Document Type: EA-Administrative Record
Index Field: Environmental Assessment
Project Name: Savannah Marina EA
Project Number: 2024-31

SAVANNAH MARINA DEED MODIFICATION AND SECTION 26A APPROVAL
FINAL ENVIRONMENTAL ASSESSMENT

Hardin County, Tennessee

EAXX-455-00-000-1729862105

Prepared by:
TENNESSEE VALLEY AUTHORITY
Knoxville, Tennessee

February 2026

To request further information, contact:
Jessica Wykoff-Carpenter
NEPA Compliance
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, TN 37902
E-mail: nepa@tva.gov

Table of Contents

List of Appendices

List of Tables

List of Figures

CHAPTER 1 – PURPOSE AND NEED FOR ACTION

1.1 Introduction and Background

The City of Savannah (the City) has applied for a deed modification and a shoreline construction permit under Section 26a of the Tennessee Valley Authority (TVA) Act of 1933, as amended, for the inland excavation and dredge to make room for a proposed full-service marina and harbor development on Kentucky Reservoir in Savannah, Hardin County, Tennessee (see Appendix B, Figure 1-1). The proposed marina facilities would be sited on approximately 63.46 acres (see Figures Appendix B, 1-2 and 1-3). The proposed marina site consists of property owned by the City and the portion below the 370-foot contour (2.96 acres) is under a TVA flowage easement which restricts certain shoreline activities. TVA previously acquired flowage easement rights over TVA Tract Nos. GIR-8118F and GIR-8119F in 1943.

The proposed 63.46-acre marina site is made up of 48.1 land-based acres and 15.36 water-based acres. The proposed excavation (approximately 480,724 cubic yards) would result in 12.95 acres of additional property below the 370-foot contour, over which TVA would acquire new flowage rights. A deed modification over 2.96 acres is also needed to allow for certain shoreline activities that are restricted in the existing flowage easement (see Appendix B, Figure 1-4).

Spoil material resulting from the proposed excavation would be stored at the top of the bank and disposed of nearby on two City-owned spoil sites totaling 14.2 acres (see Appendix B, Figure 1-5). There is potential for Spoil Site 1 (8.92 acres) to hold a total of 630,400 cubic yards of spoil material and Spoil Site 2 (5.28 acres) to hold a total of 276,575 cubic yards of spoil material. There is potential for the City to use another adjacent area that is within a TVA transmission line right-of-way (ROW) to transport spoil from the marina site to the spoil sites and to spread spoil if needed, upon TVA approval. The combined 63.46-acre marina site and 14.2-acre spoil sites (77.66 acres) will herein be referred to as the “Project Area” (see Appendix B, Figures 1-1 through 1-5).

To allow for construction and operation of the proposed marina, TVA would need to take the following actions:

- Issuance of a deed modification over 2.96 acres of TVA Tract Nos. GIR-8118F and GIR-8119F to allow inland dredging. The proposed modification of flowage rights would include the abandonment of TVA’s rights to drain the land for malaria control, and to construct navigation aids. TVA also proposes to include a deed restriction that the City would only construct water use facilities below the 370-foot contour, upon written approval by TVA. TVA would still retain the rights to remove unapproved structures below the 370-foot contour. When the deed modification is complete, these TVA Tracts would be referred to under the new TVA Tract Nos. GIR-8118F,S.1X and GIR-8119F,S.1X.
- Issuance of a prior entry license, upon TVA executive approval of the proposed actions, allowing the work to take place. At the time of prior entry, TVA may choose not to grant approval of all requested facilities, but only

what is necessary to conduct the dredge and complete the work needed to prepare the property survey.

- Approval under Section 26a of the TVA Act for excavation, dredging, and construction of commercial marina facilities below the 400-foot contour elevation (500-year flood elevation) to the City.
- Acquisition of flowage rights and issuance of flowage easements, with the same rights as the existing adjacent flowage rights, up to the 370-foot contour over the 12.95 acres created through the inland excavation and dredge for construction of the proposed marina.

Table 1-1. Summary of Proposed Actions and Associate Acreages

Proposed Actions	Acreages
Marina Site	63.46 acres
Land Based Portion	*48.1 acres*
Water Based Portion	*15.36 acres*
Spoil Site 1	5.28 acres
Spoil Site 2	8.92 acres
Deed Modification	2.96 acres
Acquisition of Flowage Easement Rights	12.95 acres

In accordance with TVA's Land Policy (2006), TVA manages its lands to protect the integrated operation of the TVA reservoir and power systems, to provide for appropriate public use and enjoyment of the reservoir system and to provide for continuing economic growth in the Tennessee Valley (Valley). In considering this request, TVA seeks to manage reservoir lands in a way that maintains the quality of life and other important values to the people of the TVA region. Section 26a of the TVA Act, as amended, requires that TVA approval be obtained prior to the construction, operation, or maintenance of any obstruction affecting navigation, flood control, or public lands. TVA will determine Section 26a approval, denial, or modifications with approval through Section 26a regulations, deed restrictions, and compliance with TVA policies and guidelines. TVA's interest in considering this proposal also arises from its commitment to improve the area's economic base, support sustainable economic growth, and provide public and commercial recreation opportunities.

The Project Area includes portions of two streams (Town Branch and Mud Branch), which are tributaries to the Tennessee River. The proposed marina site also includes areas of higher ground, with elevations in excess of 430-feet above mean sea level (msl). There is a broad, low-lying area adjacent to the two streams with elevations between 360- and 380-feet msl, this area being the portion of the site that would be the majority of the marina project footprint.

TVA's action (Proposed Action) includes the approval of the City's request to obtain a Section 26a permit allowing the placement of fill within the 100- and 500-year floodplains and the approval of a commercial marina with floating docks in the reservoir situated along the shoreline. TVA's Section 26a jurisdiction applies to all portions of the City's Site that fall within the 500-year floodplain of the Tennessee River and to the area of the proposed water-based infrastructure.

This project would be completed in three phases. Phases I and II would include the proposed actions in the Section 26a approval request, including the initial harbor excavation and marina construction. The City's planned Phase III actions are not included in the Section 26a permit request, but they are within the existing project footprint for this environmental assessment (EA). This environmental review will consider all proposed future development within the project footprint provided by the applicant to add efficiency to the permitting and environmental review process for potential future related requests.

1.2 Purpose and Need

The City's purpose and need is to develop a commercial marina and associated facilities along Kentucky Reservoir to provide recreation, boat storage, and fueling services that are currently unavailable in the area.

TVA's action is to decide whether to issue a deed modification and Section 26a permit approval for shoreline construction activities as part of the City's proposed commercial marina development on Kentucky 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 reservation across, along, or in the Tennessee River watershed. On TVA reservoirs this jurisdiction typically applies to the limits of the 500-year floodplain or to the upper limits of TVA's flowage easement rights, whichever is higher. Because the proposed facilities include activities that would be located within the 500-year floodplain, 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 must also consider whether to modify the current deed over TVA Tract Nos. GIR-8118F and GIR-8119F to allow for the proposed inland excavation and dredge.

The proposed facilities are also consistent with TVA's reservoir land use plan for the area. Completed in 2017, the Kentucky Reservoir Land Management Plan (RLMP) reflects TVA's preference to accommodate developed recreation in this portion of the reservoir. While the proposed marina would be located on shoreland owned by the City, the adjacent TVA shoreline property is allocated for Developed Recreation. Additionally, the City's request meets TVA's objective to provide the public with quality, affordable outdoor recreation opportunities.

1.3 Decision to be Made

TVA's decision is whether to approve or deny the City's request to do an inland excavation and inland excavation and dredge and construct and operate a commercial marina on TVA Tract Nos. GIR-8118F and GIR-8119F. Specifically, TVA's decision is whether to take the following actions:

- Issue a deed modification over 2.96 acres of TVA Tract Nos. GIR-8118F and GIR-8119F to allow an inland excavation and dredge.
- Issue Section 26a approval for the proposed excavation and construction of commercial marina facilities below the 400-foot contour elevation (500-year flood elevation) to the City.
- Acquire flowage rights, the same as the existing adjacent flowage rights, up to the 370-foot contour over the 12.95 acres created through the inland excavation and dredge for construction of the proposed marina.
- Issue a prior entry license, upon TVA executive approval of the proposed actions, allowing the work to take place. At the time of prior entry, TVA may choose not to grant approval of all facilities, but only what is necessary to conduct the dredge and complete the work needed to prepare the survey.

1.4 Related Environmental Reviews and Consultation Requirements

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

Shoreline Management Initiative (SMI): An Assessment of Residential Shoreline Development Impacts in the Tennessee Valley Final Environmental Impact Statement (TVA 1998)

In November 1998, TVA completed the SMI final environmental impact statement (EIS) analyzing possible alternatives for managing residential shoreline development throughout the Valley. The selected Shoreline Management Plan (SMP) defines the standards for vegetation management, water use facilities, shoreline stabilization, and other residential shoreline alterations. The SMP was approved by the TVA Board of Directors (Board) on April 21, 1999. The result of the study was TVA's Shoreline Management Policy that established a Valleywide policy to improve the protection of shoreline and aquatic resources while allowing reasonable access to the water.

In the SMI final EIS, TVA considered seven alternatives for managing residential shoreline development impacts in the Valley. The 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 Proposed Action would be consistent with the Shoreline Management Policy.

Kentucky Reservoir Land Management Plan - Multiple Reservoir Land Management Plans and Final Environmental Impact Statement (TVA 2017a and 2017b)

On August 23, 2017, the Kentucky RLMP was approved by the Board. The Kentucky RLMP addresses the management of the 74,713.6 acres of TVA-owned public land surrounding Kentucky Reservoir, and it is one of eight RLMPs prepared by TVA and analyzed in the Multiple RLMPs EIS.

The Multiple RLMPs EIS considered potential impacts to TVA-managed public lands on eight reservoirs in Alabama, Kentucky and Tennessee: Chickamauga, Fort Loudoun, Great Falls, Kentucky, Nickajack, Normandy, Wheeler and Wilson that are

surrounded by 138,221.4 acres of TVA-managed land. As part of these eight RLMPs and the EIS, the Board also approved the proposed changes to the Comprehensive Valleywide Land Plan and land use allocation target ranges, which were set forth in the 2011 Natural Resource Plan (NRP) and updated in the 2020 NRP. The EIS is included as Volume I and the Kentucky RLMP is Volume V of the Multiple RLMPs project.

1.5 Scope of the Environmental Assessment

TVA has prepared this EA to comply with National Environmental Policy Act (NEPA) and regulations promulgated by TVA to implement NEPA. The EA investigates the potential environmental and socioeconomic effects of the proposed construction, operation, and maintenance of the proposed commercial marina project and addresses resources present within the entire Project Area.

TVA considered the possible environmental effects of the proposed alternatives and determined that potential effects to the resources listed below were relevant to the decision to be made; thus, the following resources are addressed in detail in this EA:

- Parks and Recreation
- Managed and Natural Areas
- Navigation
- Socioeconomics
- Surface Water and Soil Erosion
- Geology and Groundwater
- Wetlands
- Aquatic Ecology
- Terrestrial Zoology
- Vegetation
- Endangered and Threatened Species and their Critical Habitats
- Utilities and Service Systems
- Land Use and Prime Farmland
- Noise
- Visual Resources
- Transportation
- Public Health and Safety
- Floodplains
- Archaeological and Historic Resources
- Solid and Hazardous Waste
- Reasonably Foreseeable Impacts

The detailed analysis in this EA focuses on those resource areas above that have the potential for impacts associated with the proposed ground disturbing activities and operation of the facilities. Potential effects to additional resources of the City's long-term management of the area are also addressed in this EA.

1.6 Scoping and Public Involvement

TVA's public involvement included issuance of a public notice notifying the public of the opportunity for review and comment during the 30-day public review of the draft EA. The public notice instructed stakeholders to visit TVA.com/nepa to review the draft EA and provided instructions for submitting comments. The draft EA was posted on TVA.com/nepa on October 17, 2025, and was announced in a media release. TVA's agency involvement included notification of the availability of the draft EA to local, state, and federal agencies and federally recognized tribes as part of the review.

In total, TVA received 64 official public comments on the draft EA. Comments could be submitted through the online portal at www.tva.com/nepa, via email, or U.S. mail during the public comment period. A total of 59 comments were submitted through the online portal, four comments were submitted by email, and one comment was sent by mail. Comments were received from individuals in Savannah, TN and surrounding communities, as well as the Tennessee Department of Environment and Conservation.

These comment submissions were carefully reviewed and comments with similar themes were summarized into nine individual comment statements. Appendix I provides these comment statements and TVA's responses to them. The comments and responses are categorized into five broad topics –Support for Alternative B (Action Alternative), Overcrowding and Boating Safety Concerns, Traffic and Roadway Safety Concerns, Potential Flooding Concerns, and Other.

Key themes from public comments include:

- Support for the proposed Savannah Marina project due to increased access to fuel, food, boating supplies, and boat storage
- Support for the proposed Savannah Marina project due to potential benefits to the community and economy due to creation of new jobs, increased property values, and increased tourism
- Support for the proposed Savannah Marina project due to increased accessibility to the river for citizens who are elderly or who have disabilities
- Concern about potential increase in boating and road traffic and safety concerns
- Concern about increased flooding due to development of the Savannah Marina

TVA Public Land Management also completed a 30-day public comment period as part of the Deed Modification process. The public notice was posted in the Savannah Courier on October 16, 2025, requesting public comments to identify issues associated with the proposed Project. The public notice received one comment that was incorporated into the comment response in the EA. U.S. Army

Corps of Engineers (USACE) also plans to hold a public notice period and invite public comments at a later time.

1.7 Necessary Permits or Licenses

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

- A TVA Section 26a permit is required for shoreline construction activities like docks, marinas or shoreline stabilization. This ensures projects align with TVA's management goals for the river, including recreation, flood control, navigation, water supply, power generation, and water quality. TVA will also consider issuing a prior entry license, upon TVA executive approval of the proposed actions, allowing the work to take place.
- USACE permits are needed for activities in navigable waters and for discharging dredged or fill material. Key permits include Section 404 of the Clean Water Act (regulating dredging or fill in navigable waters and wetlands) and Section 10 of the Rivers and Harbors Act of 1899 (requiring authorization for structures in or over navigable waters).
- The Tennessee Department of Environment and Conservation (TDEC) requires a National Pollutant Discharge Elimination System (NPDES) general permit under Section 402 of the Clean Water Act (CWA) for discharge of pollutants found in stormwater runoff associated with construction activities that disturb greater than 1.0 acre into waters of the U.S. or waters 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 from erosion of sediment, solid waste, chemicals usage, equipment usage and maintenance, dust control, and septic issues.
- Section 404 of the CWA prohibits the discharge of dredged or fill material into waters of the U.S. unless authorized by the USACE. Section 401 of the CWA requires a Water Quality Certification from the State of Tennessee prior to the issuance of a federal permit for activities that result in a discharge to navigable waters. Unavoidable impacts to waters of the U.S. or waters of Tennessee would be conducted and mitigated in accordance with a Section 404 permit from the USACE and a Section 401 Water Quality Certification from TDEC. TDEC administers Section 401 Water Quality Certification through the aquatic resources alteration permit (ARAP) program.
- The Tennessee Division of Underground Storage Tanks requires notification and registration and subsequently an operating permit for underground petroleum storage tanks in Tennessee. They do not regulate above ground storage tanks. For above ground storage tanks that meet certain criteria, a Spill Prevention, Control and Countermeasures Plan in accordance with 40 CFR 112 would also be required. Construction activities would be performed in compliance with applicable stormwater permitting requirements.

- Should hydrostatic test discharges occur, the City would be required to obtain coverage under the 2021 NPDES General Permit for Discharges of Hydrostatic Test Water (TN670000) from TDEC.
- The City would also be required to obtain a Water Main Extension Permit and Sanitary Sewer Main and Lift Station/Force Main Permit. If required, the City would also obtain a pretreatment or discharge permit from the publicly owned treatment works and an engineering plan review by TDEC. No other federal, state, or local permits are anticipated to be required based on the resource impacts as discussed in this EA.

CHAPTER 2 - ALTERNATIVES

2.1 Description of Alternatives

TVA has determined that there are two alternatives for consideration of the proposed project: Alternative A - the No Action Alternative and Alternative B - the Proposed Action Alternative.

2.1.1 Alternative A – No Action Alternative – TVA Does Not Grant the Requested Approvals to the City for its Proposed Marina Project

Under the No Action Alternative, TVA would not grant the City a deed modification or issue the Section 26a permit required for the proposed inland harbor or construction of a marina. The shoreland would remain under the current flowage easement This alternative does not meet the City's purpose and need; however, it provides a benchmark for comparing the environmental impacts of the implementation of the proposed Action Alternative.

2.1.2 Alternative B – Proposed Action Alternative – TVA Grants the Requested Approvals to the City for its Proposed Marina Project

Under this alternative, TVA would issue a deed modification for 2.96 acres of property owned by the City, a Section 26a permit for the proposed inland excavation and dredge and construction of the proposed marina and associated facilities, and TVA would acquire flowage rights over 12.95 acres created by the inland excavation and dredge below the 370-foot contour.

Phases I and II of the proposed marina project would be constructed pending completion of this EA and required Section 26a permit and deed modification actions. Phase III actions would be initiated following completion of Phases I and II construction and after the marina is operational, with additional review and approval by TVA. The anticipated list of facilities constructed as part of each phase is detailed below.

Phase I

Construction of Phase I is anticipated to include excavation of 480,724 cubic yards of soil from the marina site to be deposited at Spoil Sites 1 and 2 and the relocation of portions of two streams located in the Project Area. This phase of construction is projected to take approximately nine months to complete.

Spoil from the excavation would be stored at the top of the bank and disposed of at two spoil sites located adjacent to the Project Area. Vegetation would be removed

from the entire Project Area and spoil sites prior to excavation work in a manner that does not create erosion.

Phase II
Construction of Phase II is anticipated to take 1.5-2 years to complete and would include installation of the following marina facilities:

- Dock area of 36,414 square feet with 132 boat slips anchored using spud poles
- A 9,070-square foot floating building located within the dock area
- Two electrical substations
- Two utility bridges to allow for utilities on the floating portion of the marina
- Sixteen electrical pedestals
- Sixty-six double hose bibs
- Two fueling stations
- Two sanitary pump-out systems
- An 87,640 square foot asphalt pavement parking lot
- A roadway with entrance to the parking lot
- A concrete boat ramp totaling 13,500 square feet
- Concrete sidewalk totaling 1,684 square feet
- Two light poles
- Shoreline stabilization activities, construction of a debris deflector, and placement of riprap along the riverbank of the entire marina basin

Phase III
The order and pacing of the subsequent actions will be dependent on market conditions and needs prioritized for each phase by the City. The support amenities anticipated as part of Phase III include:

- A river boat dock (plan to adjust location from current rendering to address navigation concerns)
- A lighthouse
- Covered boat storage
- A land-based restaurant
- Event space

2.1.3 Alternatives Considered but Eliminated from Further Discussion

The City submitted for review an alternative that would be similar in scope to the Action Alternative; however, it would have involved excavation of TVA-owned reservoir property allocated for public recreation use. TVA will not consider dredge requests to remove material within 25 feet of the shoreline at full pool for the purpose of creating new shoreline. Also, TVA will not consider requests to create new shoreline or for inland harbors on TVA owned property (TVA 2025b). Therefore, this alternative was removed from consideration.

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.

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

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

Resource Area	Impacts From No Action Alternative	Impacts From Proposed Action Alternative
Parks and Recreation	No impacts, including beneficial impacts, on local recreation opportunities would be expected.	The proposed marina would provide additional recreational opportunities. Increase in local boating traffic is expected to be minor.
Managed and Natural Areas	No impacts on managed areas, natural areas, or ecologically significant sites would be expected.	Impacts to nearby managed and natural areas would be minor and short-term and no effects to streams on the Nationwide Rivers Inventory or any Wild and Scenic Rivers are expected.
Navigation	No impacts on navigation would be expected.	Impacts to navigation in the area would be minor with evaluation under the TVA Section 26a and USACE Section 10 permit review processes and with implementation of routine mitigation measures.
Socioeconomics	No impacts, including beneficial impacts, on local demographics, socioeconomic conditions, or community services would be expected.	The proposed marina would result in minor beneficial impacts to the local economy during construction and operation.
Surface Water	No impacts on local surface water quality would be expected.	Construction is not likely to adversely impact surface waters.
Geology and Groundwater	No impacts on local groundwater quality or quantity would be expected.	Ground disturbance activities related to the proposed marina are expected to have minor impacts on geology or groundwater quantity or flow.

Resource Area	Impacts From No Action Alternative	Impacts From Proposed Action Alternative
Wetlands	No impacts on local wetland extent or function would be expected.	There would be no significant impact on adjacent wetlands with applicable permits and mitigation as required by USACE and TDEC.
Aquatic Ecology	Aquatic life in local streams would not be affected and no impacts on endangered or threatened animal species or any designated critical habitat would be anticipated.	No impacts to aquatic life in local streams or federally or state-listed aquatic animals or any designated critical habitats would be expected.
Terrestrial Zoology	No changes from current biological conditions would occur. Local wildlife would not be affected, and no effects to endangered or threatened terrestrial animal species or any designated critical habits would be anticipated.	There is potential for minor short-term disturbance of some resident wildlife from construction. No effects to any federally or state-listed species would be anticipated.
Vegetation	Local vegetation would not be impacted, and no endangered or threatened plan species or any designated critical habitats would be expected.	The proposed project would result in minor permanent impacts to vegetation located in the Project Area. No effects to any federally or state-listed species would be anticipated.
Utilities and Service Systems	No changes in local utilities and service systems would be expected.	Given the ability of existing utility providers to meet proposed consumption, along with proactive coordination and planning with utility providers, minor impacts to existing utilities and service systems and the available capacity of these resources would be expected.
Land Use and Prime Farmland	No impacts to land use or prime farmland would be anticipated.	Impacts to land use and prime farmlands as a result of the Action Alternative would be considered minor.
Noise	No noise or vibration impacts from construction or operation would occur because the proposed marina project would not be constructed.	Adverse noise impacts associated with construction and workforce traffic are expected to be minor and temporary. Adverse noise impacts associated with operation of the marina would be expected to be minor.
Visual resources	Aesthetic character of the area would be expected to remain virtually unchanged.	Visual impacts resulting from the operation of the inland harbor and marina and associated facilities would be minor and the scenic class would be fair.
Transportation	No changes in local traffic and transportation would be anticipated.	With the use of traffic management plan activities, impacts to the local transportation network and traffic conditions from transportation of spoil would be temporary and minor. Impacts on the transportation network

Resource Area	Impacts From No Action Alternative	Impacts From Proposed Action Alternative
		and traffic conditions during operations are also anticipated to be minor.
Public Health and Safety	No changes in local public health and safety would be expected.	Compliance with federal, state, and local safety standards during project construction and operation would result in minor impacts to public health and safety.
Floodplains	No changes in local floodplain functions would be expected.	With mitigation measures and standard BMPs, minor adverse impacts would be expected.
Archaeological and Historic Resources	No adverse effects to archeological or historic resources would be anticipated.	No adverse effects to archaeological or historic properties would be anticipated with implementation of mitigation measures.
Hazardous Materials and Solid Waste	No changes to hazardous materials or solid waste would be expected.	Action Alternative would not result in adverse impacts from the generation, storage and disposal of solid and hazardous wastes.

2.3 Identification of Mitigation Measures

Specific measures, precautions, or safeguards that would avoid, eliminate, or reduce potential effects and can be environmental commitments are identified in this section.

2.3.1.1 Routine Mitigation Measures

TVA identifies as part of permit issuance Section 26a permit conditions that include routine mitigation measures, BMPs, and other requirements. Upon approval, implementation of these routine mitigation measures serve to avoid, minimize, or resolve potential impacts on the environment. The Section 26a permit conditions are included in Appendix C.

The following routine measures shall be applied to reduce the potential for adverse environmental effects during the construction and operation of the planned marina.

The routine measures that would be implemented to avoid or minimize potential navigation impacts include:

- No portion of the marina facilities may extend beyond the approved harbor limits.
- The applicant should be advised in writing that the facility would front a commercial navigation channel at a location which makes the facility and any moored boats vulnerable to wave wash.
- All floating facilities are securely anchored to prevent them from floating free during major floods.

The routine measures that would be implemented to avoid or minimize potential floodplain and flood risk impacts include:

- All power installations and lights will have a cutoff switch located above the 500-year elevation 400.1 that is accessible during flooding.

The City would implement BMPs as outlined in the Tennessee Department of Environment and Conservation *Erosion and Sediment Control Handbook* (TDEC 2012) to minimize erosion during construction, operation and maintenance activities.

The City would develop and implement a Soil Management Plan and a SWPPP consistent with the terms of the general construction stormwater permit. The SWPPP identifies specific BMPs to address construction-related activities that would be adopted to minimize storm water impacts. Implementation of these plans will ensure that construction activities have no impact on groundwater quality.

Any soil, baled hay or straw, plants and sod with roots and soil attached, soil-moving equipment, or other "Regulated Articles" as defined by U.S. Department of Agriculture (USDA) should comply with Animal and Plant Health Inspection Service (APHIS) Quarantine Regulations if moved to a county outside of the quarantine to minimize the spread of imported fire ants. TVA committed to implement specific conservation measures for federally listed bat species. These activities and associated conservation measures are in the TVA Bat Strategy Project Screening Form (see Appendix D).

2.3.1.2 Non-Routine Mitigation Measures

Flood Risk 26a Conditions

- Spoil material would be deposited at either Spoil Site 1 or Spoil Site 2.
- Electrical installations that could be flood-damageable (e.g., electrical panels, transformers and the like) would be elevated on concrete pads to be above the 100-year flood elevation 398.
- The fuel storage tank vents and filling ports would have extensions located above the 100-year flood elevation 398.
- The fuel storage tank would be securely anchored to prevent it from floating free during major floods.
- The lighthouse (Phase III) would be constructed with flow-through vents or other openings in the building in accordance with Hardin County floodplain regulations.
- Should the upland restaurant and event space (Phase III) be located on ground below elevation 400.1 (the 500-year flood elevation) and within TVA flowage easement, TVA would require the finished floor elevation to be at least at elevation 402.1, with any crawlspace elevation no lower than elevation 400.1.
- Should the upland restaurant and event space be located on ground below elevation 400.1 (the 500-year flood elevation) and outside TVA flowage easement, the buildings would be constructed in accordance with Hardin County floodplain regulations.

Flooding and flood control rights for the acquired easement will be the same as adjacent flowage easements.

Archaeology

In consultation with TVA, the Chickasaw Nation, and the State Historic Preservation Officer (SHPO), the City would fund the development, fabrication, and installation of a permanent interpretive sign at a publicly accessible location in the Project Area within one year of the beginning of marina operations to acknowledge historical tribal resources in the area.

2.4 The Preferred Alternative

Alternative B - the Proposed Action Alternative - is the applicant's preferred alternative for the proposed project. Under Alternative B TVA would grant a deed modification for 2.96 acres of property owned by the City, issue Section 26a approval for the proposed inland excavation and dredge and construction of the proposed marina and associated facilities, and TVA would acquire flowage rights over 12.95 acres created by the inland excavation and dredge.

CHAPTER 3 – AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the existing environmental, social, and economic conditions of the Project Area and the surrounding areas, and the anticipated potential effects of implementing Alternative A - The No Action Alternative and Alternative B - The Proposed Action Alternative for each resource. The descriptions below of the potentially affected environment are based on field surveys conducted in December 2022, January to March 2023, August to October 2023, and April to June 2024, in published and unpublished reports, and through personal communications with resource experts. This information, along with the No Action Alternative, establishes the baseline conditions against which TVA decision makers and the public can compare the potential effects of implementing the alternatives under consideration in accordance with NEPA regulations.

Potential effects related to air quality and global climate change were considered and potential effects on these resources were found to be minor or absent because of the nature of the action.

3.1 Parks and Recreation

3.1.1 Affected Environment

Kentucky Reservoir waterways and reservoir property are popular for their developed and dispersed recreation opportunities. Developed recreation includes campgrounds, lodges, marinas, boat ramps, parks, swimming pools, beaches and golf courses. Dispersed recreation activities include picnicking, primitive camping, hiking, bank fishing, hunting, kayaking and canoeing. Kentucky Reservoir offers a range of public and commercial recreation amenities including marinas with restaurants and fuel services, boat-launching ramps, informal and full-service campgrounds, picnic and swimming facilities and nature trails.

While Kentucky Reservoir offers an abundance of developed and dispersed public and commercial recreation opportunities and recreation facilities (TVA 2017a), the portion of the reservoir in the vicinity of the Project Area is somewhat underserved

and does not have a marina nearby. Pickwick Landing Marina and Riverstone Marina are the closest marinas to the Project Area and they are about 17 miles and 28 river miles away, respectively[1]. The City has indicated that there is demand for a new and modern marina in the area. The proposed marina would potentially provide a benefit and attraction for local residents, tourists, and potential homeowners.

TVA conducted a desktop-level review of developed recreation resources within a 3-mile radius of the Project Area utilizing TVA's eGIS, ArcGIS and Google Earth mapping databases. Six developed recreation areas and two public boat-launching ramps were identified to be within a 3-mile radius (see Table 3-1). Six other boat launching ramps in the area are 10 or more miles from the Project Area. Some dispersed recreational activities such as nature observation, hiking, and walking for pleasure may occur on some of the public lands within or near the Project Area and related access routes. Wayne Jerrolds River Park, operated by the City's Department of Parks and Recreation, is immediately adjacent to the Project Area and a portion of the park overlaps the Project Area. The 9.7-acre park currently offers a variety of amenities including a boat-launching ramp, courtesy dock, kayak launch, picnic areas with pavilions, walking trails and restrooms. It also features a connection to the Tennessee RiverLine and a boardwalk. The City would remove the boat-launching ramp and docks from the park for construction of the proposed marina complex. The nearby boat-launching ramp maintained by Tennessee Wildlife Resources Agency (TWRA) includes parking to accommodate approximately 45 vehicles. There are currently 22 active 26a permits within a 3-mile radius that include private docks or boat-launching ramps.

Table 3-1. Developed Recreation Areas in the Vicinity of the Project Area

Recreation Area	County	State	Approximate Distance/Direction from project area
Public Parks			
Wayne Jerrolds River Park	Hardin	TN	Overlap/adjacent
Trail of Tears Overlook Park	Hardin	TN	.5 mi north
Tennessee Street Park	Hardin	TN	.7 mi northeast
Hardin County Fairgrounds	Hardin	TN	1.6 mi northeast
Savannah Parks & Recreation Fields	Hardin	TN	1.7 mi northeast
Northwood Public Pool	Hardin	TN	2.1 mi northeast
Public and Commercial Water Access			
Pickwick Landing Marina	Hardin	TN	11.4 mi south
Saltillo Boat Ramp and River View Park	Hardin	TN	17.8 mi northeast
Riverstone Marina	Hardin	TN	1.9 mi northeast

[1] While Pickwick Landing Marina is the closest marina to the proposed Project Area, it is located on Pickwick Reservoir, meaning that boaters on Kentucky Reservoir traveling to Pickwick Landing Marina would be required to haul boats by road or navigate through the locks at Pickwick Dam.

3.1.2 Environmental Effects

3.1.2.1 Alternative A – No Action Alternative
Under the No Action Alternative, the proposed marina would not be developed and additional recreational opportunities that would be provided would not occur. There would be no changes to recreation opportunities in the area, and impacts to parks and recreation facilities or opportunities in the area are not anticipated.

3.1.2.2 Alternative B – Proposed Action Alternative
Under the Proposed Action Alternative, there would be minor, temporary impacts to recreation experiences on nearby park-goers during construction. However, there would be moderate beneficial impacts after the marina and the associated facilities are operational because of additional amenities and access to water-based recreation opportunities. The proposed marina would include 132 boat slips and a boat-launching ramp which would provide additional water access and recreational amenities and opportunities.

3.2 Managed and Natural Areas

3.2.1 Affected Environment

Managed areas include lands held in public ownership that are managed by an entity (e.g., TVA, U.S. Forest Service, State of Tennessee) 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 Regional Natural Heritage database identified three managed and natural areas within 3 miles of the Project Area (see Table 3-2).

Table 3-2. Managed and Natural Areas Within 3 miles of the Project Area

Natural Area	Acres	County	Distance from Project Area
Wayne Jerrolds River Park	9.7	Hardin (TN)	Overlap/Adjacent
Walker Branch State Natural Area	725.85	Hardin (TN)	2.3 miles South
Beason Creek Wetland-TWRA	460.14	Hardin (TN)	2.2 miles West

Source: TVA Regional Natural Heritage database queried January 2025

3.2.2 Environmental Effects

3.2.2.1 Alternative A
Under the No Action Alternative, nearby managed and natural areas would remain available for dispersed recreational use; no additional local recreational opportunities would be provided. No effects on local boating, Nationwide Rivers Inventory streams, Wild and Scenic Rivers or TVA HPAs are expected.

3.2.2.2 Alternative B

Under the Proposed Action Alternative, there are likely to be impacts to the Wayne Jerrolds River Park because it overlaps/is adjacent to the Project Area. The portion of the park associated with the proposed marina project would be temporarily unavailable for use during construction, but construction is projected to take 2-3 years, so the impacts would be short-term. As a City-owned and managed park, any alterations to the park would be considered an improvement to the existing recreation opportunities and would provide new recreation amenities to the region. No streams on the Nationwide Rivers Inventory or any Wild and Scenic Rivers were identified in the vicinity, and therefore, no effects would occur. Potential impacts to managed and natural areas would be beneficial and adverse impacts associated with construction would be minor and temporary.

3.3 Navigation

3.3.1 Affected Environment

The Project Area is located along the Tennessee River. Navigation in the Tennessee River is provided through a system of dams and lock sets over the course of approximately 652-miles which connects Knoxville, Tennessee, at the upper end with Paducah, Kentucky, at the confluence of the Tennessee and the Ohio rivers and provides for year-round navigation the length of the Tennessee River.

The Project Area is located along the right descending bank between Tennessee River miles 190 and 191. Existing water use/access is provided just north of the proposed marina which includes parking and a boat launch. There are several other private and public boat launches within the surrounding area. The Pickwick Dam and Campground are located approximately 10 miles south of the Project Area.

Section 10 of the Rivers and Harbors Act of 1899 requires authorization from the Secretary of the Army, acting through the USACE, for the construction of any structure in or over any navigable water of the U.S. Structures or work outside the limits defined for navigable waters of the U.S. require a Section 10 permit approval if the structure or work affects the course, location, or condition of the water body. The law applies to any dredging or disposal of dredged materials, excavation, filling, re-channelization or any other modification of a navigable water of the U.S., and to all structures, from the smallest floating dock to the largest commercial undertaking (USACE 2025).

3.3.2 Environmental Effects

3.3.2.1 Alternative A - No Action Alternative

Because no actions would be taken under the No Action Alternative, there would be no change in the existing navigation conditions, and there would be no change to commercial or recreational navigation on the Tennessee River.

3.3.2.2 Alternative B - Proposed Action Alternative

Under the Action Alternative, the lakeward extensions of the proposed marina and harbor limits would extend into the embayment. Implementation of the Action Alternative would create a newly inundated harbor area immediately that connects

to the main stem of the Tennessee River. The applicant would obtain a USACE Section 10 permit before dredging activities and the construction of the proposed marina would begin. Due to the proposed dredging and creation of an inland harbor, the marina would not extend into the navigable channel and would meet harbor limit requirements. The creation of an inland harbor would result in a long-term increase in boat traffic in the vicinity of the marina; however, this would not result in a corresponding increase in new boaters on other sections of the Tennessee River at Kentucky Reservoir.

TVA anticipates that the impacts to navigation would not be significant with implementation of the following routine mitigation measures to be included as general permit conditions in the Section 26a approval to the City.

- No portion of the marina facilities may extend beyond the approved harbor limits.
- The City should be advised in writing that the marina facility would front a commercial navigation channel at a location which makes the marina facility and any moored boats vulnerable to wave wash.
- All floating marina facilities are to be securely anchored to prevent them from floating free during major floods.

Proper lighting would be installed on the marina facilities to warn boaters of their presence during non-daylight hours. As the inland harbor and marina plans would be evaluated by TVA and USACE for consistency with the agencies' requirements during the Section 26a permit review process, there would be minor impacts on commercial or recreational navigation from implementation of Alternative B.

