action Alternative
Land Use and Prime Farmland	No impacts	Minor adverse long-term impacts on land use because the Proposed Action would be consistent with other properties in the vicinity where mixed residential and commercial development are common.
Geology and Groundwater	No impacts	Minor adverse impacts with BMPs to minimize potential for spills and contamination.
Noise and Vibration	No impacts	Minor temporary impacts from construction noise. Minor to moderate impacts during operation from increased boat use.
Air Quality	No impacts	Minor adverse impacts during construction and operation from vehicle, equipment, and boat emissions.
Visual Resources	No impacts	Minor adverse impacts on visual resources from conversion of Project Area from mostly forested to a developed condition.
Socioeconomics	No impacts	Moderate short and long-term benefits to the local economy from increase in construction and operation employment and tax revenue. Minor impacts from increased property values.

Resource Area	Impacts From No Action Alternative	Impacts from Proposed Action Alternative
Public Health and Safety	No impacts	Minor short- and long-term impacts with adherence to OSHA and TOSHA requirements and the Tennessee Fire Codes.
Hazardous Materials and Solid Waste	No impacts	No adverse impacts with implementation of Spill Prevention, Control, and Countermeasure (SPCC).
Utilities and Service Systems	No impacts	Temporary, minor impacts from potential interruptions during construction and no adverse impacts during operation.
Natural and Managed Areas	No impacts	Minor indirect impacts, but no conflict with management of Hinds Ridge Forest potential National Natural Landmark (NNL) or its eligibility for NNL designation.
Parks and Recreation	No impacts	Minor short-term impacts from construction activities; moderate long-term beneficial impacts from increased water-based recreational opportunities.
Transportation	No impacts	Minor impacts during construction and intermittent minor to moderate impacts during operation from increased traffic.
Cultural and Historic Resources	No impacts	Based on survey results and lack of NRHP eligible or listed resources, no effects are anticipated.
Vegetation	No impacts	Minor impacts from 4.78 acres of tree clearing. No impacts on rare plant communities or threatened or endangered species.
Wetlands	No impacts	Minor, permanent impacts from removal of 0.02 acres of low-quality wetlands.
Surface Water	No impacts	With adherence to requirements in the Section 26a permit, SWPPP, SPCC, CGP, and CWA permits, there would be minor short- and long-term impacts on surface water.
Floodplains	No impacts	Minor temporary impacts from construction of roads, a boat launch ramp, courtesy pier, porticos, and parking lots within the 100- and 500-year floodplains. Minor permanent impacts from placement of fill within the 100-year floodplain and Norris Flood Storage Zone.

2.3 Identification of Mitigation Measures

Through the Project planning and permitting process, numerous design modifications have been incorporated into the Proposed Action Alternative that avoid or minimize impacts to sensitive resources identified within the Project Area.

In addition to the standard conditions for granting Section 26a approval and other necessary permits, which include mitigation measures, BMPs, and other requirements, TVA would require implementation of the following mitigation measures to avoid, minimize, or resolve adverse impacts on the environment:

- In accordance with the Spill Prevention, Control, and Countermeasure (SPCC) plan, the SWPPP, CGP and Clean Water Act (CWA) permits, Project activities would be conducted in a manner to ensure that waste materials are contained, and the introduction of pollution materials to receiving waters would be minimized.

- The Applicant and its contractors would adhere to OSHA and TOSHA requirements to minimize safety risks.

- Structures would conform to applicable building code and floodplain development requirements.

- The following Conservation Measures identified in the TVA Bat Strategy Project Review Form (Appendix B) would be implemented:

    - Noise would be short-term, transient, and not significantly different from the urban interface or natural events (i.e., thunderstorms) that bats are frequently exposed to when present on the landscape.

    - Operations involving chemical/fuel storage or resupply and vehicle servicing would be handled outside of riparian zones (streamside management zones) in a manner to prevent these items from reaching a watercourse. Earthen berms or other effective means would be installed to protect stream channel from direct surface runoff. Servicing would be done with care to avoid leakage, spillage, and subsequent stream, wetland, or ground water contamination. Oil waste, filters and other litter would be collected and disposed of properly. Equipment servicing and chemical/fuel storage would be limited to locations greater than 300-ft from sinkholes, fissures, or areas draining into known sinkholes, fissures, or other karst features.

    - Standard BMPs for sediment and contaminants as well as measures to avoid or minimize impacts to sensitive species or other resources would be implemented consistent with applicable laws and Executive Orders (EOs).

    - Temporary lighting would be directed away from suitable habitat during the active season.

    - The use of outdoor lighting would be evaluated during the active season and light pollution would be minimized when installing new or replacing existing permanent lights by angling lights downward or via other light minimization measures (e.g., dimming, directed lighting, motion-sensitive lighting).

- To minimize the potential for the introduction of sediment into jurisdictional aquatic resources, the Project would comply with the TDEC General NPDES Permit for Discharges of Stormwater Associated with Construction Activities.

- The Applicant and its contractors would adhere to requirements in TCA 1000-3-8 to minimize fugitive dust.

- To minimize impacts from stormwater runoff, sedimentation, and erosion, erosion prevention and sediment control measures would be installed in upland areas. A SWPPP would be developed and implemented consistent with the requirements of

the TDEC General NPDES Permit for Discharges of Stormwater Associated with Construction Activities.

- An SPCC plan would be required due to the capacity (20,000 gallons) of the gasoline above-ground storage tanks (ASTs). The purpose of this plan would be to defend against petroleum pollution. If the threshold requirement for a SPCC plan were met, a SPCC plan would be prepared and would apply to all locations in the marina where fuel or oil is stored or transferred, and it would clearly explain spill emergency procedures, including health and safety, notification and spill containment and control measures.

- All solid waste generated during construction (i.e., organic material, building material, excess debris associated with clearing, excavation, and grading) and operation would be managed and disposed of in accordance with applicable local, state, and federal regulations, and disposed of at an off-site landfill.

- Organic material would not be burned on site.

- Permanent restroom facilities would be properly sized, permitted, and installed per state and local requirements.

- To ensure that the Proposed Action Alternative would be consistent with the requirements of EO 11988 for floodplain management, the following conditions would be included in the final TVA Section 26a approval and easement documents:

    - The porticos would remain open to the elements and never be enclosed.

    - No items or equipment subject to flood damage would be stored under the porticos.

    - Dumpsters located below an elevation of 1,035 feet would be securely anchored to prevent them from floating free during a major flood.

    - The fuel storage tank would be designed to meet State or Local requirements for above ground storage tanks, as appropriate.

    - Floating facilities (boat slips, marina store, fuel dispensers located on the dock, access walkways, courtesy dock, and wave break) would be securely anchored to prevent them from floating free during major floods.

    - For all electrical utilities permitted, a cutoff would be located at or above the 500-year flood elevation (1,035 feet) and would be accessible during flooding.

    - The Applicant would evaluate future development connecting to utilities to ensure they would not support unwise development in the 100-year floodplain.

    - Bank stabilization would be placed, on average, no more than two feet from the existing shoreline at the June 1 flood guide elevation of 1,020 feet.

  - The concrete boat launch ramp, parking areas, and landscaping would be constructed to withstand flooding with minimal damage.

- The recreation easement would contain the following flood risk conditions or covenants, as appropriate:

  - Any future facilities or equipment subject to flood damage would be located above or floodproofed to at least the 500-year flood elevation plus two vertical feet, which would be an elevation of 1,037 feet.

  - Any future development proposed within the limits of the 100-year floodplain (elevation 1,032 feet) would be consistent with the requirements of EO 11988.

  - All future development would be consistent with the requirements of the TVA Flood Storage Loss Guidelines.

  - Although TVA retains the right to flood the area, TVA would not be liable for damages resulting from flooding.

2.4 The Preferred Alternative

TVA's preferred alternative is the Proposed Action Alternative. Under this alternative, TVA would grant a commercial recreation easement and 26a approval to the Applicant for the proposed marina. The Proposed Action Alternative meets the needs of the Applicant and supports TVA's mission of providing recreational opportunities in the Tennessee Valley region.

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CHAPTER 3 – AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the existing environmental, social, and economic conditions of the Project Area and surrounding areas and the anticipated potential impacts of implementing the No Action Alternative and the Proposed Action Alternative for each resource. The No Action Alternative is analyzed in the EA to establish a baseline for analyzing the environmental impacts of the Proposed Action Alternative in accordance with NEPA regulations.

To ensure the potential impacts of the Project are properly analyzed, this EA addresses resources present within the entire 62.67-acre Project Area, although TVA's permitting authority applies to the approximately 55.79 acres that fall below the 1,044-foot contour.

3.1 Land Use and Prime Farmland

Consistent with the Norris RLMP, TVA manages public land on Norris Reservoir to protect and enhance natural resources and to improve the quality of life in the Tennessee Valley. TVA public land is used for commercial and public recreation, industrial development, natural resource management, and a variety of other community needs.

The Project Area is in an unincorporated portion of Claiborne County without land use zoning. Prior to construction, the Applicant would be required to obtain a Claiborne County building permit.

Aside from open water, land cover in both the Project Area and within a 1-mile buffer of it is primarily deciduous forest (Table 3-1) (USGS 2024). Much of the Project Area exhibits signs of past logging activities (see Section 3.14).

Table 3-1. Landcover within the Project Area and within a 1-mile Buffer.

Landcover Class	Project Area Acres	Percent of the Project Area	Project Area and 1-mile Buffer Acres	Percent of Project Area and 1-mile Buffer
Deciduous Forest	25.83	40.2	2,142.42	57.86
Developed, Low Intensity	0.22	0.3	10.90	0.29
Developed, High Intensity	-	-	2.22	0.06
Developed, Medium Intensity	-	-	8.23	0.22
Developed, Open Space	-	-	84.28	2.28
Hay/Pasture	0.91	1.4	188.89	5.10
Herbaceous	9.10	14.2	169.77	4.59
Mixed Forest	0.02	<1	208.20	5.62
Open Water	28.15	43.8	780.46	21.08
Barren Land	-	-	4.85	0.13
Emergent Herbaceous Wetland	-	-	0.22	0.01
Shrub/Scrub	-	-	64.07	1.73
Evergreen Forest	-	-	38.06	1.03

Data source: USGS 2024

Prime farmland is land most suitable for economically producing sustained high yields of food, feed, fiber, forage, and oilseed crops. Prime farmlands are available for agricultural use (i.e., not water or developed land) and have the best combination of soil type, growing season, and moisture supply. The Farmland Protection Policy Act (7 U.S.C.§ 4201 et seq.) requires Federal agencies to consider the adverse effects of their actions on prime or unique farmlands. The purpose of the Act is “to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses.”

Soils in the Project Area are comprised of Lehew fine sandy loam, Rough stony land/Talbott soil material, and Montevallo shaly silt loam. Within the Project Area, none of these soil types are classified as prime farmland. The erosion factor K for these soils ranges from 0.20 to 0.24. Factor K indicates the susceptibility of a soil to sheet and rill erosion by water and, in general, the higher the value, the more susceptible the soil is to sheet and rill erosion by water (USDA-NRCS 2024).

3.1.1 Alternative A

Under the No Action Alternative, TVA would not grant Section 26a approval for shoreline construction activities or an easement to operate the proposed marina. As a result, there would be no construction and no change in land use or prime farmland in the Project Area.

3.1.2 Alternative B

As a result of the proposed construction and operation activities, land cover and use would change, with a long-term decrease in forested land and an increase in developed land. Because the Project Area is in a location without land use zoning, there would be no conflicts with local land use regulations. Overall, impacts on land use would be long-term and minor.

There is no prime farmland in the Project Area and, therefore, no impacts on this resource. Because the erosion factor for the predominant soil types in the Project Area is relatively low, it is anticipated that the risk of erosion would be minor. Clearing, grading, and development of the landscape, including vegetation clearing, increases in impermeable surfaces, and soil compaction, are expected to result in minor impacts to shallow aquifers as water infiltration is reduced.

3.2 Geology and Groundwater

The Project Area is within the Ridge and Valley Province of the Appalachian Mountain Region, which is characterized by long ridges and intervening valleys and composed of early Paleozoic sedimentary rocks (TVA 2001, NPS 2018). The province extends southwest to northeast and soft sediment limestone and shales that are easily eroded make up the valleys, while more resistant sandstones and conglomerates form the ridges (NPS 2018). Cambrian age dolomites, shales, and limestones primarily characterize the bedrock geology underlying the Project Area (USGS 2017). There are no known caves within the Project Area.

In eastern Tennessee, the Ridge and Valley Province principal aquifers consist of carbonate rocks that are primarily Cambrian and Ordovician in age, with minor Silurian, Devonian, and Mississippian rocks also present (USGS 1995). Locally, this system is referred to as the East Tennessee aquifer system and consists of soluble carbonate rocks. Water quality in the carbonate aquifers of the province is characterized as hard, with dissolved solids concentrations of 170 milligrams per liter or less. Due to the complex

network of fractures, bedding planes, and solution openings in the carbonate rocks in areas with thin residuum overlying the substrate, water recharges rapidly and water quality in these aquifers is susceptible to contamination by human activities (USGS 1995).

The depth to groundwater in the Project Area is reported as greater than 30 inches beneath the land surface (USDA Natural Resource Conservation Service [USDA-NRCS] 2024). Groundwater used for public supply is often obtained from a relatively deep zone, the top of which is typically 50-250 feet beneath the land surface (USGS 2016).

3.2.1 Alternative A

Under the No Action Alternative, TVA would not grant Section 26a approval for shoreline construction activities or an easement to operate the proposed marina. As a result, there would be no change to the existing geological and groundwater conditions.

3.2.2 Alternative B

Construction of the proposed marina and associated infrastructure would involve ground-disturbing activities. Approximately 4.78 acres of tree removal would occur, and the Project Area would be graded, resulting in ground disturbance at shallow to moderate depths. Excavation for foundations, piping, pilings, and utility connections would result in ground disturbance at greater depths. It is not anticipated that these activities would occur at depths that would intersect public groundwater supplies (typically 50 to 250 feet beneath the land surface (USGS 2016)) or result in significant impacts to groundwater resources.

Shallow aquifers could sustain minor impacts from changes to overland water flow and recharge caused by clearing, grading, and construction within the Project Area. Water infiltration, which is normally enhanced by vegetation, would be temporarily reduced until vegetation is re-established. Since construction would occur in three phases, the entirety of the Project Area would not be devoid of vegetation at a single point in time. In addition, near-surface soil compaction caused by heavy construction vehicles could reduce the ability of soil to absorb water. These minor impacts would be temporary and would not significantly affect geologic resources or groundwater resources.

The implementation of a SWPPP would minimize potential impacts from erosion and sediment. Following construction, all disturbed areas not covered by roads, parking, or structures would be restored and vegetated, or other stabilization measures would be installed. Any impacts resulting from construction activities involving chemical or fuel storage or resupply and equipment and vehicle services, such as spills and leaks that could contaminate groundwater, would be minimized by implementation of the SPCC for construction and operation of the proposed marina. Installation of the sewer pump, sewer lines, fuel piping, fuel dock, and fuel tanks would be conducted following applicable permits and regulatory requirements to minimize the potential for leakage or spillage.

