

ECONOMIC DEVELOPMENT GRANT PROPOSAL FOR THE TELLICO WEST SITE

DRAFT ENVIRONMENTAL ASSESSMENT

Monroe County, Tennessee (Vonore)

Prepared by:

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1.0 PROPOSED ACTION AND NEED

An integral part of Tennessee Valley Authority's (TVA's) mission is to promote economic development in the TVA service area. TVA provides financial assistance to help bring to market new/improved sites and facilities in the TVA service area and position communities to compete successfully for new jobs and capital investment. TVA proposes to provide an economic development grant through InvestPrep funds to the Tellico Reservoir Development Agency (TRDA) to assist with the development of the Tellico West Site (Proposed Action or Project). The area of TVA's Proposed Action (herein referred to as the Project Area) comprises approximately 142.6 acres within the Tellico West Site and is located between State Road (SR) 72, Excellence Way, and Deer Crossing in Vonore, Monroe County, Tennessee (TN) (Figure 1 and Attachment 1, Figures 1-A and 1-B). TVA funds would be used to assist with tree clearing and construction of a gravel access road.

The primary purpose of the Proposed Action is to enable the TRDA to continue to develop the Tellico West Site. The proposed grant to the TRDA would assist with improvements to put the site in a more marketable position and allow prospects to better envision the development potential. Proposed improvements would lead to an increased probability of achieving TVA's mission of job creation and capital investment. Target industries for the Tellico West Site include manufacturing, manufacturing suppliers, automotive, automotive suppliers, marine, marine suppliers, and warehouse/distribution. Pursuant to the National Environmental Policy Act (NEPA) and its implementing regulations 40 CFR Parts 1500–1508 and TVA's implementing regulations 18 CFR Part 1318, this environmental assessment (EA) assesses the environmental impacts that would potentially result from TVA's Proposed Action. TVA's decision is whether to provide the requested funding to the TRDA.