3.4 Socioeconomics

3.4.1 Affected Environment

The Project Area is located in south-central Hardin County. The study area for socioeconomic analysis is defined as any census block group that falls within a 1-mile radius of the Project Area and includes portions of Hardin County in southwestern Tennessee. Thus, the study area is limited to the 10 census block groups within a 1-mile radius of the proposed Project Area (see Appendix B, Figure 3-1). As the study area is located in Hardin County, this county and the state of Tennessee are included as appropriate secondary geographic areas of reference. Comparisons at multiple spatial scales provide a more detailed characterization of populations that may be affected by the proposed actions, including minority and low-income populations. Demographic and economic characteristics of populations within the study area were assessed using the most recent U.S. Census Bureau (USCB) data available, including 2020 Decennial Census counts (USCB 2021) for total population and racial characteristics, and 2019-2023 American Community Survey 5-year estimates (USCB 2024a) for the remaining datasets.

3.4.1.1 Demographic and Economic Conditions

Demographic and economic characteristics of the block groups that make up the study area and of the secondary reference geographies are summarized in Table 3-3.

The block groups that make up the study area have a combined resident population of 12,039, which accounts for approximately 45 percent of Hardin County and less than 1 percent of the state of Tennessee. The study area is a mixture of rural and suburban development, with one population center, the city of Savannah. Since 2010, the study area population has increased by approximately 4 percent, which is similar to the population growth rate in Hardin County and noticeably lower than that in the state (approximately 9 percent).

The majority of the population (approximately 88 percent) is white, while approximately 5 percent identify as Black or African American. There are also small numbers who are Hispanic or Latino, Asian, or who identify as two or more races. Minority percentages in the study area are generally comparable to those of Hardin County and noticeably lower than the state of Tennessee, which also have minority populations under 50 percent (Table 3-3). There are ten census block groups within the study area, two of which have a minority population that either exceeds 50 percent of the total population, or is meaningfully greater (greater than or equal to 10 percentage points), or both, than the minority population percentage of Hardin County or the state of Tennessee.

The nationwide poverty level is determined annually by the USCB and varies by the size of family and number of related children under 18 years of age. The 2024 USCB Poverty Threshold for an individual under the age of 65 is an annual income of $16,320, and for a family of four it is an annual household income of $31,812 (USCB 2024b). The median household income in the study area is $26,728, which is similar to that of Hardin County ($27,876) and notably lower than the state of Tennessee ($37,866) (Table 3-3). Correspondingly, the percentage of the block group population falling below the poverty level (approximately 24 percent) is higher than both Hardin County (approximately 21 percent) and the state of Tennessee (approximately 14 percent).

For the purposes of this assessment, low-income individuals are those whose annual household income is less than two times the poverty level. According to the EPA, the effects of income on baseline health and other aspects of susceptibility are not limited to those below the poverty thresholds (Environmental Protection Agency [EPA] 2019). For example, populations having an income level from one to two times the poverty level also have worse health overall than those with higher incomes (Centers for Disease Control and Prevention 2011). Approximately 55 percent of the population within the study area are considered low-income, with percentages for individual block groups ranging from 36 percent to 72 percent of the population. As shown in Table 3-3, nine of the census block groups have low-income populations that either exceed 50 percent of the total population or significantly exceed the low-income percentage of the general population, including the block groups in which the primary project activities would occur.

The civilian labor force within the block group encompassing the Project Area is 4,722, with the unemployment rate at 1.8 percent. This unemployment rate is slightly lower than the unemployment rate of Hardin County (4.3 percent) and the state of Tennessee (4.7 percent, respectively) (Table 3-3).

Table 3-3 Demographic and Socioeconomic Characteristics

	Study Area (Summary of 10 Block Groups)	Hardin County, Tennessee	State of Tennessee
Population[1,2,3]			
Population, 2020	12,039	26,831	6,910,840
Population, 2010	11,583	26,026	6,346,105
Percent Change 2010-2020	3.9%	3.1%	8.9%
Persons under 18 years, 2023	23.4%	20.0%	22.3%
Persons 65 years and over, 2023	20.7%	23.2%	16.8%
Racial Characteristics[1]			
White alone, 2020 (a)	87.9%	90.5%	70.9%
Black or African American, 2020 (a)	4.5%	3.0%	15.7%
American Indian and Alaska Native, 2020 (a)	0.2%	0.3%	0.2%
Asian, 2020 (a)	0.7%	0.6%	1.9%
Native Hawaiian and Other Pacific Islander, 2020 (a)	0.0%	0.0%	0.1%
Some Other Race alone, 2020 (a)	0.3%	0.2%	0.3%
Two or More Races, 2020	4.2%	3.4%	3.9%
Hispanic or Latino, 2020	2.2%	2.1%	6.9%
Total Minority	12.1%	9.5%	29.1%
Income and Employment[3]			
Median Household income, 2023	$26,728	$27,876	$37,866
Persons below poverty level, 2023	23.8%	20.8%	13.8%
Persons below low-income threshold, 2023 (b)	55.4%	47.1%	32.1%
Civilian Labor Force, 2023	4,722	11,112	3,465,315
Percent Employed, 2023	98.2%	95.7%	95.3%
Percent Unemployed, 2023	1.8%	4.3%	4.7%

(a) Includes persons reporting only one race.

(b) Low-income threshold is defined as two times the poverty level

Sources: [1]USCB 2011; [2]USCB 2021; [3]USCB 2024a

3.4.1.2 Community Facilities and Services

Community facilities and services include public or publicly funded facilities such as police protection and other emergency services (ambulance/fire protection), schools, hospitals and other health care facilities, libraries, day care centers, churches, and community centers. To identify facilities and emergency services that could be potentially impacted by proposed project activities, the study area is identified as the service area of various providers, where applicable, or the area within a 5-mile radius of the proposed project.

Based on a review of aerial imagery and online information including the U.S. Geological Survey Geographic Names Information System database (USGS 2021), community facilities and services available within a 5-mile radius of the proposed project include numerous churches, cemeteries, schools, and public service buildings. The Project Area is also served by the Hardin County Fire Department, the Savannah Fire Department, the Hardin County Sheriff's Office, and the Crump

Police Department. There are multiple community facilities in close proximity (within 0.5 mile) of the Project Area.

3.4.2 Environmental Effects

3.4.2.1 Alternative A- No Action Alternative

Under the No Action Alternative, there would be no change in local demographics, socioeconomic conditions, or community services, and there would be no impacts to minority or low-income populations in association with the proposed action.

3.4.2.2 Alternative B- Proposed Action Alternative

3.4.2.2.1 Demographic and Economic Impacts

The Action Alternative aligns with TVA's commitment to improve the area's economic base, support sustainable economic growth, and provide public and commercial recreational opportunities. Construction of the proposed marina would allow for recreation, boat storage, and fueling that do not currently exist in this area.

There would be a minor, short-term beneficial impact on the local economy, primarily through the temporary use of workers to construct the proposed facilities. It is likely that the construction workforce would be drawn from Hardin County, for the duration of the approximately 2-3 year construction period for Phases I and II of the project. As such, impacts to demographics would be minor.

The implementation of Alternative B would entail a temporary increase in employment and associated construction payrolls, the purchases of materials and supplies, and procurement of additional services. Beneficial economic impacts would result from capital costs associated with the construction, expenditure of wages earned by the workforces and sales and tax revenues from workforce purchases. During operations, the project would provide an additional tax revenue through sales tax through customer purchases, operations-related materials and supplies and through increases in property taxes. The operation of the marina would create approximately 15 full-time jobs in boating and maintenance operations and another approximately 15 full-time or part-time jobs in store and restaurant operations. Therefore, impacts to the local economy would be beneficial and minor.

3.4.2.2.2 Community Facilities and Services

Direct impacts to community facilities occur when a community facility is displaced or access to the facility is altered. Neither the construction or operation of the proposed marina facilities would result in the displacement of community facilities or impede access to any facilities. Therefore, there would be no direct impacts to community facilities or services under Alternative B.

Indirect impacts occur when a proposed action or project results in a population increase that would generate greater demands for services and/or affect the delivery of such services. As the marina construction and maintenance would not result in notable impacts to local demographics, increased demands for services such as schools, churches, and healthcare facilities are not anticipated. In the event of an emergency at the proposed marina or any associated facilities, local law enforcement, fire, and/or emergency medical services response would likely be required. As the intent of this new facility is to allow for recreation, boat storage, and

fueling that do not currently exist in this area, and adequate emergency services exist in the vicinity of the proposed marina project area, implementation of Alternative B would not have a notable impact on the demand for emergency services in the area.

3.5 Surface Water and Soil Erosion

3.5.1 Affected Environment

The proposed Project Area is in Hardin County and lies within the Tennessee River-Mud Creek watershed Hydrologic Unit Code (HUC) 060400010504. Precipitation in the Project Area and vicinity averages about 58.2 inches per year. The wettest month is May with approximately 6.7 inches of precipitation, and the driest month is August with approximately 3.4 inches. The average annual air temperature is 61 degrees Fahrenheit (ºF) ranging from a monthly average of 49º F to 73º F (U.S. Climate Data 2025).

The CWA (33 U.S. Code §§1251-1387) establishes the basic structure for regulating discharges of pollutants into “Waters of the U.S.” which are surface water features such as streams or wetlands that are subject to USACE jurisdiction. Executive Order (EO) 11990 (Protection of Wetlands) requires that federal agencies avoid, to the extent possible, adverse impact to wetlands on federally owned property. In compliance with Section 404 of the CWA, authorization from the USACE must be obtained prior to dredge or fill activities within waters of the U.S. A state-issued Water Quality Certification may also be required in accordance with Section 401 of the CWA for impacts to waters of the U.S. In Tennessee, TDEC is responsible for authorizing Section 401 certifications.

The site was assessed for wetlands and other “waters” subject to 404/401 regulations by the USACE and/or the TDEC (Brophy-Heineke & Associates 2021). Results of the survey found that the Tennessee River is located along the western boundary of the site. In addition to the Tennessee River, two additional named streams, Town Branch and Mud Branch, and three unnamed streams are located within the Project Area and meet the criteria for jurisdictional water features. One unnamed stream was delineated within the vicinity of the Project Area and other water features were deemed as non-jurisdictional. Delineated water features within the Project Area that meet the criteria for jurisdictional waters are described in Table 3-4 and all water features delineated during the site assessment are shown in Appendix B, Figure 3-2.

Table 3-4. Jurisdictional Waters within the Project Area

Water Feature	Length through the Project Area (feet)
Tennessee River	930.0
Mud Branch	314.8
Town Branch	3,311.1
Central Stream	75.1
Northeast Stream	599.0
Southeast Stream	110.9
Total	**5,340.9**

The CWA under Section 303(d) requires states to identify waters in which 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. In addition, the state assigns a priority for development of Total Maximum Daily Loads based on the severity of the pollution and the sensitivity of the uses, among other factors (EPA 2025). States are required to submit reports to the EPA and include streams and water bodies that are deemed impaired and threatened to be included on state the "303(d) list". The Kentucky Reservoir, along with associated tributaries including Mud Branch, are listed on Tennessee's 2024 303(d) list as impaired due to flow regime modifications, temperature, bacteria, sedimentation or siltation, and/or alteration in stream-side littoral or vegetative covers (TDEC 2024a) (Table 3-5).

Table 3-5. TDEC 303(d) Listed Streams in the Vicinity of the Proposed Savannah Marina

Stream	303(d) Impaired Stream		
	Use Support	Cause	Source
Kentucky Reservoir	Impaired	Dissolved Oxygen	Dam or impoundment
Mud Branch	Impaired	Dissolved Oxygen, Physical Substrate Habitat Alterations, Sedimentation/Siltation and Alteration in Stream-side or Littoral Vegetative Covers	Grazing in Riparian or Shoreline Zones, Channelization, and Crop Production (Irrigated)

Source: TDEC 2024b

3.5.2 Environmental Effects

3.5.2.1 Alternative A- No Action Alternative
Under the No Action Alternative, no alteration of existing waterways would occur, as such there would be no impacts to surface waters.

3.5.2.2 Alternative B- Proposed Action Alternative
Under the Proposed Action Alternative, TVA would grant Section 26a approval for construction activities associated with the proposed inland harbor and marina and associated facilities. Potential impacts during construction and operation include direct disturbance of jurisdictional waters, risk of erosion and sedimentation, and potential storm water runoff, discharges, and solid waste introduction.

Proposed work in and along the shoreline of the Tennessee River would include construction of the inland harbor, which would entail the excavation of 480,724 cubic yards of soil from the Project Area, and development of the marina and associated facilities, which would include a 36,414 square foot dock with 132 boat slips in addition to parking areas, utilities, and other associated features. Dredging of the inland harbor would require shoreline stabilization activities, construction of a debris deflector and placement of riprap along the riverbank on the west end of the Project Area.

A total of 4,410.9 feet of jurisdictional water resources would be permanently altered or removed during site grading and construction of the inland harbor and marina and associated facilities. The City would obtain the necessary Section 404/401 CWA permits and an ARAP to ensure jurisdictional water feature functions and values remain at their current capacity. The City would adhere to USACE and TDEC permits including any mitigation requirements to ensure no more than minor impacts to the aquatic environment would result and the objectives of the CWA are upheld.

Impacts from earth moving activities could occur during construction. The use of equipment for grading and dredging activities could impact surface waters due to fugitive dust deposition and erosion. General construction activities would adhere to BMPs outlined in TDEC's *Erosion and Sediment Control Handbook* and standard 26a permit conditions (TDEC 2012).

Excavation of material to create the inland harbor would occur in dry conditions to reduce potential sedimentation. The inland harbor area would be isolated from the Tennessee River and water features within the Project Area; temporary barrier systems could include either an earthen berm or cofferdam. The excavated material would be removed by pans and/or dump trucks. The material would initially be stored at the top of the riverbank and transported to the spoil areas. Once the inland harbor has been graded, the temporary barrier would be breached to allow water from the Tennessee River to flow into the excavated inland harbor.

All dredging and excavation work would be completed before the connection to the Tennessee River occurs. This allows for the minimization of sedimentation and debris entering the Tennessee River. Additionally, a custom turbidity curtain, a floating barrier below the water surface, would be used to contain sediment stirred

during construction and prevent downstream sedimentation. Turbidity curtains would be used at the connection point to the river during breaching and the stream relocation to the river. All areas disturbed during excavation would be stabilized according to the applicant's excavation plan and geotechnical recommendations. Stabilization could include measures such as planning vegetation, placing erosion control blankets, or installing riprap to prevent soil erosion and sediment runoff. Additionally, other BMPs including silt fences, sediment traps, or erosion control mats could be used during excavation of the stream relocation and would remain in place until after the stream is connected to the river and final stabilization has been achieved. BMPs including silt fencing, dust suppression, and revegetation would also be used at Spoil Sites 1 and 2 to minimize migration of soil off site. Adherence to applicable permits and mitigation requirements along with BMPs identified above would result in temporary and minor impacts to surface waters.

Construction activities could temporarily affect surface water via stormwater runoff and discharges. The City would comply with appropriate state and federal permit requirements. As more than one acre of land would be disturbed at a given period of time, the City would obtain a TDEC NPDES General Permit for Discharge Associated with Construction Activity (TNR100000). This includes the development and implementation of a site-specific SWPPP to ensure sedimentation and other site run-off is minimized prior to discharge to surface waters. The SWPPP would identify specific BMPs to address construction-related activities necessary for implementation to minimize surface water impacts from erosion of sediment, solid waste, chemical usage, equipment usage and maintenance and dust control. If hydrostatic test discharges occur during construction, coverage under the NPDES General Permit for Discharges of Hydrostatic Test Water (TN670000) would be required, and all hydrostatic test discharges would be conducted in accordance with the permit conditions. Additionally, sewage discharges are not anticipated as portable toilets will be provided for the construction workforce as needed. These toilets would be pumped out regularly, and the sewage would be transported by tanker truck to an approved wastewater treatment plant that accepts pump out. Therefore, construction impacts due to stormwater runoff and discharges are considered minor with effective use of BMPs and adherence to applicable permit requirements.

Potential impacts to surface water could result from the operation of the marina and associated facilities, including the introduction of oils, lubricants and/or fuels to surface waters and the introduction of solid waste from trash and debris not being properly stored or disposed of. These potential impacts would be mitigated by employing standard 26a permit conditions for BMPs which could include keeping the marina clean of oil and debris, maintaining adequate garbage pick-up services on site, ensuring that any permanent restroom facilities are properly sized, permitted, and installed per state and local requirements, and prohibiting unpermitted discharges.

Therefore, impacts associated with the construction and operation of the inland harbor, marina, associated facilities, and spoil areas include permanent loss of waters which meet the criteria for jurisdictional waters, temporary impacts due to

earth-moving activities, and potential for impacts from stormwater run-off and discharges. However, the effective use of BMPs and adherence to applicable state and federal permits would minimize potential effects and overall impacts would be minor.

3.6 Geology and Groundwater

3.6.1 Affected Environment

The Project Area is located on the border of the Coastal Plain and Interior Low Plateaus provinces (National Park Service 2018a and 2018b). The Coastal Plain province is on the western portion of Tennessee bordering the Mississippi River to the east and the Tennessee River to the west. The Interior Low Plateaus are almost completely horizontal beds of Paleozoic sandstone, shale, and limestone. The entire province is divided northeast-southwest by a fold axis known as the Cincinnati Arch. The area is also home to two structural domes that have been eroded to form basins lined with inward-facing cuestas, hills or ridges with a steep face on one side and a gentle slope on the other. The limestone of the province is marked by well-developed karst topography such as caves and springs formed by the dissolution of carbonate rock (National Park Service 2018b). A site-specific study was conducted by GeoCheck in 2016 for the proposed site. The geological rock stratigraphic unit underlying the site was categorized as Paleozoic and Silurian and soil type was categorized as silt loam.

The Project Area receives groundwater from the national alluvial aquifer and the regional Holocene alluvium aquifer (USGS 2025). The national alluvial aquifer underlies the floodplain of the Mississippi River and its tributaries and the southern end of the Western Valley of the Tennessee River. The alluvial aquifers, which consist of sand and gravel with interbeds of clay, are used primarily for rural-domestic supplies and irrigation, but also include use for public water supply along the Tennessee River, with the closest drinking water well approximately 1 mile north of the Project Area (USGS 2025). The alluvial aquifers can yield more than 1,500 gallons per minute to wells depending on the thickness of sand and gravel in the aquifer. At the southern end of the Western Valley of the Tennessee River, the alluvial aquifer supplied 1.9 million gallons per day for public supplies in Hardin and Henderson counties during 2015. The water quality of the alluvial aquifer is generally good, but in some areas, iron concentrations exceed 1.0 milligrams per liter (Groundwater Working Group 2018).

The regional Holocene alluvial aquifer is characterized by sand, gravel, silt, and clay. It underlies the Mississippi Alluvial Plain and the alluvial plains of streams in the Gulf Coastal Plain upland areas. It is thickest beneath the Mississippi Alluvial Plain where it commonly is between 100 to 150 feet (USGS 1990). However, it is generally less than 50 feet thick elsewhere. Additionally, the closest well to the Project Area is at a depth of 50 feet and is approximately one mile north of the Project Area (USGS 2025). Therefore, groundwater resources underlying the Project Area are variable, but considered shallow. According to the GeoCheck (2016) report, groundwater at the sight flows west. Water quality within the Holocene alluvial aquifer was sampled in 1998, indicating that there were no concentrations of compounds that exceeded the maximum concentration limits

(USGS 1998). Overall, the Project Area is characterized as having silt loam soil with geologic rock strata of Paleozoic and Silurian age (GeoCheck 2016). The Project Area is underlain by the Holocene alluvial aquifer which is part of the alluvial aquifer system (USGS 2025). The groundwater quality is considered good and does not exceed maximum concentration limits (Groundwater Working Group 2018; USGS 1998).

3.6.2 Environmental Effects

3.6.2.1 Alternative A- No Action Alternative

Under the No Action Alternative, the Project Area would remain in its current condition and there would be no changes to the existing geological and groundwater conditions. Thus, there would be no foreseeable impacts to local groundwater from adopting this alternative. Any future changes would be due to circumstances and conditions other than the proposed Action Alternative.

3.6.2.2 Alternative B- Proposed Action Alternative

The Action Alternative involves the excavation of approximately 480,720 cubic yards of soil with a maximum depth of 338 feet msl. This action is not expected to adversely affect geologic conditions directly or indirectly. Clearing and grading activities would likely result in predominantly shallow to moderate depth ground disturbance with greater soil disturbance depths expected for utilities, foundations, piping, and dredging. Ground disturbance activities are not expected to impact groundwater quantity or existing flow paths as groundwater would continue to flow west towards the Tennessee River where existing aquifer recharge occurs. The use of construction-related equipment and vehicles has the potential to indirectly impact groundwater quality from the contamination of surfaces through which groundwater would infiltrate. Contamination may originate from leaks or spills of chemicals associated with construction-related vehicles or equipment. Additionally, the use of BMPs as outlined in the Tennessee Department of Environment and Conservation *Erosion and Sediment Control Handbook* (TDEC 2012), the implementation of a Soil Management Plan, and a SWPPP would ensure that construction activities have no impact on groundwater quality. Ultimately, impacts on groundwater from the Action Alternative are expected to be negligible.

3.7 Wetlands

Activities in wetlands are regulated by state and federal agencies to ensure no net loss of wetland resources. Under the CWA §404, activities resulting in the discharge of dredge or fill material to waters of the U.S., including wetlands, must be authorized by the USACE through a Nationwide, Regional, or Individual permit to ensure no more than minor impacts to the aquatic environment. Section 401 of the CWA requires state water quality certification for projects in need of USACE approval. In Tennessee, TDEC is responsible for issuance of water quality certifications pursuant to Section 401 of the federal Water Pollution Control Act (33 U.S.C. 1251, 1341) regarding regulated waters of the state. Lastly, EO 11990 (Protection of Wetlands) directs federal agencies to take action to minimize the destruction, loss or degradation of wetlands on federally owned property to the extent practicable.

3.7.1 Affected Environment

Wetlands are areas inundated or saturated by surface or groundwater such that vegetation adapted to saturated soil conditions are prevalent. Examples include bottomland forests, swamps, wet meadows, isolated depressions, and fringe wetland along the edges of watercourses and impoundments. Wetlands provide many societal benefits such as toxin absorption and sediment retention for improved downstream water quality, storm water impediment and attenuation for flood control, shoreline buffering for erosion protection, and provision of fish and wildlife habitat for commercial, recreational, and conservation purposes.

A field survey of the larger property owned by the City at this location, including the Project Area, was conducted to identify wetland resources on August 19, 2021, by Brophy-Heineke & Associates.

Wetland determinations were performed according to the USACE standards, which require documentation of hydrophytic (wet-site) vegetation, hydric soil, and wetland hydrology (Environmental Laboratory 1987; USACE 2024; USACE 2010). The USACE defines vegetation cover stratums as:

- Trees/Forest: Woody plants, excluding woody vines, approximately 20 feet or more in height and 3 inches or larger in diameter at breast height.
- Shrub stratum: Woody plants, excluding woody vines, approximately 3 to 20 feet in height.
- Herb/emergent: All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 feet in height.

Table 3-6. Wetlands within Proposed Project Area

Wetland Identifier	Wetland Type[1]	Wetland Acreage within the Project Area	Wetland HUC10	Wetland HUC Name
W1	PEM	0.025	0604000105	Tennessee River
W2	PEM	0.019	0604000105	Tennessee River
W3	PFO	0.322	0604000105	Tennessee River
W4	PEM	1.760	0604000105	Tennessee River
W5	PEM	0.322	0604000105	Tennessee River
W6	PEM	0.258	0604000105	Tennessee River
W7	PSS	1.096	0604000105	Tennessee River
Total Acres		**3.865**		

[1]Classification codes as defined in Cowardin et al. (1979): P=Palustrine; EM=Emergent; SS=scrub-shrub; FO=Forested

The proposed project is located between a rural landscape, dominated by agricultural fields, forested uplands and bottomlands, and commercial land use with intermixed residential property. The Project Area is located within the Tennessee River (0604000105) watershed. Seven wetland complexes, totaling 3.85 acres, were identified within the proposed Project Area (Table 3-7). The combination of

land-use practices and landscape position dictates the wetland habitat type, wetland functional capacity and wetland value. The identified wetlands consisted of emergent, scrub-shrub and forested habitat (Table 3-7).

Table 3-7. Acreage of Wetlands by Habitat Type Within the Project Area and Relative to Total Mapped Wetland Occurrence Within the Watershed

Watershed (10-HUC)	NWI Estimated Total Wetland Acres in Watershed	Delineated Total Wetland Acreage in Proposed Project Area			
		Emergent	Scrub-Shrub	Forested	Total
Tennessee River (0604000105)	598	2.44	1.09	0.32	3.85

Emergent wetlands within the Project Area totaled 2.44 acres across five delineated wetlands. Emergent wetlands are generally devoid of woody vegetation with predominant cover by non-woody species across areas periodically saturated and/or inundated. Emergent wetland habitats included valley bottoms and swales (W5 and W6) and floodplain areas (W1, W2, W3, W4, and W7). All the wetland areas contained indicators of wetland hydrology, influencing soil physiology such that coloration indicative of wetland conditions was evident in the soil profile. Emergent wetland vegetation observed was common to the area and included rice cutgrass, Virginia dayflower, pannicles aster, narrowlead cattail, false nettle, evening primrose, blunt spikerush.

Scrub-shrub wetlands are dominated by woody vegetation generally less than 15 feet tall and three inches in diameter (Cowardin et al. 1979). This habitat type totaled approximately 1.09 acres within one delineated wetland area (W7) within the Project Area (Table 3-6, Table 3-7). The scrub-shrub wetland habitat encountered comprised 4 percent of the total estimated scrub-shrub wetland habitat across the project watershed (Table 3-6).

Scrub-shrub wetlands within the Project Area were comprised of young saplings in early successional forest (scrubby), such as previously clearcut areas. W7 appeared to have been historically cleared but left fallow such that saplings comprising early successional forest habitat were present. Delineated scrub-shrub wetland areas exhibited wetland hydrology indicators and hydric soil coloration within the soil profile. Common hydrophilic species, such as black willow, silver maple, false nettle, giant ragweed, and American buckwheat vine were dominant across this wetland.

Forested wetlands in general have deeper root systems and contain greater biomass (quantity of living matter) per acre than emergent and scrub-shrub wetlands, which do not grow as tall. As a result, forested wetlands provide higher levels of wetland functions, such as sediment retention, carbon storage, and pollutant retention and transformation (detoxification), storm water storage, and

flood attenuation, all of which support better water quality and protection of downstream infrastructure (Ainslie et al. 1999; Scott et al. 1990; Wilder and Roberts 2002). Of the wetland areas delineated, 0.32 acre of forested wetland were delineated across one wetland area within the proposed Project Area (W3). All forested wetland areas contained indicators of wetland hydrology influencing soil physiology such that coloration indicative of wetland conditions was evident in the soil profile. All forested wetlands identified were dominated by common wetland vegetation including boxelder, bald cypress, sweetgum, rice cutgrass, Chinese privet, and false nettle.

The Tennessee River (0604000105) watershed contains forested wetland W3 within the Project Area. Of an estimated total 528 acres of forested wetland in this watershed, the proposed Project Area contains 0.32 acre, or 0.06 percent of the total estimated forested wetland habitat across the project watershed (Table 3-6).

3.7.2 Environmental Effects

3.7.2.1 Alternative A- No Action Alternative
Under the No Action Alternative, on-site wetlands would remain in their current condition and there would be no impact to wetlands located within the Project Area.

3.7.2.2 Alternative B- Proposed Action Alternative
Under the Action Alternative, dredging of 1.739 acres of wetlands within W5, W6, and W7 and permanent fill of approximately 0.021 acres of W4 for construction of a new road leading to the proposed marina would occur.

Activities in wetlands are regulated by state and federal agencies to ensure no net loss of wetland resources. Under the CWA Section 404, activities resulting in the discharge of dredge, fill, and associated secondary impacts to water of the U.S., including wetlands, must be authorized by the USACE through a Nationwide, Regional, or Individual Permit. This project is located in the USACE's Nashville District. CWA Section 401 mandates state water quality certification for projects requiring USACE approval. In Tennessee, TDEC certifies CWA Section 401 permits and impacts to intrastate wetland resources through a general or individual ARAP. In Tennessee, this permit is required for any alteration to the physical, chemical, or biological properties of any waters of the state, including wetlands, pursuant to the Tennessee Water Quality Control Act (§69-3-108, 0400-40-07). TDEC's permit process ensures compliance with Tennessee's anti-degradation policy as well (§69-3-108, 0400-40-04). Lastly, EO 11990 (Protection of Wetlands) requires federal agencies to minimize wetland destruction, loss, or degradation, and avoid new construction in wetlands wherever there is a practicable alternative, while carrying out agency responsibilities on federally owned property.

Efforts were made during project planning and siting to avoid wetlands to the extent practicable. However, because of project and topographic constraints, no practicable alternative was available that would allow complete avoidance of wetlands. The Proposed Action would avoid W1 (0.025 acre), W2 (0.019 acre) and W3 (0.322 acre). Avoidance of these features and adherence to standard construction BMPs would minimize increases in sedimentation and changes to wetland hydrology.

The proposed Project Area contains a total of 2.44 acres of emergent wetlands, 1.09 acres of scrub-shrub wetlands, and 0.32 acre of forested wetlands (Table 3-6). Emergent and scrub-shrub wetlands located within the proposed Project Area including W4, W5, W6, and W7 would be permanently impacted by construction activities.

Table 3-8. Impacts to Wetlands Within the Project Area

Wetland Identifier	Impact Type	Temporary Impacts for Access	Acreage of Wetland Fill	Acreage of Wetland Dredge
W001	None	--	--	--
W002	None	--	--	--
W003	None	--	--	--
W004	Fill for Project Construction	--	0.021	--
W005	Dredging for Project Construction	--	--	0.385
W006	Dredging for Project Construction	--	--	0.258
W007	Dredging for Project Construction	--	--	1.096
Total acres			**0.021 acres**	**1.739 acres**

Woody (forested and scrub-shrub) wetlands support higher wetland function than emergent wetlands. Due to the rate of water uptake, extensive root system, and structural integrity of trees and shrubs relative to herbaceous plants, wooded wetlands function at a greater capacity to impede and hold storm water, absorb toxins, retain sediment, and provide the shaded forage and spawning habitat necessary for its aquatic and terrestrial inhabitants to exist. Therefore, conversion of this community type to a habitat devoid of woody vegetation would result in a reduction of existing functional capacity. Forested wetlands within the Project Area would be avoided, however, loss of wetland functions and values from scrub-shrub wetland clearing would be compensated for at the discretion of the USACE and TDEC.

The proposed impacts are located on private property owned by the City, over which TVA retains flowage rights. TVA is not responsible for impacts to wetlands on private property in accordance with EO 11990 (Protection of Wetlands) Section 1(b). The City is responsible for obtaining and remaining in compliance with state and federal regulations regarding CWA Section 404 and 401 pertaining to wetland impacts.

Permits and compensatory mitigation necessary to remain in compliance with CWA Section 404 and 401 could be required by USACE and TDEC, respectively, to ensure insignificant impacts to wetlands result from the proposed project. With

applicable permit and mitigation compliance as decided by state and federal regulators, avoidance, and minimization, TVA's issuance of a deed modification and Section 26a approval would have no significant impacts to wetlands within the larger watershed basin.

3.8 Aquatic Ecology

3.8.1 Affected Environment

3.8.1.1 Wildlife

The proposed Project Area, located in Hardin County, falls within the Tennessee River (0604000105) HUC-10 watershed, in the Southeastern Plains and Hills level IV sub-ecoregion of the Southeastern Plains level III ecoregion (Griffith et al. 2009). During an August 2021 field survey, certified hydrologic professionals for Brophy-Heineke and Associates completed a water resource assessment. Field crews documented the Tennessee River as the western boundary, with two named streams, Town Branch and Mud Branch, and three additional jurisdictional channel reaches (northwest stream, central stream, and southeast stream) (Lewis 2022, Appendix E).

Town Branch and Mud Branch likely once supported a rich aquatic community, but generations of poor land use practices and urbanization of the surrounding area have likely had adverse impacts to general aquatic ecology. The reaches of Town Branch and Mud Branch that would be impacted regularly suffer from high water events and sedimentation as a result of the mainstem Tennessee River flooding. The substrate is now composed of shifty sand/gravel (Eldridge et al. 2022).

3.8.1.2 Threatened and Endangered Aquatic Species

The Endangered Species Act (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 the United States Fish and Wildlife Service (USFWS) when proposed actions may affect endangered or threatened species or Designated Critical Habitat.

A query of the TVA Regional Natural Heritage database and the USFWS Information for Planning and Consultation (IPaC) database tool indicated 14 federally listed aquatic species (freshwater mussels) have the potential to occur within the 10-digit HUC watershed adjacent to the proposed Project Area (Table 3-6). Additionally, Hardin crayfish and shortspire horn snail are under federal status review by the USFWS. Blue sucker, flame chub, highfin carpsucker, and southern cavefish have threatened and deemed in need of management status by Tennessee. The blue sucker, southern cavefish, cracking pearlymussel, clubshell, slabside pearlymussel, and shortspire hornsnail records are historic and are not anticipated to be present in the Project Area.

The Hardin crayfish range overlaps the Project Area. However, extensive survey efforts were conducted in 2006 throughout Hardin County and no records of the species were reported from Mud Branch, Town Branch or other smaller Tennessee River direct tributaries (Rohrbach and Withers 2006). The aquatic features that would be permanently impacted would not provide suitable habitat for the highfin carpsucker as the species prefers gravel substrate in clear medium to large rivers (Etnier and Starnes 1993). The flame chub occurs in the Tennessee River drainage from the Knoxville area downstream through the Mud Branch system south of Savannah, Hardin County, Tennessee (Etnier and Starnes 1993). There is potentially suitable habitat for the flame chub in the Project Area.

A May 2022 survey for freshwater mussels was conducted by Dinkins Biological Consulting, LLC. Dinkins Biological Consulting surveyed the confluence of Mud Branch and the Tennessee River, Town Branch, a tributary to Mud Branch and an unnamed backwater channel. The survey efforts yielded 52 live mussels representing nine species. No federally or state-listed aquatic animal species were documented during the survey (Eldridge et al. 2022). The species collected are reservoir tolerant and are abundant throughout the Tennessee River system.

Table 3-9. Federally and State-Listed Aquatic Animal Species Within the Tennessee River (0604000105) 10-digit HUC Watershed

Common Name	Scientific Name	Status[2]	
		Federal	State (Rank[3])
Fishes			
Blue sucker	*Cycleptus elongatus*	-	T (S2)
Flame chub	*Hemitremia flammea*	-	D (S3)
Highfin carpsucker	*Carpiodes velifer*	-	D (S2S3)
Southern cavefish	*Typhlichthys subterraneus*	-	D (S3)
Mussels			
Clubshell	Pleurobema clava	E,XN	E (SH)
Cracking pearlymussel	Hemistena lata	E,XN	E (S1)
Fanshell	Cyprogenia stegaria	E,XN	E (S1)
Longsolid	Fusconaia subrotunda	T	- (S3)
Orange-foot pimpleback	Plethobasus cooperianus	E,XN	E (S1)
Pink mucket	Lampsilis abrupta	E	E (S2)
Ring pink	Obovaria retusa	E,XN	E (S1)
Rough pigtoe	Pleurobema plenum	E,XN	E (S1)
Round hickorynut	Obovaria subrotunda	T	- (S2S3)
Sheepnose	Plethobasus cyphyus	E	E (S2S3)
Slabside pearlymussel	Pleuronaia dolabelloides	E	E (S2)
Smooth rabbitsfoot	Quadrula cylindrica cylindrica	T	T (S3)
Spectaclecase	Cumberlandia monodonta	E	E (S2S3)
White wartyback	Plethobasus cicatricosus	E,XN	E (S1)
Crayfish			
Hardin crayfish	*Orconectes wrighti*	UR	E (S2)
Snails			
Shortspire hornsnail	*Pleurocera curta*	UR	- (S2)

[1] Source: TVA Regional Natural Heritage database and USFWS IPAC databases queried on 3/28/2025
[2]Federal Status Code: LT = Listed Threatened; LE = Listed Endangered; PDL = Petitioned for Delisting; XN = Experimental Population, Non-Essential; UR = Under Review
State Status Codes: D = Deemed in need of conservation; E = Endangered; T = Threatened
[3]State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; SX = Presumed Extirpated; SH = Of historical occurrence in Tennessee, e.g. formally part of the established biota, with the expectation that it may be rediscovered

3.8.2 Environmental Effects

3.8.2.1 Alternative A- No Action Alternative

Under the No Action Alternative, on-site aquatic ecology resources would remain in their current condition. There would be no impacts to aquatic ecology located within the Project Area.

3.8.2.2 Alternative B- Proposed Action Alternative

Under the Action Alternative, TVA and the City would be obliged to adhere to state and federal permit requirements and to commit to any mitigation or conservation measure provisions as a result of adverse modifications made to the Project Area. Due to the negative survey results of the Eldridge et al mussel survey (2022), impacts to federally threatened and endangered aquatic species are not anticipated

to occur as a result of the proposed marina development. Impacts to state-listed species are possible due to potential suitable habitat for the flame chub in the Project Area.