Following construction, all disturbed areas not covered by roads, parking, or structures would be restored and vegetated, or other stabilization measures would be installed. With compliance with applicable permits and regulatory requirements, it is anticipated that the construction and operation of the proposed marina would have minor impacts on geologic and groundwater resources.

3.3 Noise and Vibration

Noise is defined as unwanted or unwelcome sound judged to be unpleasant, loud, or disruptive. For this analysis, this definition is focused on sound added to the undeveloped

Project Area through human activities. These levels can vary with time of day, weather, vegetation, and human activity. The level of disturbance or unpleasantness can be variable and subjective, but the intensity or loudness is measured on a logarithmic scale in units called decibels (dB). Because of inherent subjectivity, dB is adjusted using an “A-weighted decibel” (dBA), which weights high-pitched and low-pitched sounds to approximate how the average person hears sound. The day and night level (Ldn) is the 24-hour equivalent of the steady A-weighted sound level, which incorporates a 10 dBA correction penalty for the hours between 10 pm and 7 am to account for the increased annoyance during this period and the fact that most people are more sensitive to noise while they are trying to sleep.

Construction activities from vehicle traffic and construction equipment create sounds referred to as construction noise. The impact of construction noise can vary not only among individuals but also based on time of day. For traffic-related noise, the Federal Highway Administration (FHWA) has set a threshold of 67 dBA as the sound level at which noise abatement should be considered (FHWA 2017).

According to the Claiborne County Sheriff’s Office, there are no noise ordinances or other restrictions in unincorporated portions of Claiborne County (K. Rhodes, personal communication, July 17, 2025).

The Project Area is in a rural setting, where existing noise is primarily associated with boating activity on Norris Reservoir. Typical background Ldn for rural areas ranges between 35 and 50 dBA (EPA 1974). Background noise levels greater than 65 dBA can interfere with normal conversation, watching television, using a telephone, listening to the radio, and sleeping. Ambient noise within the Project Area is anticipated to fall within the typical range described above for rural areas.

Given the rural setting, there are few sensitive noise receptors within the vicinity of the Project Area. Northwest of the Project Area is the Elk Lodge cabin rental and a nearby residence, both are approximately 0.43 miles from the edge of the Project Area’s boundary. The Pines Cabin rental is approximately 0.34 miles north of the Project Area. A cluster of around three residences is located southwest of the Project Area, across Norris Reservoir. These residences are approximately 0.25 miles from the edge of the Project Area’s boundary.

3.3.1 Alternative A

Under the No Action Alternative, TVA would not grant Section 26a approval for shoreline construction activities or an easement to operate the proposed marina. As a result, there would be no changes in noise levels in the Project Area and no impacts.

3.3.2 Alternative B

There would be short and long-term increases in noise during implementation of the Proposed Action Alternative. During each of the three phases of construction, noise would be generated from the operation of construction equipment on-site and the movement of construction-related vehicles (i.e., worker trips and material and equipment trips) into the Project Area and on surrounding roadways. Table 3-2 displays the average noise levels produced by typical construction equipment and the typical noise level associated with a twin-engine motorboat. Twin engine boats include pontoon boats, yachts, wakeboard boats, and others.

Table 3-2. Average Noise Levels from Construction Equipment and a Typical Twin-Engine Motorboat.

Noise Source	Average Measured Sound Level at 50 feet
Impact Pile Driver	101
Auger Drill Rig	84
Dozer	82
Concrete Pump Truck	81
Excavator	81
Twin-engine Motorboat	79
Front-end Loader	79
Concrete Mixer Truck	79
Backhoe	78
Dump Truck	76
Flatbed Truck	74

Data source: Federal Highway Administration 2017, National Marine Manufacturers Association 2000

Although noise levels associated with construction activities would increase ambient noise levels adjacent to the Project Area, the distance, topography, and remaining vegetation between the Project Area and the nearest sensitive receptor would diminish noise to a background level such that it is unlikely to be experienced. Any noise that would potentially be experienced would be short-term during the construction phases. Using the noise level associated with an impact pile driver, the loudest typical piece of construction equipment, the approximate noise level at each receptor is estimated in Table 3-3. These noise levels would be temporary and intermittent, only occurring when the loudest equipment is used. For these reasons, impacts during construction would be minor.

Table 3-3. Approximate Noise Levels at Receptors within Proximity of the Project Area.

Receptor	Approx. Distance from Project Area Boundary (miles)	Approx. Noise Level of an Impact Pile Driver at that Distance (dBA)
Commercial – Elk Lodge	0.43	67
Residence – Owen Payne Ln	0.43	67
Commercial – The Pines Cabin	0.34	69
Residences – Washburn, TN	0.25	72

It is anticipated that boating noise would increase as a result of the operation of the marina. These impacts would be minor to moderate in conjunction with the existing use of Norris Reservoir. Impacts from boating noise would occur during the day (the use of personal water craft (e.g., jet skis) is not permitted to operate between sunset and sunrise (Kalkomey Enterprises 2025)), which reduces the likelihood that larger twin-engine boats would be heard at night.

3.4 Air Quality

Federal and state regulations protect ambient air quality. With authority granted by the Clean Air Act (CAA) 42 U.S.C. 7401 et seq. as amended in 1977 and 1990, the U.S. Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS) to protect human health and public welfare. The EPA codified NAAQS in 40 Code of Federal Regulations (CFR) Part 50 for the following “criteria pollutants:”

nitrogen dioxide, carbon monoxide, ozone, sulfur dioxide, lead, and particulate matter (PM) with an aerodynamic diameter equal to or less than 2.5 microns ($PM_{2.5}$). The NAAQS reflect the relationship between pollutant concentrations and health and welfare impacts. Primary standards protect human health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards are designed to protect public welfare, including visibility, animals, crops, vegetation, and buildings. These standards reflect the latest scientific knowledge and have an adequate margin of safety intended to address uncertainties and provide a reasonable degree of protection.

The EPA classifies geographic areas as being “attainment” areas or “nonattainment” areas. A geographic area with air concentrations at or below the NAAQS is referred to as an “attainment” area. An area with air concentrations that exceed these standards is referred to as a “nonattainment” area. The air quality in Claiborne County, Tennessee, currently meets the ambient air quality standards and is designated in attainment with respect to criteria pollutants (US EPA 2025).

Other pollutants, such as hazardous air pollutants (HAPs), are also a consideration in air quality impact analysis. HAPs are pollutants that are listed under Section 112(b) of the CAA because the pollutants present a threat of adverse human health impacts or adverse environmental impacts. Although there are no applicable ambient air quality standards for HAPs, the emissions are limited through permit thresholds and technology standards as required by the CAA.

Fugitive dust is a source of respirable airborne PM, including PM_{10} and $PM_{2.5}$, which can result from ground disturbances such as grading, excavation, and travel on unpaved roads. The amount of dust generated is a function of the activity, silt and moisture content of the soil, wind speed, frequency of precipitation, vehicle traffic and types, and roadway characteristics. The TDEC Air Pollution Control Rule (Tennessee Code Annotated [TCA] 1000-3-8) requires reasonable precautions to prevent PM from becoming airborne, including use, where possible, of asphalt, water or suitable chemicals to limit its creation. Proposed construction and operation activities would be subject to both federal and state (Tennessee Division of Air Pollution Control) regulations. These regulations impose permitting requirements and specific standards for expected air emissions.

3.4.1 Alternative A

Under the No Action Alternative, TVA would not grant Section 26a approval for shoreline construction activities or an easement to operate the proposed marina. As a result, there would be no construction or operation activities and no changes to existing air quality conditions.

3.4.2 Alternative B

Transient air pollutant emissions would occur during the proposed construction activities, Phase I of which is anticipated to begin in mid-2026 and finish in the first quarter of 2027. Construction-related air quality impacts would primarily result from the staging of construction vehicles, equipment, and supplies, the operation of construction vehicles and equipment, and worker personal vehicles.

Fugitive dust from site development (grading, construction, etc.) would be minimized during the construction period through adherence to requirements in TCA 1000-3-8.

During the construction and operation phases, combustion of gasoline and diesel fuels by internal combustion engines (boats, vehicles, generators, construction equipment, etc.) would generate local emissions of PM, nitrogen oxides, carbon monoxide, volatile organic compounds, and SO_2 during the site preparation and construction period. However, modern emission control technologies and new fuel mixtures have significantly reduced vehicle and equipment emissions.

Generally, these temporary impacts on air quality during the construction and operation phases would be similar to other medium-scale construction projects and marinas. The quantity and duration of emissions would vary, further minimizing the intensity of short-term impacts on air quality. Air emissions are dependent upon both man-made factors (e.g., intensity of activity, control measures) and natural factors (e.g., wind speed, wind direction, soil moisture). However, even under unusually adverse conditions, emissions during construction and operation would have, at most, a minor transient impact on off-site air quality and would be well below applicable NAAQS.

3.5 Visual Resources

Visual resources within a landscape are evaluated based on several factors that include scenic attractiveness, integrity, and visibility. Scenic attractiveness is a measure of scenic quality based on human perceptions of intrinsic beauty as expressed in the forms, colors, textures, and visual composition of each landscape. Scenic integrity is a measure of scenic importance based on the degree of visual unity and wholeness of the natural landscape character. The varied combinations of natural features and human alterations both shape landscape character and help define their scenic importance. The subjective perceptions of a landscape's aesthetic quality and sense of place are dependent on where and how it is viewed. For this analysis, the affected environment is the Project Area, as well as the physical and natural features of the landscape around it.

Undeveloped portions of the Project Area offer a moderate degree of scenic attractiveness, particularly the Project Area interior and shoreline, which are largely in a natural condition, but with areas of disturbance including unpaved access roads, tree removal or downed trees, and human-made clearings. The view from the Project Area across the Norris Reservoir is currently a mix of forested and residential areas.

3.5.1 Alternative A

Under the No Action Alternative, TVA would not grant Section 26a approval for shoreline construction activities or an easement to operate the proposed marina. There would be no change to visual resources in the Project Area and no impacts on scenic attractiveness, integrity, or visibility.

3.5.2 Alternative B

The scenic attractiveness, integrity, and visibility of the Project Area would be altered by the construction and operation of the marina and associated facilities. Residences on adjacent parcels would likely experience minor visual impacts, which would be minimized by the presence of trees and other vegetation between those residences and the proposed development. There would be moderate impacts from the change in visual character resulting from the proposed development. However, these changes would be similar to the character of several nearby parcels in the viewshed, which include a mix of residential, commercial, and open space lands. Development along the Project Area shoreline would be seen from across the Norris Reservoir, including some residential areas. However, the forested areas between the shoreline and residential areas would minimize direct changes

to the scenic qualities and visibility of the Project Area. As a result, adverse impacts on visual resources would be minor.

3.6 Socioeconomics

The Project Area is in Claiborne County, Tennessee. The nearest city is Tazewell, the county seat. Publicly available statistics generated by the United States Census Bureau to characterize socioeconomic conditions in the state and county are presented in Table 3-4. Claiborne County's 2024 population is close to the median county population for Tennessee.

Table 3-4. Population, Income, and Employment in the State and County

Socioeconomic Metric	Claiborne County	Tennessee
Population[1]		
Total Population (2020)	29,930	6,910,840
Most Recent Population Estimate (July 2024)	33,070	7,227,750
Population Percent Change: 2020 to 2024	+10.5%	+4.6%
Income and Employment[2]		
2022 Average Earnings (2024$)	$48,086	$72,251
2022 Per Capita Income (2024$)	$45,112	$62,489
2024 Unemployment rate	4.0%	3.4%
2022 Average Earnings (2024$)	$48,086	$72,251
Top Employment Industries (2024)	Manufacturing (25%); Local government (19%); Trade, transportation, & utilities (16%); Education & health services (14%)	Trade, transportation, & utilities (21%); Education & health services (15%); Professional & business services (14%); Leisure & hospitality (11%); Manufacturing (11%)

[1] 2020 Population Estimates from U.S. Census Bureau, 2020 Decennial Census; 2024 Population Estimates from U.S. Census Bureau, Population Estimates Program
[2] Income and employment data source: U.S. Department of Commerce, Bureau of Economic Analysis via Headwaters Economics

The average earnings and per capita income in Claiborne County are about 33 percent lower than the statewide earnings and per capita income. The primary industries providing employment are manufacturing, local government, trade/transportation/utilities/ and education/health services. Manufacturing facilities providing employment include automotive parts, cargo trailers, furniture, and textiles.

The 2024 unemployment rate for Claiborne County was 4 percent, slightly higher than the state unemployment rate. Data from the 2023 American Community Survey (ACS) indicate that approximately 18 percent of residents in Claiborne County live below the federal poverty level, which is higher than at the state level (13 percent) (Headwaters Economics 2025). Three census block groups are within 1 mile of the Project Area, including where the Project Area itself is located. Table 3-5 contains poverty and minority information for these areas. The Project Area and vicinity are predominantly white with relatively low levels of individuals below the poverty level.

Table 3-5. Poverty and Minority Status by Census Block Group Within 1-mile of the Project Area.

Socioeconomic Metric[1]	Block Group 2, Census Tract 9706, Claiborne County, TN*	Block Group 3, Census Tract 9709, Claiborne County, TN	Block Group 3, Census Tract 5001, Grainger County, TN
Estimated Population	2,320	1,055	1,815
Income in the past 12 months below poverty level	100	37	266
Race			
White alone	2,191	1,055	1,791
Black or African American alone	44	0	0
American Indian and Alaska Native alone	0	0	0
Asian alone	0	0	0
Native Hawaiian or Other Pacific Islander alone	0	0	0
Some Other Race alone	0	0	0
Population of Two or More Races	85	0	24

[1] Data source: U.S. Census Bureau 2023 American Community Survey, 5-year estimates

3.6.1 Alternative A

Under the No Action Alternative, TVA would not grant Section 26a approval for shoreline construction activities or an easement to operate the proposed marina. There would be no change to employment levels, tax revenue, or property values.

3.6.2 Alternative B

According to the Applicant's Section 26a application, the Project would provide an estimated 15-30 construction jobs during construction, and 30-50 long-term jobs for operation. The restaurant, retail space, and fuel dock would cost approximately $8 million to construct over one year, and the boat slips would cost approximately $40 million to construct over six years. The County Planning Commission noted in a newspaper article that the estimated property tax from the proposed Project would be $5 million or more annually (Compton 2024). Additionally, on November 20, 2023, the Claiborne County Commission, including the County Mayor, passed a resolution in support of the development.

The proposed Project would contribute to the local economy by accommodating population growth, providing jobs, and increasing revenue through sales and taxes. There would be additional short- and long-term economic benefits derived from employment income of site contractors, sales tax revenues for building materials and supplies, heavy-equipment rental for site preparation, and enhancement of surrounding property values.

Conversely, increased property values could result in adverse economic impacts on existing residents in the county, such as an increase in property taxes and housing costs.

However, impacts are anticipated to be minor due to the geographic separation between existing neighborhoods and the proposed Project.

Overall, the proposed Project would provide employment opportunities, sales revenues to local businesses, and tax revenue to local municipalities. There may be some negative impacts from population growth or increased property values, but the proposed Project would provide moderate short- and long-term socioeconomic benefits to the local economy.