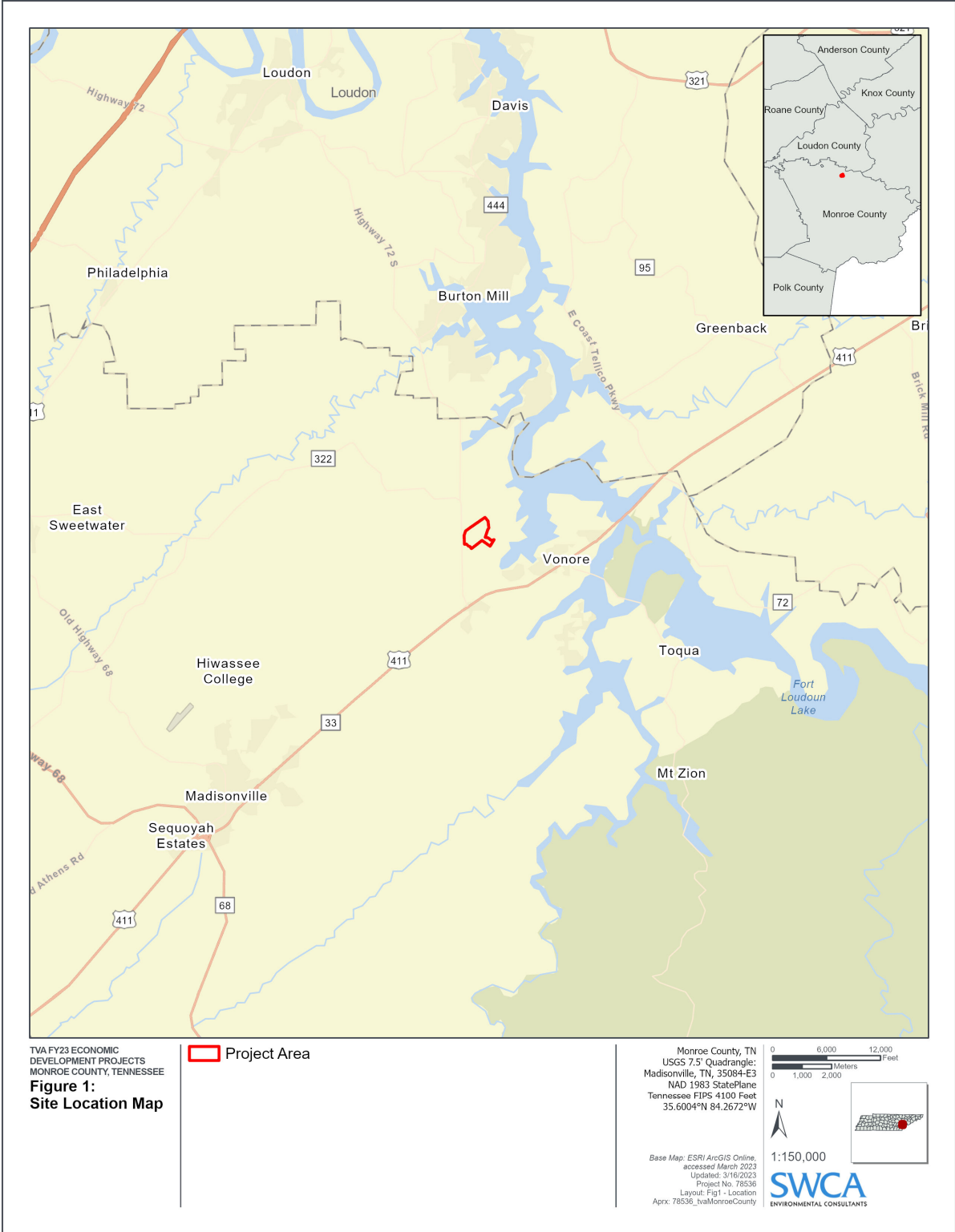


Figure 1. Project location map.

2.0 OTHER ENVIRONMENTAL REVIEWS AND DOCUMENTATION

Other studies have been performed on behalf of TRDA within the Project Area. In 1999, an archaeological survey was conducted over a large portion of the Project Area (Thomas 1999). The purpose of the survey was to identify potential archaeological resources in the study area.

In May 2017, subsurface conditions at the site were evaluated for site development and construction planning purposes (S&ME, Inc. 2017a).

In May 2017, S&ME, Inc., conducted a surface water delineation of the Project Area to identify potentially jurisdictional wetlands and waterbodies (S&ME, Inc. 2017b) as well as a threatened and endangered species review (S&ME, Inc. 2017c).

The archaeological survey report, subsurface investigation report, wetland delineation report, and threatened and endangered species report were used in the preparation of this EA.

3.0 ALTERNATIVES

Based on internal scoping, TVA has determined that there are two reasonable alternatives to assess under NEPA: the No Action Alternative and the Action Alternative.

3.1 The No Action Alternative

Under the No Action Alternative, TVA would not provide InvestPrep funds to the TRDA. TVA would not be furthering its mission of promoting economic development by assisting the local community to compete successfully for new jobs and capital investment through the Proposed Action. If the TRDA were to obtain alternate funding and proceed with its current plans, the overall environmental consequences would be similar to those anticipated from implementing the Action Alternative. If the Project is postponed, any environmental effects would be delayed for the duration of the postponement. If the Project were cancelled, no direct environmental effects are anticipated, as environmental conditions on the site would remain essentially unchanged from the current conditions for the foreseeable future.

3.2 The Action Alternative

Under the Action Alternative, TVA would provide InvestPrep funds to the TRDA to assist with tree clearing and construction of a gravel access road. The Action Alternative would require clearing of approximately 54.9 acres of trees and construction of an approximately 1,100-foot compacted gravel access road within the 142.6 acre Project Area (see Attachment 1, Figures 1-A and 1-B).

Site activities required for the Action Alternative would occur over approximately 6 months and would require a small workforce that would likely be drawn from a local contractor. Trees would be cut and burned onsite during the winter clearing season and stumps would be removed and burned onsite as well.