3.9 Terrestrial Zoology

3.9.1 Affected Environment

3.9.1.1 Wildlife

The Project Area consists of approximately 77.7 terrestrial acres composed of a matrix of mowed herbaceous fields surrounded by early successional habitat, forest edges, secondary-growth forested fragments, and wooded areas with mature hardwood trees. The Project Area also includes part of the Tennessee River, two of its tributaries (Town Branch and Mud Branch), and several wetlands. Each of these land cover types offers habitat for species common to the region, both seasonal individuals and permanent residents.

Mowed herbaceous fields offer little suitable habitat for rare wildlife species but can be used by many common species. Birds that utilize these grassy areas include American robin, red-tailed hawk, and turkey vulture (National Geographic 2002). Mammals that can be found in these areas include eastern mole, prairie vole, and striped skunk (Kays and Wilson 2009). Common amphibians and reptiles that can be found in this habitat include American toad, black racer, and eastern gartersnake (Powell et al. 2016). During a field survey in February 2025, several small burrows were observed in this habitat type, most likely occupied by small mammals or snakes.

Early-successional habitat, forest edges, and secondary-growth forests offer habitat to a multitude of avian species such as common grackle, mourning dove, and wild turkey (National Geographic 2002). Blue-gray gnatcatcher, blue grosbeak, eastern blue bird, eastern towhee, indigo bunting, northern cardinal, northern mockingbird, pine warbler, song sparrow, white-eyed vireo, and white-throated sparrow were observed in these habitat types within the Project Area during field surveys. Coyote, white-footed deer mouse, and white-tailed deer are mammals also frequently associated with early-successional habitats and secondary-growth forests (Kays and Wilson 2009). Eastern cottontail was observed within the Site. Amphibians and reptiles generally found in these habitats include Cope’s gray treefrog, five-lined skink, and gray ratsnake (Powell et al. 2016).

Wooded areas with mature hardwoods within the Project Area provide habitat for an array of terrestrial animal species. Birds typically found in this habitat include American crow, downy woodpecker, and tufted titmouse (National Geographic 2002). Blue jay, Carolina chickadee, Carolina wren, and red-bellied woodpecker were observed in the forested area during field surveys. Mature trees and trees with cavities and exfoliating bark found in these wooded areas can also provide summer-roosting habitat for common bat species such as big brown bats, eastern red bats, and evening bats (Harvey et al. 2011). Eastern gray squirrel, northern raccoon, and Virginia opossum are other species likely to occur in this habitat (Kays and Wilson 2009). Common amphibians and reptiles found in this habitat type include eastern

black kingsnake, eastern box turtle, and eastern narrow-mouthed frog (Powell et al. 2016).

The Tennessee River, Town Branch, Mud Branch, and wetlands within the Project Area provide habitat for common bird species such as Canada goose, great blue heron, and ring-billed gull (National Geographic 2002). American beaver, American mink, and common muskrat are common aquatic mammals that can occur within these habitats in the Project Area (Kays and Wilson 2009). Common reptile and amphibian species found in these habitats include eastern cricket frog, pond slider, and southern two-lined salamander (Powell et al. 2016). Upland chorus frogs were heard within the Project Area during field survey.

The Project Area contains habitat for a wide variety of invertebrates. Several species of dragonfly, bee, butterfly, and arachnid were observed within the Project Area during field surveys. Asian lady beetle, carpenter ant, funnel weaver, meadow slug, and red-banded hairstreak, among other invertebrates have been observed within approximately 3 miles of the Project Area (iNaturalist Community 2025).

Red imported fire ant colonies were observed across the Project Area. This species is an exotic, invasive species that was accidentally introduced into the United States and has infested up to 367 million acres. They feed on crops such as sorghum and corn, and their large nests interfere with agricultural operations (USDA APHIS 2025).

Review of the USFWS IPaC website identified 18 species of Migratory Birds of Conservation Concern (MBCC) that have the potential to occur within the Project Area. A comprehensive description of these MBCC and their habitats can be found in Appendix F.

3.9.1.2 Threatened and Endangered Terrestrial Animal Species

A review of terrestrial animal records in the TVA Regional Natural Heritage database in January 2025, resulted in one species of state conservation concern (Margaret's river cruiser) within 3 miles of the Project Area. One federally protected species (bald eagle), two species proposed for federal listing (eastern hellbender and tricolored bat), and two federally listed species (gray bat and northern long-eared bat) are known from Hardin County. Additionally, the USFWS IPaC database indicated that two additional species proposed for federal listing (alligator snapping turtle and monarch butterfly) and one federally listed species (whooping crane) have the potential to occur in the Project Area (Table 3-10).

Table 3-10. Federally and State-Listed Terrestrial Animal Species in the Vicinity of the Project Area[1]

Common Name	Scientific Name	Federal Status[2]	State Status[2] (Rank)[3]
Amphibians			
Eastern hellbender[5]	*Cryptobranchus alleganiensis alleganiensis*	PE	E (S3)
Birds			
Bald eagle[5]	*Haliaeetus leucocephalus*	DL	- (S3)
Whooping crane[6]	*Grus americana*	EXPN	- (SX)
Invertebrates			
Margaret's river cruiser	*Macromia margarita*	-	- (S2S3)
Monarch butterfly[4]	*Danaus plexippus*	PT	- (S4)
Mammals			
Gray bat[5]	*Myotis grisescens*	E	E (S2)
Northern long-eared bat[5]	*Myotis septentrionalis*	E	E (S1S2)
Tricolored bat[5]	*Perimyotis subflavus*	PE	T (S2S3)
Reptiles			
Alligator snapping turtle[6]	*Macrochelys temminckii*	PT	T (S2S3)

[1] Source: TVA Regional Natural Heritage database and USFWS Ecological Conservation Online System (https://ecos.fws.gov/ipac/) extracted 04/08/2025.
[2] Status Codes: DL = Delisted; E = Endangered; EXPN = Experimental Population, Non-Essential; PE = Proposed Endangered; PT = Proposed Threatened; T = Threatened.
[3] State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S4 = Apparently Secure; SX = Presumed Extirpated.
[4] Historically this species has not been tracked by state or federal heritage programs; USFWS has determined that this species could occur within the Project Area.
[5] Species that has not been documented within 3 miles of the Project Area but has been documented within Hardin County.
[6] Species has not been documented within 3 miles of the Project Area or from Hardin County; USFWS has determined this species has the ability to occur within the Project Area.

Alligator snapping turtles are large freshwater turtles that are confined to river systems that flow into the Gulf of America, formerly known as the Gulf of Mexico and renamed by EO 14172. This species is typically associated with deep water of large rivers where they feed on fish and other small invertebrates and vertebrates that they can scavenge. Nest sites are typically found between 8- to 72-feet from water but have also been found more than 500 feet away. Nesting occurs from May to July, and hatchlings emerge about 100-150 days later depending on temperature (USFWS 2021). Although no records of alligator snapping turtle are known from Hardin County, Tennessee, the USFWS has determined that this species could occur within the Project Area. Though no nests were observed during field survey, habitat for this species is available within the Project Area along the Tennessee River and its shoreline.

Bald eagles are protected under the Bald and Golden Eagle Protection Act (16 USC 668- 668d). This species is associated with strong, mature trees capable of supporting their large nests, which are built near larger waterways where they forage primarily for fish (USFWS 2007). Three bald eagle nest records are known from Hardin County, Tennessee, the nearest of which occurs approximately 9.8 miles from the Project Area. Foraging habitat for this species is available over the Tennessee River, and mature trees within the Project Area provide suitable nesting

habitat. Neither individuals nor their nests were observed in the Project Area during field survey.

Eastern hellbenders inhabit the Tennessee River drainage system. This species favors cool, fast flowing perennial streams with high oxygen levels. They require large, flat rocks in the stream bed for breeding. Eggs are laid in nests in late summer or fall beneath said rocks or submerged logs. Eastern hellbender records are known from Hardin County, the nearest being approximately 6.1 miles from the Project Area. Suitable habitat for breeding adults is not available within the Project Area.

Gray bats roost in caves year-round and migrate between summer and winter roosts during spring and fall (Tuttle 1976). Gray bats have also been documented roosting in manmade structures such as on bridges and in abandoned buildings. This species disperses over bodies of water at dusk where they forage for insects (USFWS 1982). Five gray bat records are known from Hardin County, Tennessee, the nearest of which is from a mist-net capture approximately 8.3 miles from the Project Area. No caves are known within three miles of the Project Area. No other suitable roosting structures for gray bat were observed within the Project Area during field survey. Foraging habitat for this species is available over the Tennessee River, Mud Branch, and Town Branch.

Margaret's river cruiser is a species of conservation concern found in clean, small streams to large rivers with rocks and silt deposits. They breed in flowing waters and their larvae rely on pristine water quality; presence of this species indicates good water quality. This species was historically documented approximately 2.7 miles from the Project Area. Although not optimal, some areas of Mud Branch and Town Branch contain cobble stones and silt substrate with clear running water that may provide habitat for this species.

Monarch butterfly is a highly migratory species, with eastern United States (U.S.) populations overwintering in Mexico. Monarch populations typically return to the eastern U.S. in April (Davis and Howard 2005). Summer breeding habitat requires milkweed plant species, on which adults exclusively lay eggs for larvae to develop and feed. Adults will drink nectar from other blooming wildflowers when milkweeds are not in bloom (Schweitzer and Jepsen 2014). USFWS determined that this species could occur within the Project Area. Early-successional habitat within the Project Area consists of several wildflowers and other flowering plant species that may provide suitable foraging habitat for adult monarchs; however, abundant milkweed plants suitable for developing larvae were not observed during field survey.

Northern long-eared bats (NLEB) predominantly overwinter in large hibernacula such as caves, abandoned mines, and cave-like structures. During the fall and spring, they utilize entrances of caves and the surrounding forested areas for swarming and staging. In the summer, NLEB roost individually or in colonies beneath exfoliating bark or in crevices of both live and dead trees (typically greater than three inches in diameter). This species also roosts in abandoned buildings and under bridges. NLEB 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 2022). Eleven records of NLEB are known from Hardin County, Tennessee, the nearest of which is from a mist-net capture approximately 8.2 miles from the Project Area. All records within the county are pre-white nose syndrome records from between 2011 to 2014. Based on the progression of white-nose syndrome and subsequent species decline, the Project Area does not fall within an area where NLEB is reasonably certain to occur, per available USFWS data.

Tricolored bat is generally a solitary species but can also be found in small groups. This species is associated with a variety of 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, Spanish moss, and beard lichen. However, this species has also been occasionally documented roosting in artificial structures such as bridges, culverts, and barns. In winter, this species is most commonly found in caves and mines but may also use culverts, abandoned wells, tree cavities and rock shelters (USFWS 2021a). Eight records of tricolored bat are known from Hardin County, Tennessee, the nearest of which is from a mist-net capture approximately 8.3 miles from the Project Area. No caves are known within three miles of the Project Area. Foraging habitat is available over the Tennessee River, Mud Branch, and Town Branch and over and around trees and forest edges within the Project Area. Approximately 29 acres of wooded habitat within the Project Area ranging from low quality to high quality habitat may provide summer roosting habitat for tricolored bat.

Whooping crane is a large bird that once occurred throughout North America but has declined to one self-sustaining wild population that breeds in Canada and winters in coastal Texas. During migration, whooping cranes may be found in coastal marshes, estuaries, agricultural fields, and other large wetland habitats (USFWS 2001). Since 2007, a small group of atypical individuals have come to winter in Tennessee, in a rural area on the Cumberland River; however, whooping cranes are rare migrants and winter residents in Tennessee (TWRA 2024). The whooping crane is listed as Endangered in the Southwest (USFWS Region 2). Outside of this region, the whooping crane is categorized as a non-essential experimental population. For the purposes of consultation, non-essential experimental populations are treated as threatened species on National Wildlife Refuge and National Park land (require consultation under 7(a)(2) of the ESA) and as a proposed species on private land (no section 7(a)(2) requirements, but Federal agencies must not jeopardize their existence (section 7(a)(4))) (USFWS 2024a). Wetlands within the Project Area may provide marginally suitable stopover habitat for whooping crane.

3.9.2 Environmental Consequences

3.9.2.1 Alternative A- No Action Alternative

3.9.2.1.1 Wildlife and Threatened and Endangered Terrestrial Animal Species

Under the No Action Alternative, no significant changes or effects to terrestrial animals, including threatened or endangered species, would occur. No impacts to

wildlife, species of conservation concern, or federally and state-listed species and their habitats are anticipated.

3.9.2.2 Alternative B- Proposed Action Alternative

3.9.2.2.1 Wildlife

Implementation of the Action Alternative would result in the displacement of wildlife (primarily common, habituated species) currently using the Project Area. Direct effects to some individuals could occur if those individuals are immobile during the time of habitat removal (e.g., during breeding, nesting or hibernation seasons). Habitat removal likely would disperse mobile wildlife into surrounding areas in attempts to find new food sources, shelter, and to reestablish territories. Due to the extent of previous disturbance and the availability of similarly suitable habitat in areas throughout the surrounding landscape, impacts to populations of common wildlife species under the Action Alternative are expected to be minor.

Suitable nesting habitat is available for American kestrel, cerulean warbler, Kentucky warbler, prothonotary warbler, red-headed woodpecker, and wood thrush in the forested areas. Nesting habitat for grasshopper sparrow and prairie warbler is available in the early successional fields of the Project Area. The Action Alternative may directly impact nests, eggs, or juveniles of these species if the proposed action occurs while nests are active. Impacts to populations of these MBCC would be expected to be minor as a result of the Action Alternative.

Red imported fire ants have negative effects on agriculture and natural resources by damaging crops and agricultural equipment and impacting wildlife. The USDA APHIS works to prevent the human-caused spread of this pest by enforcing federal quarantine and works with state cooperators to regulate high-risk commodities, such as nursery stock, hay, and soil-moving equipment. Hardin County, Tennessee is currently under APHIS quarantine.

- As a routine mitigation measure, any soil, baled hay or straw, plants and sod with roots and soil attached, soil-moving equipment, or other “Regulated Articles” as defined by USDA should comply with APHIS Quarantine Regulations if moved to a county outside of the quarantine area to minimize the spread of imported fire ants (USDA APHIS 2019).

3.9.2.2.2 Threatened and Endangered Terrestrial Animal Species

Under the Action Alternative, nesting habitat and foraging habitat for alligator snapping turtle could be impacted. Standard construction BMPs would be implemented to minimize impacts to water quality in the Tennessee River and its tributaries that may support this species. The Action Alternative would not jeopardize the continued existence of alligator snapping turtle.

Given the distance to known nesting records from the Project Area, absence of any additional nests within the Project Area during field survey, and with the

implementation of BMPs, impacts to bald eagle foraging and nesting habitat would be expected to be minor as a result of the Action Alternative. The Action Alternative is in compliance with National Bald Eagle Management Guidelines.

Given the lack of available breeding habitat for eastern hellbender, the Action Alternative would not jeopardize the continued existence of eastern hellbender.

No impacts to gray bat roosting habitat are expected as a result of the Action Alternative. Increased turbidity and silt in the Tennessee River and its tributaries within the Project Area could impact gray bat foraging habitat. BMPs would be implemented to minimize impacts to water quality. A number of activities associated with the proposed project were addressed in TVA's programmatic consultation with the USFWS on routine actions for federally listed bats in accordance with Endangered Species Act Section 7(a)(2), completed in April 2018 and updated in May 2023 and November 2024. For those activities with potential to affect bats, TVA committed to implement specific conservation measures. These activities and associated conservation measures are in the TVA Bat Strategy Project Screening Form (see Appendix D) and must be reviewed and implemented as part of the proposed project. With the use of these identified conservation measures, proposed actions would not significantly impact gray bat.

Proposed inland dredging would permanently alter Mud Branch and Town Branch. Increased turbidity and silt in these bodies of water could directly affect Margaret's river cruiser larvae if larvae are present while the Action Alternative is ongoing. However, the reaches of these tributaries regularly suffer from high water events and sedimentation as a result of mainstem Tennessee River flooding and likely do not provide suitable habitat for this species. Standard construction BMPs would be implemented around water bodies within the Project Area to minimize impacts to water quality in the Tennessee River and its tributaries. Impacts of the Action Alternative to these two small tributaries could result in minor impacts to populations of Margaret's river cruiser.

Given the lack of abundant breeding habitat available , the Action Alternative would not jeopardize the continued existence of monarch butterfly.

Based on the location of the Project Area, which occurs outside of known and potential northern long-eared bat habitat, the Action Alternative would have no effect on northern long-eared bat.

Winter roosting habitat for tricolored bat would not be impacted by the Action Alternative. Approximately 29 acres of summer roosting habitat for tricolored bat could be directly impacted as part of the Action Alternative. In Hardin County, tricolored bat pup season, when newly born pups cannot yet fly, occurs from May 15 to July 31 (USFWS 2024b). Direct effects could occur to individuals if they are present within the Project Area at the time tree removal occurs. Individuals roosting within the Project Area outside of pup season are expected to be mobile and able to flush to nearby suitable habitat if disturbed. As such, TVA recommends removing suitable habitat outside of pup season to avoid direct impacts to tricolored bat. The Action Alternative would not jeopardize the continued existence of tricolored bats.

Wetland habitat for whooping crane could be directly impacted as a result of the Action Alternative. Whooping cranes would be mobile and expected to flush if present in the Project Area while proposed actions are ongoing. Alternative habitat is available directly outside of the Project Area. BMPs would be implemented during construction to minimize potential impacts to wetlands and bodies of water in the Project Area, to the extent practicable. The Action Alternative would not jeopardize the continued existence of whooping crane.

Neither the Action Alternative nor the No Action Alternative would result in significant impacts on any terrestrial species or their habitats.

3.10 Plants

3.10.1 Affected Environment

3.10.1.1 Vegetation

Biological field surveys of the Project Area were conducted in February and July 2025 to document plant communities, presence of invasive plants, and to search for possible threatened and endangered plant species, and rare plant communities. All plant communities present in the Project Area were visited during the surveys. Using the National Vegetation Classification System (Grossman et al. 1998), vegetation types observed during field surveys can be classified as a combination of deciduous and herbaceous vegetation. No forested areas in the proposed Project Area had structural characteristics indicative of old growth forest stands (Leverett 1996). All forested areas encountered were fragmented, occurring in isolated islands; the largest continuous forested area was located in the middle of the Project Area.

Herbaceous vegetation is characterized by greater than 75 percent cover of forbs and grasses and less than 25 percent cover of other types of vegetation and occurs on 55.3 percent of the Project Area (45 acres). Young mowed fields, maintained transmission line ROW, old unmowed fields with thickety ecotones and dumps account for the vast majority of vegetation in the Project Area. Most of these areas are dominated by plants indicative of early-successional habitats and are comprised of mainly native vegetation. Common herbaceous species include broomsedge bluestem, dogfennel, Japanese stiltgrass, late goldenrod, purpletop tridens, southern dewberry, and tall fescue. The woody vine Japanese honeysuckle is also found in this vegetation type.

Deciduous forest, which occurs throughout the Project Area, is the only and most common forest type in the Project Area and occurs on 44.5 percent of the Project Area (36 acres). Mature upland forests, grown up dumps and spoil areas, and young upland thickets and bottomland forests next to streams are the dominant forest types encountered. These forests are comprised of common species such as American sycamore, black cherry, loblolly pine, northern hackberry, persimmon, slippery elm, sweet gum, and water oak. The understory is comprised of some of the saplings of trees listed above, and other common species such as American hornbeam, box elder, Chinese privet, mimosa, pawpaw, and winged elm. The woody grass giant cane is scattered throughout, especially near streams.

Herbaceous species in these forested areas include species such as annual ragweed, beefsteak plant, big-pod Sesbania, butterweed, Indian woodoats, late goldenrod, and southern dewberry. The woody vines such as cat greenbrier, crossvine, and Japanese honeysuckle, poison ivy, roundleaf greenbrier, trumpet creeper, and Virginia creeper are also prevalent in the understory. Deciduous forests in the proposed Project Area have trees that average between 6 and 30 inches diameter at breast height. Most of the trees near the parking area next to the reservoir are 24 to 36 inches in diameter at breast height. In the spoil areas, the trees ranged from 3 inches to 18 inches.

Evergreen forest is the least common forest type in the Project Area and occurs on 0.2 percent of the Project Area (0.2 acres). This forest type has low species diversity and is dominated by loblolly pine. The understory is comprised of common hardwood saplings. EO 13112 (Invasive Species) directed TVA and other federal agencies to prevent the introduction of invasive species (both plants and animals), control their populations, restore invaded ecosystems and take other related actions. EO 13751 (Safeguarding Nation From Impacts of Invasive Species) amends EO 13112 and directs actions by federal agencies to continue coordinated federal prevention and control efforts related to invasive species. This order incorporates considerations of human and environmental health, climate change, technological innovation, and other emerging priorities into federal efforts to address invasive species; and strengthens coordinated, cost efficient federal action. Some invasive plants have been introduced accidentally, but most were brought here as ornamentals or for livestock forage. Because these robust plants arrived without their natural predators (insects and diseases) their populations spread quickly across the landscape displacing native species and degrading ecological communities or ecosystem processes (Miller 2015). No federal-noxious weeds were observed, but many non-native invasive plant species were observed throughout the proposed Project Area. Invasive species present across significant portions of the landscape include beefsteak plant, Bradford pear, Chinese privet, Japanese honeysuckle, Japanese stiltgrass, sericea lespedeza, and silktree. During field surveys, invasive plants were prevalent in sections of both herbaceous vegetation and deciduous forest types.

Overall, none of the proposed Project Area supports high quality plant communities with significant conservation value.

3.10.1.2 Threatened and Endangered Species

The TVA Regional Natural Heritage database and USFWS IPaC list were reviewed in April 2025 to identify federally and state-protected plant species that could potentially occur in the Project Area. No federally listed and four state-listed plant species, have been previously reported within a 5-mile vicinity of the Project Area. One federally listed plant species (Price’s potato bean) has been previously reported in Hardin County and it is also reported in the USFWS iPaC database (Table 3-11). No Designated Critical Habitat for plants is known to occur in the Project Area.

Table 3-11 . Federally and State-Listed Plants Within 5 Miles of the Project Area[1]

Common Name	Scientific Name	Status[2]	
		Federal	State (Rank[3])
Bunchflower	*Melanthium virginicum*	–	END (S1)
Lamance iris	*Iris brevicaulis*	–	END (S1)
Maryland milkwort	*Polygala mariana*	–	SPCO (S1)
Price's potato-bean[4]	*Apios priceana*	THR	END (S3)
Yellow trout-lily	*Erythronium rostratum*	–	SPCO (S2)

[1] Source: TVA Regional Natural Heritage database, queried April 11, 2025
[2] Status Codes: END = Listed as Endangered; SPCO = Listed as Special Concern; THR = Listed as Threatened
[3] State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable
[4] Federally listed species occurring within Hardin County where work would occur, but not necessarily within 5 miles of the Project Area.

TVA completed botanical field surveys in February and July 2025 that indicate that no occurrences of or habitat for Price's potato-bean, or any other federally or state-listed plant species, occurs in the Project Area. The entirety of the action area is actively mowed, highly disturbed, and is populated primarily with weedy native and non-native species.

3.10.2 Environmental Consequences

3.10.2.1 Alternative A- No Action Alternative

3.10.2.1.1 Vegetation

With adoption of the No Action Alternative, the property would remain in its current condition and none of the proposed marina construction work would occur. The parcel would continue to be deciduous forested and early successional, both dominated by mostly non-native species. Any changes to vegetation on site would be the result of other natural or anthropogenic factors and would not be the result of adoption of this alternative. Property within the Project Area has no conservation value and adoption of Alternative A would not impact the vegetation of the region. Neither the small islands of deciduous forests nor the open fields containing herbaceous vegetation support unique natural plant communities. Both of these habitat types are common and well represented throughout the region.

3.10.2.1.2 Threatened and Endangered Species

Adoption of the No Action Alternative would not impact federally or state-listed plant species because field surveys indicated no listed plant populations or habitat capable of supporting listed species occurs in the Project Area. Changes to local plant communities resulting from natural ecological processes and human-related disturbance would continue to occur, but the changes would not be the result of the proposed project. Implementation of the No Action Alternative would not impact federally or state-listed plant species or Designated Critical Habitat.

3.10.2.2 Alternative B- Proposed Action Alternative

3.10.2.2.1 Vegetation

While adoption of this alternative would result in wholesale disturbance across the Project Area it would not negatively impact vegetation on any appreciable scale. The area would be graded and all vegetation would be removed. Impacts to

vegetation may be permanent, but the vegetation found on site is comprised of native and non-native plants that are common and representative of the area and have little to no conservation value. The implementation of TVA standard procedures for revegetating with noninvasive species (TVA 2022) would be included as a Section 26a permit condition and would serve to minimize the potential introduction and spread of invasive species in the proposed Project Area.

3.10.2.2.2 Threatened and Endangered Species

Adoption of the Action Alternative would have no impact on federally or state-listed plant species or Designated Critical Habitat because neither occurs within the Project Area. Field surveys indicate that no habitat for state-listed species occurs along the proposed project either and no rare plants were observed.

3.11 Utilities and Service Systems

3.11.1 Affected Environment

Several utilities and service systems are located in the vicinity of the proposed Project Area as a result of development in the nearby city of Savannah. These include natural gas, water, sewer, underground telephone, and overhead electric transmission utilities. Major utility service providers in the general vicinity include the Savannah Utilities Department (SUD) and the Tennessee Valley Electric Cooperative (TVEC).

Existing water and sewer, natural gas, and overhead electric lines intersect the Project Area from the north and east. In addition, overhead electric transmission lines owned and operated by TVA and TVEC intersect the Project Area from the south and north.

3.11.2 Environmental Consequences

3.11.2.1 Alternative A- No Action Alternative

Under the No Action Alternative, utilities needed for the proposed project would not be installed and no impacts would occur on existing utilities.

3.11.2.2 Alternative B- Proposed Action Alternative

Construction of the inland harbor, new marina and associated facilities would require installation of new support systems and utility infrastructure. Proposed supporting facilities relevant to utilities necessary to operate the marina include:

- One electrical shutoff main located in an accessible area above the 398-foot contour (See Section 3.17, Floodplains).
- Two electrical substations
- Two fueling stations
- Two sanitary pump-out systems
- Two light poles
- Sixteen electrical pedestals
- Sixty-six double hose bibs
- Two utility bridges to allow for utilities on the floating portion of the marina

Prior to construction, existing utility lines would be located and marked to prevent accidental damage during upgrade and installation activities. In addition, the City

would coordinate with existing electricity, natural gas, water, and sewer providers to minimize and avoid impacts and disruptions to existing service.

Operation of the proposed marina facilities would require an estimated baseline electric load of 2,798 kilowatts for which TVEC has the capacity to supply. The City determined the most practical route for electrical service into the proposed Savannah Marina site would be to extend the existing 2-phase electric transmission line from the Paul Street lift station southward to the Project Area. This alignment would require a conversion to a 3-phase transmission line.

Natural gas, potable water, and sewage services would be provided by SUD, with loads calculated as being 6,700 cubic feet per hour, 193 gallons per minute (GPM), and 174 GPM, respectively. SUD has adequate capacity to serve the facilities for all utilities within the Project Area. Given the ability of existing utility providers to meet proposed consumption, along with proactive coordination and planning with utility providers, Alternative B would result in minor impacts to existing utilities and service systems and the available capacity of these resources.

3.12 Land Use and Prime Farmland

3.12.1 Affected Environment

3.12.1.1 Land Use

The proposed Project Area is located in central Hardin County, in the city of Savannah, Tennessee. A portion of the Project Area and both spoil areas have been zoned High Density Residential by the City. The remaining portions of the Project Area are outside of the City's corporate limits. According to the City's Zoning Ordinance, Zone R-3 High Density Residential Districts are designed to provide suitable areas for high density residential development where appropriate urban services and facilities are provided or where the extension of such services and facilities will be physically and economically feasible. Generally, these areas will be characterized by single family detached dwellings, duplexes, and multiple family dwellings and townhouses (City of Savannah 2006).

Residential areas are located to the east and to the north of the Project Area. The nearest single-family residential areas are directly north of the Project Area along Paul Street. Directly north of the Project Area is the Wayne Jerrolds River Park which is under a recreation easement from TVA to the City (TVA 2025a).

Land cover within the approximate 64-acre Project Area, spoil areas, and 5-mile vicinity is analyzed using the U.S. Geological Survey (USGS) National Land Cover Database (Multi-Resolution Land Characteristics [MRLC] Consortium 2021). As shown in Table 3-12, land cover in the Project Area is primarily characterized as pasture/hay, woody wetlands and developed (open space) land covers. Within the approximate 14 acre spoil areas, the land cover types consist of emergent herbaceous wetlands, developed land, forested land, and pasture/hay. Major land cover types within the 5-mile vicinity of the Project Area are cultivated crops, pasture/hay and deciduous forest.

Table 3-12 Land Cover Within the Project Area and 5-mile Vicinity

	Marina Site (acres)	Spoil Sites (acres)	Project Area (acres)	5-mile Vicinity (acres)
National Land Cover Database Description				
Barren Land	-	-	-	89.1
Cultivated Crops	-	-	-	12,813.3
Deciduous Forest	3.2	0.8	4.0	9,019.7
Developed, High Intensity	-	-	-	267.5
Developed, Medium Intensity	0.2	-	0.2	933.1
Developed, Low Intensity	1.5	2.6	4.2	2,368.6
Developed, Open Space	10.1	3.6	13.7	5,311.3
Emergent Herbaceous Wetlands	7.7	-	7.7	776.8
Evergreen Forest	-	-	-	1,379.5
Grassland/Herbaceous	0.9	-	0.9	391.4
Mixed Forest	2.8	1.6	4.4	2,315.7
Open Water	2.2	-	2.2	2,288.0
Pasture/Hay	18.0	5.6	23.5	10,985.9
Scrub/Shrub	0.2	-	0.2	502.9
Woody Wetlands	17.3	-	17.3	5,643.8
Total	**64.1**	**14.2**	**78.3**	**55,086.6**

Source: MRLC Consortium 2021

3.12.1.2 Prime Farmland

The 1981 Farmland Protection Policy Act (FPPA) and its implementing regulations (7 Code of Federal Regulations [CFR] Part 658) recognize the importance of prime farmland and the role that federal agencies can have in converting it to nonagricultural uses. The act requires all federal agencies to evaluate impacts to prime and unique farmland prior to permanently converting to land use incompatible with agriculture.

Prime farmland soils have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. These characteristics allow prime farmland soils to produce the highest yields with minimal expenditure of energy and economic resources. In general, prime farmlands have an adequate and dependable water supply, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no rocks. Prime farmland soils are permeable to water and air, not excessively erodible or saturated for extended periods, and are protected from frequent flooding.

The acreage of prime farmland soils within the approximate 64-acre Project Area and 14-acre spoil areas, and within a 5-mile vicinity are summarized in Table 3-13. There are seven soil types, comprising of 16 acres within the Project Area that are classified as prime farmland soils (USDA Natural Resources Conservation Service [NRCS] 2022).

Table 3-13 Prime Farmland Within the Project Area, Spoil Sites, and 5-Mile Vicinity

	Project Area		Spoils Areas		Project and Spoil Areas		5-mile Vicinity	
	Acres	**Percent**	**Acres**	**Percent**	**Acres**	**Percent**	**Acres**	**Percent**
Soil Type								
All prime farmland soils	15.9	24.8	1.6	11.2	17.5	22.3	28,814.8	52.3
Not prime farmland	48.3	75.2	12.5	88.8	60.8	77.7	26,271.9	47.7
Total	**64.1**		**14.1**		**78.3**		**55,086.8**	

Source: USDA NRCS 2022

As shown in Table 3-13, prime farmland is not a unique feature in the project vicinity, as approximately 52 percent of soils in a 5-mile radius are considered prime farmland soils.

In accordance with the FPPA evaluation procedures, a USDA Farmland Conversion Impact Rating (Form AD-1006) was completed for the Project Area and provided to the USDA NRCS for input (Appendix G). On July 28, 2025, the NRCS reviewed the Form AD-1006 and indicated that the Project does not meet the guidance set forth by the act as the Project Area and spoil areas are already in or committed to urban land use or has existing footprints including rights-of-way and therefore is not subject to FPPA. As such the Project is therefore exempt from FPPA review (see Appendix G).

3.12.2 Environmental Consequences

3.12.2.1Alternative A- No Action Alternative

3.12.2.1.2 Land Use and Prime Farmland

Under the No Action Alternative, no excavation or construction would occur in the Project Area. Therefore, there would be no impacts to land use or prime farmland resources.

3.12.2.2 Alternative B- Proposed Action Alternative

3.12.2.2.1 Land Use

Under the Action Alternative, although land use would be converted from primarily undeveloped land to developed recreation and shoreline access, impacts to land use would be minor. This alternative would remove 17.5 acres of prime farmland from potential agricultural use; however, this amount is minor in comparison to the total acres of farmland in operation within Hardin County and the state of Tennessee. Additionally, the Project Area is currently zoned as High Density Residential District, which includes land uses such as multiple family dwellings, day care centers, parks, and playgrounds. Therefore, due to the relatively small about of prime farmland to be impacted and the fact that the Project Area is zoned for development, impacts to land use and prime farmlands as a result of the Action Alternative are considered minor.

3.12.2.2.2 Prime Farmland

The Project does not require FPPA review because the area is already used for urban purposes or has established ROWs, making it outside the scope of the FPPA. As a result, there would be no impact on prime farmland soils due to project development.

3.12 Noise

3.13.1 Affected Environment

Noise is an unwanted or unwelcome sound usually caused by human activity and added to the natural acoustic setting of a locale. It is further defined as sound that disrupts normal activities or diminishes the quality of the environment. Community response to noise is dependent on the intensity of the sound source, its duration, the proximity of noise-sensitive land uses, and the time of day the noise occurs. For instance, higher sensitivities to noise would be expected during the quieter overnight periods at noise-sensitive receptors, such as residences, or other sites where frequent human use occurs.

Sound is measured in logarithmic units called decibels (dB). Given that the human ear cannot perceive all pitches or frequencies of sound, noise measurements are typically weighted to correspond to the limits of human hearing. This adjusted unit of measure is known as the A-weighted decibel (dBA) which filters out sound in frequencies above and below human hearing. A noise level change of 3 dBA or less is barely perceptible to average human hearing. However, a 5 dBA change in noise level is clearly noticeable. The noise level associated with a 10 dBA change is perceived as being twice as loud; whereas the noise level associated with a 20 dBA change is considered to be four times as loud and would therefore represent a “dramatic change” in loudness.

To account for sound fluctuations, environmental noise is commonly described in terms of the equivalent sound level. The equivalent sound level is the constant noise level that conveys the same noise energy as the actual varying instantaneous sounds over a given period. Fluctuating levels of continuous, background, and/or intermittent noise heard over a specific period are averaged as if they had been a steady sound. The day-night sound level (Ldn), expressed in dBA, is the 24-hour average noise level with a 10-dBA correction penalty for the hours between 10 p.m. and 7 a.m. to account for the increased sensitivity of people to noises that occur at night. Typical background day-night noise levels for rural areas are anticipated to range between an Ldn of 35 and 50 dB, whereas higher-density residential and urban areas background noise levels range from Ldn 43 dB to 72 dB (EPA 1974). Common indoor and outdoor noise levels are listed in Table 3-14.

Table 3-14 Common Indoor and Outdoor Noise Levels

Common Outdoor Noises	Sound Pressure Levels (dB)	Common Indoor Noises
	110	Rock Band at 5 m (16.4 ft)
Jet Flyover at 300 m (984.3 ft)	100	Inside Subway Train (New York)
Gas Lawn Mower at 1 m (3.3 ft)	90	Food Blender at 1 m (3.3 ft)
Diesel Truck at 15 m (49.2 ft)	80	Garbage Disposal at 1 m (3.3 ft) Shouting at 1 m (3.3 ft)
Gas Lawn Mower at 30 m (98.4 ft)	70	Vacuum Cleaner at 3 m (9.8 ft)
Commercial Area	60	Normal Speech at 1 m (3.3 ft) Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime Quiet Suburban Nighttime	40	Small Theater, Large Conference Room Library
Quiet Rural Nighttime	30	Bedroom at Night Concert Hall (Background)
	20	Broadcast and Recording Studio
	10	
	0	Threshold of Hearing

Source: Federal Highway Administration (FHWA) 2017

There are no federal or state established quantitative noise-level regulations specifying environmental noise limits for Hardin County. However, the EPA noise guideline recommends outdoor noise levels do not exceed Ldn of 55 dBA, which is sufficient to protect the public from the effect of broadband environmental noise in typical outdoor and residential areas. These levels are not regulatory goals but are "intentionally conservative to protect the most sensitive portion of the American population" with "an additional margin of safety" (EPA 1974). The U.S. Department of Housing and Urban Development (HUD) considers an Ldn of 65 dBA or less to be compatible with residential areas (HUD 1985).