3.7 Public Health and Safety

The mission of the Occupational Safety and Health Administration (OSHA), a division of the US Department of Labor, is to ensure safe and healthful working conditions for working men and women by setting and enforcing standards and by providing training, outreach, education, and assistance. The State of Tennessee has an OSHA-approved plan under the Tennessee Occupational and Safety and Health Administration (TOSHA), which covers employees in the private sector and state and local government.

The Project Area is currently undeveloped and is not used by the public.

Some wastes generated by construction activities can pose a health and safety hazard. Exposure to these wastes can occur for persons working on or accessing (e.g., trespassing) a project site and persons working or living adjacent to a project site. Currently, solid, hazardous, and liquid wastes discharges and air emissions are managed following applicable federal, state, and local laws and regulations and applicable permit requirements.

Safety risks associated with operation of the Project include worker safety, the potential for structure fires, and public safety on access roads and floating boat slips.

3.7.1 Alternative A

Under the No Action Alternative, TVA would not grant Section 26a approval for shoreline construction activities or an easement to operate the proposed marina. There would be no change in public health and safety conditions within the Project Area.

3.7.2 Alternative B

The Applicant and its contractors would adhere to OSHA and TOSHA requirements to minimize safety risks. As a result, short-term impacts during construction would be minor.

During operation, the Applicant would provide fire extinguisher cabinets appropriately spaced to follow the Tennessee Fire Codes that require fire extinguishers and a life ring for emergencies. Appropriate speed limits would be established on Project Area roads. Commercial operators would be expected to employ standard employee safety training programs as required by OSHA and TOSHA. Safety risks on and near floating infrastructure would be further minimized by installation of lightweight, portable firefighting pumps that are mounted on a float. As a result, long-term impacts during operation would be minor.

3.8 Hazardous Materials and Solid Waste

Solid waste is defined by the Resource Conservation and Recovery Act (RCRA) as any garbage, sludge, or any other discarded material from industrial, commercial, mining, agricultural operations, and community activities. Solid waste is any material that has been discarded by being abandoned, inherently waste-like, a discarded military munition, or

recycled in certain ways (US EPA 2021). The EPA regulates solid waste under Subtitle D of the RCRA, which bans the open dumping of waste and sets minimum federal criteria for the operation of municipal waste and industrial waste landfills, including design criteria, location restrictions, financial assurance, corrective action, and closure requirements. In Tennessee, the TDEC Division of Solid Waste Management operates under the authority of the Solid Waste Management Act of 1991 (T.C.A. §68-211-101 et seq.) and implements RCRA Subtitle D at the state level.

Hazardous waste materials may include any solid waste or combination of solid waste that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may present substantial danger to public health or the environment when released into the environment (40 CFR Part 261). To be classified as a hazardous waste, a solid waste must meet one or more of the EPA-established characteristic properties (ignitability, corrosivity, reactivity, and toxicity) or be specifically listed as a known hazardous waste (US EPA 2021). Hazardous wastes are regulated under the RCRA through the EPA and the Atomic Energy Act through the US Nuclear Regulatory Commission. In addition to the EPA and US Nuclear Regulatory Commission, hazardous materials are regulated in the US by laws and regulations administered by OSHA and the US Department of Transportation. In Tennessee, the TDEC Division of Solid Waste Management implements RCRA Subtitle C at the state level.

A Phase I Environmental Site Assessment (ESA) has not been completed for the Project Area. No solid and/or hazardous wastes are known to be present. A search of the TDEC map database did not identify any underground storage tanks in the Project Area (TDEC 2025). No solid and/or hazardous wastes are known to be present.

3.8.1 Alternative A

Under the No Action Alternative, TVA would not grant Section 26a approval for shoreline construction activities or an easement to operate the proposed marina. As a result, there would be no change in solid or hazardous waste generation or disposal in the Project Area.

3.8.2 Alternative B

Solid waste would be generated during the clearing, construction, and operation of the proposed development and facilities. Wastes associated with construction would primarily consist of organic material, building material waste, and excess debris associated with clearing, excavation, and grading. All solid waste generated during construction and operation would be managed and disposed of in accordance with applicable local, state, and federal regulations, and disposed of at an off-site landfill. Organic material would not be burned on-site.

Construction of an eight-inch sewer line and continuation of service below the 1,044 contour are included in the Proposed Action. Sewer infrastructure within the Project Area would be constructed to code to minimize the potential for future overflows.

Project operation would involve the storage and use of gasoline. The March 28, 2025, site plan provided by the Applicant and the Section 26a application indicate that two double-walled ASTs are planned to be installed near the marina for fuel purposes. The Applicant also proposed the installation and use of four fuel pumps, two each located on 12x100-foot fuel docks on either side of the main walkway just past the marina store platform. A gas line would transport fuel from the fuel storage located above the 1,044-foot contour down to the fuel docks and gas station. An SPCC could be required due to the capacity of the gasoline

ASTs (20,000 gallons), the purpose of which would be to defend against petroleum pollution. Since the threshold requirement for a SPCC plan would be met, a SPCC plan would be prepared and would apply to all locations in the marina where fuel or oil is stored or transferred, and it would clearly explain spill emergency procedures, including health and safety, notification and spill containment and control measures. It is also recommended that the facility participate in the TVA Clean Marina initiative to further provide guidance on the placement of BMPs and good housekeeping controls to minimize the potential of unregulated discharges.

With implementation of the SPCC plan, no adverse impacts related to solid and hazardous waste and hazardous materials are anticipated.

3.9 Utilities and Service Systems

The Project Area is served by a variety of utility providers and service systems, including the following:

- Electric – Powell Valley Cooperative
- Water, Sewer, and Gas – Claiborne County Utility District
- Trash and Recycling, Cable and Internet, and Phone – multiple providers exist for these services

3.9.1 Alternative A

Under the No Action Alternative, TVA would not grant Section 26a approval for shoreline construction activities or an easement to operate the proposed marina. There would be no changes to utilities on the Project Area or any of the existing service systems and no impacts.

3.9.2 Alternative B

The proposed Project would include installation of utilities above and below the 1,044-foot contour, including an 8-inch water line, 8-inch sewer line, telecommunications, and electricity. These utilities would serve the restaurant and commercial marina. The gas line would also run from storage tanks located above the 1,044-foot contour down to the dock to supply fuel to the gas station. Although unlikely, interruptions in service could be experienced by nearby residences and businesses as these utilities are connected to the system. Any interruptions would be temporary and would be avoided to the extent possible. The Applicant would coordinate with the applicable utility provider(s) to minimize planned disruptions. As a result, there may be temporary, minor impacts during construction and there would be no adverse impacts during operation.

3.10 Natural and Managed Areas

Managed areas include lands held in public ownership that are managed by an entity (e.g., TVA, US Department of Agriculture, US Forest Service, state agencies) to protect and maintain certain ecological and/or recreational features. Natural areas include ecologically significant sites; federal, state, or local park lands; national or state forests; wilderness areas; scenic areas; wildlife management areas; recreational areas; greenways; trails; Nationwide Rivers Inventory streams; and wild and scenic rivers. Ecologically significant sites are either tracts of privately owned land that are recognized by resource biologists as having significant environmental resources or identified tracts on TVA lands that are ecologically significant but not specifically managed by TVA's Natural Areas program.

A review of the TVA Natural Heritage Database identified one natural or managed area within 3 miles of the Project Area: the Hinds Ridge Forest area, a potential NNL located on 13 acres across the Norris Reservoir, approximately 0.25 miles from the Project Area.

3.10.1 Alternative A

Under the No Action Alternative, TVA would not grant Section 26a approval for shoreline construction activities or an easement to operate the proposed marina. There would be no direct or indirect impacts to the Hinds Ridge Forest potential NNL because none of the proposed activities would take place.

3.10.2 Alternative B

Construction and operation of the proposed development would not directly impact the Hinds Ridge Forest potential NNL. Minor indirect impacts could include construction and operation noise, viewshed intrusions, and runoff during construction, which would be minimized by adhering to the SWPPP. These impacts are not anticipated to affect management of the potential NNL or its eligibility for NNL designation.

3.11 Parks and Recreation

Popular recreational activities near the Project Area include boating, fishing, and water skiing on Norris Reservoir. Surrounding parcels are a mix of private land and TVA Undeveloped Recreation Lands. These TVA lands are available for informal and dispersed recreation such as hunting, hiking, birdwatching, camping, and other pursuits, subject to posted restrictions.

No public parks (e.g., county parks, ballfields, etc.) are located within 1 mile of the Project Area. There are currently two public water access points near the Project Area:

- The Lone Mountain Boat Dock is a public marina that is open year-round. The marina is located approximately 1.2 miles north of the Project Area on Ball Creek, a tributary of Big Sycamore Creek that enters the Clinch River around mile 135. This marina has 187 boat slips, as well as houseboat moorings. The Lone Mountain Boat Dock also offers amenities such as camping, boat rentals, and other water recreation activities, such as canoeing and kayaking.

- The Norris Landing Marina is a commercial marina located approximately 1 mile northwest of the Project Area. The Marina has 392 boat slips and offers other amenities, such as RV camping, utilities, and other marina services.

The Tennessee Wildlife Resources Agency (TWRA) places and maintains natural and manmade fish attractors that provide fish with habitat and resources such as cover, food sources, and spawning sites. Several fish attractors are located northeast of the Project Area in Big Sycamore Creek and Ball Creek and may provide an improved fishing experience.

3.11.1 Alternative A

Under the No Action Alternative, TVA would not grant Section 26a approval for shoreline construction activities or an easement to operate the proposed marina. There would be no change in parks and recreation facilities or opportunities near the Project Area.

3.11.2 Alternative B

Under the Proposed Action Alternative, there could be short-term impacts to Norris Reservoir recreation experiences during installation of floating infrastructure (e.g., possible temporary implementation of a no-wake zone). However, there would be moderate beneficial impacts during operation because of improved access to water-based recreation opportunities.

The construction and operation of the proposed marina could result in an increase in recreational boat traffic in the direct Project Area. However, there are multiple recreational access locations on Norris Reservoir and within the vicinity of the Project Area. As a result, and because recreational boats can travel a considerable distance from their original access point, it is unclear if or how much of an increase there may be in the surrounding area because of the proposed marina. In Tennessee, the TWRA is responsible for enforcing the Tennessee Boating Safety Act and oversees boat registrations, safety equipment, and speed limits. Recreational boating volume is not tracked (or managed) by TVA.

Construction may introduce temporary and intermittent noise on nearby TVA parcels, possibly affecting dispersed recreation experiences. These impacts are expected to be minor and would occur over the short term. Operation is not expected to affect land-based recreation opportunities on nearby TVA parcels.

3.12 Transportation

The Project Area contains an unimproved network of logging trails and roads. Direct access is from the north via Owen Payne Lane, which originates at its intersection with Lone Mountain Road. These two roads are considered rural local roads by the Tennessee Department of Transportation (TDOT), which support travel over short distances and primarily provide access to adjacent land (TDOT 2025; FHWA 2023). Major roadways within the vicinity of the Project Area include US 25E and TN 33, which intersect in the City of Tazewell, approximately 5.5 miles north of the Project Area. TDOT 24-hour traffic data for annual average daily traffic on roadways near the Project Area is provided in Table 3-6.

Table 3-6. 2024 Annual Average Daily Traffic.

Roadway	2024 Annual Average Daily Traffic
Lone Mountain Road (NW of Project Area)	1,167
Lone Mountain Road (NE of Project Area)	808
US 25E (S of Lone Mountain Road)	9,338
US 25E (N of Lone Mountain Road)	13,401
TN 33 (near intersection with Lone Mountain Road)	9,924

Source: TDOT 2024.

Because there is no active use in the Project Area, the existing logging trails and roads are not used for daily traffic.

3.12.1 Alternative A

Under the No Action Alternative, TVA would not grant Section 26a approval for shoreline construction activities or an easement to operate the proposed marina. As a result, the footprint of the main access point to the Project Area would remain the same, and it would

remain as an unimproved surface. There would be no change in transportation access or traffic volumes near the Project Area and no impacts.

3.12.2 Alternative B

Under the Proposed Action Alternative, paved roadways within the Project Area would be constructed, and the existing network of logging roads would no longer be used for access or transportation. Traffic along Owen Payne Lane and Lone Mountain Road would increase during the construction period because of materials deliveries and workers entering the Project Area. However, this increase would be minor because a small crew of 8 to 12 workers would be on-site daily during construction. While this increase would be noticeable because of the low existing traffic levels, it would not result in regular delays or congestion. Over the long term, there would be greater increases in traffic during operation as the public uses commercial facilities in the Project Area. This increase would likely be more noticeable on weekends and may result in localized, intermittent delays on holiday weekends or other times of high use. Overall, these long-term impacts would be minor to moderate.

3.13 Cultural and Historic Resources

Cultural resources include pre-contact and historic archaeological sites, districts, buildings, structures, and objects, as well as locations of important historic events that lack material evidence of those events. Historic architectural structures are also cultural resources and include standing structures (e.g., houses, barns, dams, power plants) that are usually at least 50 years of age and are considered eligible for listing on the National Register of Historic Places (NRHP). Cultural resources are considered historic properties if included in, or considered eligible for inclusion in, the NRHP maintained by the National Park Service. The eligibility of a resource for inclusion in the NRHP is based on the Secretary of the Interior's criteria for evaluation (36 CFR § 60.4), which state that significant cultural resources possess integrity of location, design, setting, materials, workmanship, feeling and association, and:

A. are associated with important historical events; or

B. are associated with the lives of significant historic persons; or

C. embody distinctive characteristics of a type, period, or method of construction or represent the work of a master, or have high artistic value; or

D. have yielded or may yield information (data) important in history or prehistory

Because of their importance to the Nation's heritage, historic properties are protected by multiple laws. Federal agencies, including TVA, have a statutory obligation to facilitate the preservation of historic properties, stemming primarily from NHPA (16 U.S.C. §§ 470 et seq.). Other relevant laws include the Archaeological and Historic Preservation Act (16 U.S.C. §§ 469- 469c), Archaeological Resources Protection Act (16 U.S.C. §§ 470aa-470mm) and the Native American Graves Protection and Repatriation Act (25 U.S.C. §§ 3001- 3013).

Section 106 of the NHPA requires federal agencies to consider the potential effects of their actions on historic properties and to allow the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on the action. Section 106 involves four steps: 1) initiate the process; 2) identify historic properties; 3) assess adverse effects; and 4) resolve adverse effects. This process is conducted in consultation with the State Historic

Preservation Office (Tennessee Historical Commission) of the state in which the action would occur, all federally recognized Tribes with interest in the project location, and with other interested consulting parties. Section 110 of the NHPA sets out the broad historic preservation responsibilities of federal agencies and is intended to ensure that historic preservation is fully integrated into their ongoing programs. Federal agencies are responsible for identifying and protecting historic properties and avoiding unnecessary damage to them. Section 110 also charges each federal agency with the affirmative responsibility for considering projects and programs that further the purposes of the NHPA, and it declares that the costs of preservation activities are eligible project costs in all undertakings conducted or assisted by a federal agency.

Cultural Resource Surveys and Findings

TVA has recommended that the area of potential effect (APE) for the cultural resources surveys includes the project footprint, where physical effects could occur, and all areas within a half-mile radius of the project footprint that would be visible from the proposed structures, where visual effects to above ground resources could occur.