3.13.1.1 Sources of Noise

Ambient noise in the area is characterized by residential noise and recreational use of the Tennessee River including motorboats and personalized watercraft use. However, the city of Savannah is located just northwest of the Project Area and is characterized by noise associated with heavier traffic and commercial operation of businesses and stores.

Noise sources common to activities evaluated in this EA include noise from construction activities, transportation noise, and operational noise. The level of construction noise depends on the nature and duration of the project. Construction activities would be expected to result in increased noise levels due to operation of equipment and movement of vehicles (i.e., worker trips and material and equipment trips) on the surrounding roadways. Noise levels associated with construction activities would increase ambient noise levels adjacent to the construction site and along roadways used by construction-related vehicles. Construction noise is generally temporary and intermittent in nature because it primarily occurs during daytime hours, typically on weekdays, minimizing the impact to receptors. However, construction could potentially occur up to 7 days a week and limited nighttime hours if warranted to meet construction schedules. Transportation noise would primarily comprise noise associated with workers commutes and intermittent transport of equipment, materials, and spoil material.

3.13.1.2 Noise Receptors

Sensitive noise receptors include residences, or other developed sites where frequent human use occurs, recreators on the adjacent Tennessee River, residences along the adjacent Riverfront Drive and Paul Street (approximately 48 feet away from the Project Area), and residences to the east of the Project Area along Bluff Circle.

3.13.2 Environmental Consequences

3.13.2.1 Alternative A- No Action Alternative

Under the No Action Alternative, there would be no change to noise levels in the Project Area or nearby vicinity associated with the proposed marina project. Therefore, no impacts to sensitive noise receptors would occur as a result of TVA actions associated with the proposed project.

3.12.2.2 Alternative B- Proposed Action Alternative

3.12.2.2.1 Construction Noise

Under the Action Alternative, there would be short- and long-term increases in noise. During the anticipated 2-3 year construction period, noise would be generated from operation of construction equipment on site and the movement of construction-related vehicles (i.e., worker trips and material and equipment trips) on surrounding roadways. Noise emissions from most construction equipment would attenuate to 85 dBA or less at a distance of 50 feet (FHWA 2017). Heavy haul trucks would have a maximum of 50 dBA at 50 ft. Special equipment including track drills and pile-drivers have a typical maximum noise level of 98 dBA at 50 feet (Bolt et al. 1971) and 95 dBA at a distance of 50 feet, respectively (FHWA 2017). Noise levels associated with construction activities would increase ambient noise levels

adjacent to the construction site and along roadways used by construction related vehicles. Construction noise would be temporary and intermittent in nature because it would generally occur on weekdays during daylight hours which minimizes the impact on nearby receptors. However, as stated above work during nighttime hours and weekend is possible depending on the construction schedule.

Construction equipment noise levels are temporary and rarely steady; they fluctuate depending on the type of equipment and quantity used at any given time. In addition, construction related sound levels experienced by sensitive receptors would be a function of distance, other noise sources, and the presence and extent of vegetation, structures, and intervening topography between the noise source and receptor. Based on straight line noise attenuation, it is estimated that noise levels from most construction equipment (85 dBA at 50 feet) would attenuate to approximately 85 dBA or less at the closest residence (48 feet). Track drills (98 dBA at 50 feet) would attenuate to approximately 98 dBA at the closest residence. Other residences near the Project Area would experience construction noise levels to a lesser dBA due to greater distance from the noise source and vegetative screening.

The EPA's outdoor noise guideline is stated to be 55 dBA at all sensitive receptors. Some construction noise emissions would be temporarily higher than the EPA's recommended Ldn guidelines for residential areas, and slightly higher than the HUD's recommendation of 65 dBA. EPA noise guidelines are not regulatory goals but are "intentionally conservative to protect the most sensitive portion of the American population" with "an additional margin of safety" (EPA 1974). The construction noise emissions would be infrequent occurrences that would not contribute to typical background noise levels, as they would not fall under the continuous background, and intermittent noise category that defines Ldn. As a result, adverse noise impacts associated with construction are expected to be minor and temporary. Although noise levels at nearby residences may periodically surpass the EPA and HUD's recommended Ldn guidance for residential areas, the highest noise levels associated with typical construction equipment, and activities near the boundary of the project's limits of noise disturbance, would be infrequent and only last for the duration of the construction period (Phases I and II estimated at 2 to 3 years). Therefore, noise impacts from construction of the proposed Project Area are anticipated to be minor.

Noise emissions experienced by recreators on the Tennessee River during construction would be temporary and minor due to their transient nature. Therefore, it is anticipated that no recreator on the Tennessee River would be exposed to significant noise levels for an extended period of time.

There is also a potential for indirect noise impacts associated with an increase in traffic related to construction vehicles (workers and equipment and materials deliveries) and spoil transport on surrounding roadways. Due to the nature of the decibel scale and the attenuating effects of noise with distance, a doubling of traffic volume would result in an approximately 3 dBA increase in noise level, which would not normally be a perceptible noise increase (FHWA 2011). Spoil transport would occur within the Project Area and would only travel short distances. There is one residence located on the proposed spoil transportation route. This sensitive receptor

would experience perceptible changes in ambient noise associated with spoil transport. However, noise attenuation from heavy haul trucks is approximately 50 dBA at 50 feet which is within the EPA and HUD recommended guidelines. Overall, given the temporary and intermittent nature of construction activities, noise impacts associated with workforce traffic would be minor and temporary.

3.13.2.2.3 Operational Noise

Under Alternative B, operational noise would occur from the operation and use of marina facilities including patrons traveling to the marina, boat unloading/docking, and operation of motorized watercraft.

As noted in Section 3.15 Transportation, up to 162 marina workers and marina visitors/patrons could access the marina and associated facilities daily. However, implementation of Alternative B would include a new road from Paul Street to Riverfront Drive (south of the Project Area) allowing for new access to the marina and associated facilities from the north and south which would help disperse traffic to another route. Additionally, users of the marina and associated facilities would access the area at varying times throughout the day, so the increase in vehicles would be dispersed. Therefore, impacts from increases in traffic associated with operation of the marina and associated facilities would be minor.

The primary source of noise from commercial operation of the marina would be motorized watercraft. Noise emission levels for recreational boating activities can range from 40 dBA (very quiet) to 90 dBA from a personal watercraft (i.e. jet ski) (TVA 2017a). Motorboats and personal watercraft also may exhibit elevated short bursts of noise as a result of the speed of the watercraft and other operational factors. The TWRA regulates boating and personal watercraft for the safety of the public by enforcing Tennessee State boating laws. State boating regulations require that the noise level of any motorized vessel must not exceed 86 decibels at a distance of 50 feet or more from the vessel (TWRA 2025a). Additional guidelines are provided by TWRA to prevent excessive noise from personal watercraft, such as avoiding excessive noise near residential areas, particularly early in the morning (TWRA 2025b). Moreover, all boaters are expected to be in compliance with state boating laws and regulations that set standards for noise levels. As such, impacts to ambient noise during operation of Alternative B are minor.

3.14 Visual Resources

3.14.1 Affected Environment

This assessment provides a review of the visual attributes of existing scenery, along with the anticipated impacts resulting from implementation of the proposed action. The classification criteria used in this analysis are adapted from a scenic management system developed by the U.S. Forest Service and integrated with planning methods used by TVA. The classification process is also based on the methodology and descriptions adapted from Landscape Aesthetics, A Handbook for

Scenery Management, Agriculture Handbook Number 701 (U.S. Forest Service 1995).

The visual landscape of an area is formed by physical, biological, and man-made features that combine to influence both landscape identifiability and uniqueness. The scenic value of a particular landscape is evaluated based on several factors that include scenic attractiveness, scenic 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 attractiveness is expressed as one of the following three categories: distinctive, common, or minimal. Scenic integrity is a measure of scenic importance based on the degree of visual unity and wholeness of the natural landscape character. The scenic integrity of a site is classified as high, moderate, low, or very low. The subjective perceptions of a landscape's aesthetic quality and sense of place are dependent on where and how it is viewed.

Views of a landscape are described in terms of what is seen in the foreground, middleground, and background. In the foreground, defined as an area within 0.5 miles of the observer, details of objects are easily distinguished in the landscape. In the middleground, normally between 0.5 and 4.0 miles from an observer, objects may be distinguishable, but their details are weak and tend to merge into larger patterns. Details and colors of objects in the background, the distant part of the landscape, are not normally discernable unless they are especially large and standing alone. In this assessment, the background is measured as 4.0 to 10.0 miles from the observer. Visual and aesthetic impacts associated with an action may occur as a result of the introduction of a feature that is not consistent with the existing viewshed. The impressions of an area's visual character can have a significant influence on how it is appreciated, protected, and used. Consequently, the visual character of an existing site is an important factor in evaluating potential impacts.

The proposed inland harbor and marina and associated facilities are located on the eastern boundary of the Tennessee River in Hardin County. The majority of the Project Area is lightly developed and includes forested and scrub/shrub areas (See Section 3.12 Land Use). The Project Area includes portions of two streams (Town Branch and Mud Branch) which are tributaries to the Tennessee River. The Project Area also includes areas of higher ground, with elevations in excess of 430 feet msl. There is a broad, low-lying area adjacent to the two streams with elevations between 360 feet to 380 feet msl.

The visual landscape surrounding the Project Area consists of commercial properties and residential properties to the north and east, and crop fields and forested areas to the south. Adjacent to the Project Area is the existing Wayne Jerrolds River Park which includes parking area, trails and a boat launch ramp (TVA 2017a). The visual character of the Tennessee River on the eastern shoreline adjacent to the Project Area are low slopes that show signs of erosion. The shoreline on the west side of the Tennessee River has commercial developments and residential areas with a few private docks.

As shown in Appendix B, Figure 3-3, the viewshed of certain facilities, such as residences, churches, schools, and outdoor recreation sites can be vulnerable to visual modifications in the surrounding landscape. A number of residences are located in the foreground of the proposed Project Area. Most of the residences are located to the east along Bluff Circle but several residences are located adjacent to the Project Area to the north and there are a few dispersed residences to the south of the Project Area. Other sensitive visual receptors in the foreground include recreational areas, Wayne Jerrolds River Park and the Tennessee River, Schools, Hardin County Alternative School and Hardin County High School, and churches as depicted in Appendix B, Figure 3-3. In the middleground (0.5 to 4 miles from the site), there are a large number of churches, cemeteries, schools, and other outdoor recreation facilities located near downtown Savannah, as well as in the smaller unincorporated communities in the vicinity. However, the closest of the sensitive visual receptors are located adjacent to the Project Area.

The composition and patterns of vegetation are the prominent natural features of the landscape within the Project Area. The forms, colors, and textures of the natural features of the Project Area are typical of southern Tennessee and are not considered to have distinctive visual quality. Therefore, scenic attractiveness of the Project Area is considered common, due to the ordinary or common visual quality in the foreground, middleground, and background (Table 3-15). The scenic integrity is considered moderate due to noticeable human alteration. The scenic value class of a landscape is determined by combining the levels of scenic attractiveness, scenic integrity, and visibility and can be excellent, good, fair, or poor. Based on the criteria used for this analysis, the overall scenic value class for the Project Area is good.

Table 3-15 Visual Assessment Ratings for the Project Area

	Existing Landscape	
View Distance	**Scenic Attractiveness**	**Scenic Integrity**
Foreground	Common	Moderate
Middleground	Common	Moderate
Background	Common	Moderate

3.14.2 Environmental Effects

3.14.2.1 Alternative A- No Action Alternative

Under the No Action Alternative, no excavation or construction would occur in the Project Area. Therefore, there would be no direct or indirect impacts to visual resources.

3.14.2.2 Alternative B- Proposed Action Alternative

The Action Alternative would result in both short-term and long-term impacts to visual resources.

During the construction period (approximately 2 to 3 years), there would be increased visual discord due to an increase in personnel and heavy construction equipment coupled with disturbances from clearing of trees and vegetation and dredging of the proposed inland harbor. While there are sensitive receptors

adjacent to the Project Area, construction activities would be contained within immediate vicinity of the Project Area and would only last until project activities have been completed. Additionally, the disturbed areas would be seeded and restored according to TVA's standard BMPs (TVA 2022).

Long-term impacts resulting from the construction of Alternative B would include visible alterations to the existing landscape associated with the inland harbor, marina and associated facilities, and spoil storage. Spoil would be disposed of during construction and placed in mounds that would be visible long-term. These visual alterations would be visible from the residences and recreation areas adjacent to the Project Area. However, once construction is complete, existing vegetation surrounding the spoil areas would provide a natural screen between the spoil mounds and sensitive receptors to the north and east (Figure 1-3). In addition, several areas within the Project Area footprint would be re-vegetated to provide a natural screen, especially for residences located adjacent to the north and for residences to the east along Bluff Circle (see Figure 1-2).

Other sensitive receptors in the foreground include recreators on the Tennessee River and at Wayne Jerrolds River Park. Recreators on the Tennessee River would have direct views of the inland harbor and associated facilities; however, the proposed development does not impede the overall recreational experience of the Tennessee River as users are mobile. Recreators at Wayne Jerrolds River Park would have intermittent views of the proposed facilities due to the presence of existing and proposed vegetation. However, the proposed visible alterations would be similar to the existing Wayne Jerrolds River Park.

Motorists on Riverside Drive, Paul Street, Riverfront Drive, and Sevier Street may have views of the inland harbor, marina and associated facilities, and spoil areas. However, the change in viewshed as a result of Alternative B would be minor given the transient nature of motorists on these roadways. Additional vehicular traffic as a result of the project would have a minor visual impact on residents and motorists along local roadways.

Based on the profile of the inland harbor, marina and associated facilities, spoil areas, and the topography and existing vegetation in the surrounding area, views from middleground and background distances would be minimal.

Additional watercraft on the Tennessee River in the vicinity of the marina would contribute to an increase in visual congestion. However, this use would be consistent with the character of nearby lands which include private docks and public park offering access to the Tennessee River.

While the implementation of Alternative B would involve new structures and additional vehicle and watercraft traffic that would contribute to a minor decrease in visual integrity of the landscape, the existing scenic class would not be reduced by two or more levels from "good" to "poor", which is the threshold of significance of impact to the visual environment. Therefore, visual impacts resulting from the operation of the inland harbor and marina and associated facilities would be minor and the scenic class would be fair.

3.15 Transportation

3.15.1 Affected Environment

Riverside Drive to Paul Street to Riverfront Drive provides direct access to the Project Area. Riverside Drive is accessed via U.S. Highway 64 (Bridge Avenue). Riverfront Drive extends through the Project Area and connects to Bluff Circle West which connects to several roads east of the Project Area that ultimately connect to Main Street and State Route (SR) 128 (locally known as Pickwick Street). The Project Area is bounded by the Tennessee River to the west, and residential and commercial development to the north and east, and rural forested and agricultural land to the south.

Nearby roadways, primarily SR 128 (Pickwick Street) and SR 69 provide access to the south; Mississippi via SR 128 and Alabama via SR 69. U.S. Highway 64 extends east to west and provides access to Memphis and Chattanooga.

Tennessee Department of Transportation (TDOT) 24-hour traffic data for annual average daily traffic (AADT) on roadways in proximity to the Project Area is provided in Table 3-16.

Table 3-16 AADT of Roadways in Proximity to the Project Area

Roadway Segment	AADT (vehicles/day)
US Highway 64 (West)	15,070
Main Street	10,931
Water Street	7,108
Pickwick Street (Between Main Steer and Water Street)	6,007
SR 128 (Pickwick Street) Past Water Street	10,502

Source: TDOT 2025

3.15.2 Environmental Effects

3.15.2.1 Alternative A- No Action Alternative

Under the No Action Alternative, there would be no change to the transportation network or traffic volumes near the Project Area.

3.15.2.2 Alternative B- Proposed Action Alternative

Under Alternative B, construction of the inland harbor and marina would require excavation of 480,724 cubic yards of soil which would be stored at the top of the Tennessee River bank and disposed of at Spoil Sites 1 and 2 (see Figure1-3). The spoil sites are owned by the City of Savannah and are located adjacent to the marina site and accessed via Riverfront Drive. There is potential for the use of the TVA owned transmission line ROW located within the Project Area and adjacent to the spoil sites as access to the spoil areas or to spread spoil if needed, upon TVA approval. As the marina site and spoil sites are located on City owned land and are adjacent to each other with access provided via Riverfront Drive, impacts on traffic volumes are minor as trucks carrying spoil materials would be traveling very short distances. There is one residence, located along the segment of Riverfront Drive to

be used for disposal of spoil material, with the potential to be impacted by transportation of spoil. Disturbances may include traffic pattern disruptions or congestion due to the transport or use of materials and heavy equipment. During construction the contractor with assistance from the City of Savannah will monitor Riverfront Drive and control traffic as needed. Additionally, City of Savannah public works staff will schedule closures, block the street when necessary and work with the resident to maintain reasonable access to their property. With the use of traffic management plan activities identified above, impacts to the local transportation network and traffic conditions from transportation of spoil would be temporary and minor.

During construction there would be approximately 20 vehicles traveling to the Project Area daily, including equipment maintenance trucks, fueling trucks, delivery vehicles, and personal transportation vehicles for construction workers. While AADT on Riverside Drive, Paul Steet, or Riverfront Drive are not available, given the relatively small number of vehicles associated with construction and the limited duration of construction (9 months) impacts to local traffic conditions would be minor and temporary over the construction period.

After construction is completed, the marina would include parking lots and two new roads, one connecting Paul Street south to Riverfront Drive through the Project Area and another from the upper parking lot to the lower parking lot of the inland harbor and marina (see Figure 1-2). The new roads would provide access to the marina from Riverfront Drive and Paul Street.

Once constructed, operation of the marina would include 132 boat slips for recreators. Additionally, the operation of the marina would require approximately 15 full-time jobs in boating and maintenance operations and another approximately 15 full-time or part-time jobs in store and restaurant operations. Assuming one person per vehicle, up to 162 vehicles could access the marina and associated facilities on a daily basis. Operations of the proposed development would introduce additional traffic on local roadways. There are several ways to access the proposed marina from Main Street, U.S Highway 64 (Bridge Avenue), and SR 128 (Pickwick Street); therefore, traffic is expected to be dispersed throughout the local transportation network. As such, impacts on the transportation network and traffic conditions during operations are anticipated to be minor.

3.16 Public Health and Safety

3.16.1 Affected Environment

Workplace health and safety regulations and laws are designed to eliminate personal injuries and illnesses from occurring in the workplace. These laws may comprise both federal and state statutes. The Occupational Safety and Health Act (OSHA) of 1970 is the main statute protecting the health and safety of workers in the workplace from hazardous work environments, including risk of injury or illness. The Tennessee Department of Labor and Workforce Development has adopted federal OSHA standards contained in 29 CFR Parts 1910 and 1926 pursuant to Tennessee Code Annotated Section 50-3-201. The Tennessee Emergency Management Agency (TEMA) is responsible for maintaining protection of the public

through their regulations on hazardous wastes and materials. The State of Tennessee has an OSHA-approved plan under the Tennessee Occupational and Safety and Health Administration which covers employees in the private sector and state and local government. Additionally, TEMA supports local jurisdictions during emergencies by coordinating and managing mutual aid from local jurisdictions, Tennessee agencies and departments, and the federal government. TVA has a robust, safety-conscious culture that focuses on awareness and understanding of workplace hazards, prevention, intervention, and integration of BMPs to avoid or minimize hazards.

Public emergency services in the vicinity of the Project Area include urgent care clinics, hospitals, law enforcement services, and fire protection services. The Hardin Medical Center Emergency Department is located approximately 1.35 miles northeast of the Project Area.

3.16.2 Environmental Effects

3.16.2.1 Alternative A- No Action Alternative

Under the No Action Alternative there would be no change in public health and safety conditions within the Project Area.

3.16.2.2 Alternative B- Proposed Action Alternative

Under Alternative B, a site-specific health and safety plan would address the hazards, controls, and coordination associated with various construction tasks. During construction, customary industrial safety standards, BMPs, and job site safety plans would be maintained. Construction debris and wastes would be managed in accordance with federal, state, and local requirements. Compliance with federal, state, and local safety requirements would ensure that no unusual occupational safety risks would be expected from construction activities.

Increased traffic to the Project Area has the potential to impact public health and safety as increased traffic can result in increased risk for accidents; however, increased traffic associated with both construction and operation would be minor, as discussed in Section 3.15 Transportation, resulting in minor impacts to public health and safety. Traffic procedures used to further minimize potential safety concerns would be addressed in the health and safety plans followed by construction contractors.

Compliance with federal, state, and local safety standards during project construction and operation would result in minor impacts to public health and safety.

In Tennessee, the Tennessee Wildlife Resources Agency (TWRA) is responsible for enforcing the Tennessee Boating Safety Act and oversees boat registrations, safety equipment, and speed limits. TWRA is also responsible for preparing Tennessee's annual boating safety reports (TWRA 2024). The data in these boating safety reports are derived from "reportable boating incident" reports submitted by TWRA officers who investigate boating incidents and report their findings on TWRA Boating Report Incident forms. To be considered a reportable boating incident, an incident involves death, a missing person, an injury requiring medical treatment beyond first aid, or property damage of $2,000 or more. The annual boating safety

reports are analyzed to create proactive plans to reduce the number of boating incidents and their related fatalities, injuries, and property damage.

In 2024, 192 incidents were reported in Tennessee on all reservoirs, 22 incidents were reported on Kentucky Reservoir and nine were reported in Hardin County, including one boating fatality, six serious injury incidents and one property damage incident. When compared to other similar reservoirs in Tennessee, Kentucky Reservoir has a low occurrence of boating incidents (TWRA 2024). The increase in local boating traffic is not expected to have significant adverse effects on recreational boating traffic and boating safety because the increase in boating traffic would be minor.

3.17 Floodplains

3.17.1 Affected Environment

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 Executive Order (EO) 11988, Floodplain Management.

The proposed project would be located at about Tennessee River Mile 190.4, right descending bank, on Kentucky Reservoir, in Hardin County, Tennessee. At this location, the 100- and 500-year flood elevations would be 397.8- and 400.1-feet msl, respectively. The elevation for flood-damageable development within TVA's flowage easement or on TVA property would be 402.1-feet msl.

TVA reservoirs have power storage, 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 hydro turbines. 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. The PSZ would extend from elevations 354.0- to 359.0-feet msl, and the FSZ would extend from elevations 354.0- to 400.1-feet msl.

3.17.2 Environmental Effects

As a federal agency, TVA adheres to the requirements of EO 11988 (Floodplain Management). The objective of EO 11988 is "…to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative" (EO 11988, Floodplain Management). The EO is not intended to prohibit floodplain development in all cases, but rather to create a consistent government policy against such development under most circumstances (U.S. Water Resources Council, 1978). The EO requires that agencies avoid the 100-year floodplain unless there is no practicable alternative.

To minimize the loss of flood storage on TVA reservoirs, TVA applies its Flood Storage Loss Guideline to ensure that the least amount of flood storage space is lost while achieving project objectives resulting in a net benefit to the natural and human environment in a practical manner.

3.17.2.1 Alternative A- No Action Alternative

Under the No Action Alternative, there would be no changes within the local floodplains.

3.17.2.2 Alternative B- Proposed Action Alternative

The proposed project would consist of three phases which would require a deed modification, acquisition of flowage easement rights, a prior entry license, and Section 26a permit. Phase 1 involves excavation, including dredging, of over 480,000 cubic yards (about 300 acre-feet) of material and would be deposited at Spoil Sites 1 and 2. Phase 2 includes a boat harbor, construction of floating open and covered boat slips, marine service station and ship store, electrical pedestals, above-ground fuel tanks, marine fueling station, sewer lines for sanitary pump-out system, parking lots, roads, concrete boat ramp, land-based sidewalks, light poles, riprap along the marina basin, and stream relocation. Phase 3, to be completed in the future, would consist of an upland restaurant with patio, dry boat storage, additional parking, lighthouse, additional boat slips, and a riverboat docking area.

Phase I

The excavation, including dredging, would be located within the Tennessee River 100-year floodplain, and consistent with Executive Order 11988, are considered repetitive actions in the 100-year floodplain that should result in only minor impacts (TVA 1981). The excavated and dredged material would be deposited at Spoil Sites 1 and 2, portions of a former borrow site that is partially located within the 100-year floodplain and Flood Storage Zone; however, less material would be deposited than has been previously removed. Therefore, there would be no net fill in the FSZ, which would comply with the TVA Flood Storage Loss Guideline. Condition 1 would minimize adverse impacts.

The Town Creek stream relocation would be located within the 100-year floodplain and would be performed in accordance with applicable regulations, which would ensure impacts to floodplains would be minimized; therefore, that activity would be consistent with EO 11988.

Phase II

The floating open and covered boat slips, floating marine service station and ship store, utility bridges from the floating marina to shore, double hose bibs, fueling stations, sanitary pump-out systems, paved parking lot, roads, concrete boat ramp, land-based sidewalks, light poles and riprap along the marina basin would be located within the Tennessee River 100-year floodplain. Consistent with EO 11988, these facilities are considered repetitive actions in the 100-year floodplain that should result in only minor impacts. Conditions 2 and 3 would minimize adverse impacts.

Electrical substations, electrical pedestals and above-ground fuel tanks would also be located within the Tennessee River 100-year floodplain and these facilities are not considered repetitive actions in the 100-year floodplain. The locations of these facilities are near proposed parking areas and roadways for access, and the parking areas and roads are designed to meet Americans with Disabilities Act (ADA) requirements. Therefore, there is no practicable alternative to locating these facilities within the 100-year floodplain. Conditions 4 through 6 would minimize adverse impacts and thus the facilities would be consistent with EO 11988.

The Town Creek stream relocation would be performed in accordance with applicable regulations, which would ensure impacts to floodplains would be minimized; therefore, that activity would be consistent with EO 11988.

Nearly four thousand feet of riprap bank stabilization would be placed; however, far more material would be removed by the inland excavation and dredge than would be replaced by riprap; therefore, the riprap would comply with the TVA Flood Storage Loss Guideline.

Phase III

Additional parking, additional boat slips, and a riverboat docking area would be located within the Tennessee River 100-year floodplain, and consistent with Executive Order 11988, these facilities are considered repetitive actions in the 100-year floodplain that should result in only minor impacts (TVA 1981). Condition 2 would minimize adverse impacts.

The lighthouse would also be located within the 100-year floodplain. Lighthouses are not repetitive actions in the 100-year floodplain. To serve its purpose, the lighthouse must be located adjacent to the reservoir and would be constructed within a parking area graded to meet ADA requirements. Therefore, there is no practicable alternative to locating the lighthouse in the floodplain. To minimize adverse impacts, the lighthouse would be constructed with flow-through vents or other openings in the building in accordance with Hardin County floodplain regulations. Thus the lighthouse would be consistent with EO 11988.

Although the exact location of the dry boat storage, upland restaurant and event space are unknown, the applicant stated they would be located outside the 100-year floodplain and above the 100-year flood elevation, which would be consistent with EO 11988. Should the upland restaurant and event space be located on ground below elevation 400.1 (the 500-year flood elevation) and within TVA flowage easement, TVA would require the finished floor elevation to be at least elevation 402.1, with any crawlspace elevation no lower than elevation 400.1. Should the upland restaurant and event space be located on ground below elevation 400.1 (the 500-year flood elevation) and outside TVA flowage easement, the buildings would be constructed in accordance with Hardin County floodplain regulations. There would be no special conditions for the dry boat storage.

The proposed project would have minor adverse impacts on floodplains and their natural and beneficial values provided the following conditions are included in the

26a permit and acquired flowage easement. No additional conditions are needed for the deed modification or prior entry license.

Section 26a Permit Conditions

1. Spoil material would be deposited at either Spoil Site 1 or Spoil Site 2.
2. You agree to securely anchor all floating facilities to prevent them from floating free during major floods.
3. All power installations and lights will have a cutoff switch located above the 500-year elevation 400.1-feet msl that is accessible during flooding.
4. Electrical panels would be elevated on concrete pads to be above the 100-year flood elevation 398-feet msl.
5. The fuel storage tank vents and filling ports would have extensions located above the 100-year flood elevation 398-feet msl.
6. The fuel storage tank would be securely anchored to prevent it from floating free during major floods.
7. The lighthouse would be constructed with flow-through vents or other openings in the building in accordance with Hardin County floodplain regulations.
8. Should the upland restaurant and event space be located on ground below elevation 400.1-feet msl (the 500-year flood elevation) and within TVA flowage easement, TVA would require the finished floor elevation to be at least elevation 402.1-feet msl, with any crawlspace elevation no lower than elevation 400.1-feet msl.
9. Should the upland restaurant and event space be located on ground below elevation 400.1-feet msl (the 500-year flood elevation) and outside TVA flowage easement, the buildings would be constructed in accordance with Hardin County floodplain regulations.

Flooding and flood control rights for the acquired easement will be the same as adjacent flowage easements.

3.18 Archaeological and Historic Resources

3.18.1 Affected Environment

Cultural resources include precontact and historic archaeological sites, districts, buildings, structures, and objects as well as locations of important historic events. Federal agencies, including TVA, are required by the National Historic Preservation Act (NHPA) (54 USC 300101 et seq) and by NEPA to consider the possible effects of any of their projects, activities, and programs (including licenses, permits, or other assistance) on historic properties. Federal agencies may fulfill their statutory obligations under NEPA regarding cultural resources by following the process outlined in the regulations implementing Section 106 of NHPA at 36 CFR Part 800 and coordinating the process with the NEPA process.

Section 106 of the NHPA requires that federal agencies consider the potential effects of their actions on historic properties and allow the Advisory Council on Historic Preservation an opportunity to comment on the action. The Section 106 process includes identifying consulting parties, determining an area of potential effects (APE), identifying historic properties in the APE, assessing the undertaking's

potential adverse effects on historic properties, and resolving any adverse effects. This process is carried out in consultation with the SHPO wherein the undertaking takes place and other interested consulting parties, including federally recognized Indian tribes with an interest in the Project Area.

Cultural resources are considered historic properties if they are listed or eligible for listing in the National Register of Historic Places (NRHP), which is maintained by the National Park Service. The NRHP eligibility of a resource is based on the Secretary of the Interior's criteria for evaluation (36 CFR 60.4), which states that significant cultural resources possess historic significance or research value, and also display integrity of location, design, setting, materials, workmanship, feeling, and association such that they are able to convey their historic significance.

To be eligible for listing on the NRHP if the cultural resource meets one of the following criteria:

- Criterion A: made a significant contribution to American history; for example, literature, ethnic heritage, health/medicine, and transportation.
- Criterion B: related to the life of significant persons; examples of NRHP properties nominated under Criterion B include George Washington's Mount Vernon estate.
- Criterion C: embodied distinctive characteristics of a type, period, or method of construction including works of a master or buildings that possess high artistic value.
- Criterion D: yielded important information about history or prehistory. This category is typically the most relevant criterion for archaeological resources. "Undertaking" means any project, activity, or program that has the potential to have an effect on a historic property and that is under the direct or indirect jurisdiction of a federal agency or is licensed or assisted by a federal agency.

During the Section 106 process, the agency must consult with the appropriate SHPO, federally recognized Indian tribes that have an interest in the undertaking, and any other party with a vested interest in the undertaking. If avoidance or minimization are not feasible, measures to mitigate the adverse effect must be taken.

The APE is the geographic area or areas within which an undertaking may (directly or indirectly) cause changes in the character or use of historic properties, if such properties exist. If any historic properties are present in the APE the agency must assess whether the undertaking would result in any adverse effects on a historic property, in consultation with the SHPOs and tribes. Examples of adverse effects would be ground disturbing activity in an archaeological site or erecting structures within the viewshed of a historic building in such a way as to diminish the structure's integrity of feeling or setting. Agencies must seek ways to resolve any adverse effects through avoidance, minimization, or mitigation.

The APE for the proposed action includes the area of proposed ground disturbance, where physical effects could occur, including the dredge location, marina facilities, two spoil placement areas, and areas within a half mile of the proposed marina where visual effects to above-ground historic structures could occur.

3.18.1.1 Archaeological Resource Surveys

In 2021, Panamerican Consultants completed a due-diligence archaeological survey of most of the footprint of the Project Area (Saatkamp and Buchner 2021) for the City. A smaller portion of the project footprint was also surveyed previously by TRC Companies Inc. (TRC) for the construction of a segment of TVA transmission line 5825 in 2004 (Wampler and Karpynec 2004) and this survey was used in consultation with the SHPO for that action. A literature review by Panamerican found that one previously recorded archaeological site, 40HR29, also known as Savannah Mounds, intersects the project footprint. The Savannah Mounds Site, was first recorded and mapped in 1871 by J. Parish Stelle, as a large palisaded, mound group. The site was revisited by C.B. Moore in 1915 when he reported that the mounds had been largely destroyed by the expansion of the City and that no further investigation of the site was warranted. A series of subsequent professional archaeological surveys inside the original site boundaries during the 1970s and 1980s and subsequent analyses of those surveys determined that the site's largest component, including mound construction, was of Middle Woodland Period cultural affiliation. There was also evidence of sporadic occupations as early as the Archaic Period and later into the Mississippian Period (Welch 1998). The Middle Woodland mound-building occupation of the site has been interpreted to be non-residential and used primarily for ceremonial and mortuary purposes (Welch 1998).

3.18.1.2 Archaeological Sites

The Panamerican archaeological surveys within the current APE took place in September of 2021 and consisted of 278 shovel tests at 30-meter intervals and pedestrian walkover inspection. The APE is described by Panamerican as including bluffs, ridges and low-lying areas with areas of woodlands and tall grass and evidence of severe erosion with exposed patches of subsoil. Only eight of the shovel tests were positive for cultural material with 171 being negative and 99 not excavated due to excessive slope. The positive shovel tests consisted of two distinct loci of low-density lithic scatters encountered on eroded ridge top and a single Late Woodland potsherd that is the only diagnostic artifact. Panamerican recommended none of the archaeological remains as eligible for listing in the NRHP and reiterated the earlier assessments that the site has been largely destroyed by expansion of the City. In addition to encroachment from the development of the City, historic aerial imagery and the Federal Emergency Management Agency (FEMA) flood data (FEMA 2025) of the APE show that much of the APE has been subject to repeated episodes of flooding with commensurate scouring and erosion of landforms. USGS Light Detection and Ranging (LiDAR) point cloud imaging of landforms and analysis by TVA within the APE shows no evidence of any existing archaeological landscape features and this is also the conclusion reached by Panamerican's analysis of LiDAR data (Saatkamp and Buchner 2021).

Although the TRC archaeological surveys within the APE were for a 5.9 mile (9.5 kilometer) 100-foot-wide TVA transmission corridor for Transmission Line 5825, the surveyed segment within the APE is approximately 1,800-feet long. In April of 2004, TRC shovel tested along the corridor at 30-meter intervals and did not locate any artifacts within the current APE. Accordingly, TRC recommended no further work

within the transmission line ROW corridor. TVA concurs with the findings of both Panamerican and TRC for those areas surveyed within the APE.

There are small portions of the APE not shovel tested by Panamerican that are outside of both the Panamerican and TRC survey areas, but these are in areas of low probability for intact archaeological deposits. This area would include the extreme southeastern portion of the APE where greater than 10 percent slope, heavy ground disturbance from quarrying or borrow activity, road-construction and TVA transmission line construction would preclude any possibility of intact sites. The western portion of the unsurveyed area is moderately to heavily sloped, eroded and modified by the construction of Riverfront Drive and transmission structures 82 and 505 as evidenced by aerial and ground-level imagery with areas of gravelly, exposed subsoils. LiDAR elevation models provided by USGS, depict further evidence of heavy human land modification and erosion over the entire area with soils mapped as either severely eroded or gravelly with greater than 10 percent slopes and what appear to be outcrops of exposed parent material in portions of the APE. Panamerican's assessment of the southern part of the Transmission Line 5825 transmission corridor within the APE is that the area was previously quarried and this is confirmed by LiDAR evidence of a large borrow or quarry pit in the eastern part of the unsurveyed portion of the APE.

Excess spoil material from the marina development is to be placed over two spoil material areas numbered 1 and 2 (see Figures 1-5), totaling about 14.2 acres. LiDAR shows a quarry and large areas of what appears to be cut and fill in Spoil Placement Site 1 and large areas of soil truncation, grading and possible exposed parent material in Spoil Placement Site 2. Oral history from a City employee states that Site 2 has been used by the City as a landfill for many years. Both spoil placement sites appear to be heavily disturbed from previous mechanized soil-moving operations by the city, but TVA needed to confirm with a field review. The field review results indicated that the project footprint has been heavily disturbed by terraforming, the installation of a TVA transmission line ROW, former use of the area as a rock quarry and land fill, as well as erosion. Soils within the APE were heavily affected by deflation, the geological process of soil removal due to wind action leading to blowouts or depressions, which tends to occur in areas without vegetation cover. Soils consisted of a shallow layer of O horizon (organic matter) soils over subsoil, which suggests previous mechanized removal of topsoil in the APE. Subsoil is the layer of soil beneath the darker organo-humic topsoil that is composed of compacted mineralized clayey reddish soils. Given the deflated (eroded or wind swept) nature of the soils and the low probability conditions throughout the APE, the potential for intact buried deposits is low.

In a letter dated September 4, 2025, TVA consulted with the Tennessee SHPO regarding the APE, survey results, and NRHP eligibility determinations. In a letter dated October 6, 2025, the Tennessee SHPO concurred with TVA's findings and recommendations. Pursuant to 26 CFR 800.3(f) (2), TVA also consulted with federally recognized Indian tribes. The Chickasaw Nation responded on October 7, 2025, regarding the cultural significance of an archaeological site located in the APE and requesting the addition of a condition to the 26a permit requiring that the

City place educational signage in the Project Area. TVA worked with the City to prepare a scope of work for the requested signage. TVA consulted with the Tennessee SHPO on the scope of work in a letter dated November 12, 2025. The Tennessee SHPO responded with their concurrence on November 12, 2025. (see Appendix H).

3.18.1.3 Architectural Resources

A large portion of the viewshed extent for the proposed project was previously considered in the historic properties architectural survey for the eastern portion (Segment 10) of Transmission Line 5825 (constructed in 2005) that runs through the eastern portion of the APE (Wampler and Karpynec 2004). Within 0.5 mile of the transmission line segment inside the APE, the only historic properties identified by the survey as NRHP-eligible would be the Hardin County Courthouse at 456 Main Street in Savannah and Savannah City Cemetery. Additionally, the NRHP-listed Savannah Historic District and its expansion partially falls inside the 0.5-mile extent and the NRHP-listed Cherry Mansion is located in the 0.5-mile extent. The Tennessee Historical Commission database also shows 69 inventoried historic architectural resources within 0.5 mile of the APE that are undocumented by the survey. While the proposed spoil areas could reach a height of 50 feet, the spoil would not be visible to NRHP-listed Cherry Mansion.

TVA ran a viewshed analysis to demonstrate that visual effects from the existing Transmission Line 5825 towers in the APE almost completely impact the APE viewshed. There is a small area along the right descending bank of the Tennessee River where the Transmission Line 5825 towers in the project footprint cannot be seen but are visible within the APE, which includes NRHP-listed Cherry Mansion. However, this location is just 350 feet from and in full view of the intervening Harrison-McGarity Carpenter Bridge (constructed 1980). The viewshed is further compromised by the Transmission Line 5825 (Segment 1) towers crossing over the river and modern water-use infrastructure along both sides of the Tennessee River. TVA has completed consultation with the Tennessee SHPO and federally recognized Indian tribes for the proposed project and has received concurrence.
3.18.2 Environmental Effects

3.18.2.1 Alternative A- No Action Alternative

Under the No Action Alternative, existing land use would be expected to remain unchanged, no proposed marina construction would occur and there would be no change from current conditions. Therefore, there would be no impacts to Cultural and Historic resources.

3.18.2.2 Alternative B- Proposed Action Alternative

After review of archaeological surveys and background research, there would be no effect to archaeological resources under the proposed Action Alternative. Due to concerns from the Chickasaw Nation, the City would be required to fund the development, fabrication, and installation of a permanent interpretive sign at the Project Area within one year of the beginning of marina operations to acknowledge historical tribal resources in the area. Should previously undiscovered cultural resources be identified during Project Site construction or operations, a TVA

archaeologist and consulting parties will be consulted before any further action is taken.

Visual impacts to historic structures within the APE are not anticipated given that the APE is already compromised by existing, intervening modern transmission towers, bridges, modern homes/water-use facilities, asphalt roads, utility lines/poles and other modern public works projects. The setting and feeling of the project location as it relates to historic properties is thus lacking in integrity and has been compromised.

TVA finds that the undertaking i.e., implementing the Action Alternative, would have no adverse effect to historic properties.

3.19 Solid and Hazardous Waste

3.19.1 Affected Environment

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 (EPA 2021). The EPA regulated solid waste under Subtitle D of the RCRA, which bans the open dumping of waste and sets minimum federal 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 (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 U.S. Nuclear Regulatory Commission, hazardous materials are regulated in the US by laws and regulations administered by OSHA and the U.S. Department of Transportation. In Tennessee, the TDEC Division of Solid Waste Management implements RCRA Subtitle C at the state level.

No solid or hazardous waste is known to be present in the Project Area. The proposed project would generate solid waste during clearing and construction in the Project Area. Operation of the proposed marina would involve creation of solid waste and storage of fuel on-site.

3.19.2 Environmental Effects

3.19.2.1 Alternative A- No Action Alternative

Under the No Action Alternative, there would be no change in solid or hazardous waste generation or disposal in the Project Area.

3.19.2.2 Alternative B- Proposed Action Alternative

Under the Action Alternative, the proposed marina facilities would generate solid waste from trash and debris and would store hazardous materials such as fuel on site.

Solid waste would be generated during the clearing, construction, and operation of the proposed marina facilities. Wastes associated with construction would primarily consist of organic material, building material waste, and excess debris associated with clearing and excavation. 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.

Operating of the proposed marina would involve the storage and use of gasoline. Phase II construction includes installation of an above ground 10,000 gallon split use fuel tank with piping to two fueling stations. In addition to fuel storage, general maintenance to motors would generate used oil and oiled materials, which would require specific control measures, storage, and disposal.

The proposed volume of fuel and oil stores on site would exceed 1,320 gallons. Therefore, the City would be required to implement a Spill Prevention, Control, and Countermeasures Plan (SPCC) in accordance with 40 CFR 223. In addition, the piping to the proposed fuel dock must be double-walled. Piping must be installed in such a way that the interstitial space can be inspected for the presence of liquid (water or fuel).

With the development and implementation of a SPCC Plan and applicable BMPs and compliance with all applicable state and federal laws and regulations, the Action Alternative would not result in adverse impacts from the generation, storage, and disposal of solid and hazardous wastes.

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 herbaceous vegetation, deciduous forest, and evergreen forest. Land cover within the 1-mile buffer is similar to the Project Area, with the addition of areas considered developed open space.

The reasonably foreseeable environmental trends and planned actions identified within the geographic scope of analysis include the following:

- Continued use of Kentucky Reservoir for recreational purposes including operation of nearby commercial marinas and public boat launch sites.
- Continued residential and commercial development related to the proposed marina including on formerly undeveloped lands.
- In addition to road construction or maintenance 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 the city of Savannah, Tennessee 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.

3.20.1 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.

3.20.2 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 BMPs and mitigation measures. Construction activities would also have a limited, yet favorable short-term impact on the local economy through the creation of construction and support jobs and revenue.

Operation of the proposed facilities would affect long-term productivity primarily through the conversion of forested areas to other uses. Project-related activities would alter the Project Area landscape, and consequently, impacts on vegetation may be considered permanent.

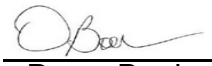
3.20.3 Irreversible and Irretrievable Commitments of Resources

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 construct an inland harbor and develop a commercial marina on Kentucky 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.

3.20.4 NEPA Compliance Certification

Consistent with 18 CFR 1318.106(e) and 1318.401(g), the Tennessee Valley Authority certifies that this document represents TVA's good-faith effort to fulfill the requirements of NEPA within the Congressional timeline established at NEPA Section 107(g) and according to page limits established at NEPA Section 107(e). In this document, TVA prioritizes documentation of the most important considerations based on its expert judgement. Any considerations addressed briefly or unaddressed are, in TVA's judgment, comparatively less substantive. In TVA's expert opinion, the factors mandated by NEPA have been thoroughly considered, and the analysis contained in this document is adequate to inform and reasonably explain TVA's final decision regarding the proposed federal action.



Dawn Booker, Senior Manager
NEPA Compliance
Environment and Stewardship
Tennessee Valley Authority

February 3, 2026

Date Signed

CHAPTER 4 – LITERATURE CITED

Ainslie, W. B., R. D. Smith, B. A. Pruitt, T. H. Roberts, E. J. Sparks, L. West, G. L. Godshalk, and M. V. Miller. 1999. A regional guidebook for assessing the functions of low gradient, riverine wetlands in western Kentucky. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS, USA. Technical Report WRP-DE-17.

Avery, M. L. 2020. Rusty Blackbird (*Euphagus carolinus*), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.rusbla.01. Retrieved from https://birdsoftheworld.org/bow/species/rusbla/1.0/introduction (accessed June 2024).

Bogart, R. 2025. On the Wing with Chimney Swifts. U.S. Fish and Wildlife Service. Retrieved from https://www.fws.gov/story/chimney-swifts (accessed September 2025).

Bolt, Beranek and Newman. 1971. Noise from Construction Equipment, Operations, Building Equipment and Home Appliances. United States Environmental Protection Agency. National Service Center for Environmental Publications. Retrieved from https://www.epa.gov/nscep (accessed June 2025).

Brophy-Heineke & Associates Inc. 2021. Water Resource Assessment Report. Savannah Marina. Savannah, Hardin County, Tennessee.

Buehler, D. A., P. B. Hamel, and T. Boves. 2020. Cerulean Warbler (*Setophaga cerulea*), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.cerwar.01. Retrieved from https://birdsoftheworld.org/bow/species/cerwar/1.0/introduction (accessed June 2024).

Centers for Disease Control and Prevention (CDC). 2011. Morbidity and Mortality Weekly Report. CDC Health Disparities and Inequalities Report- United States, 2011. Retrieved from: https://www.cdc.gov/mmwr/pdf/other/SU6001.pdf (accessed May 12, 2025).City of Savannah. 2006. Zoning Ordinance. Retrieved from https://cityofsavannah.org/images/zoning-regs.pdf (accessed May 2, 2025).

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. *Classification of Wetland and Deepwater Habitats of the United States*. Washington, D.C.: U.S. Fish and Wildlife Publication FWS/OBS-79/31.

Davis, A. and Howard, E. 2005. Spring recolonization rate of monarch butterflies in eastern North America: New estimates from citizen-science data. Journal of

the Lepidopterists' Society. *59(1): 1-5.* Retrieved from https://images.peabody.yale.edu/lepsoc/jls/2000s/2005/2005(1)1-Davis.pdf (accessed November 2023).

Eldridge, R., B. Dinkins, G. Dinkins. 2022. Survey for Freshwater Mussel Species at the Site of the Proposed Savannah Marina Backwater (Hardin County, Tennessee). Prepared for City of Savannah, Tennessee. 52 pp.

Environmental Laboratory. 1987. *Corps of Engineers Wetland Delineation Manual*. Vicksburg, Miss.: U.S. Army Corps of Engineers Waterways Experiment Station. Technical Report Y-87-1.

Etnier, D. A., and W. C. Starnes. 1993. The Fishes of Tennessee. The University of Tennessee Press. Knoxville, Tennessee. 689 pp.

Evans, M., E. Gow, R. R. Roth, M. S. Johnson, and T. J. Underwood. 2020. Wood Thrush (*Hylocichla mustelina*), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.woothr.01. Retrieved from https://birdsoftheworld.org/bow/species/woothr/1.0/introduction (accessed June 2024).

Farmer, A., R. T. Holmes, and F. A. Pitelka. 2020. Pectoral Sandpiper (*Calidris melanotos*), version 1.0. In Birds of the World (S. M. Billerman, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.pecsan.01. Retrieved from https://birdsoftheworld.org/bow/species/pecsan/cur/introduction (accessed April 2025).

Federal Emergency Management Agency (FEMA). 2025. FEMA Flood Map Service Center. Retrieved from https://msc.fema.gov/portal/search?AddressQuery=Savannah%2C%20TN (accessed July 2025).

Federal Highway Administration (FHWA). 2011. Highway Traffic Noise: Analysis and Abatement Guidance. FHWA-HEP-10-025. December 2011.

_____. 2017**.** Construction Noise Handbook. Chapter 9.0 Construction Equipment Noise Levels and Ranges. Retrieved from http://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/handbook09.cfm (accessed April 2025).

Frei, B., K. G. Smith, J. H. Withgott, P. G. Rodewald, P. Pyle, and M. A. Patten. 2020. Red-headed Woodpecker (*Melanerpes erythrocephalus*), version 1.0. In Birds of the World (P. G. Rodewald, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.rehwoo.01. Retrieved from

https://birdsoftheworld.org/bow/species/rehwoo/1.0/introduction (accessed June 2024).

GeoCheck. 2016. The EDR Radius Map Report with GeoCheck. 300 S Riverside Drive. Savannah, Tennessee. Inquiry Number: 4681340.2s. July 22, 2016.

Griffith, G. E., J. M. Omernik, and S. Azevedo. 2009. Ecoregions of Tennessee (color poster with map, descriptive text, summary tables, and photographs): Denver, Colorado, U.S. Geological Survey (map scale 1:940,000).

Grossman, D. H., D. Faber-Langendoen, A. S. Weakley, M. Anderson, P. Bourgeron, R. Crawford, K. Goodin, S. Landaal, K. Metzler, K. D. Patterson, M. Pyne, M. Reid, and L. Sneddon. 1998. *International classification of ecological communities: terrestrial vegetation of the United States. Volume I. The National Vegetation Classification System: development, status, and applications*. The Nature Conservancy, Arlington, Virginia. 139pp.

Groundwater Working Group. 2018. Tennessee's Roadmap to Securing the Future of Our Water Resources. Retrieved from https://www.tn.gov/content/dam/tn/environment/water/tn-h2o/documents/plan-&-appendices/wr-tnh2o_plan-app_groundwater-chapter.pdf. (accessed April 15, 2025).

Harvey, M. J., Altenbach, J. S., Best, T. L. 2011. Bats of the United States and Canada. The Johns Hopkins University Press. Baltimore, Maryland.

Hicklin, P. and C. L. Gratto-Trevor. 2020. Semipalmated Sandpiper (Calidris pusilla), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.semsan.01. Retrieved from https://birdsoftheworld.org/bow/species/semsan/cur/introduction (accessed April 2025).

iNaturalist Community. 2025. Observations of Class Insecta, Arachnida, and Mollusca within a 5 km radius of Savannah Marina Deed Modification and Section 26a Approval, observed from May 2019 to November 2024. Retrieved from https://www.inaturalist.org (exported April 2025).

Jehl Jr., J. R., J. Klima, and R. E. Harris. 2020. Short-billed Dowitcher (*Limnodromus griseus*), version 1.0. In Birds of the World (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.shbdow.01. Retrieved from https://birdsoftheworld.org/bow/species/shbdow/cur/introduction (accessed April 2025).

Katzner, T. E., M. N. Kochert, K. Steenhof, C. L. McIntyre, E. H. Craig, and T. A. Miller. 2020. Golden Eagle (*Aquila chrysaetos*), version 2.0. In Birds of the

World (P. G. Rodewald and B. K. Keeney, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.goleag.02. Retrieved from https://birdsoftheworld.org/bow/species/goleag/cur/introduction (accessed April 2025).

Kays, R., and D. E. Wilson. 2009. Mammals of North America, Second Edition. Princeton University Press, Princeton, NJ.

Leverett, Robert 1996. Definitions and History in Eastern old-growth forests: prospects for rediscovery and recovery. Edited by Mary Byrd Davis. Island Press, Washington D.C. and Covelo, California.

Lewis, J. 2022. Water Resource Assessment Report Savannah Marina (Savannah, Hardin County, Tennessee). Prepared for City of Savannah. 84 pp.

McDonald, M. V. 2020. Kentucky Warbler (*Geothlypis formosa*), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.kenwar.01. Retrieved from https://birdsoftheworld.org/bow/species/kenwar/1.0/introduction (accessed June 2024).

Miller, J. H., S. T. Manning, and S. F. Enloe. Slightly revised 2015. A Management Guide for Invasive plants in the Southern Forests. Gen. Tech. Rep. SRS-131. U.S. Department of Agriculture, Forest Service, Southern Research Station: 1-3.

Morse, D. H., J. P. Poston, P. Pyle, and A. F. Poole. 2024. Black-throated Green Warbler (*Setophaga virens*), version 1.2. In Birds of the World (P. G. Rodewald and N. D. Sly, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.btnwar.01.2. Retrieved from https://birdsoftheworld.org/bow/species/btnwar/cur/introduction (accessed April 2025).

Multi-Resolution Land Characteristics (MRLC) Consortium. 2021. MRLC Consortium, National Land Cover Database (NLCD). Retrieved from https://www.mrlc.gov/data, (accessed July 2025).

National Geographic. 2002. Field Guide to the Birds of North America (Fourth Edition). National Geographic Society, Washington D.C.

National Park Service. 2018a. Coastal Plain Provence. Retrieved from https://www.nps.gov/articles/coastalplain.htm. (accessed April 2025).

_____. 2018b. Interior Low Plateaus. Retrieved from https://www.nps.gov/articles/interiorlowplateausprovince.htm. (accessed April 2025).

Natural Resources Conservation Service (NRCS). 2022. Web Soil Survey, NRCS, U.S. Department of Agriculture. Retrieved from https://websoilsurvey.sc.egov.usda.gov (accessed July 2025).

NatureServe. 2025. Margaret's River Cruiser: *Macromia margarita.* NatureServe Explorer [web application]. NatureServe, Arlington, VA. Retrieved from https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.113436/Macromia_margarita (accessed April 2025).

Nichols, K. and Lori R. 2025. *Cultural Resource Survey for Two Spoil Placement Areas, City of Savannah Deed Modification and 26A Permit Approval, Hardin County, Tennessee*. Prepared for Tennessee Valley Authority.

Nolan Jr, V., E. D. Ketterson, and C. A. Buerkle. 2020. Prairie Warbler (*Setophaga discolor*), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.prawar.01. Retrieved from https://birdsoftheworld.org/bow/species/prawar/1.0/introduction (accessed June 2025).

Petit, L. J. 2020. Prothonotary Warbler (*Protonotaria citrea*), version 1.0. In Birds of the World (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.prowar.01. Retrieved from https://birdsoftheworld.org/bow/species/prowar/1.0/introduction (accessed June 2025).

Powell, R., Conant, R., and J. T. Collins. 2016. A Field Guide to Reptiles and Amphibians: Eastern and Central North America. 4th edition. Houghton Mifflin, Boston, MA.

Rohrbach, G. M. and D. I. Withers. 2006. A status survey of the Caney Fork crayfish (Cambarus pristinus) and Hardin County crayfish (*Orconectes wrighti*) with notes on the Brawley's Fork crayfish (*Cambarus williami*). Final report contract #ID-06-08125-00 submitted to the Tennessee Natural Heritage Program, Nashville, Tennessee, 30 August 2006. 25 pp.

Saatkamp, Andrew and C. Andrew Buchner. 2021. *Phase I Archaeological Survey for the Savannah Marina, Hardin County, Tennessee*. Prepared for the City of Savannah.

Schweitzer, D.F. and S. Jepsen. 2014. Monarch: *Danaus plexippus.* NatureServe Explorer [web application]. NatureServe, Arlington, VA. Retrieved from

https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.108245/Danaus_plexippus (accessed June 2024).

Scott, M. L., B. A. Kleiss, W. H. Patrick, and C. A. Segelquist. 1990. The Effect of Developmental Activities on Water Quality Functions of Bottomland Hardwood Ecosystems: The Report of the Water Quality Workgroup. As reported in: Gosslink, J.G. *et al.* (1990) Ecological processes and cumulative impacts : illustrated by bottomland hardwood wetland ecosystems / edited. Lewis Publishers, Chelsea, MI.

Slater, G. L., J. D. Lloyd, J. H. Withgott, and K. G. Smith. 2021. Brown-headed Nuthatch (*Sitta pusilla*), version 1.1. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.bnhnut.01.1 Retrieved from https://birdsoftheworld.org/bow/species/bnhnut/cur/introduction (accessed April 2025).

Steeves, T. K., S. B. Kearney-McGee, M. A. Rubega, C. L. Cink, and C. T. Collins. 2020. Chimney Swift (*Chaetura pelagica*), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.chiswi.01 Retrieved from https://birdsoftheworld.org/bow/species/chiswi/1.0/habitat (accessed June 2024).

Tennessee Department of Environment and Conservation (TDEC). 2012. Tennessee Erosion Prevention & Sediment Control Handbook. 4th Edition. August 2012. Retrieved from https://www.tn.gov/environment/permit-permits/water-permits1/npdes-permits1/npdes-stormwater-permitting-program/epsc-handbook.html (accessed May 2025).

_____. 2024a. Rules of the Tennessee Department of Environment And Conservation Chapter 0400-40-04 Use Classifications for Surface Waters. March 2024. Retrieved from https://publications.tnsosfiles.com/rules/0400/0400-40/0400-40-04.20240317.pdf (accessed March 2025).

_____. 2024b. EPA Approved List of Impaired and Threatened Waters. April 2024. Retrieved from https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/water-quality-reports---publications.html (accessed April 2025).

Tennessee Department of Transportation (TDOT). 2025. Average Annual Daily Traffic. Retrieved from https://tdot.public.ms2soft.com/tcds (accessed July 2025).

Tennessee Valley Authority (TVA). 1981. Class Review of Repetitive Actions in the 100-Year Floodplain, Federal Register Vol. 46, No. 76, April 21, 1981. pp. 22845-22846. https://www.govinfo.gov/content/pkg/FR-1981-04-21/pdf/FR-1981-04-21.pdf

_____. 1998. Shoreline Management Initiative: An Assessment of Residential Shoreline Development Impacts in the Tennessee Valley. Final Environmental Impact Statement. TVA Land Management, Norris, Tennessee. Retrieved from https://www.tva.com/nepa (accessed March 2025).

_____. 2017a**.** Kentucky Reservoir Final Reservoir Land Management Plan, Vol V. Retrieved from https://www.tva.com/nepa (accessed March 2025).

_____. 2017b. Multiple Reservoirs Land Management Plans and, Final Environmental Impact Statement, Vol I. Retrieved from https://www.tva.com/nepa (accessed March 2025).

_____**.** 2022. A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities, Revision 4. Edited by S.T. Benefield, R.L. Brannon, J.C. Buttram, B.V. Dalton, G.D. Dalton, C.A. Henley, W.G. Martin, A.E. Masters, C.L. Phillips, C.A. Suttles, and R.C. Wilson. Chattanooga, TN. Retrieved from https://www.tva.com/energy/transmission/transmission-system-projects (accessed November 2024 and July 2025).

_____**.** 2025a**.** Reservoir Land Management Plan Viewer Map. Retrieved from https://www.arcgis.com/apps/Embed/index.html?webmap=30d1cc53e22242a88cde834e244fc650&extent=-88.6524,33.7099,-81.5608,37.5874&home=true&zoom=true&scale=true&search=true&searchextent=true&details=true&legend=true&theme=light (accessed July 2025).

_____**.** 2025b. Section 26a Guidance for Dredges and Excavations. Retrieved from: https://www.tva.com/environment/shoreline-construction-permits/section-26a-guidance/dredges-and-excavations (accessed August 2025).

Tennessee Wildlife Resources Agency (TWRA). 2024. Tennessee Boating Incident Statistical Report (2024). *Annual Boating Accident Reports*. Retrieved from 2024 Tennessee Boating Incident Statistical Report (accessed December 2025).

_____. 2024. Whooping Crane, *Grus americana.* TWRA, Nashville, TN. Retrieved from https://www.tn.gov/twra/wildlife/birds/whooping-crane.html (accessed June 2024).

_____. 2025a.The Handbook of **T**ennessee Boating Laws and Regulations. 2025 Edition. Retrieved from

https://assets.kalkomey.com/boater/pdfs/handbook/tennessee-handbook-entire.pdf (accessed July 2025).

_____. 2025b. The Handbook of Tennessee Boating Laws and Responsibilities. Retrieved from https://www.tn.gov/content/dam/tn/twra/documents/boating/TN-Boating-Handbook.pdf (accessed July 2025).

Tibbitts, T. L. and W. Moskoff. 2020. Lesser Yellowlegs (*Tringa flavipes*), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.lesyel.01. Retrieved from https://birdsoftheworld.org/bow/species/lesyel/cur/introduction (accessed April 2025).

Tuttle, M. D. 1976. Population ecology of the gray bat (*Myotis grisescens*): philopatry, timing, and patterns of movement, weight loss during migration, and seasonal adaptive strategies. Occasional Papers of the Museum of Natural History, University of Kansas, 54:1-38. Retrieved from https://www.merlintuttle.org/wp-content/uploads/2018/04/Population-Ecology-of-the-Gray-Bat-Myotis-grisescens-Philopatry-Timing-and-Patterns-of-Movement-Weight-Loss-During-Migration-and-Seasonal-Adaptive-Strategies.-1976.-By-Merlin-D.-Tuttle.pdf (accessed December 2023).

U.S. Army Corps of Engineers (USACE). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0), ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-20. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

_____. 2020. National Wetland Plant List. 1100 U.S. Army Corps of Engineers Research and Development Center. Cold Regions Research and Engineering Laboratory, Hanover, NH. Retrieved from https://wetland-plants.sec.usace.army.mil (accessed June 2025).

_____. 2024. 2022 National Wetland Plant List, Version 3.6. Retrieved from https://nwpl.sec.usace.army.mil (accessed August 2025). U.S. Army Engineer Research and Development Center, Vicksburg, MS.

_____. 2025. Section 10 of the Rivers and Harbors Act. Retrieved from https://www.spl.usace.army.mil/Missions/Regulatory/Jurisdictional-Determination/Section-10-of-the-Rivers-Harbors-Act/ (accessed April 2025).

U.S. Census Bureau (USCB). 2011. Decennial Census 2010. Table ID: P1 Total Population. Retrieved from https://data.census.gov/cedsci/ (accessed May 2025).

_____. 2021. 2020 Decennial Census Redistricting Data (PL 94-171). Retrieved from https://data.census.gov/cedsci/ (accessed May 2025).

_____. 2024a. American Community Survey 2019-2023. Detailed Tables. Retrieved from https://data.census.gov/cedsci/ (accessed May 2025).

_____. 2024b. Poverty Thresholds for 2024. Retrieved from http://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html (accessed December 2021).

U.S. Climate Data. 2025. Information for Savannah, TN. Retrieved from https://www.usclimatedata.com/climate/savannah/tennessee/united-states/ustn0450 (accessed March 2025).

U.S. Department of Agriculture—Animal and Plant Health Inspection Service (USDA APHIS). 2019. *Imported Fire Ant Program Manual.* Animal and Plant Health Inspection Service. Retrieved from https://www.aphis.usda.gov/sites/default/files/fire-ant-program-manual.pdf (accessed April 2025).

_____. 2025. *Imported Fire Ants. Animal and Plant Health Inspection Service*. Retrieved from https://www.aphis.usda.gov/plant-pests-diseases/ifa (accessed April 2025).

U.S. Department of Housing and Urban Development (HUD). 1985. The Noise Guidebook, HUD-953-CPD Washington, D.C., Superintendent of Documents, U.S. Government Printing Office.

U.S. Environmental Protection Agency (EPA). 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. Office of Noise Abatement and Control, Arlington, VA.

_____. 2019. EJSCREEN Technical Documentation. Office of Policy, Washington, DC. Retrieved from https://19january2021snapshot.epa.gov/ejscreen/technical-documentation-ejscreen_.html (accessed May 2025).

_____. 2021. Defining hazardous waste: listed, characteristic and mixed radiological wastes. Retrieved from https://www.epa.gov/hw/defining-hazardous-waste-listed-characteristic-and-mixed-radiological-wastes (accessed July 2025).

_____. 2025. Overview of Total Maximum Daily Loads (TMDLs). Retrieved from https://www.epa.gov/tmdl/overview-total-maximum-daily-loads-tmdls (accessed July 2025).

U.S. Fish and Wildlife Service (USFWS). 1982. Gray Bat Recovery Plan. Minneapolis, MN. 26pp. Retrieved from https://www.nrc.gov/docs/ML1214/ML12146A326.pdf (accessed December 2023).

_____. 2001. Endangered and Threatened Wildlife and Plants; Establishment of a Nonessential Experimental Population of Whooping Cranes in the Eastern United States, Federal Register 66:123. Retrieved from https://www.govinfo.gov/content/pkg/FR-2001-06-26/pdf/01-15791.pdf#page=1 (accessed December 2023).

_____. 2007. National bald eagle management guidelines. Arlington (VA): U.S. Fish and Wildlife Service, Division of Migratory Bird Management. 23 p. Retrieved from https://www.fws.gov/sites/default/files/documents/national-bald-eagle-management-guidelines_0.pdf (accessed December 2023).

_____. 2021a. Species Status Assessment Report for the Alligator Snapping Turtle (Macrochelys temminckii), Version 1.2. March 2021. Atlanta, GA. Retrieved from https://ecos.fws.gov/ServCat/DownloadFile/206831 (accessed November 2024).

_____. 2021b. Species Status Assessment Report for the Tricolored Bat (Perimyotis subflavus), Version 1.1. December 2021. Hadley, MA. Retrieved from https://ecos.fws.gov/ServCat/DownloadFile/221212 (accessed December 2023).

_____. 2022. Species Status Assessment Report for the Northern long-eared bat (*Myotis septentrionalis*), Version 1.1. March 22, 2022. Bloomington, MN. Retrieved from https://ecos.fws.gov/ServCat/DownloadFile/215290 (accessed December 2023)._____. 2024a. Environmental Conservation Online System: Whooping Crane (*Grus americana*) Species Profile. Retrieved from: https://ecos.fws.gov/ecp/species/758 (accessed June 2025).

_____. 2024b. Range-wide Indiana Bat and Northern Long-eared Bat Survey Guidelines. U.S. Fish and Wildlife Service, Region 3, Bloomington, MN. Retrieved from https://www.fws.gov/sites/default/files/documents/2024-10/2024_usfws_rangewide_ibat-nleb_survey_guidelines.pdf (accessed April 2025).

U.S. Forest Service. 1995**.** Landscape Aesthetics, A Handbook for Scenery Management. Agriculture Handbook Number 701. December 1995.

U.S. Geological Survey (USGS). 1990. Geology and Ground-Water Resources of the Memphis Sand in Western Tennessee. Retrieved from

https://pubs.usgs.gov/wri/wrir88-4182/pdf/wrir_88-4182_a.pdf (accessed June 2025).

_____. **1998.** Quality of Ground Water in Pleistocene and Holocene Subunits of the Mississippi River Valley Alluvial Aquifer, 1998. Retrieved from https://pubs.usgs.gov/wri/2003/4202/report.pdf (accessed June 2025).

_____. 2021. Geographic Names Information System Dataset. Retrieved from https://geonames.usgs.gov/apex/ (accessed May 2025).

_____. 2025. National Water Information System: Web Interface. USGS 351412088151501 Hd:K-006. Well site. Retrieved from https://waterdata.usgs.gov/nwis/inventory?agency_code=USGS&site_no=351412088151501 (accessed May 2025).

U.S. Water Resources Council. 1978. Guidelines for Implementing Executive Order 11988, Floodplain Management. Federal Register Vol. 43, No. 29, February 10, 1978. pp. 6030-6054. Retreived from https://www.govinfo.gov/content/pkg/FR-1978-02-10/pdf/FR-1978-02-10.pdf (accessed August 2025).

Vickery, P. D. 2020. Grasshopper Sparrow (*Ammodramus savannarum*), version 1.0. In Birds of the World (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.graspa.01. Retrieved from https://birdsoftheworld.org/bow/species/graspa/cur/introduction (accessed 2025).

Wampler, Marc E., Ted Karpynec. 2004. *Phase I Cultural Resources Survey of the Existing and Proposed Corridor of the Pickwick-Savannah Transmission Line and Within a Proposed Substation Footprint in Savannah, Hardin County, Tennessee*. Submitted to the Tennessee Valley Authority, Knoxville, Tennessee.

Welch, Paul D. 1998. Middle Woodland and Mississippian Occupations of the Savannah Site in Tennessee. *Southeastern Archaeology* 17(1):79-92.

Wilder, T.C. and Roberts, T. H. 2002. "A Regional Guidebook for Applying the Hydrogeomorphic Approach to Assessing Wetland Functions of Low-Gradient Riverine Wetlands in Western Tennessee," ERDC/EL TR-02-6, U.S. Army Engineer Research and Development Center, Vicksburg, MS. Appendix A – Title of Appendix A.

Yeager, A. and M. Brittingham. 2016. Managing Habitat for American Kestrels. Penn State Extension. Pennsylvania State University, University Park, PA. Retrieved from https://extension.psu.edu/managing-habitat-for-american-kestrels#:~:text=the%20water%20attracts.-

,Management%20Practices,makes%20previously%20unsuitable%20habitat%20suitable (accessed November 2023).