During an archaeological survey of the project shoreline in 2009 conducted by TVA (Gage and Herrmann), no cultural resources were identified within the APE. In March 2024, North Wind Resource Consulting, LLC (North Wind) conducted an additional Phase I archaeological survey within and adjacent to the project shoreline within TVA's flowage easement jurisdiction (Brown et al. 2025a). The proposed facility locations above TVA's flowage easement were not surveyed during this effort. As such, TVA requested additional archaeological surveys of those areas. North Wind conducted an additional survey in May of 2025 (Brown et al. 2025b). North Wind did not record any new archaeological sites during their surveys; however, they did revisit previously recorded sites 40CE225, 40CE228, and 40CE266 and recorded a single isolated find along the shoreline. All three of these sites were previously determined not eligible for listing in the NRHP and are located outside of the APE. Likewise, the single isolated find is located outside the APE and is also not considered eligible for listing in the NRHP. North Wind recommended that the revisited sites remain listed as ineligible for the NRHP following their investigation.

North Wind also conducted a Phase I historic architectural survey of the APE that would be visible to the proposed project facilities. North Wind's survey identified one historic-aged above-ground structure, the Middlesboro Branch of the Southern Railroad, within the APE. However, North Wind recommended the Railroad as not eligible for listing in the NRHP. North Wind recommended that no additional archaeological or architectural work is needed in the APE. TVA agrees with North Winds recommendations.

3.13.1 Alternative A

Under the No Action alternative, TVA would not grant Section 26a approval for shoreline construction activities or an easement to operate the proposed marina. As a result, no proposed facilities would be constructed within the Project Area, and there would be no effects to historic properties.

3.13.2 Alternative B

Under the Proposed Action alternative, TVA would grant a Section 26a permit for shoreline construction activities and an easement to operate the proposed marina. Construction would involve ground-disturbing activities and the installation of above-ground structures in an uncompromised viewshed.

The Phase I archaeological surveys did not identify any resources within the APE. As such, the Proposed Action has no potential to affect archaeological sites. The Phase I architectural survey identified a single historic above-ground structure, the Middlesboro Branch of the Southern Railroad, in the APE. Northwind recommended this resource as not eligible for the NRHP and that the Proposed Action would have no effect on historic properties. TVA agrees with North Wind's recommendations.

Based on the results of the surveys and the lack of NRHP eligible or listed resources in the APE, there would be no effect on historic properties as a result of the Proposed Action. TVA initiated consultation on November 4, 2025, with the Tennessee Historical Commission and all Federally Recognized Tribes with an interest in the Project Area regarding the potential for adverse effects to cultural resources in compliance with Section 106 of the National Historic Preservation Act (NHPA). Details are provided in Appendix A.

3.14 Vegetation

A vegetation field survey of the Project Area was conducted on May 6, 2025, and focused on documenting plant communities, invasive species, and any potential plant populations that are state or federally listed as threatened or endangered. Using the National Vegetation Classification System (Grossman et al. 1998), vegetation types observed during field surveys were categorized as a combination of deciduous forest, mixed forest, and herbaceous vegetation. The herbaceous vegetation was heavily disturbed and degraded in some areas, with signs of recent deforestation and heavy equipment use throughout the site (Figure 3-1). No forested areas in the Project Area had structural characteristics indicative of old growth forest stands (Leverett 1996). All plant communities observed within the Project Area are common and well-represented across Tennessee.

Figure 3-1. Example of heavily disturbed vegetation in the Project Area

Deciduous forests are comprised of stands in which deciduous tree species account for more than 75 percent of the canopy cover. These forests occurred on approximately 24.1 percent of the Project Area (15.48 acres) and were dominated by young forest with trees ranging from 6 to 12 inches in diameter at breast height (dbh). Older trees were found in select areas along the Norris Reservoir shoreline and steeper slopes within the Project

Area, which ranged from approximately 12 to 24 inches dbh. Common canopy trees, including saplings, were observed in the area. Additionally, thick stands of non-native invasive shrubs and vines mixed with native shrubs were prevalent. Both native and invasive species were observed on the forest floor. Woody vine species were found throughout the canopy and understory. A list of common species observed in the Project Area is in Appendix C.

Mixed forests are defined as stands in which both evergreen and deciduous species contribute between 25-75 percent of total canopy cover. This forest type occurred in approximately 6.4 percent of the Project Area (4.12 acres) and was composed primarily of young trees that averaged approximately 6-12 inches dbh. Older trees were found in select areas along the Norris Reservoir shoreline and steeper slopes within the Project Area and ranged from approximately 12 to 30 inches dbh. Mixed forests were dominated by a variety of deciduous tree species, including American beech, sugar maple, red maple, southern red oak, eastern black walnut, and yellow buckeye, as well as conifers including eastern redcedar and Virginia pine. The understory supported saplings of canopy species mentioned above, as well as staghorn sumac. The herbaceous layer featured rattlesnake fern, Christmas fern, downy rattlesnake plantain, and Japanese stiltgrass as dominant species. Poison ivy vines covered much of the forest floor and understory and limited light penetration within these areas.

Herbaceous vegetation is characterized by greater than 75 percent cover of forbs and grasses and less than 25 percent cover of other vegetation types. These areas occupied approximately 7.4 percent of the Project Area (4.73 acres). Forest edges, disturbed fields, and regions along former logging roads accounted for the vast majority of herbaceous vegetation within the Project Area. Most of these sites were heavily disturbed and dominated by plants indicative of early-successional habitats, including areas with dense coverage of non-native invasive species. Common herbaceous species included pokeweed, common mullein, lyreleaf sage, wild garlic, broomsedge, daisy fleabane, and Japanese stiltgrass. Common woody species in these areas included multiflora rose, Pennsylvania blackberry, black elderberry, Japanese honeysuckle, frost grape, and kudzu. Much of this habitat type was densely covered in kudzu.

3.14.1 Alternative A

Under the No Action Alternative, TVA would not grant Section 26a approval for shoreline construction activities or an easement to operate the proposed marina. As a result, on-site vegetation would remain in its current condition, and there would be no impact to vegetation located within the Project Area.

3.14.2 Alternative B

Under the Proposed Action Alternative, existing vegetation within the Project Area would likely be heavily disturbed. Approximately 4.78 acres of trees would be cleared within portions of deciduous and mixed forest vegetation types, and ground disturbance would occur to construct structures associated with the proposed marina and housing, as well as the road, parking, and pedestrian infrastructure. Construction of these structures and maintenance of the surrounding areas could reduce the abundance of invasive plant species within the Project Area, while increased light penetration due to tree clearing could promote the growth of aggressive native and invasive species within the periphery of cleared areas. Because of the relatively small area affected, and the existing levels of disturbance from prior logging activities, these impacts would be minor.

There would be no loss of rare or unique plant communities, as all of the terrestrial plant communities found within the Project Area are common and well represented throughout the region. Herbaceous species on-site are primarily weedy native species or non-native invasive species. Under the Proposed Action, the extent or abundance of these species at the local, regional, or state level would not be significantly affected. The Proposed Action is not anticipated to affect federal or state-listed plant species or their habitats, as field surveys indicated habitat for rare, threatened, and endangered species does not occur within the Project Area. Development and regular maintenance of the Project Area over the long term may reduce the abundance of current invasive species on-site and could improve the overall quality of vegetation present.

Submerged aquatic vegetation (SAV) may be affected by the installation of the docks. However, many species of SAV are free-floating and thus impacts are expected to be minor. The physical presence of the docks may also alter natural light regimes and water circulation. Some shading may also have a beneficial effect by suppressing algal growth and cooling surface waters in the immediate area. Operation and use of the docks could lead to the possible introduction of invasive aquatic vegetation.

3.15 Wetlands

Wetlands are areas inundated by surface or groundwater often enough to support vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, mud flats, and natural ponds.

Wetlands are protected under Sections 404 and 401 of the Clean Water Act (CWA) and by EO 11990, Protection of Wetlands. Under Section 404, the U.S. Army Corps of Engineers (USACE) established a permit system to regulate activities in WOTUS, including wetlands. To conduct specific activities in wetlands, authorization under a Section 404 permit from the USACE may be required, depending on the wetland size and hydrologic connectivity to a navigable waterway. Section 401 gives states the authority to certify whether activities permitted under Section 404 are in accordance with state water quality standards. In Tennessee, the TDEC is responsible for issuing Section 401 Water Quality Certification (WQC). TDEC administers Section 401 WQC through the Aquatic Resource Alteration Permit (ARAP) program. EO 11990 requires all federal agencies to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency’s responsibilities.

A stream and wetland delineation for the Project Area was conducted in May 2025. The delineation was performed according to the USACE standards (Environmental Laboratory 1987). The USACE wetland standards require documentation of wetlands, such as the one used by the USFWS (Cowardin et al. 1979), and as defined under 18 CFR Part 1318.40, were also considered in this review. One wetland (W001; 0.02 acres) was identified within the Project Area and is described in more detail in the following paragraph.

Wetland W001 is a palustrine emergent wetland located near the center of the Project Area along the edge of a former logging road (Figure 3-2). It appeared as a depression within the surrounding landscape. Wetland W001 supported dominant wetland vegetation consisting primarily of black willow (*Salix nigra*), soft rush (*Juncus effusus*), broadleaf cattail (*Typha latifolia*), woolgrass (*Scirpus cyperinus*), Pennsylvania blackberry, Japanese stiltgrass (*Microstegium vimineum*), and kudzu. The soil profile consisted of clay loam soils.

Hydrology indicators included drainage patterns, geomorphic position, and FAC-neutral test.

Wetland W001 is located approximately 700 feet west of the Norris Reservoir shoreline. This wetland is presumed isolated within the landscape and would not be considered a jurisdictional WOTUS under the current guidance issued in March of 2025 following court decisions regarding the case of *Sackett v EPA*. Final determinations of jurisdictional status are subject to USACE approval. According to TVA Rapid Assessment Method (RAM) wetland scoring methodologies, W001 is a low-quality wetland.

Figure 3-2. View of wetland W001, facing east

3.15.1 Alternative A

Under the No Action Alternative, TVA would not grant Section 26a approval for shoreline construction activities or an easement to operate the proposed marina. As a result, wetland W001 would remain in its current condition and there would be no impact to wetlands located within the Project Area.

3.15.2 Alternative B

The Proposed Action Alternative would result in draining or filling of wetland W001. This wetland is hydrologically isolated and therefore non-jurisdictional at the federal level based on current guidance provided by the USACE. At the state level, no notice, approval, or mitigation is required for the alteration of a low-quality wetland less than 1 acre in size (such as W001), provided that the alteration is done in accordance with the following conditions:

- (A) The activity must not result in the discharge of toxic pollutants;
- (B) Sediment must be prevented from entering a stream or other surface waters; and
- (C) Appropriate steps must be taken to ensure that petroleum products or other chemical pollutants are prevented from entering waters of the state. In the event of a spill, measures must be taken immediately to prevent pollution of waters of the state, including groundwater (T.C.A., Title 69, Chapter 3, Part 1).

If required, the Applicant would obtain all necessary section 404/401 CWA permits and required compensatory mitigation prior to construction. Because W001 is of low quality and requires no permitting or mitigation, impacts under the Proposed Action Alternative would be permanent but minor.

3.16 Surface Water

The Project Area drains to waterways within the ten-digit hydrologic unit code (HUC) Norris Lake-Clinch River (0601020511) and Ball Creek (0601020509) watersheds. In addition to the Norris Reservoir embayment of the Clinch River, a May 2025 stream and wetland delineation identified one intermittent stream and one ephemeral stream/wet-weather conveyance (WWC) in the Project Area (Table 3-7). The WWC transitions into an intermittent stream as groundwater influence becomes apparent. This single channel terminates into Norris Reservoir. These surface waters are depicted in Figure 3-3 and a representative photograph of the intermittent stream on the Project Area is provided as Figure 3-4.

Table 3-7. Watercourses in the Project Area.

Drainage Name	Type of Resource	Jurisdictional Status	Total Length (feet)
L001 (Norris Reservoir)	Lacustrine	Jurisdictional	7,913.72
S001	Intermittent Stream	Jurisdictional	77.36
E001	Wet Weather Conveyance	Ephemeral	130.02

As defined by the 2023 Conforming Rule, enacted in response to *Sackett v. EPA*, ephemeral features are those that flow only in direct response to precipitation, including ephemeral streams, swales, gullies, rills, and pools, and are not considered jurisdictional WOTUS. The intermittent stream is presumed to be jurisdictional, which would require permits and mitigation. Hydrological determinations were conducted by a Tennessee Qualified Hydrologic Professional to determine its jurisdictional status. Linear watercourses were classified as stream or WWC/ephemeral streams. Streams are defined by the 2020 TDEC Division of Water Pollution Guidance for Making Hydrologic Determinations as “a surface water that is not a wet-weather conveyance” [Rule 0400-4-3-.04(20)]. Wet-weather conveyances are “man-made or natural watercourses, including natural watercourses that

have been modified by channelization: (a) that flow only in direct response to precipitation runoff in their immediate locality; (b) whose channels are at all times above the ground water table; (c) that are not suitable for drinking water supplies; (d) and in which hydrological and biological analysis indicate that, under normal weather conditions, due to naturally occurring ephemeral or low flow there is not sufficient water to support fish, or multiple populations of obligate lotic aquatic organisms whose life cycle includes an aquatic phase of at least two months [Rule 1200—3.04(25)].

The CWA requires 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 EPA. The term ‘303(d) list” refers to the list of impaired and threatened streams and waterbodies identified by the state. Norris Reservoir is listed on Tennessee’s 2024 303(d) list as impaired due to mercury caused by atmospheric deposition and sources outside state jurisdiction or borders (TDEC 2024).