Appendix A – Symbols, Acronyms, and Abbreviations

Symbols, Acronyms, and Abbreviations

AADT	Average Annual Daily Traffic
APE	area of potential effect
APHIS	Animal and Plant Health Inspection Service
ARAP	Aquatic Resource Alteration Permit
BMP	Best Management Practice
CFR	Code of Federal Regulations
CWA	Clean Water Act
dB	decibels
dBA	A-weighted decibels
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act of 1973
FEMA	Federal Emergency Management Agency
FPPA	Farmland Protection Policy Act
GPM	gallons per minute
HUC	Hydrologic Unit Code
HUD	United States Department of Housing and Urban Development
IPaC	Information for Planning and Consultation
Ldn	Day-night Level
LiDAR	Light Detection and Ranging
msl	Mean sea level
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NLEB	Northern Long-eared Bat
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRP	Natural Resources Plan
OSHA	US Occupational Safety and Health Administration
RCRA	Resource Conservation and Recovery Act
RLMP	Reservoir Land Management Plan
ROW	right- of- way
SHPO	State Historic Preservation Officer
SMI	Shoreline Management Initiatives
SMP	Shoreline Management Policy
SPCC	Spill Prevention, Control, and Countermeasures Plan
SR	State Route
SUD	Savannah Utilities Department
SWPPP	Stormwater Pollution Protection Plan
TDEC	Tennessee Department of Environment and Conservation
TDOT	Tennessee Department of Transportation
TEMA	Tennessee Emergency Management Agency
TRC	TRC Companies Inc.
TVA	Tennessee Valley Authority
TVEC	Tennessee Valley Electric Cooperative
TWRA	Tennessee Wildlife Resources Authority
US	United States
USACE	United States Army Corps of Engineers
USCB	United States Census Bureau
USDA	United States Department of Agriculture
USGS	United Stated Geological Survey
USFWS	United States Fish and Wildlife Service

Appendix B – Figures

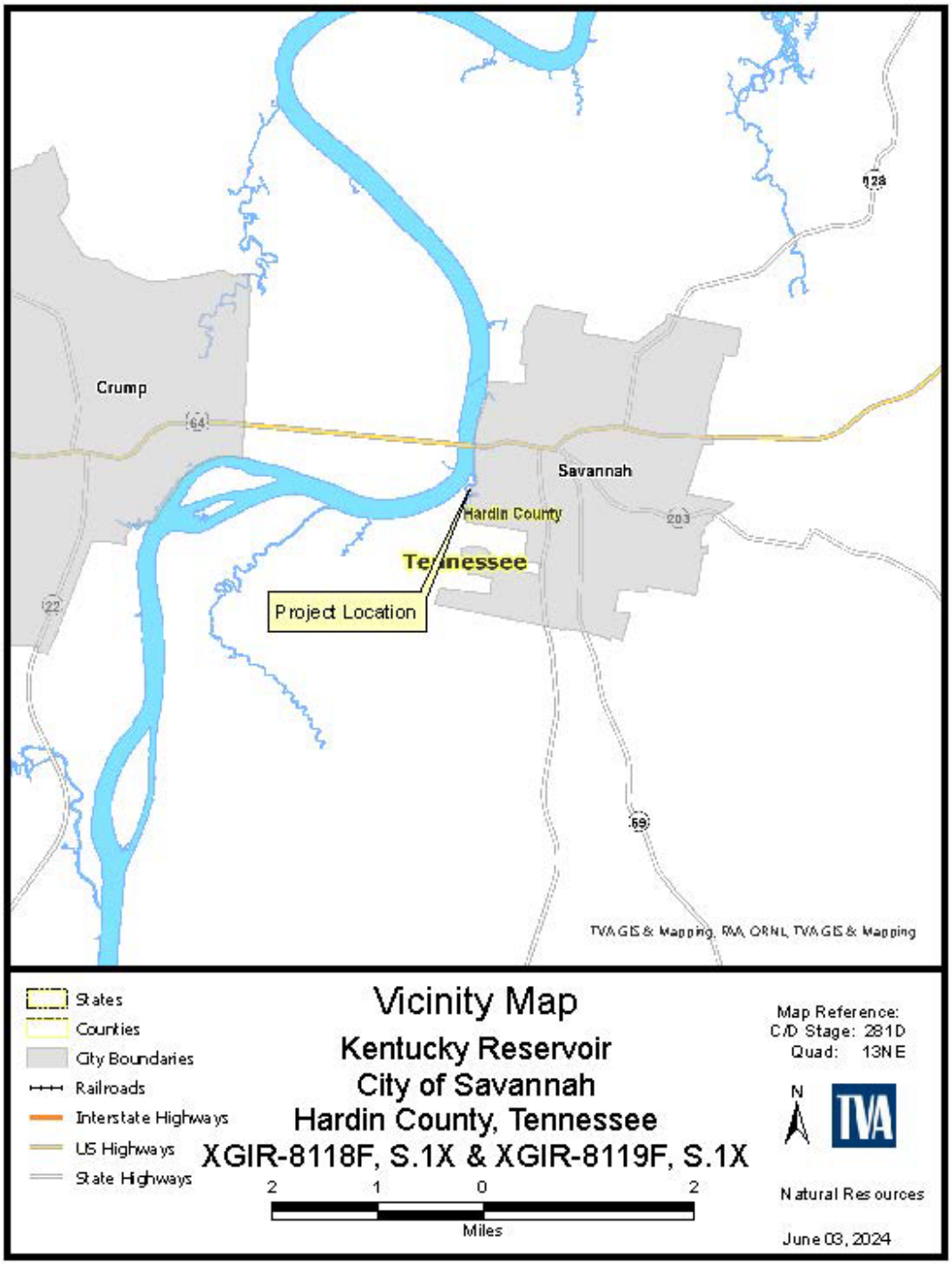
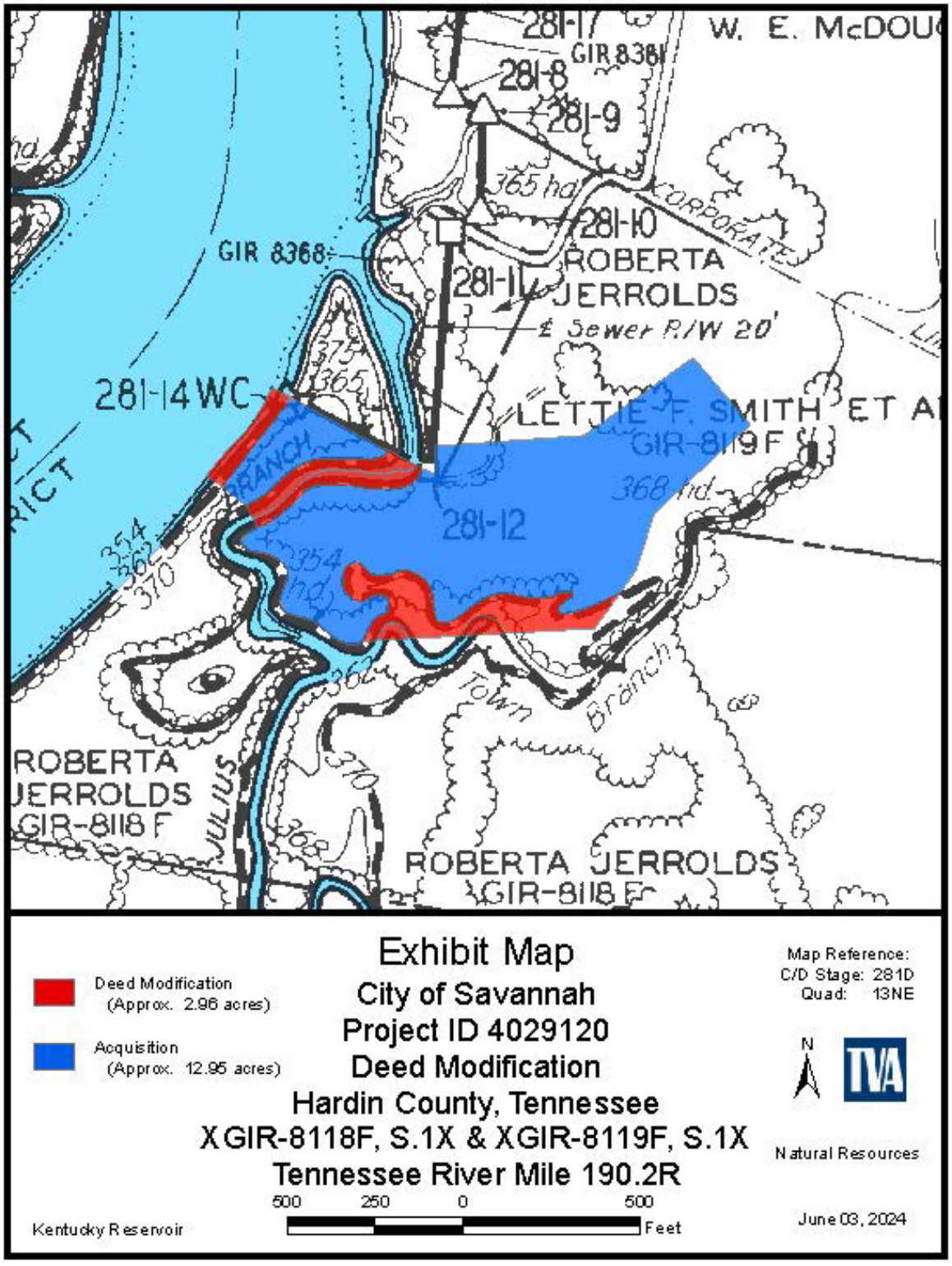


Figure 1-1. Vicinity Map of the Proposed Project Area

Figure 1-2. Aerial Map of Proposed Marina Site

Figure 1-3. Rendering of Proposed Marina



1-4.Exhibit Map of Proposed TVA Land Actions

Figure 1-5. Aerial Map Showing Proposed Marina and Spoil Sites

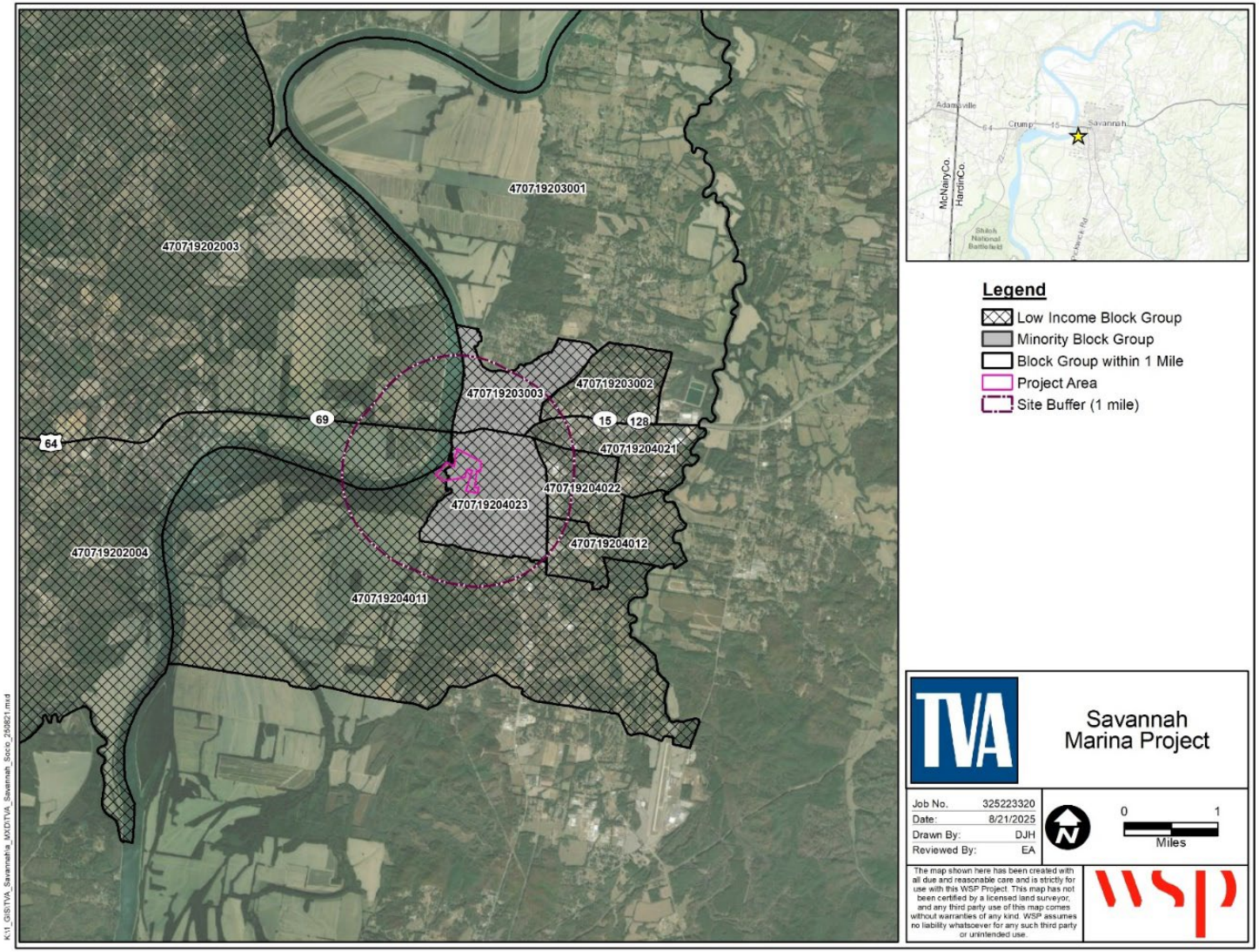


Figure 3-2. Low Income and Minority Block Groups Identified Within 1-Mile of the Project Area

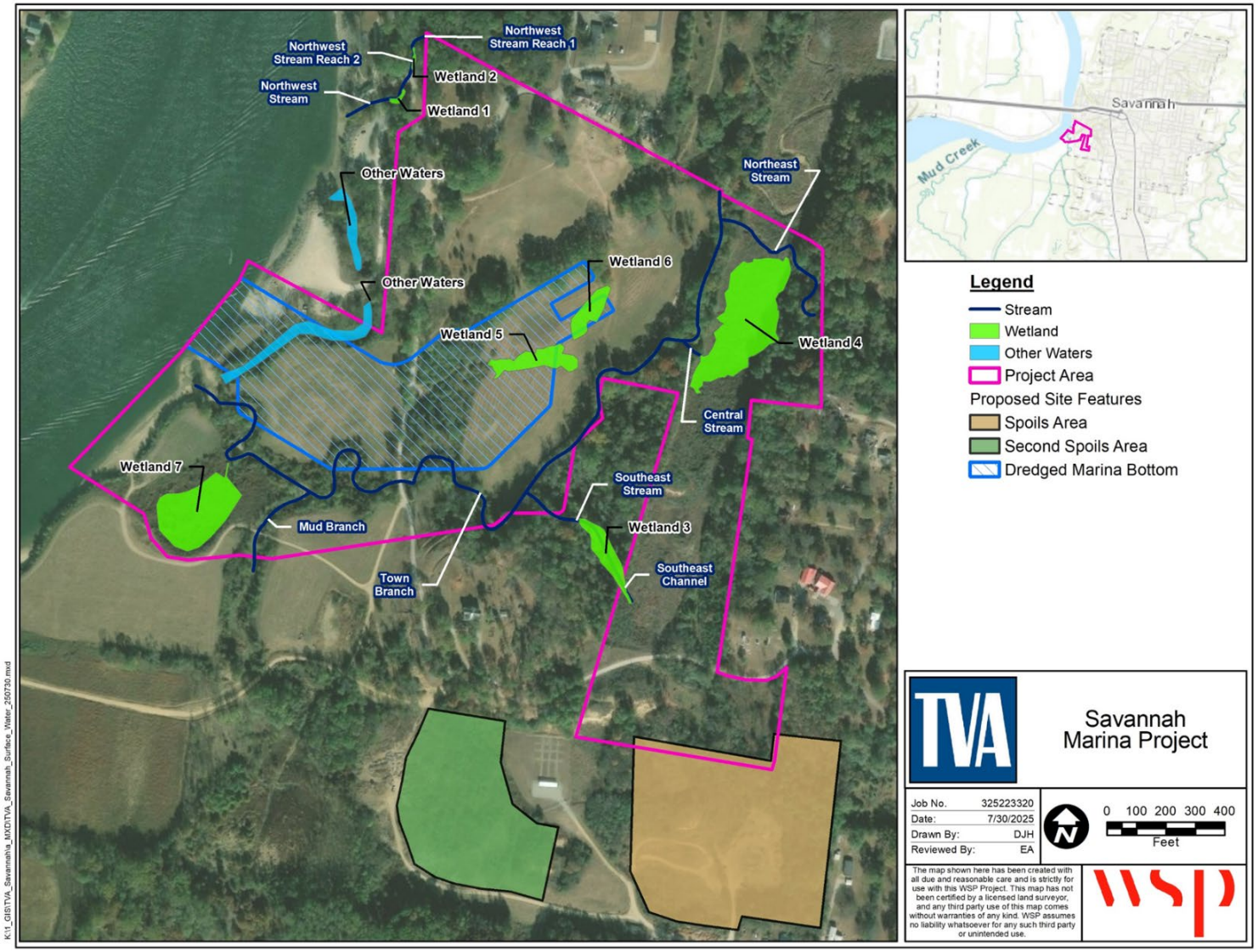


Figure 3-3 . Water Features Delineated During the Site Assessment

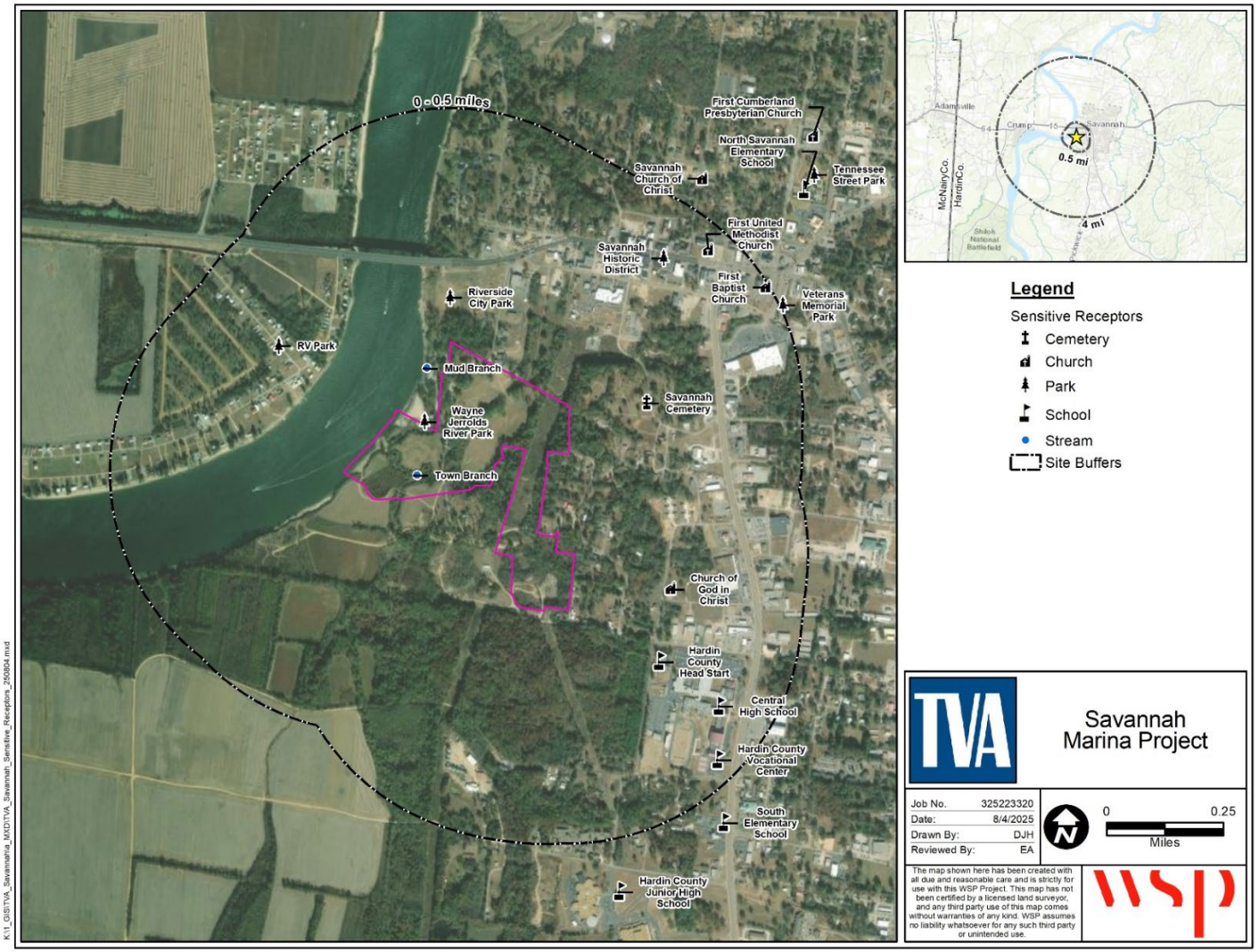


Figure 3-4. Sensitive visual receptors within foreground

Appendix C – Standard Section 26a Conditions

GENERAL AND STANDARD CONDITIONS
Section 26a

GENERAL CONDITIONS

1. You agree to make every reasonable effort to construct and operate the facility authorized herein in a manner so as to minimize any adverse impact on water quality, aquatic life, wildlife, vegetation, and natural environmental values.
2. This permit may be revoked by TVA by written notice if:
   a. the structure is not completed in accordance with approved plans;
   b. you fail to comply with any condition contained in this approval;
   c. if in TVA's judgment the structure is not maintained in a good state of repair and in good, safe, and substantial condition;
   d. the structure is abandoned;
   e. the structure or work must be altered or removed to meet the requirements of future reservoir or land management operations of the United States or TVA;
   f. TVA finds that the structure has an adverse effect upon navigation, flood control, or public lands or reservations;
   g. all invoices related to this permit are not timely paid;
   h. you no longer have sufficient property rights to maintain a structure at this location; or
   i. a land use agreement (e.g., license, easement, lease) for use of TVA land at this location related to this permit expires, is terminated or cancelled, or otherwise ceases to be effective.
3. If this permit for this structure is revoked, you agree to remove the structure, at your expense, upon written notice from TVA. In the event you do not remove the structure within 30 days of written notice to do so, TVA shall have the right to remove or cause to have removed, the structure or any part thereof. You agree to reimburse TVA for all costs incurred in connection with removal.
4. In issuing this Approval of Plans, TVA makes no representations that the structures or work authorized or property used temporarily or permanently in connection therewith will not be subject to damage due to future operations undertaken by the United States and/or TVA for the conservation or improvement of navigation, for the control of floods, or for other purposes, or due to fluctuations in elevations of the water surface of the river or reservoir, and no claim or right to compensation shall accrue from any such damage. By the acceptance of this approval, applicant covenants and agrees to make no claim against TVA or the United States by reason of any such damage, and to indemnify and save harmless TVA and the United States from any and all claims by other persons arising out of any such damage.
5. In issuing this Approval of Plans, TVA assumes no liability and undertakes no obligation or duty (in tort, contract, strict liability or otherwise) to the applicant or to any third party for any damages to property (real or personal) or personal injuries (including death) arising out of or in any way connected with applicant's construction, operation, or maintenance of the facility which is the subject of this Approval of Plans.
6. You are responsible for obtaining all necessary licenses, permits, and/or approvals required by local, state, or federal statute, regulation, or code prior to commencing any construction activities. This permit is not a substitute for any such requirements.
7. You must conduct all activities authorized by this permit in a manner that complies with all applicable local, state and federal laws, and all licenses, permits, and/or approvals issued thereunder.
8. If your activity is subject to Section 401 water quality certification, you must comply with the conditions of any enclosed certification. Those conditions are incorporated into and made a part of this permit approval.
9. This permit supersedes all verbal communications related to the work authorized. The facility will not be altered, or modified, unless TVA's written approval has been obtained prior to commencing work.
10. You understand that covered second stories are prohibited by Section 1304.204 of the Section 26a Regulations.
11. You agree to notify TVA of any transfer of ownership of the approved structure to a third party. Third party is required to make application to TVA for permitting of the structure in their name (1304.10). Any permit which is not transferred within 60 days is subject to revocation.
12. You agree to stabilize all disturbed areas within 30 days of completion of the work authorized. All land-disturbing activities shall be conducted in accordance with Best Management Practices as defined by Section 208 of the Clean Water Act to control erosion and sedimentation to prevent adverse water quality and related aquatic impacts. Such practices shall be consistent with sound engineering and construction principles; applicable federal, state, and local statutes, regulations, or ordinances; and proven techniques for controlling erosion and sedimentation, including any required conditions under Section 6 of the Standard Conditions.
13. You agree not to use or permit the use of the premises, facilities, or structures for any purposes that will result in draining or dumping into the reservoir of any refuse, sewage, or other material in violation of applicable standards or requirements relating to pollution control of any kind now in effect or hereinafter established.

14. The Native American Graves Protection and Repatriation Act and the Archaeological Resources Protection Act apply to archaeological resources located on the premises of land connected to any application made unto TVA. If applicant (for 26a permit) discovers human remains, funerary objects, sacred objects, objects of cultural patrimony, or any other archaeological resources on or under the premises, applicant shall immediately stop activity in the area of the discovery, make a reasonable effort to protect the items, and notify TVA by telephone (865-632-2931). Work may not be resumed in the area of the discovery until approved by TVA.
15. You should contact your local government official(s) to ensure that this facility complies with all applicable local floodplain regulations.
16. You agree to abide by the conditions of the vegetation management plan. Unless otherwise stated on this permit, vegetation removal is prohibited on TVA land.
17. You agree to securely anchor all floating facilities to prevent them from floating free during major floods.
18. You are responsible for accurately locating your facility, and this authorization is valid and effective only if your facility is located as shown on your application or as otherwise approved by TVA in this permit. The facility must be located on land owned or leased by you, or on TVA land at a location approved by TVA.
19. You agree to allow TVA employees access to your water use facilities to ensure compliance with any TVA issued approvals.
20. It is understood that you own adequate property rights at this location. If at any time it is determined that you do not own sufficient property rights, or that you have only partial ownership rights in the land at this location, this permit may be revoked. TVA may require the applicant to provide appropriate verification of ownership.
21. In accordance with 18 CFR Part 1304.9, Approval for construction covered by this permit expires 18 months after the date of issuance unless construction has been initiated.

Additional Conditions

.

Appendix D- TVA Bat Strategy Project Review Form

Project Review Form - TVA Bat Strategy *(04/2025)*

*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: Savannah Marina deed modification and section 26a approval EA **Date:** 12/9/2024

Contact(s): Jess Wykoff-Carpenter **CEC#:** **Project ID:** 45861

Project Location (City, County, State): Savannah, Hardin County, Tennessee

Project Description:

The City of Savannah (City) has submitted a request to TVA for a deed modification and Section 26a permit approval for the dredge of an inland harbor and development of a full-service commercial marina on 2.96 acres of Kentucky reservoir. Vegetation removal over the entire project area will be completed prior to excavation work in a manner that does not create erosion.

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

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 12)**

Project Review Form - TVA Bat Strategy *(04/2025)*

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	Winter Hibernation	Winter Torpor	Spring Staging, Fall Swarming	Pup Season	Summer Gap	Year
VA, TN, NC	Nov 16 - Mar 31	N/A	Apr 1 - May 14, Aug 16 - Nov 15	May 15 - Jul 31	Aug 1 - Aug 15	
KY	Nov 16 - Mar 31	N/A	Apr 1 - May 14, Aug 16 - Nov 15	May 15 - Jul 31	Aug 1 - Aug 15	
AL, GA MS (Hibernation Range)*	Nov 16 - Mar 14	N/A	Mar 15 - Apr 30, Sept 1 - Nov 15	May 15 - Jul 31	Aug 1 - Aug 30	
MS (Year-round Range)*	N/A	Dec 15 - Feb 15	N/A	May 1 - Jul 15	Feb 16 - Apr 30, Jul 16 - Dec 14	

*MS (Year-round Range) = Attala, Wintson, Noxubee, Leake, Neshoba, Kemper, Rankin, Scott, and Newton Counties, Mississippi
*MS (Hibernation Range) = All MS counties in the TVA Region excluding those listed above in the Year-round Range

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: 29 ◉**ac** ○**trees** ○**N/A**

STATE	Winter Hibernation	Winter Torpor	Spring Staging, Fall Swarming	Pup Season	Summer Gap	Year
VA, TN, NC	■ Nov 16 - Mar 31	N/A	■ Apr 1 - May 14, Aug 16 - Nov 15	May 15 - Jul 31	Aug 1 - Aug 15	2026
KY	Nov 16 - Mar 31	N/A	Apr 1 - May 14, Aug 16 - Nov 15	May 15 - Jul 31	Aug 1 - Aug 15	
AL, GA MS (Hibernation Range)*	Nov 16 - Mar 14	N/A	Mar 15 - Apr 30, Sept 1 - Nov 15	May 15 - Jul 31	Aug 1 - Aug 30	
MS (Year-round Range)*	N/A	Dec 15 - Feb 15	N/A	May 1 - Jul 15	Feb 16 - Apr 30, Jul 16 - Dec 14	

*MS (Year-round Range) = Attala, Wintson, Noxubee, Leake, Neshoba, Kemper, Rankin, Scott, and Newton Counties, Mississippi
*MS (Hibernation Range) = All MS counties in the TVA Region excluding those listed above in the Year-round Range

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 Reviewer? ◉ **YES** ○ **NO** (Go to Step 12)

Info below completed by: ☐ **Heritage Reviewer** (name) ☐ Date ☐

■ **Terrestrial Zoologist** (name) Maria Aguirre Date 8/6/25

Species	None	Within a Distance Of:	Cave/Winter Roost	Capture	Summer Roost / Roost Tree	Within the County
Gray Bat		3 mi		■	N/A	■
Indiana Bat	■	10 mi				
Northern Long-Eared Bat		5 mi		■		■
Tricolored Bat		3 mi	■	■		■
Virginia Big-Eared Bat	■	6 mi				

Amount of SUITABLE habitat to be removed/burned (may differ from STEP 4e): 29 **(**◉**ac** ○**trees)*** ○**N/A**

STEP 6) Provide any additional notes resulting from Heritage Reviewer records review in Notes box below then . . . . . Go to Step 12

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

Project Area does not fall within allocation where NLEB is reasonably certain to occur, as defined by USFWS IPaC tool; no Take for MYSE required. Approximately 29 acres of wooded habitat within the Project Area ranging from low quality to high quality habitat may provide summer roosting habitat for tricolored bat.

STEPS 7-11 To be Completed by Terrestrial Zoologist (if warranted):

STEP 7) Project will involve removal of suitable trees within documented habitat? ○ **YES** ◉ **NO**

Hibernation Zone	Within Swarming Habitat	Near Post-WNS Captures	Near Post-WNS Summer Roosts
Indiana Bat	< 10 mi	< 5 mi	< 2.5 mi
Northern Long-Eared Bat	< 5 mi	< 1.5 mi	< 0.25 mi
Tricolored Bat	< 3 mi	< 1.5 mi	< 0.25 mi

Year-Round Zone	Near Post-WNS Captures	Near Post-WNS Summer Roost Trees
Northern Long-Eared Bat	< 1.5 mi	< 0.25 mi
Tricolored Bat	< 1.5mi	< 0.25 mi

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 29 ◉ **acres or** ○ **trees** proposed to be used during the ○ **WINTER** ○ **VOLANT SEASON** ○ **NON-VOLANT SEASON** ◉ **N/A**

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

Species	Total Suitable Habitat to be Removed	Winter Season Removal	Winter Season Take Remaining*	Volant Season Removal	Volant Season Take Remaining*	Pup Season Removal	Pup Season Take Remaining*
Indiana Bat							
NLEB							
Tricolored Bat							

Take Estimates are for TVA Action 4 - Manage Permitting under Section 26a of the TVA Act

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 12) 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 13)

◉ **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).

Manual Override

Maria Aguirre

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.

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, 25, 26, 37, 47, 52, 62, 63, 64, 65, 70, 71, 73, 78, 80, 82, 83, 86, 91	**NV2** - Drilling, blasting, or any other activity that involves continuous noise (i.e., longer than 24 hours) disturbances greater than 75 decibels measured on the A scale (e.g., loud machinery) **within a 0.5 mile radius of documented winter and/or summer roosts** (caves, trees, unconventional roosts) will be conducted when bats are absent from roost sites.
☐	16, 26, 62	**NV3** - Drilling or blasting **within a 0.5 mile radius of documented cave** (or unconventional) roosts will be conducted in a manner that will not compromise the structural integrity or alter the karst hydrology of the roost site.
☐	16, 26, 62	**NV4** - Drilling or blasting **within 0.5 miles of a documented roost site** (cave, tree, unconventional roost) that needs to occur when bats are present will first involve development of project-specific avoidance or minimization measures in coordination with the USFWS.
☐	15, 26, 92	**HP1** - Site-specific cases in which potential impact of human presence is heightened (e.g., conducting environmental or cultural surveys within a roost) will be closely coordinated with staff bat biologists to avoid/ minimize impacts below any potential adverse effect. Any take from these activities would be covered by TVA's Section 10 permit.
☐	15, 26, 92	**HP2** - Entry into roosts known to be occupied by federally listed bats will be communicated to the USFWS when impacts to bats may occur if not otherwise communicated (i.e., via annual monitoring reports per TVA's Section 10 permit). Any take from these activities would be covered by TVA's section 10 permit.
☐	23	**SHF1** - Fire breaks will be used to define and limit burn scope.
☐	17, 23, 34	**SHF2** - Site-specific conditions (e.g., acres burned, transport wind speed, mixing heights) will be considered to ensure smoke is limited and adequately dispersed away from caves so that smoke does not enter cave or cave-like structures.
☐	23	**SHF3** - Acreage will be divided into smaller units to keep amount of smoke at any one time or location to a minimum and reduce risk for smoke to enter caves.
☐	17, 23, 34	**SHF4** - If burns need to be conducted when there is some potential for bats to present on the landscape and more likely to enter torpor due to colder temperatures, burns will only be conducted if the air temperature is 55° or greater, and preferably 60° or greater.
☐	23	**SHF5** - Fire breaks will be plowed immediately prior to burning, will be plowed as shallow as possible, and will be kept to minimum to minimize sediment.
☐	23	**SHF6** - Tractor-constructed fire lines will be established **greater than 200 feet from cave entrances**. Existing logging roads and skid trails will be used where feasible to minimize ground disturbance and generation of loose sediment.
☐	17, 22, 23, 32, 33, 34, 35, 36	**SHF7** - Burning will only occur if site specific conditions (e.g. acres burned, transport wind speed, mixing heights) can be modified to ensure that smoke is adequately dispersed away from caves or cave-like structures. This applies to prescribed burns and burn piles of woody vegetation.
☐	17, 22, 23, 32, 33, 34, 35, 36	**SHF8** - Brush piles will be burned a **minimum of 0.25 mile from documented, known, or obvious caves or cave entrances** and otherwise in the center of newly established ROW when proximity to caves on private land is unknown.

☐	17, 23, 34	**SHF9** - A **0.25 mile buffer of undisturbed forest** will be maintained around documented or known gray bat maternity and hibernation colony sites, documented or known Virginia big-eared bat maternity, bachelor, or winter colony sites, Indiana bat hibernation sites, northern long-eared bat hibernation sites, and tricolored bat hibernation sites. Prohibited activities within this buffer include cutting of overstory vegetation, construction of roads, trails or wildlife openings, and prescribed burning. Exceptions may be made for maintenance of existing roads and existing ROW, or where it is determined that the activity is compatible with species conservation and recovery (e.g., removal of invasive species).
☐	33, 34	**TR1*** - Removal of potentially suitable summer roosting habitat during time of potential occupancy has been quantified and minimized programmatically. TVA will track and document alignment of activities that include tree removal (i.e., hazard trees, mechanical vegetation removal) with the programmatic quantitative cumulative estimate of seasonal removal of potential summer roost trees for Indiana bat and northern long-eared bat. Project will therefore communicate completion of tree removal to appropriate TVA staff.
☐	33, 34	**TR2** - Removal of suitable summer roosting habitat **within 0.5 mile of Priority 1/Priority 2 Indiana bat hibernacula, 0.25 mile of Priority 3/Priority 4 Indiana bat hibernacula, 0.25 miles of any northern long-eared bat hibernacula, or 0.25 miles of any tricolored bat hibernacula** will be prohibited, regardless of season, with very few exceptions (e.g., vegetation maintenance of TL ROW immediately adjacent to a known cave).
☐	33, 34	**TR3*** - Removal of suitable summer roosting habitat within documented habitat (i.e., within 10 miles, 5 miles, and 3 miles of documented Indiana bat, northern long-eared bat, and tricolored bat hibernacula, respectively; within 5 miles, 1.5 miles, and 1.5 miles of documented post-white-nose syndrome Indiana bat, northern long-eared bat, and tricolored bat capture sites, respectively; and within 2.5 miles, 0.25, and 0.25 miles of documented Indiana bat northern long-eared bat, and tricolored bat post-white-nose syndrome summer roost trees, respectively) will be tracked, documented, and included in annual reporting.
■	33, 34	**TR4*** - Removal of suitable summer roosting habitat within potential habitat for Indiana bat, northern long-eared bat, and tricolored bat will be tracked, documented, and included in annual reporting. Project will therefore communicate completion of tree removal to appropriate TVA staff.
☐	33, 34	**TR5*** - In areas where northern long-eared bat and tricolored bat remain active year-round, continuing to roost in trees, tree removal within documented habitat (1.5 miles of northern long-eared bat and tricolored bat post-white nose syndrome captures sites, and 0.25 miles of northern long-eared bat and tricolored bat post-white-nose syndrome roosts) will be tracked, documented, and included in annual reporting.
☐	33, 34	**TR6** - Removal of any trees within 0.25 miles of a documented Indiana bat maternity roost tree, or post-white nose syndrome northern long-eared bat or tricolored bat maternity summer roost tree or the roost tree itself during pup season, will first require a site-specific review and assessment. If pups are present in trees to be removed (determined either by mist netting and assessment of pregnant, lactating, or post lactating adult females, or by visual assessment of trees following evening emergence counts for Indiana bats and northern long-eared bats), TVA will coordinate with the USFWS to determine how to avoid direct and minimize indirect impacts to pups to the extent possible. This may include establishment of artificial roosts before loss of roost tree(s).
☐	33, 34	**TR7** - In areas where northern long-eared bat and tricolored bat remain active year-round, continuing to roost in trees, tree removal within 0.25 miles of documented post-white-nose syndrome northern long-eared bat or tricolored bat roosts during winter torpor TVA will coordinate with the USFWS to determine how to avoid direct and minimize indirect impacts to pups to the extent possible.
☐	33, 34	**TR8** (**Existing Transmission ROW only**) - **Tree removal within 100 feet of existing transmission ROWs will be limited to hazard trees**. On or adjacent to TLs, a hazard tree is a tree that is tall enough to fall within an unsafe distance of TLs under maximum sag and blowout conditions and/or are also dead, diseased, dying, and/or leaning. Hazard tree removal includes removal of trees that 1) currently are tall enough to threaten the integrity of operation and maintenance of a TL or 2) have the ability in the future to threaten the integrity of operation and maintenance of a TL.
☐	33, 34	**TR9** (**TVA Reservoir Land only**) - Requests for removal of hazard trees on or adjacent to TVA reservoir land will be inspected by staff knowledgeable in identifying hazard trees per International Society of Arboriculture and TVA's checklist for hazard trees. Approval will be limited to trees with a defined target.
☐	33, 34	**TR10** - If removal of suitable summer roosting habitat occurs when bats are present on the landscape, a funding contribution (based on amount of habitat removed) towards future conservation and recovery efforts for federally listed bats would be carried out. Project can consider seasonal bat presence/absence surveys (mist netting or emergence counts) that allow for positive detections without resulting in increased constraints in cost and project schedule. This will enable TVA to contribute to increased knowledge of bat presence on the landscape while carrying out TVA's broad mission and responsibilities.

☐	69, 77, 89, 91	**AR1** - Projects that involve structural modification or demolition of buildings, bridges, and potentially suitable box culverts, will require assessment to determine if structure has characteristics that make it a potentially suitable unconventional bat roost. If so a survey to determine if bats may be present will be conducted following the USFWS Survey Guidelines. Structural assessment will include: o Visual check that includes an exhaustive internal/external inspection of building to look for evidence of bats (e.g., bat droppings, roost entrance/exit holes); this can be done at any time of year, preferably when bats are active. o Where accessible and health and safety considerations allow, a survey of roof space for evidence of bats (e.g., droppings, scratch marks, staining, sightings), noting relevant characteristics of internal features that provide potential access points and roosting opportunities. Suitable characteristic may include: gaps between tiles and roof lining, access points via eaves, gaps between timbers or around mortise joints, gaps around top and gable end walls, gaps within roof walling or around tops of chimney breasts, and clean ridge beams. o Features with high-medium likelihood of harboring bats but cannot be checked visually include soffits, cavity walls, space between roof covering and roof lining. o Applies to culverts that are at least 23 feet in length with one or more of the following characteristics that make the culvert potentially suitable: • Minimum culvert entrance height/diameter 3 feet • Openings protected from high winds • Not susceptible to enough flooding that the remaining unflooded space would be less than 3 feet. • Inner areas relatively dark with roughened walls or ceilings (this may include corrugated metal culverts with rusting walls) • Crevices, weep holes, imperfections, or swallow nests o Bridge survey protocols will be adapted from the latest USFSW Survey Guidelines. o Bat surveys usually are NOT needed in the following circumstances: • Domestic garages /sheds with no enclosed roof space (with no ceiling) • Modern flat-roofed buildings • Metal framed and roofed buildings • Buildings where roof space is regularly used (e.g., attic space converted to living space, living space open to rafters) or where all roof space is lit from skylights or windows. Large/tall roof spaces may be dark enough at apex to provide roost space
☐	69, 77, 89, 91	**AR2** - Additional bat P/A surveys (e.g., emergence counts) conducted if warranted (i.e., when AR1 indicates that bats may be present).
☐	91	**AR3** - Bridge survey protocols will be implemented, either by permittee (e.g., state DOT biologists) or qualified personnel. If a bridge is determined to be in use as an unconventional roost per the latest USFWS Guidelines, subsequent protocols will be implemented.
☐	69, 89	**AR4** - Removal of buildings with suitable roost characteristics within six miles of known or presumed occupied roosts for Virginia big-eared bat would occur between Nov 16 and Mar 31. Buildings may be removed other times of the year once a bat biologist evaluates a buildings' potential to serve as roosting habitat and determines that this species is not present and/or is not using structure(s).

☐	16, 17, 18, 21, 22, 24, 25, 26, 27, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 39, 48, 50, 51, 56, 61, 62, 63, 64, 65, 67, 69, 84, 89	**SSPC1** (**Transmission only**) - Transmission actions and activities will continue to Implement A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities. This focuses on control of sediment and pollutants, including herbicides. Following are key measures: o BMPs minimize erosion and prevent/control water pollution in accordance with state-specific construction storm water permits. BMPS are designed to keep soil in place and aid in reducing risk of other pollutants reaching surface waters, wetlands and ground water. BMPs will undertake the following principles: • Plan clearing, grading, and construction to minimize area and duration of soil exposure. • Maintain existing vegetation wherever and whenever possible. • Minimize disturbance of natural contours and drains. • As much as practicable, operate on dry soils when they are least susceptible to structural damage and erosion. • Limit vehicular and equipment traffic in disturbed areas. Keep equipment paths dispersed or designate single traffic flow paths with appropriate road BMPs to manage runoff. • Divert runoff away from disturbed areas. • Provide for dispersal of surface flow that carries sediment into undisturbed surface zones with high infiltration capacity and ground cover conditions. • Prepare drainage ways and outlets to handle concentrated/increased runoff. • Minimize length and steepness of slopes. Interrupt long slopes frequently. • Keep runoff velocities low and/or check flows. • Trap sediment on-site. • Inspect/maintain control measures regularly & after significant rain. • Re-vegetate and mulch disturbed areas as soon as practical. o Specific guidelines regarding sensitive resources and buffer zones: • Extra precaution (wider buffers) within SMZs is taken to protect stream banks and water quality for streams, springs, sinkholes, and surrounding habitat. • BMPs are implemented to protect and enhance wetlands. Select use of equipment and seasonal clearing is conducted when needed for rare plants; construction activities are restricted in areas with identified rare plants. • Standard requirements exist to avoid adverse impacts to caves, protected animals, unique/ important habitat (e.g., cave buffers, restricted herbicide use, seasonal clearing of suitable habitat).
■	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.

☐	16, 17, 18, 21, 22, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 48, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 61, 62, 63, 64, 65, 66, 67, 69, 70, 71, 73, 76, 77, 80, 81, 82, 83, 84, 86, 87, 88, 89, 90, 91	**SSPC3** (**Power Plants only**) - Power Plant actions and activities will continue to implement standard environmental practices. These include: o Best Management Practices (BMPs) in accordance with regulations: • Ensure proper disposal of waste, ex: used rags, used oil, empty containers, general trash, dependent on plant policy • Maintain every site with well-equipped spill response kits, included in some heavy equipment • Conduct Quarterly Internal Environmental Field Assessments at each sight • Every project must have an approved work package that contains an environmental checklist that is approved by sight Environmental Health & Safety consultant. • When refueling, vehicle is positioned as close to pump as possible to prevent drips, and overfilling of tank. Hose and nozzle are held in a vertical position to prevent spillage o Construction Site Protection Methods • Sediment basin for runoff - used to trap sediments and temporarily detain runoff on larger construction sites • Storm drain protection device • Check dam to help slow down silt flow • Silt fencing to reduce sediment movement o Storm Water Pollution Prevention (SWPP) Pollution Control Strategies • Minimize storm water contact with disturbed soils at construction site • Protect disturbed soil areas from erosion • Minimize sediment in storm water before discharge • Prevent storm water contact with other pollutants • Construction sites also may be required to have a storm water permit, depending on size of land disturbance (>1ac) o Every site has a Spill Prevention and Control Countermeasures (SPCC) Plan and requires training. Several hundred pieces of equipment often managed at the same time on power generation properties. Goal is to • Minimize fuel and chemical use Ensure proper disposal of waste, ex: used rags, used oil, empty containers, general trash, dependent on plant policy • Maintain every site with well-equipped spill response kits, included in some heavy equipment • Conduct Quarterly Internal Environmental Field Assessments at each sight • Every project must have an approved work package that contains an environmental checklist that is approved by sight Environmental Health & Safety consultant. • When refueling, vehicle is positioned as close to pump as possible to prevent drips, and overfilling of tank. Hose and nozzle are held in a vertical position to prevent spillage o Construction Site Protection Methods • Sediment basin for runoff - used to trap sediments and temporarily detain runoff on larger construction sites • Storm drain protection device • Check dam to help slow down silt flow • Silt fencing to reduce sediment movement o Storm Water Pollution Prevention (SWPP) Pollution Control Strategies • Minimize storm water contact with disturbed soils at construction site • Protect disturbed soil areas from erosion • Minimize sediment in storm water before discharge • Prevent storm water contact with other pollutants • Construction sites also may be required to have a storm water permit, depending on size of land disturbance (>1ac) o Every site has a Spill Prevention and Control Countermeasures (SPCC) Plan and requires training. Several hundred pieces of equipment often managed at the same time on power generation properties. Goal is to minimize fuel and chemical use
☐	17, 22, 32, 33, 34, 35, 36	**SSPC4** (**Transmission only**) - Woody vegetation burn piles associated with transmission construction will be placed in the center of newly established ROWs to minimize wash into any nearby undocumented caves that might be on adjacent private property and thus outside the scope of field survey for confirmation. Brush piles will be burned a **minimum of 0.25 miles from documented caves** and otherwise in the center of newly established ROW when proximity to caves on private land is unknown.

☑	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.
☐	21, 54	**SSPC6** - Herbicide use will be avoided **within 200 ft of portals associated with caves, cave collapse areas, mines and sinkholes** are capable of supporting cave-associated species. Herbicides are not applied to surface water or wetlands unless specifically labeled for aquatic use. Filter and buffer strips will conform at least to federal and state regulations and label requirements.
☐	17, 21, 25, 26, 27, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 54, 55	**SSPC7** - Clearing of vegetation **within a 200-ft radius of documented caves** will be limited to hand or small machinery clearing only (e.g., chainsaws, bush-hog, mowers). This will protect potential recharge areas of cave streams and other karst features that are connected hydrologically to caves.
☑	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 (04/2018) and updates (05/2023 and 10/2024), which includes gray bat (listed in 1976), Indiana bat (listed in 1967), northern long-eared bat (listed in 2015), tricolored bat (anticipated listing in the future), and Virginia big-eared bat (listed in 1979).

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

No caves known within three miles of the Project Area and no burning proposed.

STEP 13) 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:

Jessica Wykoff-Carpenter (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

☐ 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 29 ○ 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).

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

Terrestrial Zoologist Acknowledgment. Finalize and Print to Non-Editable PDF

Appendix E- Streams in the Savannah Marina Project Area

Table C-1. Streams in the Proposed Savannah Marina Project Area in Hardin County, Tennessee

Site name	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
Tennessee River	N35.220011°	W88.258314°	2,706 linear feet	non-wetland waters	Section 10 / Section 404
Town	N35.217409°	W88.255785°	4,232 linear feet	non-wetland waters	Section 404
Mud	N35.217378°	W88.258400°	441 linear feet	non-wetland waters	Section 404
Central	N35.219110°	W88.253561°	95 linear feet	non-wetland waters	Section 404
NE	N35.220081°	W88.252572°	631 linear feet	non-wetland waters	Section 404
SE	N35.217588°	W88.255167°	256 linear feet	non-wetland waters	Section 404
NW	N35.221272°	W88.257428°	110 linear feet	non-wetland waters	Section 404

Appendix F- Description of Habitat Types for Migratory Birds of Conservation Concern

American kestrel can be found in a variety of open habitats, including grasslands, meadows, farmland, and urban areas. They nest in cavities, such as old woodpecker holes, natural tree hollows, or nest boxes (Yeager and Brittingham 2016).

See Section 3.9.1.2 Threatened and Endangered Terrestrial Animal Species for habitat description for bald eagle.

Brown-headed nuthatch inhabits mature pine forests in the southeastern United States. They nest in tree cavities, often reusing old woodpecker holes or excavating their own nests in dead trees and may also use bark crevices or nest boxes in areas with limited natural sites (Slater et al. 2021). The Project Area does not fall within breeding range of brown-headed nuthatch.

Cerulean warbler nests high in the canopy of mature deciduous forests in the eastern U.S. They can be found in riparian bottomlands or dry mountain ridge-tops but typically not in between. (Buehler et al. 2020).

Chimney swift is associated with human settlement and primarily use chimneys as nesting habitat; when chimneys are unavailable, swifts may utilize other human-made structures, such as barns, silos, and vents made out of porous materials such as brick, stone, or mortar (Bogart 2025). They forage over a variety of habitats, including open terrain, forests, and residential areas (Steeves et al. 2020). Suitable nesting habitat does not exist within the Project Area for chimney swift.

Coastal (Wayne's) black-throated green warbler is a subspecies of black-throated green warbler that breeds in white cedar wetlands and cypress swamps in coastal regions of Virginia, North Carolina, and South Carolina. They build cup-shaped nests high in conifers, and forage actively in the canopy (Morse et al. 2024). The project Area does not fall within the breeding range of coastal (Wayne's) black-throated green warbler.

Golden eagle occupies open landscapes such as mountains, cliffs, and expansive grasslands. They build large stick nests on cliff ledges or solitary trees and hunt over vast open areas, preying on mammals and birds (Katzner et al. 2020). The Project Area does not fall within the breeding range of golden eagle.

Grasshopper sparrow inhabits undisturbed grasslands, prairies, and hayfields. They nest on the ground, weaving grassy domes hidden in dense vegetation, and forage for insects and seeds in shortgrass habitats (Vickery 2020).

Kentucky warbler nests on the ground or on small shrubs in mature deciduous forests with a dense understory and a matrix of shaded and well-lit areas. This species can be typically found in bottomlands and near streams (McDonald 2020).

Lesser yellowlegs frequents wetlands, mudflats, and shallow ponds during migration and winter. They breed in Canadian boreal wetlands, nesting in shallow depressions on the ground near water (Tibbitts and Moskoff 2020). The project Area does not fall within the breeding range of lesser yellowlegs.

Pectoral sandpiper breeds in Arctic tundra, nesting in grassy hummocks or wet meadows. During migration, they use flooded fields, marshes, and lake edges, often mixing with other shorebirds (Farmer et al. 2020). The project Area does not fall within the breeding range of pectoral sandpiper.

Prairie warbler are forage gleaners that breed in early successional shrubby habitats with open canopies, such as regenerating forests, and forest edges with prairie. This species places their nests on small trees or shrubs (Nolan et al. 2020).

Prothonotary warbler prefers bottomland hardwood forests and forested wetlands. They nest over or close to standing water in woodpecker holes or natural cavities in live and dead trees (Petit 2020).

Red-headed woodpecker can be found in a variety of habitats such as deciduous forests, river bottoms, groves of dead trees, parks, agricultural fields, grasslands with scattered trees and along roads. For nesting, they prefer more disturbed woodlands with large diameter snags and dead limbs. They excavate cavities into snags or may use natural cavities for nesting (Frei et al. 2020).

Rusty blackbird breeds in Alaska, Canada, and the northeastern U.S. In their wintering range they will use flooded woods, edges of ponds and streams, and adjacent fields (Avery 2020).

Semipalmated sandpiper nests in coastal Arctic tundra, creating shallow scrapes lined with vegetation. They migrate along coastlines, gathering in vast flocks on mudflats and sandy beaches to forage (Hicklin and Gratto-Trevor 2020). The Project Area does not fall within the breeding range of semipalmated sandpiper.

Short-billed dowitcher inhabits tidal mudflats, salt marshes, and estuaries outside the breeding season. They nest in northern boreal wetlands, building ground nests in wet meadows, often concealed by sedges (Jehl Jr. et al. 2020). The Project Area does not fall within the breeding range of short-billed dowitcher.

Wood thrush prefers deciduous and mixed forests with a variety of deciduous tree species, moderate shrub density, shade, and an open forest floor with decaying leaf litter and moist soil. They place their nests on shaded and concealed areas in trees or shrubs approximately 10 feet off the ground (Evans et al. 2020).

Appendix G- FPAA Exemption Letter

United States Department of Agriculture

David Tamsky
Associate Environmental Planner
Earth and Environmental
WSP
1600 René-Lévesque Blvd. W., 16th Floor
Montreal, Quebec
H3H 1P9 Canada

July 28, 2025

Dear David,

The Natural Resources Conservation Service (NRCS) in Tennessee has received your Farmland Protection Policy Act (FPPA) request (AD-1006, Farmland Conversion Impact Rating) regarding Savannah Marina Deed Modification and 26a Approval, in Hardin County, TN. The intent of the FPPA is to minimize the impact Federal programs have on the unnecessary and irreversible conversion of important farmland to nonagricultural uses.

Through the review process, it has been determined this project does not meet the guidance set forth by the act and is therefore **EXEMPT** from Farmland Protection Policy Act (FPPA) review due to the following:

☐ No federal funding – This project is not planned and/or constructed with the assistance of federal funding and therefore is not subject to FPPA.

☐ Not prime farmland – This project does not have an unnecessary or irreversible impact on land designated as prime farmland and therefore is not subject to FPPA. Official land classification information can be found at http://websoilsurvey.nrcs.usda.gov.

☒ Urban development - This project area is already in or committed to urban land use or has existing footprints including right-of-ways and therefore is not subject to FPPA.

☐ Subsurface corridor project (minimal disturbance) – Properly planned/permitted buried utility projects will result in minimal disturbance of agricultural lands and are therefore not subject to FPPA.

☐ Agricultural structures - The construction of on-farm structures that are associated with farm operations are not subject to FPPA.

☐ Zoning - This project area has been designated by a state or local government entity for commercial and/or industrial landuse and therefore is not subject to FPPA.

☐ Water storage - This project area involves land used for water storage and therefore is not subject to FPPA.

☐ Minimal acreage threshold - This project falls below the threshold of 10 acres per linear mile which require review and therefore is not subject to FPPA.

Questions regarding your inquiry and this response can be emailed to the FPPA intake box at tnhawc@usda.gov.

Sincerely,

Jennifer Fedenko
State Resource Soil Scientist

Appendix H- Consultation and Coordination

TENNESSEE VALLEY AUTHORITY

400 West Summit Hill Drive, Knoxville, Tennessee 37902

September 4, 2025

Ms. Miranda Montgomery
State Historic Preservation Officer
Tennessee Historical Commission
2941 Lebanon Road
Nashville, Tennessee 37243-0442

Dear Ms. Montgomery:

TENNESSEE VALLEY AUTHORITY (TVA), CITY OF SAVANNAH DEED MODIFICATION EA AND SECTION 26A PERMIT APPROVAL, HARDIN COUNTY, TENNESSEE (35.218975, -88.2558606), (TVA TRACKING NUMBER – CRMS 118336247015)

TVA proposes to issue a Section 26a permit to the City of Savannah, Tennessee for a deed modification for the dredge of an inland harbor and development of a full-service commercial marina on Kentucky Reservoir in Hardin County, Tennessee (Figures 1-2). The proposed marina site includes portions of two creeks (Town Branch and Mud Branch), and also includes areas of higher ground, with elevations in excess of 430-feet above mean sea level (msl). There is a broad, low-lying area adjacent to the two creeks with elevations between 360 to 380-feet msl and this is the portion of the development that would be the majority of the marina project footprint. The proposed facilities are located on private property deeded to the City, that is under a TVA flowage easement. The facilities would be constructed and operated by the City of Savannah. The majority of the excavation spoil will be disposed of on nearby city property at two heavily disturbed areas totaling 14.89 acres, designated Spoil Placement Areas #1 and #2 (Figure 3) and approximately 55,000 cubic yards from the dredge will be used as fill at locations within the marina project footprint. The proposed excavation would result in the creation of 12.95 acres of property, which TVA would then acquire new flowage rights over.

TVA finds that the proposed project constitutes an undertaking (as defined at 36 CFR § 800.16 (y)) that has the potential to cause effects to historic properties. TVA recommends the area of potential effects (APE) to be the area of proposed ground-disturbance, where physical effects could occur, including the dredge location, marina facilities, two spoil placement areas, and areas within a half mile of the proposed marina where visual effects to above-ground historic structures could occur.

TVA conducted background research for the APE to identify potential historic properties using the TVA Cultural Resource Management System (CRMS), the Tennessee Historical Commission (THC) Viewer, the Tennessee Division of Archaeology (TDOA) Site File Viewer, National Register of Historic Places (NRHP) data, TVA Land Acquisition Maps (LAMs), relevant cultural resources survey reports, the US Department of Agriculture, Soil Conservation Service Web Soil Survey (WSS) (SSURGO), US Geological Survey (USGS) LiDAR imagery, TVA's

Native American removal routes database (NARR), current satellite imagery, along with USGS historical topographic maps (Savannah, TN: 1936, 1949, 1972; Pittsburg Landing, TN: 1936, 1949, 1972; Blytheville, AR 1956, 1959) and USGS 1/3 arc second LiDAR elevation models. There are both riverine and terrestrial Native American removal routes to the west in the Tennessee River and to the north along Highway 64, but both removal route fall outside the project footprint.

Archaeology

Prior to TVA's involvement, the City of Savannah completed a due-diligence archaeological survey of most of the footprint for the planned marina by Panamerican Consultants (Saatkamp and Buchner 2021) that was never submitted to your office. Therefore, please find attached a copy of the survey report titled *Phase I Archaeological Survey for the Savannah Marina, Hardin County, Tennessee*. The survey and writing of the report is consistent with the *Secretary of Interior's Standards and Guidelines for Identification* (National Park Service [NPS] 1983). A smaller portion of the project footprint was also surveyed previously by TRC for the construction of a segment of TVA transmission line (TL) 5825 in 2004 (Wampler and Karpynec) (Figure 4). The TRC survey has undergone consultation (J. Barnett, personal communication, 8/25/2025), but TVA cannot locate either the TVA transmittal or the SHPO concurrence letters. A literature review by Panamerican found that one previously recorded archaeological site, 40HR29, also known as Savannah Mounds, intersects the project footprint. The Savannah Mounds Site, was first recorded and mapped in 1871 by J. Parish Stelle, as a large palisaded, mound group. The site was again revisited by C.B. Moore in 1915 when he reported that the mounds had been largely destroyed by the expansion of the City of Savannah. A series of subsequent professional archaeological investigations inside the original site boundaries during the 1970's and 1980's and subsequent analyses of those investigations, determined that the site's largest component, including mound construction, was of Middle Woodland Period cultural affiliation. There was also evidence of sporadic occupations as early as the Archaic Period and later into the Mississippian Period (Welch 1998). The Middle Woodland mound-building occupation of the site has been interpreted to be non-residential and used primarily for ceremonial and mortuary purposes (Welch 1998:85).

The Panamerican investigations within the current project area took place in September of 2021 and consisted of 278 shovel tests at 30 meter (m) intervals and pedestrian walkover inspection (Figure 4). The project area is described by Panamerican as including bluffs, ridges and low-lying areas with areas of woods and tall grass and evidence of severe erosion with exposed patches of subsoil. Only eight of the shovel tests were positive for cultural material with 171 being negative and 99 not excavated due to excessive slope. The positive shovel tests consisted of two distinct loci of low-density lithic scatters encountered on eroded ridge top and a single Late Woodland potsherd that is the only diagnostic artifact. Panamerican recommended none of the archaeological remains as eligible for the National Register of Historic Places (NRHP) and reiterated the earlier assessments that the site has been largely destroyed by expansion of the City of Savannah. In addition to encroachment from the city, historic aerial imagery and the FEMA flood data of the project area suggest that much of the project footprint has been subject to repeated episodes of flooding with commensurate scouring and erosion of

landforms (Figure 5). USGS LiDAR point cloud imaging of landforms and analysis by TVA within the project footprint shows no evidence of any existing archaeological landscape features (Figure 6) and this is also the conclusion reached by Panamerican's analysis of LiDAR data (pp.22, 41).

Although the TRC investigations within the project footprint were for a 5.9 mile (9.5 kilometer) 100 foot wide TVA transmission corridor for TL 5825, the surveyed segment within TVA's current project footprint is approximately 1800 feet long. In April of 2004, TRC shovel tested along the corridor at 30 meter intervals and did not locate any artifacts within the current project footprint. TRC recommended no further work within the transmission corridor. TVA concurs with the findings of both Panamerican and TRC for those areas surveyed within the current project footprint.

There are small portions of the project footprint for the marina not shovel tested by Panamerican that are outside of both the Panamerican and TRC survey areas, but these are in areas of low probability for intact archaeological deposits. This area would include the extreme southeastern portion of the project footprint where greater than 10% slope, heavy ground disturbance from quarrying/borrow/landfill activities and construction would preclude any possibility of intact sites (Figure 7). The western portion of the unsurveyed area is moderately to heavily sloped, eroded and modified by the construction of Riverfront Drive and transmission structures #82 and #505 as evidenced by aerial and ground-level imagery with areas of gravelly, exposed subsoils (Figures 8-10). LiDAR elevation models provided by USGS, depict further evidence of heavy human land modification and erosion over the entire area with soils mapped as either severely eroded or gravelly (SSURGO) with greater than 10 percent slopes (Figure 11) and what appear to be outcrops of exposed parent material in portions of project footprint. Panamerican's assessment of the southern part of the L5825 transmission corridor within the project area is that the area was previously quarried (p. 31) and this is confirmed by LiDAR evidence of a large borrow or quarry pit in the eastern part of the unsurveyed portion of marina project footprint (Figure 12) and a TVA reconnaissance survey (discussed below) for two areas designated by the city for spoil placement that partially intersect and lie just to the south of the marina footprint.

On July 17, 2025, TVA archaeologists conducted a reconnaissance survey to determine whether the marina project spoil placement in either of the areas designated as Spoil Placement Areas #1 and #2 would affect historic properties. The survey included a visual examination and pedestrian walkover shovel testing in areas with. Please find attached the survey report titled *Cultural Resource Survey for Two Spoil Placement Areas, City of Savannah Deed Modification and 26A Permit Approval, Hardin County, Tennessee.* The survey and writing of the report is consistent with the Secretary of Interior's Standards and Guidelines for Identification (National Park Service [NPS] 1983). As indicated above, the spoil placement areas partially intersect the footprint designated for marina development (Figure 3).

No archaeological materials were encountered anywhere within either of the designated spoil placement areas. The landforms within both spoil placement areas were observed as either heavily eroded with exposed bedrock/subsoils or are secondary deposit spoil formed into push piles containing large amounts of modern construction refuse. The spoil area survey shovel

tested in areas that intersect the southern part of the marina footprint and confirmed that the area where Panamerican did not test is also heavily disturbed with little potential for intact archaeological deposits. There is thus substantial evidence for previous large-scale ground disturbance that has affected both the marina footprint and spoil placement areas. USGS LiDAR elevation models for the area suggest large swaths of massive earth displacement and exposed parent material in both spoil placement areas (Figure 13). Commensurately, there is extremely low potential for intact archaeological deposits within either the marina footprint or Spoil Placement Areas #1 or #2.

Based on the evidence from TVA's background research and the aforementioned archaeological surveys, TVA thus finds that this project will have no adverse effect to 40HR29 and recommends no further work. It is however possible that intact portions of 40HR29 may extend outside of TVA's project footprint.

Architecture

A large portion of the viewshed extent for TVA's current project (Figure 14) is covered by the architectural survey for the eastern leg (Segment #10) of TL 5825 (constructed in 2005) that runs through the eastern portion of the project footprint (Wampler and Karpynec 2004). Within 0.5 mile of the transmission line segments inside the current project footprint, the only properties identified by the survey as NRHP-eligible would be the Hardin County Courthouse at 456 Main Street in Savannah and Savannah City Cemetery at 400 Cherry Street. However, the survey fails to document the NRHP-listed Savannah Historic District and its expansion which intersects the 0.5 mile extent and NRHP-listed Cherry Mansion which is fully inside the 0.5 mile extent. The THC Viewer also shows 69 inventoried resources within 0.5 miles of TVA's project footprint that are undocumented by the survey. The western portion of TL 5825 (Segment #1) was constructed in 1965 and runs through the project footprint parallel to Segment #10 and north into the city where it turns west and follows Highway 64 over the Tennessee River. Tower heights on both segments range from 75 to 110 feet in height and the towers from Segment 1 have been visible from the current project area since at least 1965. TVA ran a viewshed analysis to demonstrate that visual effects from the existing TL5825 towers in TVA's project footprint almost completely cover the project area viewshed (Figure 15). There is a small area along the right descending bank of the Tennessee River where the TL 5825 towers in the project footprint cannot be seen which includes NRHP-listed Cherry Mansion. However, this location is just 350 feet from and in full view of the intervening Harrison-McGarity Carpenter Bridge (constructed 1980) (Figure 16). The viewshed is further compromised by the TL 5825 (Segment #1) towers crossing over the river, and modern water-use infrastructure along both sides of the Tennessee River (Figures 17-19).

Therefore, TVA does not anticipate visual effects to historic structures within TVA's APE given that the project viewshed is already compromised by existing modern transmission towers, bridges, modern homes/water-use facilities, asphalt roads, utility lines/poles and other modern public works projects. The setting and feeling of the project location as it relates to historic properties is thus lacking in integrity and has been compromised. TVA thus finds that this project will have no adverse effects to either historic architectural or archaeological 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 NRHP.

Pursuant to 36 CFR Part 800.5(c) we are notifying you of TVA's finding of no adverse effects; providing the documentation specified in § 800.11(e); and requesting project review. Also, we are seeking your agreement with TVA's eligibility determinations and finding that the undertaking as currently planned would have no adverse effects to historic properties.

Please contact Kerry Nichols by email at kdnichols0@tva.gov with your comments.

Sincerely,

Michaelyn Harle
Manager, Cultural Project Reviews, Environment and Economic Development and Deputy Federal Preservation Officer
Cultural Resources

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

References Cited

Saatkamp, Andrew and C. Andrew Buchner
2021 Phase I Archaeological Survey for the Savannah Marina, Hardin County, Tennessee. Prepared for the City of Savannah.

Wampler, Marc E., Ted Karpynec
2004 *Phase I Cultural Resources Survey of the Existing and Proposed Corridor of the Pickwick-Savannah Transmission Line and Within a Proposed Substation Footprint in Savannah, Hardin County, Tennessee*. Submitted to the Tennessee Valley Authority, Knoxville, Tennessee.

Welch, Paul D.
1998 Middle Woodland and Mississippian Occupations of the Savannah Site in Tennessee. *Southeastern Archaeology* 17(1):79-92.

TENNESSEE VALLEY AUTHORITY

400 West Summit Hill Drive, Knoxville, Tennessee 37902

October 6, 2025

Ms. Miranda Montgomery
State Historic Preservation Officer
Tennessee Historical Commission
2941 Lebanon Road
Nashville, Tennessee 37243-0442

Dear Ms. Montgomery:

TENNESSEE VALLEY AUTHORITY (TVA), CITY OF SAVANNAH DEED MODIFICATION EA AND SECTION 26A PERMIT APPROVAL, HARDIN COUNTY, TENNESSEE (35.218975, -88.2558606), (TVA TRACKING NUMBER – CRMS 118336247015) (PROJECT # - SHPO0007728)

In a letter dated September 4, 2025, TVA notified your office to issue a Section 26a permit to the City of Savannah, Tennessee for a deed modification for the dredge of an inland harbor and development of a full-service commercial marina on Kentucky Reservoir in Hardin County, Tennessee. As previously described in the consultation letter, TVA found that this project would have no adverse effects to either historic architectural or archaeological properties. In a response dated September 10, 2025, your office requested TVA to assess the property off Riverfront Drive (35.216626, -88.255990) that would be within the APE for National Register of Historic Places (NRHP) eligibility. Your office found the property to date to circa 1900 utilizing the Tennessee Tax Assessor data and Google Streetview illustrated that property featured some architectural detail.

Further research by TVA has determined the property off Riverfront Drive was previously surveyed in 1983 (HR-607) in the property's original location, 302 Pickwick Road, Savannah, Hardin County, Tennessee. HR-607 was relocated, approximately 1.25 miles southwest to the Riverfront Drive location in April of 1988 and was thoroughly documented through video recording (YouTube video sources: https://youtu.be/w3vrSorELP0?feature=shared; https://youtu.be/iDANSrkEpj8?feature=shared; https://youtu.be/zeeq5ETOiN4?feature=shared). Furthermore, historical topographic maps and aerial photographs show the parcel of land off Riverfront Drive was a vacant prior to 1985 (Figures 1-7).

The integrity of location and setting is an essential consideration in assessing a resource's eligibility for the NRHP. As proven through the various forms of documentation, HR-607 has been moved from its original location and environment, terminating its association with historic events or persons upon which its significance would be significant. Given that HR-607 was moved 1.25 miles from a downtown setting, surrounded by commercial and residential buildings on a level parcel, to a secluded parcel of land with a mature hillside vegetative landscape, is not associated with the original owner or a person to its historical significance, and has been located

at its current setting for less than 50 years, thus not achieving significance in its own right, HR-607 does not meet the requirements under Citeria Consideration B: Moved Properties. Further, under the qualifying requirements outlined in eligibility criteria in the National Park Service bulletin *How to Apply the National Register Criteria for Evaluation* a moved property like HR-607 to be eligible under Citeria Consideration B: Moved Properties for architecture still have to reside within its historical setting and the new environment must adequately replicate the original setting in its own right. While HR-607 has the same orientation as it did in its original location, the property's siting for the same orientation has changed the original façade (west facing) to the south facing elevation. Furthermore, HR-607 does not appear to have exceptional architectural significance for a moved property.

TVA finds the integrity of HR-607 has been compromised as its historical significance is rooted in both its original location and setting, as well as the building itself. The relocation of HR-607 into an incompatible setting from its original location and setting creates a false sense of history and it has lost its tangible association of any historic events or persons for which it would be significant. While HR-607 does retain some historic fabric, it has experienced alterations and added features (roof cresting, steps, porch decking and the removal of a chimney) and is not an exceptional representation of architecture which it would need for a property that has been moved. Therefore, TVA finds that the property, HR-607, now off of Riverfront Drive does not meet the eligibility criteria for listing in the NRHP.

TVA finds that the proposed undertaking would have no adverse effect to the property, HR-607. TVA also finds the property is not eligible for inclusion in the NRHP.

Pursuant to 36 CFR Part 800.5(c) we are notifying you of TVA's finding of no adverse effect; providing the documentation specified in § 800.11(e); 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 proposed would have no adverse effects on historic properties.

Please contact Terri L. Foley by email, tlfoley0@tva.gov with your comments.

Sincerely,

Michaelyn Harle
Manager, Cultural Project Reviews, Environment and Economic Development and
Deputy Federal Preservation Officer
Cultural Resources

TLF: ERB

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

2025-10-06 14:25:25 CDT

Dr. Michaelyn Harle
Tennessee Valley Authority

RE: Tennessee Valley Authority (TVA), Section 26A Permit, Deed Modification for Development of a Full-Service Commercial Marina on Kentucky Reservoir; CRMS 118336247015, Project#: SHPO0007728, Savannah, Hardin County, TN

Dear Dr. Michaelyn Harle:

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

Considering the information provided, we find that no historic properties eligible for listing in the National Register of Historic Places will be affected by this undertaking. If project plans are changed or archaeological remains are discovered during project construction, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act. Please provide your Project # when submitting any additional information regarding this undertaking. Questions or comments may be directed to Casey Lee, who drafted this response, at Casey.Lee@tn.gov.

Sincerely,

Miranda Montgomery
State Historic Preservation Officer

Ref:MSG17997727_5Up2L5rdGu4BMTQCFMl

TENNESSEE VALLEY AUTHORITY

400 West Summit Hill Drive, Knoxville, Tennessee 37902

November 12, 2025

Ms. Miranda Montgomery
Executive Director
and State Historic Preservation Officer
Tennessee Historical Commission
2941 Lebanon Pike
Nashville, Tennessee 37243-0442

Dear Ms. Montgomery:

TENNESSEE VALLEY AUTHORITY (TVA), CITY OF SAVANNAH DEED MODIFICATION EA AND SECTION 26A PERMIT APPROVAL, TRIBAL REQUEST FOR SIGNAGE, HARDIN COUNTY, TENNESSEE (35.218975, -88.2558606), (TVA TRACKING NUMBER – CRMS 118336247015) Project#: SHPO0007728

TVA has received the letter from your office dated October 6, 2025, indicating concurrence for a no effect finding for this project. However, we have received a letter dated October 7, 2025 from the Chickasaw Nation accepting TVA's invitation to consult on this project under Section 106 of the National Historic Preservation Act and stating the following as regards the proximity of the Savannah Mounds Site (40HR29) to the project footprint:

1. The Chickasaw Nation makes the agency aware that Site 40HR29 is significant to us. We understand that the archaeological surveys in the area found no evidence of 40HR29 in the project area. However, due to the significance of Site 40HR29, there should be a permit condition for this project in the form of placing signage about 40HR29.

TVA's response: TVA has held meetings with the City of Savannah and the City has agreed that TVA's permit issuance would be contingent upon the following commitments:

City of Savannah will fund the development, fabrication, and installation of a permanent interpretive sign within the project area to acknowledge the presence and importance of The Savannah Mounds Site (40HR29) which covers much of the project area.

I. The interpretive signage shall be located either within or proximal to the known original site boundary of 40HR29 in a publicly accessible location, taking into account physical access, security and safety of location. The location shall be selected by City of Savannah in consultation with TVA, the SHPO, and the consulting Tribes.

II. City of Savannah will ensure that draft and final illustrations of the planned interpretive sign, including proposed text, will be submitted to TVA, SHPO, and

the consulting tribes, for review and comment prior to its fabrication. The sign will be designed such that it does not reveal the locations of archaeological features or the exact site boundaries relative to sign placement location.

III. The TVA, in consultation with the SHPO and consulting Tribes, will approve the final design for the planned interpretive sign prior to its fabrication.

IV. City of Savannah shall install the interpretive sign within 1 year of the beginning of marina operations.

V. City of Savannah shall provide TVA and SHPO with photographs (non-archival digital images) of the installed interpretive sign within 60 days of its installation.

TVA is notifying your office of the permit commitments for City of Savannah and inviting further review and comments regarding the signage to ensure that permit conditions are fulfilled.

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 NRHP.

Please contact Kerry Nichols by email at kdnichols0@tva.gov with your comments.