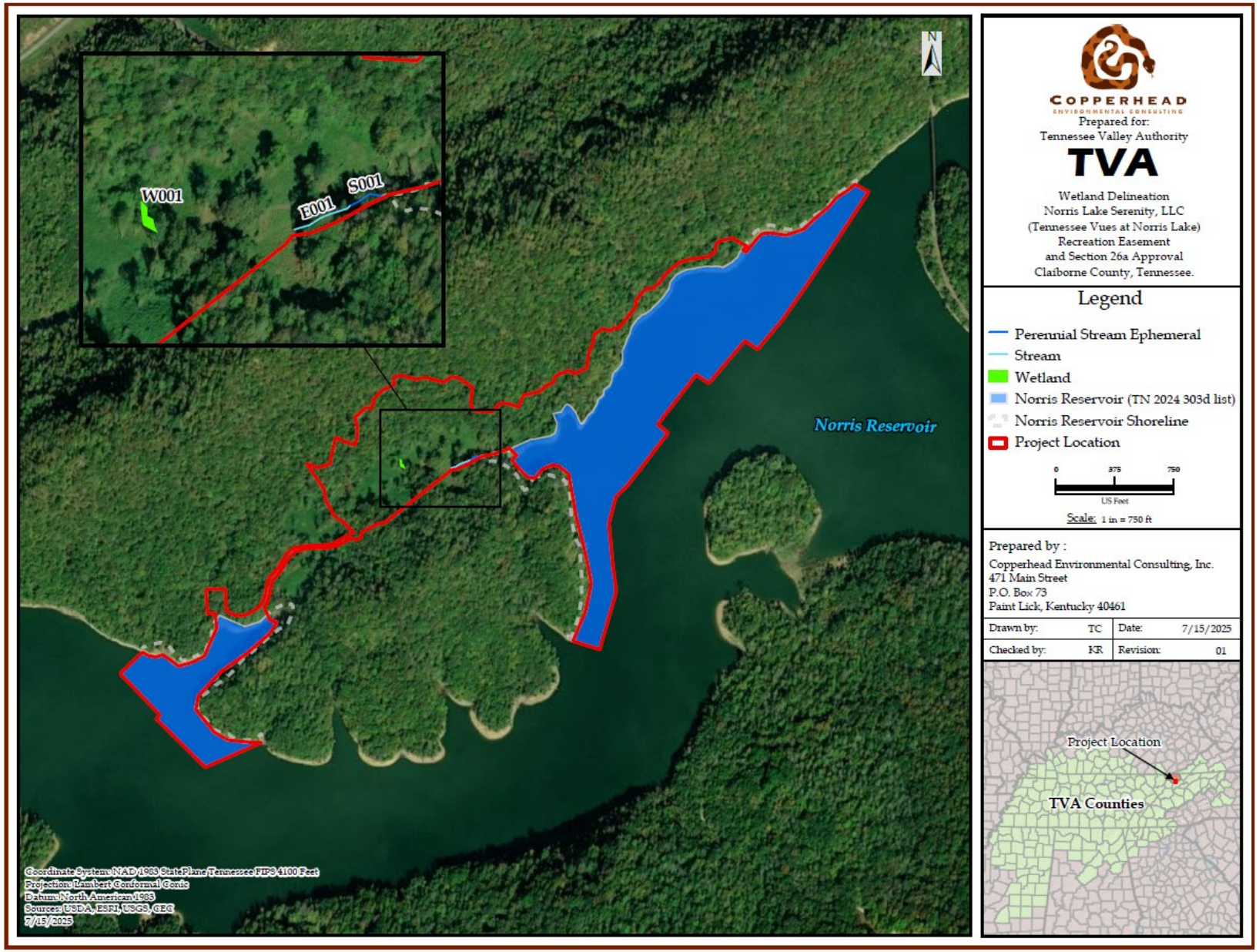

Figure 3-3. Map of delineated wetlands and waterways within the Project Area

Figure 3-4. View of intermittent stream S001 facing south

3.16.1 Alternative A

Under the No Action Alternative, TVA would not grant Section 26a approval for shoreline construction activities or an easement to operate the proposed marina. There would be no impact to surface waters located within the Project Area. As a result, surface waters would remain in their current condition.

3.16.2 Alternative B

The proposed construction activities would result in minor impacts to Norris Reservoir, with limited potential impacts to the watershed surrounding stream S001. Due to the location and nature of the proposed work, stream S001 is not expected to be directly impacted; however, some impacts could result from construction activities or runoff above the stream. Adhering to the Project's SWPPP would reduce potential water quality impacts.

The Applicant would be required to comply with applicable state and federal permit requirements, including the CGP for disturbances greater than 1 acre. Adhering to the SPCC plan would ensure that waste materials are contained, and the introduction of pollution materials to receiving waters would be minimized. Erosion and sediment control measures would minimize or avoid sedimentation into waterways, as required by the NPDES permit. The Applicant would obtain an ARAP issued from TDEC for work in waters of the state of Tennessee, as well as a USACE Individual 404 Permit for work in Norris Reservoir.

Construction could result in long-term impacts on water quality. Impervious buildings and infrastructure prevent rain from percolating through the soil, which results in additional runoff of water and pollutants into storm drains, ditches, and streams. Construction of the marina facilities would be expected to increase impervious cover, and implementation of the Proposed Action Alternative would be expected to increase the concentrated stormwater flow from the Project Area. This flow would need to be properly treated by diverting and

controlling the stormwater discharges appropriately in accordance with the NPDES permit requirements. With proper implementation of controls, only minor, temporary impacts to local surface waters are expected during construction. Potential for fuel or contaminants from construction equipment would be minimized through implementation of the SPCC as required by permit guidelines.

Portable toilets would be provided for the construction workforce. These toilets would be pumped out regularly, and the sewage would be transported by tanker truck to a publicly owned wastewater treatment plant that accepts pump out. Permanent restroom facilities would be properly sized, permitted, and installed per state and local requirements. Per the Applicant's Section 26a application, the sanitary sewer and gray water would be serviced by Claiborne County Utility District.

Following construction of the proposed marina, surface waters could be impacted by day-to-day operation. Potential impacts could include the introduction of oils, lubricants, and/or fuels to surface waters from fueling practices and parking lots; solid waste introduction from trash and debris not properly stored or disposed of; and black or grey water discharges to surface waters. In the long term, nonpoint source pollutants may accumulate from these sources, as well as from the marina itself. Continuing to adhere to the SPCC during operation would reduce the likelihood and severity of impacts to surface waters. For ongoing/post-construction operations of the marina, the Applicant would obtain a Tennessee Multi-sector Stormwater Permit (TMSP), Sector Q. A SWPP would be implemented within 6 months of the Notice of Coverage (NOC), which would minimize impacts from point source discharges of stormwater runoff.

With implementation of the mitigation measures described above, only minor short- and long-term impacts on surface water are anticipated as a result of the Proposed Action.

3.17 Floodplains

A floodplain is the relatively level land area along a stream or river that is subject to periodic flooding. The area subject to a one-percent chance of flooding in any given year is normally called the 100-year floodplain. The area subject to a 0.2-percent chance of flooding in any given year is normally called the 500-year floodplain. It is necessary to evaluate development in the floodplain to ensure that the project is consistent with the requirements of EO 11988, Floodplain Management.

TVA reservoirs have either power storage or flood storage or both. Power Storage is allocated to a range of elevations called the Power Storage Zone (PSZ), and water occupying space in that zone is used to generate electric power through a dam's hydroturbines. Flood Storage is allocated to a range of elevations called the Flood Storage Zone (FSZ), and water occupying space within that zone is used to store flood water during a flood or high-flow rain event. It is necessary to evaluate development in the PSZ and FSZ to ensure that the project is consistent with the requirements of TVA's Flood Storage Loss Guideline to minimize the loss of reservoir flood storage.

The proposed project would be located between Clinch River miles 133 and 135.4 and Ball Creek, miles 0.0 and 0.2, on Norris Reservoir. At this location, the 100- and 500-year flood elevations would be 1,032 and 1,035 feet, respectively. The PSZ would extend from elevation 930 feet to 1,020 feet; and the FSZ would extend from elevation 1,000 to 1,035 feet.

3.17.1 Alternative A

Under the No Action Alternative, TVA would not grant Section 26a approval for shoreline construction activities or an easement to operate the proposed marina. There would be no impact to floodplains located within the Project Area. As a result, floodplains would remain in their current condition.

3.17.2 Alternative B

Under the Proposed Action Alternative, and as described in Sections 1.5 and 2.1.2, TVA would grant Section 26a approval for shoreline construction activities and an easement to operate the proposed marina.

In addition to the proposed floating and land-based infrastructure, the proposed project would involve approximately 3.5 acre-feet of fill within the FSZ and approximately 1.1 acre-feet of fill within the 100-year floodplain. No fill would be needed within the PSZ for riprap bank stabilization and grading.

A fuel storage tank and trash dumpsters would be located within the 500-year floodplain (FSZ) but outside the 100-year floodplain, which is consistent with EO 11988. No practical alternatives to locating these facilities exist because of the nature of grading needed for the marina roads. State and Local requirements for above ground storage tank design would minimize adverse impacts. Additionally, trash dumpsters would be anchored to prevent them from floating free during major floods.

More than 1 acre-foot of fill is proposed within the FSZ for bank stabilization, for which there is no practical alternative due to the length of shoreline that is proposed to be stabilized. To the extent practicable, the impacts resulting from bank stabilization were offset by removing material from other areas of the Project Area. Therefore, the bank stabilization would comply with the TVA Flood Storage Loss Guideline.

Land-based porticos would connect the boat slips and the roadways. The porticos would be open on two sides and would be considered a recreational use of the floodplain that is approvable, provided floodplain impacts are minimized. To minimize adverse impacts, the porticos would remain open to the elements and would never be enclosed in the future. Additionally, no flood-damageable items would be stored in the porticos.

Consistent with EO 11988, the remaining facilities would be considered repetitive actions in the 100-year floodplain that would result in only minor impacts (TVA 1981). The mitigation measures (Section 26a and Recreation Easement conditions) outlined in Section 2.3 would minimize adverse impacts. With the implementation of these conditions and measures, it is anticipated that the Proposed Action would result in no significant impact on floodplains and their natural and beneficial values.

3.18 Aquatic Ecology

The Project Area is encompassed in the Norris Lake-Clinch River (0601020511) and the Ball Creek (0601020509) HUC-10 Watersheds. The Project Area lies within the Southern Limestone/Dolomite Valleys and Low Rolling Hills sub-ecoregion of the Ridge and Valley ecoregion. Impoundments within the Ridge and Valley ecoregion are common, resulting in lower free flowing riverine habitat types. This sub-ecoregion is primarily noted for being composed of limestone and cherty dolomite. The primary land use of this sub-ecoregion includes intensive agriculture, some urban and industrial development, and dense forest.

Primary cover types within forests include White oak stands, bottomland oak forests, and sycamore-ash-elm riparian forests (Griffeth et al. 2009).

In addition to Norris Reservoir, the aquatic features documented in the Project Area consist of a WWC that transitions into a stream as groundwater influence becomes apparent. This single channel terminates into Norris Reservoir and two families of benthic macroinvertebrates with an aquatic lifecycle of greater than or equal to two months were documented, which grants it the jurisdictional status of a stream. (See Sections 3.15 and 3.16)

Threatened and Endangered Aquatic Species

The ESA requires federal agencies to conserve endangered and threatened species and to determine the impacts of proposed actions on endangered and threatened species and Designated Critical Habitat. Endangered species are those determined to be in danger of extinction throughout all or a significant portion of their range. Threatened species are those determined to likely become endangered within the foreseeable future. Section 7 of the ESA requires federal agencies to consult with USFWS when proposed actions may affect endangered or threatened species or Designated Critical Habitat.

A query of the TVA Natural Heritage Database and the USFWS Information for Planning and Consultation (IPaC) tool indicated five federally listed species (four fish, one mussel) as occurring within the HUC-10 watersheds overlapping the Project Area (Table 3-8). Additionally, the Tangerine Darter is “Deemed in Need of Management” by the state of Tennessee. All species in Table 3-8 are extirpated or historical and are not expected to be in the Project Area. Therefore, these species are not discussed further and no impacts are expected to federal or state listed threatened or endangered species as a result of the Proposed Action.

Table 3-8. Records of Federal and State-Listed Aquatic Species.

Common Name	Scientific Name	Element Occurrence (rank[1])	Federal Status[2]	State Status (rank[3])
FISH				
Palezone Shiner	*Notropis albizonatus*	X	E	E (SH)
Slender Chub	*Erimystax cahni*	X	T,XN	T(S1)
Spotfin Chub	*Erimonax monachus*	X	T,XN	T(S2)
Tangerine Darter	*Percina aurantiaca*	H	-	D(S3)
Yellowfin Madtom	*Noturus flavipinnis*	X	T,XN	T(S1)
MUSSELS				
Fine-Rayed Pigtoe	*Fusconaia cuneolus*	X	E,XN	E (S1)
Green Blossom Pearlymussel	*Epioblasma torulosa gubernaculum*	X	DL	E(SX)

Source: TVA Natural Heritage Database, queried on 4/9/2025

[1] Heritage Element Occurrence Rank: H=historical record ≥ 25 years old; X=extirpated

[2] Status Codes: E = Listed Endangered; T = Listed Threatened; D = Deemed in need of management; XN= Non-essential experimental population; DL = delisted due to extinction

[3] State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; SH = of historical occurrence in TN, with the expectation that it may be rediscovered; SX = Presumed extirpated

3.18.1 Alternative A

Under the No Action Alternative, TVA would not grant Section 26a approval for shoreline construction activities or an easement to operate the proposed marina. There would be no impact to aquatic ecology located within the Project Area. As a result, aquatic species and their habitat would remain under their current condition.

3.18.2 Alternative B

Given that no federally or state-listed aquatic species are presumed to be in the Project Area, no impacts to these species are expected with the implementation of either dock anchoring method (i.e., concrete footers or helical system). In general, the installation of the docks is expected to create some turbidity in the water, which can affect the quality of possible spawning habitats. This effect would be temporary, and the overall impacts of the dock construction are anticipated to be minor, resulting in both positive and adverse impacts on aquatic species. For example, the docks may provide habitat for benthic macroinvertebrates and offer cover and foraging areas for fish species.

The plans for the proposed marina include 3,262 cubic yards of excavation and 1,456 cubic yards of fill below the 1,044-foot contour. Soil would be disturbed during the installation of utilities, construction of a road and parking, and development of porticos and a boat ramp. Siltation has a detrimental effect on many aquatic animals adapted to riverine environments. Turbidity caused by suspended sediment can negatively impact the spawning and feeding success of fish and mussel species (Brim Box and Mossa 1999; Sutherland et al. 2002). The Applicant would be responsible for adhering to state and local guidelines regarding sediment control during every phase of construction, which would minimize impacts to water quality and aquatic species. The Applicant would be responsible for acquiring applicable permits or mitigation related to the disturbance of S001.

Operation and use of the docks could lead to the possible introduction of aquatic invasive species from other waterways. Several species of both flora and fauna have been recorded as being transported across waterbodies and proven detrimental to the ecosystems into which they are introduced.

3.19 Terrestrial Zoology

TVA zoologists conducted terrestrial animal habitat assessments in the Project Area on April 8, 2025. The Project Area consists of deciduous and mixed deciduous-evergreen forest, early-successional, herbaceous habitat, developed or otherwise disturbed areas, and aquatic habitat (see Section 3.14 for additional details about vegetation conditions). Landscape features surrounding the Project Area consist of a variety of forest habitat, ephemeral stream crossings, early-successional habitat, and developed or otherwise disturbed areas.

Deciduous and mixed deciduous-evergreen forests occupy most of the land-based acres within the Project Area, which provide habitat for an array of common terrestrial animal species such as blue jay, wild turkey, eastern chipmunk, eastern box turtle, gray ratsnake, and white-tailed deer (National Geographic 2006, Whitaker 1996, TWRA 2025a). This area also provides foraging and roosting habitat for several bat species, such as big brown bat, eastern red bat, and evening bat.

Early-successional, herbaceous habitat (i.e., field and scrub-shrub) comprises a smaller portion of the land-based acreage within the Project Area. Some common species include

northern black racer, eastern bluebird, coyote, and red fox (National Geographic 2006, Whitaker 1996, TWRA 2025b).

Developed areas, and areas otherwise previously disturbed by human activity make up the smallest percentage of habitat within the Project Area. Many common species may occur within this habitat type, including American robin, common gartersnake, mourning dove, turkey vulture, eastern gray squirrel, and American toad (National Geographic 2006, Whitaker 1996, TWRA 2025c).

Migratory Birds

According to a March 2025 review of the TVA Regional Natural Heritage Database, the nearest bald eagle record is approximately 2.2 miles from the Project Area. No additional aggregations of migratory birds or wading bird colonies have been documented within three miles of the Project Area, and none were observed during field surveys. The USFWS IPaC tool identified eight migratory bird species of conservation concern (MBCC) with potential to occur within the Project Area: bald eagle, chimney swift, Kentucky warbler, prairie warbler, prothonotary warbler, red-headed woodpecker, rusty blackbird, and wood thrush.

Suitable foraging and nesting habitats are available within the Project Area for chimney swift, Kentucky warbler, prairie warbler, prothonotary warbler, red-headed woodpecker, and wood thrush. Suitable wintering habitat occurs within the Project Area for rusty blackbird. An abundance of similarly suitable foraging and nesting habitat also occurs throughout the adjacent landscape. Neither bald eagles nor their nests were observed in or adjacent to the Project Area during field surveys; see the Threatened and Endangered Species section for a discussion of potential impacts to bald eagle. See Appendix D for supplemental MBCC habitat information.

Threatened and Endangered Species

A March 2025 query of the TVA Natural Heritage Database identified records for one federally protected species (bald eagle) but no federally listed species within three miles of the Project Area. Two species proposed for federal listing (hellbender and tricolored bat) and three federally listed species (gray bat, Indiana bat, and northern long-eared bat) have been documented in Claiborne County, Tennessee. Additional review of the USFWS IPaC tool determined that the proposed threatened monarch butterfly also has the potential to occur within the Project Area (Table 3-9).

Table 3-9. Federally Listed Terrestrial Animal Species Known to Occur in Claiborne County, TN, and Other Species of Conservation Concern within 3 miles of the Project Area.

Common Name	Scientific Name	Federal Status[1]	State (Rank[1, 2])
Amphibians			
Hellbender[3]	*Cryptobranchus alleganiensis*	PS	PS (S3)
Birds			
Bald Eagle	*Haliaeetus leucocephalus*	DL	D
Insects			
Monarch Butterfly[4]	*Danaus plexippus*	PT	- (S4)
Mammals			
Gray bat[3]	*Myotis grisescens*	E	E (S2)
Indiana bat[3]	*Myotis sodalis*	E	E (S1)
Northern long-eared bat[3]	*Myotis septentrionalis*	E	T (S1S2)
Tricolored bat[3]	*Perimyotis subflavus*	PE	T (S2S3)

Data source: TVA Regional Natural Heritage Database; USFWS Information for Planning and Consultation (IPaC) online system (https://ecos.fws.gov/ipac/) extracted 03/03/2025.
[1] Status Codes: D = Deemed in Need of Management; DL = Delisted; E = Endangered; PE = Proposed Endangered; PS Partial Status; PT = Proposed Threatened; T = Threatened
[2] State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S4 = Apparently Secure.
[3] Species has not been documented within three miles of the Project Area but has been documented from Claiborne County, Tennessee.
[4] Historically this species has not been tracked by state or federal heritage programs; USFWS has determined that this species has the potential to occur within the Project Area.

Bald eagles are protected under the Bald and Golden Eagle Protection Act (16 USC 668–668d). This species is associated with larger mature trees capable of supporting their massive nests. These are usually found near larger waterways where the eagles forage, primarily for fish (USFWS 2007). This species is opportunistic, eating whatever they can catch when fish aren't available, including small birds, rodents, and carrion (NWF 2025). One bald eagle record was documented approximately 2.2 miles from the Project Area. While no bald eagles or nests were observed in or adjacent to the Project Area during field surveys, suitable foraging and nesting habitat is present for bald eagle throughout the Project 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). Gray bats have also been documented roosting in manmade structures such as the underside of bridges, dams, mines, concrete box culverts, and abandoned buildings (USFWS 2025). Summer caves are typically located close to rivers or lakes. Bats disperse over bodies of water at dusk where they forage for insects emerging from the surface of the water (Harvey 2011). Three gray bat records are known from Claiborne County, the nearest of which occurs approximately 9.5 miles from the Project Area. Suitable roosting habitat is not present for gray bat within the Project Area; however, suitable foraging habitat for gray bats exists over Norris Reservoir.

Hellbenders are typically found in perennial, fast-flowing, cool (≤ 20ºC), highly oxygenated streams with boulders, especially large slab rocks, which act as cover and are consistently identified as the most important indication of adult hellbender habitat. Juveniles are most often found in interstices of cobble piles and gravel. This species is not well adapted to low-oxygen conditions. Hellbenders generally breed between late August and early October. Nests are found in bedrock fissures but are typically excavations beneath partially embedded large flat rocks (USFWS 2024a). The nearest record of hellbender occurrence is approximately 11.6 miles from the Project Area. Suitable hellbender habitat is not present

within the Project Area as Norris Reservoir is deep, sluggish, and warm in late spring, summer, and early fall months.

Indiana bats hibernate in caves in winter and use areas around them for swarming (mating) in the fall and staging in the spring, prior to migration back to summer habitat. During summer, Indiana bats roost under the exfoliating bark of dead snags and living trees (typically ≥ 5 inches in diameter) in mature forests with an open understory and a nearby source of water (Pruitt and TeWinkel 2007, Kurta et al. 2002). Indiana bats are known to change roost trees frequently throughout the season, while still maintaining site fidelity, returning to the same summer roosting areas in subsequent years (Pruitt and TeWinkel 2007). Although less common, Indiana bats have also been documented roosting in buildings (Butchkoski and Hassinger 2002). Indiana bats eat terrestrial and aquatic insects while foraging in forested stream corridors, upland and bottomland forests, forested wetlands, and along wooded edges of agricultural fields, pastures, and impounded bodies of water at night (USFWS 2008). Six records of Indiana bat have been documented from Claiborne County, Tennessee, the nearest of which was documented from a hibernaculum approximately 12 miles away from the Project Area. Suitable foraging and summer roosting habitat are present within the Project Area for Indiana bat.

Monarch butterfly is a highly migratory species, with eastern U.S. populations overwintering in Mexico. Summer breeding habitat in the U.S. requires milkweed plant species, on which adults exclusively lay eggs for larvae to develop and feed on. Adults drink nectar from other blooming wildflowers when milkweeds are not in bloom. Approximately 4.98 acres of the Project Area is comprised of open or disturbed (dirt or gravel road) habitat. No records of monarch butterfly are known from Claiborne County, although the USFWS has determined that this species has the potential to occur within the Project Area. Suitable habitat may occur throughout disturbed, open areas of the Project Area; however, no milkweeds were observed within the Project Area during field surveys in April 2025. Few additional blooming wildflowers were observed during surveys that would support the monarch butterfly.

The NLEB predominantly overwinters in large hibernacula such as caves, abandoned mines, and cave-like structures. During spring and fall, NLEB utilize entrances of caves and the surrounding forested areas for swarming and staging. In summer, NLEBs roost individually or in colonies beneath exfoliating bark or in crevices of both live and dead trees (typically ≥ 3 inches in diameter). Roost selection by NLEB is similar to that of 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). NLEB are well suited to foraging in the forest interior. Fourteen NLEB records are known from Claiborne County, the nearest of which was documented from a hibernaculum approximately 8.7 miles from the Project Area. Suitable foraging and summer roosting habitat are present within the Project Area for NLEB.

Tricolored bats are generally found in small groups. They are associated with forested landscapes where they forage along forest edges and waterways. Summer roosts are primarily in live and dead leaf clusters of live or recently dead deciduous hardwood trees. This species has also been documented roosting in manmade structures such as barns, bridges, bunkers, culverts, and residential roofs during summer. In winter, this species is most commonly found in caves and mines but may also use culverts, abandoned wells, and rock shelters. One known tricolored bat record has been documented from a mine site in

Claiborne County, approximately 21 miles from the Project Area. Suitable foraging and summer roosting habitat for the tricolored bat is present within the Project Area.

The nearest known cave is approximately 2.84 miles from the Project Area. No additional caves, mines, rock shelters, culverts, or other human-made structures suitable for use by winter roosting bats were observed within the Project Area during field review in April 2025.

Following the 2024 Range-Wide Indiana Bat Survey Guidelines (USFWS 2024b), TVA surveyed approximately 20.01 acres of forested habitat within the Project Area for the presence of potentially suitable habitat for federally listed bats on April 8, 2025. Approximately 2.43 acres were determined to be suitable for use by summer roosting Indiana bats and NLEBs, based on the presence of trees with exfoliating bark, hollows, and/or cracks and crevices. All 20.01 acres of forested habitat are suitable for use by tricolored bats, as all forested habitat in the Project Area is either of hardwood or mixed hardwood-evergreen composition. Suitable roosting habitat consisted of 11 shagbark hickory and 14 snag trees. Suitable foraging habitat was also identified within the Project Area for gray bat, Indiana bat, NLEB, and tricolored bat, in and around forests, forested edges, and over Norris Reservoir. Norris Reservoir also provides a source of drinking water for all four bat species.

3.19.1 Alternative A

Under the No Action Alternative, TVA would not grant Section 26a approval for shoreline construction activities or an easement to operate the proposed marina. As a result, there would be no development and terrestrial animals and their habitats, including threatened and endangered species, would not be affected.

3.19.2 Alternative B

Ground disturbance would occur incrementally throughout the Project Area because the proposed marina would be constructed in three phases (see Section 2.1.2). The proposed marina would include 3,262-cubic yards of excavation and 1,456-cubic yards of fill below the 1,044-foot contour. Soil disturbance is anticipated for the installation of utilities, construction of a road and parking, and development of porticos and a boat ramp. It is anticipated that most vegetation clearing would be done using heavy machinery, and the removed material would be stockpiled on the property.

Any wildlife (primarily common, habituated species) currently using the Project Area may be displaced by increased levels of disturbance during construction actions. Wildlife would disperse into surrounding areas to find new food and shelter sources and to reestablish territories. Approximately 4.78 acres of forested areas that would be cleared would be maintained as early-successional or developed habitat for the foreseeable future. It is expected that over time, those species that utilize early-successional habitat, fragmented forests, and otherwise developed habitats would return to the Project Area upon completion of Project actions. Direct impacts on some individuals that are immobile during the time of construction may occur, particularly if construction activities transpire during breeding/nesting/hibernation seasons. Non-nesting individuals present on the landscape would be expected to flush from the Project Area to nearby available habitat during disturbance events. Overall, these impacts would be minor and are not likely to affect populations of species common to the area, as similarly forested habitat is abundant throughout the surrounding landscape.

Given the size and composition of the Project Area (an abundance of suitable foraging and nesting habitat) and scope of the Proposed Action Alternative, there would be no impacts to populations of migratory birds.

Threatened and Endangered Species

Hellbenders and their habitat were not located during the April 2025 field survey, therefore the Proposed Action Alternative would not jeopardize the continued existence of this species.

Although the TVA Natural Heritage Database identified Indiana bat and northern long-eared bat records of occurrence within Claiborne County, the species survey data developed and used by the USFWS within the IPaC tool suggests that the Project Area does not occur within known Indiana bat and northern long-eared bat habitat. Therefore, the Proposed Action Alternative would have no effect on Indiana bat or northern long-eared bat.

Because the nearest documented bald eagle nest occurs well over 1,000 feet from the Project Area, and no additional nests were observed during field surveys, the Proposed Action Alternative would have no impact on nesting bald eagles. Similarly, the Proposed Action Alternative would have no effect on gray bat hibernacula, given the distance to the nearest documented cave (2.84 miles) and lack of available roosting habitat within the Project Area. While foraging habitat for bald eagle and gray bat exists in and around Norris Reservoir, impacts to the Reservoir would be mitigated to the extent practicable by implementing construction BMPs. The Proposed Action Alternative would comply with the National Bald Eagle Management Guidelines. Neither Bald eagle nor gray bat would be significantly impacted by the Proposed Action Alternative.

While there is the potential for milkweed and monarchs to occur within open or disturbed acreage in the Project Area, neither was observed during the April 2025 field survey. Therefore, the Proposed Action Alternative is not likely to jeopardize the continued existence of monarch butterfly.

Tricolored bat roosting habitat is available throughout the forested acreage within the Project Area. Under the Proposed Action Alternative, approximately 4.78 acres of tree removal would occur. Direct impacts on individual tricolored bat pups could occur if vegetation removal took place during pup season (USFWS 2024), which occurs from May 15 to July 31. Direct impacts on tricolored bat could also occur if individuals are roosting within the Project Area during the non-winter season (April 1 – May 14; August 1 – September 30). Individuals roosting during this time, however, would likely be mobile and able to flush to nearby suitable habitat if disturbed. Based on the scale of the Proposed Action, the amount of suitable available habitat, and conservation measures, the Proposed Action Alternative is not likely to jeopardize the continued existence of tricolored bat.

Many activities associated with the Proposed Action were addressed in TVA's programmatic consultation with the U.S. Fish and Wildlife Service on routine actions and federally listed bats in accordance with ESA Section 7(a)(2), originally completed in April 2018 and updated in 2023 and 2024. For those activities with potential to affect bats, TVA would require that the Applicant implement specific conservation measures. These activities and associated conservation measures are identified in the TVA Bat Strategy Project Review Form (Appendix B) and summarized in Section 2.3. With use of these conservation

measures, the Proposed Action Alternative would not significantly affect gray bat and may also be beneficial to tricolored bat.

The Proposed Action Alternative would not result in significant impacts on any terrestrial species or their habitats.

3.20 Reasonably Foreseeable Impacts

Reasonably foreseeable environmental trends and planned actions are considered sufficiently likely to occur. These actions and trends may be taken by Federal and non-Federal agencies, state or local governments, or other groups or individuals.

The geographic scope of analysis for reasonably foreseeable impacts includes the Project Area and a 1-mile buffer. Current land cover and uses in the Project Area include deciduous forest, mixed forest, herbaceous and hay vegetation. Land cover within the 1-mile buffer is similar to the Project Area, with the addition of areas considered developed open space.

Based on a review of county and state planning documents and projects proposed by the Tennessee Department of Transportation, the reasonably foreseeable environmental trends and planned actions identified within the geographic scope of analysis include the following:

- Continued use of Norris Reservoir for recreational purposes including operation of nearby commercial marinas and public boat launch sites.
- Continued residential and commercial development (e.g., Norris Harbor, Norris Lake Landing), including on formerly undeveloped lands.
- While no specific road construction or maintenance projects were identified within the geographic scope of analysis, it is reasonable to assume that local roadways would continue to require maintenance and possible upgrades (e.g., widening).

In combination with implementation of the Proposed Action Alternative, these actions would contribute to continued development of Claiborne County and its recreational opportunities. There would be minor adverse impacts on wildlife, vegetation, and water quality from increased development and public use; it is assumed that development would be subject to applicable local, state, and federal permitting requirements to minimize impacts.

3.21 Unavoidable Adverse Environmental Impacts

This section describes the principal unavoidable adverse environmental impacts associated with the implementation of the Action Alternative, for which mitigation measures are considered either impracticable, do not exist, or cannot eliminate the impact. Under the Action Alternative, the construction and operation of a commercial marina would render the land occupied by the recreational facility unavailable over the duration of the operation. As described in Section 3.15, there would be unavoidable adverse impacts on 0.02 acres of wetlands. Approval or mitigation to offset impacts to this wetland are not required because of the low quality and small size of the affected wetland (T.C.A. Title 69, Chapter 3, Part 1).