Sincerely,

Michaelyn Harle
Manager, Cultural Project Reviews, Environment and Economic Development and Deputy Federal Preservation Officer
Cultural Resources

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

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

11-12-2025 10:41:06 CST

Dr. Michaelyn Harle
Tennessee Valley Authority

RE: Tennessee Valley Authority (TVA), Section 26A Permit, Deed Modification for Development of a Full-Service Commercial Marina on Kentucky Reservoir; CRMS 118336247015, Project#: SHPO0007728, Savannah, Hardin County, TN

Dear Dr. Michaelyn Harle:

In response to your request, we have reviewed the proposed permit requirement for the installation of an interpretive sign for site 40HR29 (The Savannah Mounds Site). Our review of and comment on your proposed undertaking are among the requirements of Section 106 of the National Historic Preservation Act. This Act requires federal agencies or applicants for federal assistance to consult with the appropriate State Historic Preservation Office before they carry out their proposed undertakings. The Advisory Council on Historic Preservation has codified procedures for carrying out Section 106 review in 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739).

Considering the information provided, we find that no historic properties eligible for listing in the National Register of Historic Places will be affected the installation of the interpretive signage. Please provide this office an opportunity to comment on the draft language and images to be included on the signage.

If project plans are changed or archaeological remains are discovered during project construction, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act. Please provide your Project # when submitting any additional information regarding this undertaking. Questions or comments may be directed to Jennifer Barnett, who drafted this response, at Jennifer.Barnett@tn.gov.

Sincerely,

Miranda Montgomery
State Historic Preservation Officer

Ref:MSG18027132_FRNsHoPac8EWDeZ9XfX

Appendix I- Public Comments and Response

#	Commenter Names	Comment or Summary of Comments	TVA Response to Comment
Support for Alternative B (Approval of Requested Deed Modification and Section 26a Approval)			
1	Brandi Dixon, Michael Creasy, Sharon Reeves, Beth Bridges, Shelby Thompson, Patrick Phillips, Caleb Williams, Amanda Pharris, Damien Wilkerson, James Glidwell, Michael Wernimont, Jessica Gray, David and Ronda Woods, David Risner	Commenters stated without elaboration their support for Alternative B (the action alternative).	Thank you for your comment. It has been noted by TVA.
2	Tom VanDeBurg, Timmy Howell, Billy Woods, Steven Lynn Tucker, Chris Pyron, Jeremy Kennedy, Anthony Barbaro, Liberty Calderon, Angela Hill, Jeremy, Tracy, Peyton Dixon, Allen Terry, Anna Newman, Harold Rush, Jenni, Dax Ethridge, Marki Zoe Hardy, Jeff Lipford, Peggy Leathers, Stephanie Woolridge Jones, Stephanie Shelly, Hunter Wyatt, Russel Long, Andrea Pyron, William Fullwood, Polly Godwin, Dale Ledford, Harold Rush, Cynthia Springer, Nikki Culver, Mary Zuniga, Clent Martin, David Pickard, Kevin Lester, Nena and Jr Moss, Jennie Baldwin, Randall Godwin, Jim Kerr	Commenters stated their support for Alternative B (the Action Alternative) because they believe it would benefit the community, including increased accessibility to recreation, fuel, food, supplies, and boat storage that do not currently exist in the area. Commenters also referenced benefits to the local economy due to potential new job opportunities, increased property values, tourism, and docking for the river boats.	Thank you for your comment. It has been noted by TVA.
3	Jim T Adams, Jr., Genie Earnest	Commenters expressed support for Alternative B (the Action Alternative) due to increased accessibility of the lake for elderly citizens and citizens with disabilities.	Thank you for your comment. It has been noted by TVA.
Overcrowding and Boating Safety Concerns			
4	Chris	This will just create more boat congestion in an already overcrowded area. What we have now is overwhelming. Can't enjoy the river during the summer with boats running everywhere	Thank you for your comment. It has been noted by TVA. TWRA regulates and manages boating in Tennessee. Please refer to Section 3.1 Parks and Recreation for

#	Commenter Names	Comment or Summary of Comments	TVA Response to Comment
		especially the wake boats. There's so many inexperienced boat operators in this area the amount of accidents will increase. Throw in the fact there's two boat ramps there now don't need another. Something else to maintain. However a place to launch/load with no current might save a few boat operators some trouble.	discussion of potential impacts to recreation.
5	Julia Yager	Our family doesn't want to see a marina come into Savannah. It will bring a lot of traffic and crowds that will disrupt the white (sic) and calm we like about the river.	Thank you for your comment. It has been noted by TVA.
Traffic and Roadway Safety Concerns			
6	Judy Hart	This project would certainly bring a great deal of business to Savannah, my only concern would be the entrance coming off of highway 64 as you come over the bridge. That intersection is crowded and difficult enough as it is. I'm sure it could be modified to better serve larger watercraft along with a better parking area.	Thank you for your comment. There will be multiple ways to access the marina. Therefore, impacts are anticipated to be minor. Please refer to Section 3.15 Transportation. The Tennessee Department of Transportation has roadway improvement oversight for state roadways.
7	Frances Turner	Please fix the local roads first.	Thank you for your comment. This subject is outside the scope of this review. The Tennessee Department of Transportation has roadway improvement oversight for state roadways.
Potential Flooding Concerns			
8	Sheri Kennedy	Will the marina change the depth at which the river stage remains at the area of the marina? We are very excited for the Marina to be built and the	Thank you for your comment. The depth of the river would not change. The proposed dredging would increase flood storage

#	Commenter Names	Comment or Summary of Comments	TVA Response to Comment
		improvements it could possibly bring to our town. However I live full time on the river, across from where the marina is to be built, so I am very interested in if we would have to have more chances of flooding in our area to maintain bigger boats or barges in our area.??? If the marina will not effect the river stage level then I remain excited on the progress it could bring. If it causes more frequent flooding of our area then maybe the property owners nearby should be compensated. I only want the best for our community of Crump, TN.	space in this area. At typical operating levels, the river is 1,000 feet wide at the marina site and the 100-year floodplain is over 13,000 feet wide. There would be no greater chance of flooding due to bigger boats or barges. The changes to the river because of the marina are negligible compared to the existing flood risk. Please refer to Section 3.12 Floodplains for further discussion of potential impacts to floodplains and flood risk.
Other Comments			
9	Kent Collier	TVA has erected barriers, stalled, and zoomed this project for almost a decade. Get on board now!!! The city also needs to make your 4 acre parcel part of the project. Donate the parcel to the City of Savannah ! TVA hasn't done anything with that parcel for decades. You ought to donate it as an apology for delaying and obstructing	Thank you for your comment. While the TVA-owned property at this location did not work for the proposed marina design, the property is under a recreation easement with the City and it would continue to be used for public recreation associated with the marina development.
Agency Comments			
10	TDEC	Excavation of riverbed material must be authorized through an Aquatic Resource Alteration Permit. Please plan to apply for ARAP Coverage. Additionally, the project, including staging areas, is expected to disturb greater than one acre of land. Therefore, a Construction General	The applicant has been notified of state permitting requirements. These requirements would be conditions of Section 26a approval under alternative B.

#	Commenter Names	Comment or Summary of Comments	TVA Response to Comment
		Permit (CGP) will be required. Please plan to apply for CGP coverage.	

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#2]
Date: Wednesday, October 29, 2025 8:05:56 AM

Name	Timmy
City	Howell
State	Tennessee
Organization	Property owner
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	To whom it may concern,I Timmy Howell and Peggy Howell 2930 Catfish Lane Crump, TN 38327. We are very excited to hear of the development of a marina across from our property in Crump Tennessee. Our opinion the improvements would greatly improve the surroundings and growth of Savannah and Crump Tennessee.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#3]
Date: Wednesday, October 29, 2025 9:09:29 AM

Name	Billy Woods
City	Adamsville
State	Tn
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	I am excited by the idea of a marina coming to Savannah it will provide economic growth as well as providing services to boaters from all around. I am in Favor of this proposal.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#4]
Date: Wednesday, October 29, 2025 9:20:31 AM

Name	Steven Lynn Tucker
City	Crump ,US
State	TN
Email	[redacted]
Phone Number	[redacted]

Please provide your comments by uploading a file or by entering them below. *

I graduated from the Hardin County High School in 1986. I joined the U.S. Coast Guard and served 26 years, 17 years in Florida! I witnessed firsthand the affects a marina can have on a community. The economic benefits are endless! These marinas provided critical supplies to local mariners and mariners in transit much like the river system does. Local business benefit from the increase in patrons coming into the community. This marina is way overdue for Savannah!

Steven Tucker
CWO4 USCG retired

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#5]
Date: Wednesday, October 29, 2025 9:32:45 AM

Name	Brandi
City	Crump
State	Tn
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	I think a marina in thia area would have a great, postive impact for this area. The citizen in my community (catfish lane) have been eager for this project for years.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#6]
Date: Wednesday, October 29, 2025 9:32:54 AM

Name	Chris Pyron
City	Crump
State	Tn
Organization	Home owner
Email	[redacted]
Phone Number	[redacted]

Please provide your comments by uploading a file or by entering them below. *

I live on the Tn River just above the subject property, I've lived here for 10 years, and lived in the area for 56 years. The Tn River has always been a joy for me and my Family. It's rare to have a River like the Tn River so close to enjoy. I have always said we need a Marine in Savannah, I know it would bring positive change to the area and bust the economy. With the new Hotel near completion. Our nearest Marine is in Clifton, which we travel there a lot by boat. Savannah and the surrounding area would greatly benefit from a marine in Savannah. Thank you for giving me the opportunity to give my opinion. Chris Pyron 1300 Catfish Lane, Crump Tn.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#7]
Date: Wednesday, October 29, 2025 12:02:08 PM

Name	Sheri Kennedy
City	Crump
State	Tennessee
Email	[redacted]

Please provide your comments by uploading a file or by entering them below. *

Will the marina change the depth at which the river stage remains at the area of the marina? We are very excited for the Marina to be built and the improvements it could possibly bring to our town. However I live full time on the river, across from where the marina is to be built, so I am very interested in if we would have to have more chances of flooding in our area to maintain bigger boats or barges in our area.??? If the marina will not effect the river stage level then I remain excited on the progress it could bring. If it causes more frequent flooding of our area then maybe the property owners nearby should be compensated. I only want the best for our community of Crump, TN.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#8]
Date: Wednesday, October 29, 2025 1:00:43 PM

Name	Michael Creasy
City	Savannah
State	TN
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	This is something our area has needed for a long time. We are in a unique place on the water and we don't utilize it. Hopefully this will change that.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#9]
Date: Wednesday, October 29, 2025 2:06:15 PM

Name	Sharon Reeves
City	Byron
State	Ga
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	My husband and I live in Byron, GA currently. We have been waiting to build our dream home on Catfish Lane until a marina was built. We have heard there were talks about this. I definitely vote for a marina so we can begin to make plans to build.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#10]
Date: Wednesday, October 29, 2025 2:07:37 PM

Name	Jeremy Kennedy
City	Savannah
State	TN
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	Progress is great and would be welcome to the city and river. This will produce much needed income for the area and be great for river life!

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#11]
Date: Wednesday, October 29, 2025 2:10:11 PM

Name	Anthony Barbaro
City	Crump
State	Tn
Organization	Private boater and land owner.
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	I've been using the boat ramp for 13 years as long as I've been owning a place in Crump tn. There is nowhere to fuel your boat. I think is is something we very much need and would be very appreciative.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#12]
Date: Wednesday, October 29, 2025 2:12:17 PM

Name	Liberty Calderon
City	Arlington
State	TN
Email	[redacted]
Phone Number	[redacted]

Please provide your comments by uploading a file or by entering them below. *

Dear TVA,

I am writing to express my strong support for the proposed marina on Kentucky Reservoir in Savannah, Hardin County. This project would be a wonderful addition to our community. We have a second home on Catfish Lane, and having a marina nearby would add tremendous convenience for us and many others in the area.

Currently, the closest marina accessible by boat is about an hour away, so a local marina would greatly improve accessibility, recreation, and tourism opportunities for residents and visitors alike.

Thank you for considering this project and for your continued efforts to enhance access to the Tennessee River system.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#13]
Date: Wednesday, October 29, 2025 2:12:28 PM

Name	Jennie
City	Baldwin
State	TN
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	I am in favor of the proposed Marina. We have several tracs of property along or near the river. We are very proud of our river community and would love to see it flourish. Thank you!

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#14]
Date: Wednesday, October 29, 2025 2:14:47 PM

Name	Angela Hill
City	Middleton
State	Tennessee
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	I would love for us to have access to a marina. I would love to have access to a boat slip to make it easier to be on the water. We don't come as much as we would like due to having to tow our boat back and forth and the hassle of loading a huge Tritoon. If we had a marina and boat slip it would make it more convenient. There is nothing available on the water until you get to Clifton. This would be very beneficial to the Savannah community and the surrounding ones as well

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#15]
Date: Wednesday, October 29, 2025 2:16:58 PM

Name	Jeremy
City	Crump
State	Tn
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	I think the marina would be more income into the county and area and increase the value of property near by

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#16]
Date: Wednesday, October 29, 2025 2:18:53 PM

Name	Tracy
City	Crump
State	Tn
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	Please put a marina in here. It would bring in ao much revenue and be a great addition to savananh.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#17]
Date: Wednesday, October 29, 2025 2:20:17 PM

Name	Beth bridges
City	Savannah
State	Tn
Please provide your comments by uploading a file or by entering them below. *	A marina here would be great. Please put one in for our community

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#18]
Date: Wednesday, October 29, 2025 2:21:14 PM

Name	Peyton Dixon
City	Crump
State	Tn
Please provide your comments by uploading a file or by entering them below. *	We need this marina. It would great to not have to go a long distance to enjoy one. We have waited ling enough

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#19]
Date: Wednesday, October 29, 2025 2:21:48 PM

Name	Shelby Thompson
City	Crump
State	Tn
Please provide your comments by uploading a file or by entering them below. *	Yes we need a marina in savannah

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#20]
Date: Wednesday, October 29, 2025 2:31:34 PM

Name	Allen Terry
City	Waynesboro
State	TN
Organization	United Country Terry Realty
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	I believe this would be a great asset and benefit to Savannah and Hardin County, TN

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#21]
Date: Wednesday, October 29, 2025 2:33:16 PM

Name	Anna Newman
City	Crump
State	TN
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	We would love to have a marina in Savannah! We take our boat all the way to Clifton Marina occasionally. This would bring in more money to the area.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#22]
Date: Wednesday, October 29, 2025 2:36:15 PM

Name	Harold rush
City	Adamsville
State	Tennessee
Organization	Catfish lane
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	It would be a big benefit for Savannah, Adamsville and Crump to have the marina there plus the big boats can come in and have a place to park instead of park sideways where they could hit get hit by the barges

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#23]
Date: Wednesday, October 29, 2025 2:39:30 PM

Name	Jenni
City	Crump
State	TN
Email	[redacted]
Phone Number	[redacted]

Please provide your comments by uploading a file or by entering them below. *

I think this is a wonderful idea! I currently live at 2373 Catfish Lane. This marina would be a huge asset for the city and the surrounding areas. Pickwick has become overcrowded and expensive. Memphis citizens are leaving in droves. Now is the time to bring this plan to life. A marina would give river goers a closer place to go for fuel, food, supplies, etc.
We need to save our small towns and invest in them more. This is a great way of doing that without selling out to commercial companies. Let's keep the small towns small and locally owned and operated. Let's make Savannah the best stopping place on this side of the Tennessee River.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#24]
Date: Wednesday, October 29, 2025 2:47:53 PM

Name	Dax ethridge
City	Savannah
State	Tennessee
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	As a citizen of hardin county and an avaid boater. I have to keep my big boat in a slip at cliftion which is 35 minutes away and in another county. I would love to be able to drive the 5 minutes from my house to the marina and go boating. This is a great idea for the town and county.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#25]
Date: Wednesday, October 29, 2025 2:56:24 PM

Name	Markie Zoe Hardy
City	Crump
State	TN
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	I think this will greatly impact the community in Hardin county and surrounding counties, add tourism with the new hotel being close by and be a great addition to the area

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#26]
Date: Wednesday, October 29, 2025 3:04:39 PM

Name	Jeff Lipford
City	Counce
State	TN
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	This is a much needed project for the area. It will open up new economic and recreational activities.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#27]
Date: Wednesday, October 29, 2025 3:30:25 PM

Name	Susan Durbin
City	Savannah
State	TN
Email	[redacted]
Please provide your comments by uploading a file or by entering them below. *	This project would impact the City of Savannah and Hardin County in a positive way by bringing more money and tourists to the downtown Savannah, TN area and provide for more business growth there as well.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#28]
Date: Wednesday, October 29, 2025 3:53:20 PM

Name	Patrick Phillips
City	Crump
State	Tn
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	We would Love to have the marina put in we are on catfish lane as well

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#29]
Date: Wednesday, October 29, 2025 4:03:16 PM

Name	Caleb
City	Williams
State	Tn
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	My family and I are on the river year round, skiing and fishing. We would love to see a marina in Savannah

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#30]
Date: Wednesday, October 29, 2025 4:21:22 PM

Name	Peggy Leathers
City	Crump
State	Tennessee
Email	[redacted]
Phone Number	[redacted]

Please provide your comments by uploading a file or by entering them below. *

Please have a marina in Savannah. The closest is Clifton, which is two hours round trip. Clifton has two marinas. We have to gas up to get back. We have boats that use a lot of gas and other people as well as us will NOT go through dam to get gas. We have lived here since 1992, and would like to see a marina in Savannah. I have seen people from other counties, move here because they love the river. Fishing, wave surfing, wake boarding, water skiing, around Wolf and Little Wolf island, swimming and other outdoor activities. Would bring a lot of business to the river side of the dam. Other cities from around would come more often to Savannah if we had a marina. We have a new hotel overlooking the river and a nice park on the river. Paddle boats (river cruise ships) dock here a lot as well as other river traffic. A new marina means others wouldn't have to carry gas cans head up river, those at Clifton or beyond can come more often. Thank you.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#31]
Date: Wednesday, October 29, 2025 4:29:47 PM

Name	Stephanie Woolridge Jones
City	Savannah
State	TN
Organization	N/A citizen
Email	[redacted]
Phone Number	[redacted]

Please provide your comments by uploading a file or by entering them below. *

As a newer resident to Savannah, what attracted us first was the thriving and beautiful downtown area. What Savannah has, that many towns don't have are occupied buildings and businesses downtown. Let's keep this alive and another reason to encourage people to visit our community. A marina will only elevate Savannah and Hardin County to a higher standard of living that many surrounding towns don't have. It will be one more factor for new residents to want to move here, tourists to visit here, and to invest in building their business here,

In a time where charming towns are not as prevalent as they once were, let's gift Savannah what few communities aren't able to monopolize on – take advantage of the location on the beautiful Tennessee River. The boat traffic will also bring so much revenue. Folks will stop for fuel, visit our shops and restaurants within walking distance, and they will go home and tell their friends about their visit.

Please consider this, it would be beautiful and a fantastic investment to our area for citizens and visitors alike. Please don't say no to growth, if you aren't growing you're dying – we want to keep Savannah alive and thriving.

Warm regards,
Stephanie Woolridge Jones

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#32]
Date: Wednesday, October 29, 2025 5:24:46 PM

Name	Jim T Adams, Jr
City	Bolivar
State	Tn
Email	[redacted]
Phone Number	[redacted]

Please provide your comments by uploading a file or by entering them below. *

I think it would be great for Savannah to have a marina so assist the older people who still enjoy the river. With Savannah being only 16 miles from pickwick dam the current is so swift, it is hard for older people to load and unload their boats for fishing and river activities. Also, it would be nice to be able to rent a boat slip where you would not have to load and unload boats every time you want get on the river. And also be able to purchase fuel without going to all the way to Clifton for fuel.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#33]
Date: Wednesday, October 29, 2025 5:30:55 PM

Name	Stephanie Shelly
City	Crump
State	Tn
Organization	1995 catfish ln
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	I own property right there at the bridge. We desperately need a marina there. There is no where near us to fill up if we need more gas on the river. And would also be a great place to leave the boats. Hardin County needs this marina.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#34]
Date: Wednesday, October 29, 2025 5:57:56 PM

Name	Hunter Wyatt
City	Adamsville
State	TN
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	A marina in Savannah has been needed for a long time. An area for boat storage and fuel would make for less hassle before getting on the water. I believe It would greatly benefit the area along with the new hotel.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#35]
Date: Wednesday, October 29, 2025 6:19:21 PM

Name	Russell Long
City	Crump
State	Tn
Organization	Land owners
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	I believe the marina on the lower river could open up a lot job opportunities in the area. Having a place to get fuel on the river and a place to store your book has a really big impact to the area. Really proud TVA is looking at the project and looking to make business grow.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#36]
Date: Wednesday, October 29, 2025 6:48:17 PM

Name	Julia Yager
City	Adamsville
State	TN
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	Our family doesn't want to see a marina come into Savannah. It will bring a lot of traffic and crowds that will disrupt the white and calm we like about the river.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#37]
Date: Wednesday, October 29, 2025 7:52:24 PM

Name	Andrea Pyron
City	Crump
State	TN
Email	[redacted]
Phone Number	[redacted]

Please provide your comments by uploading a file or by entering them below. *

My husband and I actually own a home just up river from the prospected Marina location & have enjoyed boating, fishing, & general river activities with our sons for many years & will continue to do so for many more. I feel the opportunity to have a Marina in Savannah, TN will be a great addition for our area (Hardin County), not only recreational but for all local businesses as well with the economical growth opportunity it will bring for our community.
Thank you for your time,
Andrea Pyron
1300 Catfish Ln
Crump, TN. 38327

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#38]
Date: Wednesday, October 29, 2025 8:35:14 PM

Name	Chris
City	Adamsville
State	Tn

Please provide your comments by uploading a file or by entering them below. *

This will just create more boat congestion in an already overcrowded area. What we have now is overwelming. Can't enjoy the river during the summer with boats running everywhere especially the wake boats. There's so many inexperienced boat operators in this area the amount of accidents will increase. Throw in the fact there's two boat ramps there now don't need another. Something else to maintain.

However a place to launch/load with no current might save a few boat operators some trouble

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#39]
Date: Thursday, October 30, 2025 12:11:50 AM

Name	Judy Hart
City	Savannah
State	TN
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	This project would certainly bring a great deal of business to Savannah, my only concern would be the entrance coming off of highway 64 as you come over the bridge. That intersection is crowded and difficult enough as it is. I'm sure it could be modified to better serve larger watercraft along with a better parking area.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#40]
Date: Thursday, October 30, 2025 1:16:53 AM

Name	William fullwood
City	Savannah
State	Tn
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	Absolutely savanna needs a marina like this and has for.many years. It will open up jobs, generate money flowing through the community.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#41]
Date: Thursday, October 30, 2025 12:30:32 PM

Name	Dale Ledford
City	Brownsville
State	Tn
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	I think the Mariner is a great idea. It will help in refueling boats in the area. You have to either pull your boats out of water for fuel now or drive boat to Clifton for fuel. This area would benefit from this tremendously.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#42]
Date: Thursday, October 30, 2025 12:30:07 PM

Name	Polly Godwin
City	Crump
State	Tn
Organization	Cig contrac
Email	[redacted]
Phone Number	[redacted]

Please provide your comments by uploading a file or by entering them below. *

Our idea is there's no fuel between Pickwick and Clifton that would give us fuel. There is really nothing to eat on the river between Pickwick and Clifton that would give a nice place to sit down and eat, not to mention the money it would bring in for Savannah and Hardin county. It would give boaters a place to rent for their big boats. It would be a stopping point for a lot of the loopers to see our great town and most of all it would raise our property values. A gift shop would
Be nice too. A place like River Bottom Grille in Florence. For outside seating and bar area.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#43]
Date: Thursday, October 30, 2025 1:39:49 PM

Name	Harold Rush
City	Adamsville
State	Tennessee
Organization	Resident on the river
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	This would help Savannah growand plus it would have someplace for the big ships that come in to park as of right now they have to park by a the boat ramp and eventually a barge is gonna hit them and that probably wouldn't be real good

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#44]
Date: Thursday, October 30, 2025 1:59:59 PM

Name	Randall Godwin
City	Savannah
State	TN
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	I would love to see the Marina come to fruition we have been hearing about this for at least 10 years and believe it would be a great improvement for the Savannah area and bring in more tourism to the area and would be a good place for the river tour boats to dock and launch. I am in full support of the Marina Thanks Randall Godwin

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#45]
Date: Thursday, October 30, 2025 2:44:32 PM

Name	Amanda Phariss
City	Savannah
State	Tn
Organization	[redacted]
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	Savannah needs one

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#46]
Date: Thursday, October 30, 2025 2:54:42 PM

Name	Damien Wilkerson
City	Savannah
State	Tn
Organization	[redacted]
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	It will put Savannah on the map and it would be the best thing ever happen to Savannah TN

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#47]
Date: Thursday, October 30, 2025 5:12:14 PM

Name	Cynthia Springer
City	Henderson
State	TN
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	I have been putting in my Boat on the Tennessee River....for decades... at MOUSETAIL LANDING STATE PARK.... , BEECH BEND in Perryville.....SALTILLO LANDING.... It's over 25 miles to RIVERSTONE MARINA and back from Saltillo .... We Need This.... Thank you for this Consideration....

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#48]
Date: Thursday, October 30, 2025 9:22:43 PM

Name	Nikki Culver
City	Crump
State	Tennessee
Email	[redacted]
Please provide your comments by uploading a file or by entering them below. *	This marina is very much needed for the community. There is no boat storage near this area & no fuel pumps around this area on the water. This would bring great commerce to the community too

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#50]
Date: Friday, October 31, 2025 7:03:51 AM

Name	Clent Martin
City	Savannah
State	TN
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	Having a marina in Savannah would be the best thing that's ever happened. It would give the young and the old so many more opportunities to get out and be active with having more stuff to do. The photo is my front yard in Savannah where the marina would be
Upload File #1	img_5094.jpeg.jpg 2.84 MB · JPG

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#51]
Date: Saturday, November 1, 2025 7:39:26 PM

Name	David Pickard
City	Savannah
State	TN
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	I am very interested in having a marina in Savannah, TN. We have to travel to Pickwick or Clifton in order to obtain fuel or food on the water since Savannah has no marina. It will be a good source of income for the city as well as convenience for the boaters. Thank you David Pickard 2966 Catfish Lane Crump, TN 38327

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#52]
Date: Monday, November 3, 2025 7:52:12 PM

Name	Kevin lester
City	Middleton
State	Tn
Email	[redacted]
Please provide your comments by uploading a file or by entering them below. *	I have a lot on catfish ln and it would be great to have a marina in the area and bring more revenue to the community

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#53]
Date: Monday, November 3, 2025 8:01:41 PM

Name	Michael wernimont
City	Adamsvile
State	Tn
Organization	Retired
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	I'm all for it start digging

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#54]
Date: Monday, November 3, 2025 10:10:34 PM

Name	Jessica Gray
City	Crump
State	TN
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	I am in favor of the proposed marina plans and I believe this will be beneficial for the community.

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#55]
Date: Thursday, November 6, 2025 9:43:08 AM

Name	Nena Moss
City	Savannah
State	Tennessee
Organization	Resident
Email	[redacted]
Phone Number	[redacted]

Please provide your comments by uploading a file or by entering them below. *

Notice of Agreement – Savannah Marina Project

I am in full support of the proposed marina project in Savannah, Tennessee. I believe this development will bring significant economic and recreational benefits to Hardin County. The marina will not only attract tourism and new business opportunities but also enhance the quality of life for local residents by creating jobs and providing a beautiful space for community enjoyment.

This project represents positive growth for our area, and I am proud to stand in agreement with efforts that invest in the future of Hardin County.
Property owner in Savannah Tennessee on the River , very close to Marina project location.
Nena and Jr Moss

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#56]
Date: Thursday, November 6, 2025 9:53:22 AM

Name	Genie Earnest
City	Crump
State	Tn
Organization	Marina
Email	[redacted]
Phone Number	[redacted]

Please provide your comments by uploading a file or by entering them below. *

Letter of Support for the Marina Project

I am a member of the Catfish Lane community and have been for the past three years, since my family purchased our property. When we bought our home, we were told that a marina would be built in the area. We thought that was a wonderful opportunity for our family and for the community as a whole.

Both of my parents are disabled, and my mother relies on a walker. Having a marina would make it much easier for my dad to park his pontoon boat and for my mom to safely get on and off the boat. It would allow her to enjoy the beauty of the Savannah River and truly experience what this area has to offer.

In addition, a marina would provide a safer and more organized place to put boats in and out of the water. The current public boat ramp can be very hectic—especially during holiday weekends—when people are swimming, unloading boats, and playing with their dogs in the same area. It can quickly become chaotic and unsafe for everyone.

I truly believe that building a marina would be a great benefit not only for the Catfish Lane community but for Savannah as a whole. It would provide accessibility, improve safety, and offer more people the chance to enjoy our beautiful river.

Sincerely,
Genie Earnest
Catfish Lane Resident

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#57]
Date: Friday, November 7, 2025 10:22:58 PM

Name	David and Ronda Woods
City	Savannah
State	Tn
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	Yes!! We need this marina in Savannah Tn. We own 4 river lots in Savannah. I wasn't sure if we were suppose to put city we live in or where our river lots are. I put Savannah but we live in Bolivar, Tn. Thank you!!

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#58]
Date: Saturday, November 8, 2025 8:55:38 PM

Please provide your comments by uploading a file or by entering them below. *	As a landowner; and a water enthusiasts, the benefits of a Marina at the savhanna location would be beneficial for economic growth, and the community, also for those just traveling the river who may need fuel or just to rest which hkeps bring business into the community, also the jobs that it would produce would help the residents, this would be a overall blessing to have in savhanna

From: Wufoo
To: nepa
Subject: Savannah Marina Deed Modification [#59]
Date: Monday, November 10, 2025 11:55:44 AM

Name	David Risner
City	Waynerboro
State	Tn.
Organization	Land owner in harden county
Email	[redacted]
Phone Number	[redacted]
Please provide your comments by uploading a file or by entering them below. *	I I fell like it would be a good thang for Savannah a Surrounding county's

From: Kent Collier
To: nepa
Subject: Savannah marina
Date: Thursday, October 30, 2025 12:43:31 AM

[You don't often get email from [redacted] Learn why this is important at https://aka.ms/LearnAboutSenderIdentification]

This is an EXTERNAL EMAIL from outside TVA. THINK BEFORE you CLICK links or OPEN attachments. If suspicious, please click the “Report Phishing” button located on the Outlook Toolbar at the top of your screen.

TVA has erected barriers, stalled, and zoomed this project for almost a decade. Get on board now!!!
The city also needs to make your 4 acre parcel part of the project. Donate the parcel to the City of Savannah ! TVA hasn’t done anything with that parcel for decades. You ought to donate it as an apology for delaying and obstructing.

Sincerely

Kent Collier

Sent from my iPhone

From: Frances Turner
To: nepa
Subject: Savannah, TN proposed Marina comment
Date: Monday, November 3, 2025 3:53:58 AM

Please fix the local roads first.

From: Classic Transport, LLC. - JGlidewell
To: nepa
Date: Monday, November 3, 2025 7:46:51 PM

You don't often get email from [redacted] Learn why this is important

This is an EXTERNAL EMAIL from outside TVA. THINK BEFORE you CLICK links or OPEN attachments. If suspicious, please click the "Report Phishing" button located on the Outlook Toolbar at the top of your screen.

Really looking forward to having the marina here in Savannah

James Glidewell
Owner
Classic Transport, LLC.
(P) [redacted] ***(F)*** [redacted]

JIM KERR

15 HOGOHEGEE DRIVE · SAVANNAH, TENNESSEE 38372 · 731-607-5377 (KERR)

11/3/25

Att Mr. Jess Wyrobe-Carpenter
Knoxville Tn

The City of Savannah, needs your support in the Marina Project

I would invite you to inspect this project. The location is perfect.

Last year in 1 walk I counted 221 Big Cruise Coming Right By My House in as well as Pleasure Boats - not Counted.

We have A New 93 Room Motel near this property and Both of these projects will Help Our Town We have 28 Tour Boats that will visit our city this year... there is another Savannah and it is not Us.

Please help on this project.

Jim Kerr

To whom It May Concern 10-21-25

I DAkota Lee Allen am writing to request how this will affect our river and the surrounding areas once the Kentucky Reservoir is installed? I would like to see graphs, Maps and the latitude and longitude on a chart, Keep in mind i am incarcerated so it may or may not be possible without discussing it with a lawyer. But i am very very interested in Knowing how this plays out. It is very Peculiar you desire to place a general store on the river i do admire this as well as the rip rap stabilization, boat ramp as well as maring, and parking lot. Please feel free to contact me at my return Address on envelope or here.

ALLEN, DAKOTA #00535182

[redacted]

Appendix J- List of Preparers

LIST OF PREPARERS

2.9 NEPA Project Management

Jessica Wykoff-Carpenter (TVA)

Education:	B.S., Environmental Studies
Project Role:	NEPA Compliance, Document Preparation
Experience:	6 years of experience in Natural Resource Management and NEPA Compliance

Kelly R. Baxter (TVA)

Education:	M.S., Plant Science and Landscape Systems; B.S., Botany
Project Role:	NEPA Compliance, Document Preparation, Technical Editor
Experience:	22 years of experience in Project Management, NEPA compliance, and land management

Dana Nelson (TVA)

Education:	B.S., Environmental Science
Project Role:	Environmental Program Manager
Experience:	18 years of environmental compliance; 7 years of preparation of environmental review documents

Derek South (TVA)

Education:	B.S., Professional Geography
Project Role:	Project Lead
Experience:	18 years of experience in Land Management and Recreation

2.10 Other Contributors

Erin Alsop (WSP)

Education:	B.S., Environmental Science
Project Role:	Technical Review
Experience:	8 years of experience in NEPA documentation and other environmental compliance

Whitney Fiore (WSP)

Education:	M.S., Natural Resource Management
Project Role:	Technical Review
Experience:	26 years of experience in NEPA documentation and other environmental compliance

Bailey Hickey (WSP)

Education:	B.S., Environmental Engineering
Project Role:	Geology and Groundwater, Soil Erosion and Surface Water, and Public Health and Safety
Experience:	6 years of experience in engineering consulting and environmental planning

Andrea Johnston (WSP)

Education:	B.S., Environmental Science
Project Role:	Geology and Groundwater, Utilities and Service Systems, Soil Erosion and Surface Water, Navigation
Experience:	3 years of experience in NEPA analysis and scientific studies

Leah Stephens
Education: B.A., Environmental Studies
Project Role: Land Use and Prime Farmland, Noise and Vibration, Transportation, Visual Resources, Public Health and Safety, Socioeconomics
Experience: 5 years of experience in NEPA analysis and documentation

R. Anderson Smith (TVA)
Education: M.S., Wildlife and Fisheries Science
Project Role: Aquatic Ecology
Experience: 14 years working with aquatic endangered species, and aquatic ecology

David Nestor (TVA)
Education: M.S. Botany; B.S., Aquaculture, Fisheries, & Wildlife Biology
Project Role: Botany
Experience: 25 years in Botanical Surveys, Plant Ecology, and Invasive Plant Species and 20 years in ESA and NEPA Compliance

Chloe Sweda (TVA)
Education: B.S. Earth and Environmental Science
Project Role: Managed and Natural Areas
Experience: 7 years of experience in Natural Resource Management

Maria Aguirre (TVA)
Education: B.S. Environmental Science
Project Role: Terrestrial Zoology
Experience: 4 years in biological field studies, 3 years in Biological Compliance, NEPA compliance, and ESA consultation for T&E terrestrial animals

Kenneth McMahan (TVA)
Education: B.S., Wildlife and Fisheries Science
Project Role: Wetlands
Experience: 4 years in Wetland Delineation, Assessments, Regulations, and NEPA and CWA compliance

Kerry Nichols (TVA)
Education: Ph.D. Anthropology (Evolutionary Archaeology)
Project Role: Archaeology
Experience: 25 years in various roles as field archaeologist, university lecturer, SHPO reviewer and federal compliance archaeologist

Robert Ryan Gupton (TVA)
Education: B.S., Environmental Science
Project Role: Public Lands Management - Recreation
Experience: 1 year of experience in Recreation Management

Nicole Berger (TVA)
Education: M.S., Engineering Management; B.S., Civil/Environmental Engineering
Project Role: Navigation
Experience: 14 years in river forecasting; 13 years in Navigation

Callan Pierson (TVA)
Education: B.S., Civil Engineering
Project Role: Surface Water Quality
Experience: 7 years of experience in surface water regulatory compliance

Carrie Williamson, P.E. (TN), CFM (TVA)
Education: M.S., Civil Engineering; B.S., Civil Engineering; Professional Engineer; Certified Floodplain Manager
Project Role: Floodplains and Flood Risk
Experience: 12 years in Floodplains and Flood Risk; 3 years in River forecasting; 11 years in Compliance Monitoring

Sara McLaughlin-Johnson (TVA)
Education: B.S., Wildlife & Fisheries Science;
Project Role: Terrestrial Zoology
Experience: 13 years in Biological Compliance, NEPA compliance, and ESA consultation for T&E terrestrial animals. 18 years in biological field studies.