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

NEPA requires a discussion of the relationship between short-term uses of the environment and maintenance and enhancement of long-term productivity. This EA analyzes the potential environmental impacts of constructing and operating the proposed full-service

commercial marina. Construction and operation activities would include conversion of forested areas to a more developed setting consisting of a mix of buildings, infrastructure (e.g., roads and parking lots), and outdoor facilities. Short-term uses are those during the construction period. Long-term productivity is the lifespan of the Project operation.

Short-term use of the environment to achieve the results of the proposed Project requires the use of land and construction materials, the use of existing roadways, and correlative, but temporary increases in emissions from transportation vehicles, as well as increased noise and vibration from construction equipment. Most of the environmental impacts from construction activities would be relatively short-term and would be addressed by mitigation measures. Construction activities would also have a limited, yet favorable short-term impact to the local economy through the creation of construction and support jobs and revenue.

Operation of the proposed facilities would affect long-term productivity through the conversion of forested areas to other uses. Physical alterations to Norris Reservoir and its shoreline would alter sediment structure, light availability, and habitat surrounding the marina. Pollutants and excess nutrients resulting from operation of the marina can impact aquatic organisms. Boat wakes and changes in currents may cause shoaling and shoreline erosion. Impacts from project-related activities that would alter the Project Area landscape and aquatic environment may be considered permanent.

3.23 Irreversible and Irretrievable Commitments of Resources

This section describes anticipated irreversible and irretrievable commitments of environmental resources associated with TVA's decision to approve the request to develop a full-service commercial marina. For the purposes of this analysis, the term "irreversible" applies to the commitment of environmental resources to their former state. The term "irretrievable" applies to the commitment of material resources that, once used, cannot by practical means be recycled or restored for other uses.

TVA's decision to approve the request to develop a commercial marina on Norris Reservoir would result in the irreversible and irretrievable conversion of land under the proposed facilities. The use of the land for other purposes would be irreversibly and irretrievably lost because of the long-term operation of the facility. Additionally, there would be an irreversible and irretrievable use of resources for the construction of the Project facilities and the use of fossil fuels for the transport of construction materials and the operation of vehicles and equipment during construction. Overall, the commercial marina would add new recreation amenities for the surrounding community and tourism. Therefore, the Project would result in a long-term increase in recreational opportunities and would support TVA's goal of providing recreational opportunities in the Tennessee Valley region.

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Appendix A – Agency Consultation and Coordination

TENNESSEE VALLEY AUTHORITY

400 West Summit Hill Drive, Knoxville, Tennessee 37902

November 4, 2025

Ms. Miranda Montgomery
State Historic Preservation Officer
Tennessee Historical Commission
2941 Lebanon Pike
Nashville, Tennessee 37243-0042

Dear Ms. Montgomery:

TENNESSEE VALLEY AUTHORITY (TVA), SECTION 26A PERMIT, NORRIS LAKE SERENITY MARINA PROJECT, CLAIBORNE COUNTY, TENNESSEE (36.37056, -83.5697559) (TVA TRACKING NUMBER – CRMS 114218205286)

TVA is proposing to issue a Section 26a permit and 30-year easement to Norris Lake Serenity, LLC (the Applicant) for the construction of a commercial marina and associated infrastructure on Norris Reservoir in Claiborne County, Tennessee. The project includes the installation of 1,216 public boat slips, porticos, a boat ramp, access roads, and parking lots on private property within TVA's flowage easement jurisdiction (Figure 1). TVA has determined that this project is an undertaking (as defined at 36 CFR § 800.16(y)) that has the potential to cause effects on historic properties. TVA recommends that the Area of Potential Effects (APE) be considered the project footprint (62.67 acres), where physical effects may occur, as well as all areas within a half-mile radius that would be visible to the project, where visual impacts to above-ground resources could occur.

TVA conducted an archaeological survey of the project shoreline in 2009 (Gage and Herrmann). No cultural resources were identified within the current APE during that survey. Prior to TVA's involvement, North Wind Resource Consulting, LLC (North Wind), at the behest of the applicant, conducted an additional Phase I archaeological survey of the property's shoreline within TVA's flowage easement jurisdiction. The associated facility locations above the shoreline were not surveyed during this effort. As such, TVA requested that the Applicant conduct additional archaeological surveys of those areas. North Wind conducted the requested additional survey in May of 2025. North Wind did not record any new archaeological sites within the APE during their surveys. Lastly, there are no known American Civil War or Native American Removal Routes within a mile of the APE.

As a part of the additional TVA requested survey, North Wind also conducted a historic architectural survey. North Wind determined, with a viewshed analysis and ground truthing, that only one resource, the Middleboro Branch of the Southern Railroad, was located within the APE. North Wind recommended the railroad as not eligible for listing in the National Register of Historic Places (NRHP). North Wind also recommended that no additional archaeological or architectural work is needed in the APE. TVA agrees with these recommendations. Please find attached to this letter both North Wind survey reports.

As no historic properties listed in or eligible for the NRHP were identified in the APE, TVA finds the proposed undertaking, as currently planned, would have no effect on historic properties.

Pursuant to 36 CFR Part 800.3(f)(2), TVA is consulting with federally recognized Indian tribes regarding properties within the proposed project's APE that may be of religious and cultural significance to them and eligible for the National Register of Historic Places (NRHP).

Pursuant to 36 CFR Part 800.4(d)(1) we are notifying you of TVA's finding of no historic properties affected; providing the documentation specified in § 800.11(d); and inviting you to review the finding. Also, we are seeking your agreement with TVA's eligibility determinations and finding that the undertaking as currently planned will have no effects on historic properties.

Please contact Derek Reaux by email, djreaux@tva.gov with your comments.

Sincerely,

Michaelyn S. Harle
Manager, Cultural Projects, Economic Development, and Environment
Deputy Federal Preservation Officer
Cultural Resources

DJR:ERB
Enclosures
cc (Enclosures):
Ms. Jennifer Barnett
Tennessee Division of Archaeology
1216 Foster Avenue, Cole Bldg. #3
Nashville, Tennessee 37210

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Appendix B – TVA Bat Strategy Project Review Form

Project Review Form - TVA Bat Strategy *(06/2019)*

*This form should **only** be completed if project includes activities in Tables 2 or 3 (STEP 2 below). This form is not required if project activities are limited to Table 1 (STEP 2) or otherwise determined to have no effect on federally listed bats. If so, include the following statement in your environmental compliance document (e.g., add as a comment in the project CEC): "Project activities limited to Bat Strategy Table 1 or otherwise determined to have no effect on federally listed bats. Bat Strategy Project Review Form NOT required." This form is to assist in determining required conservation measures per TVA's ESA Section 7 programmatic consultation for routine actions and federally listed bats.*[1]

Project Name: Norris Lake Serenity, LLC (Tennessee Vues at Norris Lake) **Date:** Feb 14, 2025

Contact(s): Brian Ross **CEC#:** **Project ID:** 46150

Project Location (City, County, State): Tazewell, Claiborne County, TN

Project Description:

Norris Lake Serenity, LLC has submitted a request to TVA for a 30-year recreation easement (ID 4032402) & Section 26a permit (ID 4031137) approval for construction & operation of a full-service commercial marina over approximately 62.67 acres of inundated TVA reservoir property & land-based facilities on Norris Reservoir. Applicant provided detailed vegetation management plan.

SECTION 1: PROJECT INFORMATION - ACTION AND ACTIVITIES

STEP 1) Select TVA Action. If none are applicable, contact environmental support staff, Environmental Project Lead, or Terrestrial Zoologist to discuss whether form (i.e., application of Bat Programmatic Consultation) is appropriate for project:

☐ 1 Manage Biological Resources for Biodiversity and Public Use on TVA Reservoir Lands	☐ 6 Maintain Existing Electric Transmission Assets
☐ 2 Protect Cultural Resources on TVA-Retained Land	☐ 7 Convey Property associated with Electric Transmission
☐ 3 Manage Land Use and Disposal of TVA-Retained Land	☐ 8 Expand or Construct New Electric Transmission Assets
■ 4 Manage Permitting under Section 26a of the TVA Act	☐ 9 Promote Economic Development
☐ 5 Operate, Maintain, Retire, Expand, Construct Power Plants	☐ 10 Promote Mid-Scale Solar Generation

STEP 2) Select all activities from Tables 1, 2, and 3 below that are included in the proposed project.

TABLE 1. Activities with no effect to bats. Conservation measures & completion of bat strategy project review form NOT required.

☐ 1. Loans and/or grant awards	☐ 8. Sale of TVA property	☐ 19. Site-specific enhancements in streams and reservoirs for aquatic animals
☐ 2. Purchase of property	☐ 9. Lease of TVA property	☐ 20. Nesting platforms
☐ 3. Purchase of equipment for industrial facilities	☐ 10. Deed modification associated with TVA rights or TVA property	☐ 41. Minor water-based structures (this does not include boat docks, boat slips or piers)
☐ 4. Environmental education	☐ 11. Abandonment of TVA retained rights	☐ 42. Internal renovation or internal expansion of an existing facility
☐ 5. Transfer of ROW easement and/or ROW equipment	☐ 12. Sufferance agreement	☐ 43. Replacement or removal of TL poles
☐ 6. Property and/or equipment transfer	☐ 13. Engineering or environmental planning or studies	☐ 44. Conductor and overhead ground wire installation and replacement
■ 7. Easement on TVA property	☐ 14. Harbor limits delineation	☐ 49. Non-navigable houseboats

Project Review Form - TVA Bat Strategy *(06/2019)*

TABLE 2. Activities not likely to adversely affect bats with implementation of conservation measures. Conservation measures and completion of bat strategy project review form REQUIRED; review of bat records in proximity to project NOT required.		
☐ 18. Erosion control, minor	■ 57. Water intake - non-industrial	☐ 79. Swimming pools/associated equipment
■ 24. Tree planting	☐ 58. Wastewater outfalls	☐ 81. Water intakes – industrial
■ 30. Dredging and excavation; recessed harbor areas	■ 59. Marine fueling facilities	☐ 84. On-site/off-site public utility relocation or construction or extension
☐ 39. Berm development	■ 60. Commercial water-use facilities (e.g., marinas)	☐ 85. Playground equipment - land-based
☐ 40. Closed loop heat exchangers (heat pumps)	☐ 61. Septic fields	☐ 87. Aboveground storage tanks
☐ 45. Stream monitoring equipment - placement and use	☐ 66. Private, residential docks, piers, boathouses	☐ 88. Underground storage tanks
■ 46. Floating boat slips within approved harbor limits	☐ 67. Siting of temporary office trailers	☐ 90. Pond closure
☐ 48. Laydown areas	☐ 68. Financing for speculative building construction	☐ 93. Standard License
■ 50. Minor land based structures	☐ 72. Ferry landings/service operations	☐ 94. Special Use License
■ 51. Signage installation	☐ 74. Recreational vehicle campsites	☐ 95. Recreation License
☐ 53. Mooring buoys or posts	■ 75. Utility lines/light poles	☐ 96. Land Use Permit
☐ 56. Culverts	■ 76. Concrete sidewalks	

Table 3: Activities that may adversely affect federally listed bats. Conservation measures AND completion of bat strategy project review form REQUIRED; review of bat records in proximity of project REQUIRED by OSAR/Heritage eMap reviewer or Terrestrial Zoologist.		
☐ 15. Windshield and ground surveys for archaeological resources	■ 34. Mechanical vegetation removal, includes trees or tree branches > 3 inches in diameter	☐ 69. Renovation of existing structures
☐ 16. Drilling	■ 35. Stabilization (major erosion control)	☐ 70. Lock maintenance/ construction
☐ 17. Mechanical vegetation removal, does not include trees or branches > 3" in diameter (in Table 3 due to potential for woody burn piles)	■ 36. Grading	☐ 71. Concrete dam modification
☐ 21. Herbicide use	☐ 37. Installation of soil improvements	■ 73. Boat launching ramps
☐ 22. Grubbing	☐ 38. Drain installations for ponds	■ 77. Construction or expansion of land-based buildings
☐ 23. Prescribed burns	☐ 47. Conduit installation	☐ 78. Wastewater treatment plants
■ 25. Maintenance, improvement or construction of pedestrian or vehicular access corridors	☐ 52. Floating buildings	☐ 80. Barge fleeting areas
☐ 26. Maintenance/construction of access control measures	☐ 54. Maintenance of water control structures (dewatering units, spillways, levees)	☐ 82. Construction of dam/weirs/ levees
☐ 27. Restoration of sites following human use and abuse	☐ 55. Solar panels	☐ 83. Submarine pipeline, directional boring operations
☐ 28. Removal of debris (e.g., dump sites, hazardous material, unauthorized structures)	☐ 62. Blasting	☐ 86. Landfill construction
■ 29. Acquisition and use of fill/borrow material	☐ 63. Foundation installation for transmission support	☐ 89. Structure demolition
☐ 31. Stream/wetland crossings	☐ 64. Installation of steel structure, overhead bus, equipment, etc.	☐ 91. Bridge replacement
☐ 32. Clean-up following storm damage	☐ 65. Pole and/or tower installation and/or extension	☐ 92. Return of archaeological remains to former burial sites
☐ 33. Removal of hazardous trees/tree branches		

STEP 3) Project includes one or more activities in Table 3? ◉ **YES (Go to Step 4)** ○ **NO (Go to Step 13)**

Project Review Form - TVA Bat Strategy *(06/2019)*

STEP 4) Answer questions *a* through *e* below (applies to projects with activities from Table 3 ONLY)

a) Will project involve continuous noise (i.e., ≥ 24 hrs) that is greater than 75 decibels measured on the A scale (e.g., loud machinery)?
- ○ **NO** (NV2 does not apply)
- ◉ **YES** (NV2 applies, subject to records review)

b) Will project involve entry into/survey of cave?
- ◉ **NO** (HP1/HP2 do not apply)
- ○ **YES** (HP1/HP2 applies, subject to review of bat records)

c) If conducting **prescribed burning** (**activity 23**), estimated acreage: _____ and timeframe(s) below; ■ **N/A**

STATE	SWARMING	WINTER	NON-WINTER	PUP
GA, KY, TN	☐ Oct 15 - Nov 14	☐ Nov 15 - Mar 31	☐ Apr 1 - May 31, Aug 1- Oct 14	☐ Jun 1 - Jul 31
VA	☐ Sep 16 - Nov 15	☐ Nov 16 - Apr 14	☐ Apr 15 - May 31, Aug 1 – Sept 15	☐ Jun 1 - Jul 31
AL	☐ Oct 15 - Nov 14	☐ Nov 15 - Mar 15	☐ Mar 16 - May 31, Aug 1 - Oct 14	☐ Jun 1 - Jul 31
NC	☐ Oct 15 - Nov 14	☐ Nov 15 - Apr 15	☐ Apr 16 - May 31, Aug 1 - Oct 14	☐ Jun 1 - Jul 31
MS	☐ Oct 1 - Nov 14	☐ Nov 15 - Apr 14	☐ Apr 15 - May 31, Aug 1 – Sept 30	☐ Jun 1 - Jul 31

d) Will the project involve vegetation piling/burning?
- ◉ **NO** (SSPC4/ SHF7/SHF8 do not apply)
- ○ **YES** (SSPC4/SHF7/SHF8 applies, subject to review of bat records)

e) If **tree removal** (**activity 33 or 34**), estimated amount: 4.78 ◉**ac** ○**trees** ○**N/A**

STATE	SWARMING	WINTER	NON-WINTER	PUP
GA, KY, TN	■ Oct 15 - Nov 14	☐ Nov 15 - Mar 31	■ Apr 1 - May 31, Aug 1- Oct 14	■ Jun 1 - Jul 31
VA	☐ Sep 16 - Nov 15	☐ Nov 16 - Apr 14	☐ Apr 15 - May 31, Aug 1 – Sept 15	☐ Jun 1 - Jul 31
AL	☐ Oct 15 - Nov 14	☐ Nov 15 - Mar 15	☐ Mar 16 - May 31, Aug 1 - Oct 14	☐ Jun 1 - Jul 31
NC	☐ Oct 15 - Nov 14	☐ Nov 15 - Apr 15	☐ Apr 16 - May 31, Aug 1 - Oct 14	☐ Jun 1 - Jul 31
MS	☐ Oct 1 - Nov 14	☐ Nov 15 - Apr 14	☐ Apr 15 - May 31, Aug 1 – Sept 30	☐ Jun 1 - Jul 31

If warranted, does project have flexibility for bat surveys (May 15-Aug 15): ○ **MAYBE** ◉ **YES** ○ **NO**

**** For **PROJECT LEADS** whose projects will be reviewed by a Heritage Reviewer (Natural Resources Organization only), **STOP HERE**. Click File/ Save As, name form as "ProjectLead_BatForm_CEC-or-ProjectIDNo_Date", and submit with project information. Otherwise continue to Step 5. ****

SECTION 2: REVIEW OF BAT RECORDS (applies to projects with activities from Table 3 ONLY)

STEP 5) Review of bat/cave records conducted by Heritage/OSAR reviewer?

○ **YES** ◉ **NO** (Go to Step 13)

Info below completed by:
- ☐ **Heritage Reviewer** (name) _____ Date _____
- ☐ **OSAR Reviewer** (name) _____ Date _____
- ■ **Terrestrial Zoologist** (name) Sara McLaughlin-Johnson Date 3/3/2025

Gray bat records: ☐ None ☐ Within 3 miles* ☐ Within a cave* ☒ Within the County

Indiana bat records: ☐ None ☐ Within 10 miles* ☒ Within a cave* ☐ Capture/roost tree* ☒ Within the County

Northern long-eared bat records: ☐ None ☐ Within 5 miles* ☒ Within a cave* ☒ Capture/roost tree* ☒ Within the County

Virginia big-eared bat records: ☒ None ☐ Within 6 miles* ☐ Within the County

Caves: ☐ None within 3 mi ☒ Within 3 miles but > 0.5 mi ☐ Within 0.5 mi but > 0.25 mi* ☐ Within 0.25 mi but > 200 feet* ☐ Within 200 feet*

Bat Habitat Inspection Sheet completed? ◉ **NO** ○ **YES**

Amount of SUITABLE habitat to be removed/burned (may differ from STEP 4e): 4.78 (◉**ac** ○**trees**)* ○**N/A**

Project Review Form - TVA Bat Strategy *(06/2019)*

STEP 6) Provide any additional notes resulting from Heritage Reviewer records review in Notes box below then . . . . . Go to Step 13

Notes from Bat Records Review (e.g., historic record; bats not on landscape during action; DOT bridge survey with negative results):

Based on IPaC review in March 2025, project does not occur in a location where Indiana bat and northern long-eared bat are reasonably certain to occur, as such, application of take for these two species is not applicable.

STEPS 7-12 To be Completed by Terrestrial Zoologist (if warranted):

STEP 7) Project will involve:

- ☐ Removal of suitable trees within 0.5 mile of P1-P2 Indiana bat hibernacula or 0.25 mile of P3-P4 Indiana bat hibernacula or any NLEB hibernacula.
- ☐ Removal of suitable trees within 10 miles of documented Indiana bat (or within 5 miles of NLEB) hibernacula.
- ☒ Removal of suitable trees > 10 miles from documented Indiana bat (> 5 miles from NLEB) hibernacula.
- ☐ Removal of trees within 150 feet of a documented Indiana bat or northern long-eared bat maternity roost tree.
- ☐ Removal of suitable trees within 2.5 miles of Indiana bat roost trees or within 5 miles of Indiana bat capture sites.
- ☒ Removal of suitable trees > 2.5 miles from Indiana bat roost trees or > 5 miles from Indiana bat capture sites.
- ☐ Removal of documented Indiana bat or NLEB roost tree, if still suitable.
- ☐ N/A

STEP 8) Presence/absence surveys were/will be conducted: ○ **YES** ◉ **NO** ○ **TBD**

STEP 9) Presence/absence survey results, on _____ ○ **NEGATIVE** ○ **POSITIVE** ◉ **N/A**

STEP 10) Project ○ **WILL** ◉ **WILL NOT** require use of Incidental Take in the amount of _____ ○ **acres or** ○ **trees** proposed to be used during the ○ **WINTER** ○ **VOLANT SEASON** ○ **NON-VOLANT SEASON** ◉ **N/A**

STEP 11) Available Incidental Take (prior to accounting for this project) as of _____

TVA Action	Total 20-year	Winter	Volant Season	Non-Volant Season
4 Manage Permitting under Section 26a of the TVA Act				

STEP 12) Amount contributed to TVA's Bat Conservation Fund upon activity completion: $ _____ OR ◉ **N/A**

TERRESTRIAL ZOOLOGISTS, after completing SECTION 2, review Table 4, modify as needed, and then complete section for Terrestrial Zoologists at end of form.

SECTION 3: REQUIRED CONSERVATION MEASURES

STEP 13) Review Conservation Measures in Table 4 and ensure those selected are relevant to the project. If not, manually override and uncheck irrelevant measures, and explain why in ADDITIONAL NOTES below Table 4.

Did review of Table 4 result in ANY remaining Conservation Measures in RED?

- ○ **NO** (Go to Step 14)
- ◉ **YES** (STOP HERE; Submit for Terrestrial Zoology Review. Click File/Save As, name form as "ProjectLead_BatForm_CEC-or-ProjectIDNo_Date", and submit with project information).

Project Review Form - TVA Bat Strategy *(06/2019)*

Table 4. TVA's ESA Section 7 Programmatic Bat Consultation Required Conservation Measures

The Conservation Measures in Table 4 are automatically selected based on your choices in Tables 2 and 3 but can be manually overridden, if necessary. To Manually override, press the button and enter your name.

Manual Override

Name: Sara McLaughlin-Johnson

Check If Applies to Project	Activities Subject To Conservation Measure	Conservation Measure Description
■	15, 16, 17, 18, 22, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 45, 47, 48, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 90, 91, 92, 93, 94, 95, 96	**NV1** - Noise will be short-term, transient, and not significantly different from urban interface or natural events (i.e., thunderstorms) that bats are frequently exposed to when present on the landscape.
■	16, 17, 18, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 48, 50, 51, 52, 53, 54, 55, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 70, 71, 73, 76, 77, 78, 80, 81, 82, 83, 86, 87, 88, 89, 90	**SSPC2** - Operations involving chemical/fuel storage or resupply and vehicle servicing will be handled outside of riparian zones (streamside management zones) in a manner to prevent these items from reaching a watercourse. Earthen berms or other effective means are installed to protect stream channel from direct surface runoff. Servicing will be done with care to avoid leakage, spillage, and subsequent stream, wetland, or ground water contamination. Oil waste, filters, other litter will be collected and disposed of properly. Equipment servicing and chemical/fuel storage will be limited to locations greater than 300-ft from sinkholes, fissures, or areas draining into known sinkholes, fissures, or other karst features.
■	17, 18, 21, 22, 24, 25, 26, 30, 31, 33, 34, 35, 36, 40, 46, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 66, 67, 68, 69, 70, 72, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 87, 88, 91, 93, 95, 96	**SSPC5 (26a, Solar, Economic Development only)** - Section 26a permits and contracts associated with solar projects, economic development projects or land use projects include standards and conditions that include standard BMPs for sediment and contaminants as well as measures to avoid or minimize impacts to sensitive species or other resources consistent with applicable laws and Executive Orders.
■	16, 26, 36, 37, 38, 39, 48, 50, 52, 59, 60, 62, 66, 67, 69, 72, 75, 77, 78, 79, 86	**L1** - Direct temporary lighting away from suitable habitat during the active season.
■	16, 26, 36, 37, 38, 39, 48, 50, 52, 59, 60, 62, 66, 67, 69, 72, 75, 77, 78, 79, 86	**L2** - Evaluate the use of outdoor lighting during the active season and seek to minimize light pollution when installing new or replacing existing permanent lights by angling lights downward or via other light minimization measures (e.g., dimming, directed lighting, motion-sensitive lighting).

[1]Bats addressed in consultation (02/2018), which includes gray bat (listed in 1976), Indiana bat (listed in 1967), northern long-eared bat (listed in 2015), and Virginia big-eared bat (listed in 1979).

Hide All Unchecked Conservation Measures

◉ HIDE
○ UNHIDE

Hide Table 4 Columns 1 and 2 to Facilitate Clean Copy and Paste

○ HIDE
◉ UNHIDE

Project Review Form - TVA Bat Strategy *(06/2019)*

NOTES (additional info from field review, explanation of no impact or removal of conservation measures).

Based on IPaC review in March 2025, project does not occur in a location where Indiana bat and northern long-eared bat are reasonably certain to occur, as such, application of take for these two species is not applicable.

Project Review Form - TVA Bat Strategy *(06/2019)*

STEP 14) Save completed form (Click File/Save As, name form as "ProjectLead_BatForm_CEC-or-ProjectIDNo_Date") in project environmental documentation (e.g. CEC, Appendix to EA) AND send a copy of form to batstrategy@tva.gov
Submission of this form indicates that Project Lead/Applicant:

Brian Ross (name) is (or will be made) aware of the requirements below.

- Implementation of conservation measures identified in Table 4 is required to comply with TVA's Endangered Species Act programmatic bat consultation.
- TVA may conduct post-project monitoring to determine if conservation measures were effective in minimizing or avoiding impacts to federally listed bats.

For Use by Terrestrial Zoologist Only

☒ Terrestrial Zoologist acknowledges that Project Lead/Contact (name) _____ has been informed of any relevant conservation measures and/or provided a copy of this form.

☐ For projects that require use of Take and/or contribution to TVA's Bat Conservation Fund, Terrestrial Zoologist acknowledges that Project Lead/Contact has been informed that project will result in use of Incidental Take _____ ○ ac ○ trees and that use of Take will require $ _____ contribution to TVA's Conservation Fund upon completion of activity (amount entered should be $0 if cleared in winter).

For Terrestrial Zoology Use Only. Finalize and Print to Noneditable PDF.

Appendix C – Common Plant Species Observed During Vegetation Survey

The following common species (native and non-native) were observed during a May 6, 2025, Project Area vegetation survey:

Common Name	Scientific Name
Southern red oak	*Quercus falcata*
Shagbark hickory	*Carya ovata*
Red maple	*Acer rubrum*
Sugar maple	*Acer saccharum*
Eastern black walnut	*Juglans nigra*
American sycamore	*Platanus occidentalis*
Black locust	*Robinia pseudoacacia*
American beech	*Fagus grandifolia*
Black willow	*Salix nigra*
Common pawpaw	*Asimina triloba*
Eastern redbud	*Cercis canadensis*
Staghorn sumac	*Rhus typhina*
Japanese honeysuckle	*Lonicera japonica*
Multiflora rose	*Rosa multiflora*
Black elderberry	*Sambucus nigra*
Pennsylvania blackberry	*Rubus pensilvanicus*
Blue violet	*Viola sororia*
Catchweed bedstraw	*Galium aparine*
Japanese stiltgrass	*Microstegium vimineum*
Licorice bedstraw	*Galium circaezans*
Poison ivy	*Toxicodendron radicans*
Virginia creeper	*Parthenocissus quinquefolia*
Greenbrier	*Smilax rotundifolia*
Kudzu	*Pueraria montana*

Appendix D – Supplemental Migratory Bird Habitat Information

Chimney swift are associated with human settlement and primarily use chimneys as nesting habitat; when chimneys are unavailable, swifts may utilize tree cavities or other human-made structures, such as barns, silos, and vents made of porous materials such as brick, stone, or mortar (USFWS 2025). They forage over a variety of habitats, including open terrain, forests, and residential areas (Steeves et al. 2020). Suitable habitat for chimney swift is available within the Project Area.

Kentucky warbler breeds in Tennessee between mid-April and late August. During this period, this species uses lowland hardwood forest, often near streams, with a dense understory. Large tracts of forest habitat are required for nesting (over 1,200 acres), though gaps such as treefall gaps, trails, or small roads are important for creating a patchwork of shaded and well-lit areas. This species mostly forages along forest floors, though they will also feed on insects in the understory and lower parts of trees (Cornell 2025d). Suitable foraging and nesting habitat is present with the Project Area, as habitat within and surrounding the Site consists of large tracts of riparian forest.

Prairie warbler migrates to the southeastern United States (U.S.) to breed from May through July in shrubby habitats with open canopies, ranging from pine forests, scrub oak barrens, regenerating forests, and borders of forest and prairie (Nolan et al. 2020). This species forages for insects, spiders, and snails in shrubby habitats. Disturbed sites within the Project Area contain a small amount of suitable nesting and foraging habitat for this species.

Prothonotary warbler breeds and forages throughout most of the southeastern U.S. in bottomland forests, wooded swamps, and forests near lakes and streams between April and July. Nests are placed in holes created by woodpeckers and chickadees, in natural holes in standing dead trees, and in nest boxes (Petit 2020). Suitable nesting and foraging habitat is present in the Project Area within forested riparian sites.

Red-headed woodpecker are present within the Project Area year-round. This species is a cavity nester of deciduous woodlands with oak or beech, groves of dead or dying trees, river bottoms, recent clearings, grasslands with scattered trees, forest edges, and roadsides (Frei et al. 2020). Foraging for insects and fruit occurs within that same deciduous habitat and breeding occurs from mid-May through mid-September. Suitable nesting and foraging habitat are present throughout the Project Area.

Rusty blackbird breeds in Alaska, Canada, and the northeastern U.S. In their wintering range they may use flooded woods, edges of ponds and streams, and adjacent fields (Avery 2020). No perennial streams or pond boundaries are present within the Project Area. The Project Area may contain marginally suitable habitat for rusty blackbird in wooded areas along the Reservoir.

Wood thrush breed throughout much of the southeastern U.S. This species can be found in mature deciduous and mixed forests, though breeding may also occur – somewhat less successfully, in fragmented forests and suburban parks. Ideal habitat includes trees over 50 feet tall, a moderate understory of saplings and shrubs, and an open forest floor with moist soil and decaying leaf litter with water nearby. In Tennessee, nesting occurs from early May through late August and nests are placed in saplings or shrubs. Foraging occurs primarily on leaf-litter invertebrates and shrub fruits (Evans et al. 2020). Suitable nesting and foraging habitat is present in the Project Area.