The TRDA, or its contractors, would obtain all required permits and authorizations, and in compliance with those permits take appropriate feasible measures, such as mitigation and implementing best management practices (BMPs) and best construction practices, to minimize or reduce the potential environmental effects of the proposed Project to insignificant levels. These practices would include but are not limited to installation of sediment and erosion controls

(silt fences, sediment traps, etc.), management of fugitive dust, daytime work hours, and other appropriate measures.

The Action Alternative does not include assessment of activities that may be directly or indirectly associated with adjacent lots already developed or under construction or the eventual build-out, occupation, and future use of the Project Area. The future use of the site has not been fully defined. Given this uncertainty, an analysis of the potential impacts for development of the adjacent lots or future use of the site is beyond the scope of this EA.

4.0 AFFECTED ENVIRONMENT AND ANTICIPATED IMPACTS

4.1 Site Description

The 142.6-acre Project Area is located within the existing 200-acre Tellico West Site between SR 72, Excellence Way, and Deer Crossing in Vonore, Monroe County, TN (see Attachment 1, Figure 1-A). The Project Area can be accessed from Excellence Way. The Project Area is located in an undeveloped area of the Tellico West Site. The Project Area is a partially cleared, undeveloped area, located adjacent to a distribution center and various commercial and manufacturing facilities. There are no permanent structures present within the Project Area.

The current land use in the Project Area is a mixture of open herbaceous land and fragmented forest (see Attachment 1, Figure 1-A). Historically, the land has been used for agriculture, specifically for hay production. The Project Area is currently vacant and has been for years, as the site has been deemed unmarketable due to limited access. The Project Area is located in an area that is zoned for heavy industrial use (zoning code M-2) (Monroe County Planning 2006).

The Project Area ranges from approximately ± 860 feet (262.1 meters) above mean sea level (MSL) to ± 940 feet (286.5 meters) above MSL (see Attachment 1, Figure 1-B). There is a large forested area in the center and eastern part of the Project Area. The northeastern and southern sections of the Project Area are open fields with a few isolated wooded stands.

4.2 Impacts Evaluated

TVA has determined that the Proposed Action, subsequent to TVA's selection of the Action Alternative, would have no impact on floodplains, land use, or prime farmland. The Proposed Action would also not result in impacts from the creation of solid and hazardous wastes. Therefore, potential impacts to these resources are not described in further detail in this EA.

According to Monroe County, TN Flood Insurance Rate Map Panel number 47123C0160D, effective February 3, 2010, and a hydrologic study completed in 2017, the Project Area is located outside identified and unmapped 100-year floodplains, which would be consistent with Executive Order 11988 (see Attachment 1, Figure 1-C). Therefore, the Project would have no impact on floodplains and their natural and beneficial resources.

The Project Area contains some soils that are classified as prime farmland, but this only accounts for approximately 0.08% of prime farmland soils within Monroe County (U.S. Department of Agriculture [USDA] Natural Resources Conservation Service [NRCS] 2021). Furthermore, the Project would not cause alteration in land use or have negative impacts on prime farmland as the Project Area is located within a property zoned as heavy industrial, and the Proposed Action would not result in a change to the zoned land use.

No demolition or waste disposal activities are associated with the Action Alternative. Therefore, the Action Alternative would not result in the creation or disposal of solid and hazardous wastes.

Resources that could potentially be impacted (negatively or positively) by implementing the Action Alternative include soils, groundwater, surface water, wetlands, aquatic ecology, botany, terrestrial zoology, managed and natural areas, cultural resources, and air quality and climate change. Implementation of the Action Alternative could create potential impacts to the human environment, including recreation, visual effects, noise, socioeconomics, environmental justice, and transportation issues. Potential impacts to resources and impacts to the human environment resulting from implementation of the Action Alternative are discussed in detail below.

4.2.1 Soils

Project Area soil information was obtained from the USDA NRCS Web Soil Survey (USDA NRCS 2021). The Project Area is located in the East and Central Farming and Forest Region and includes 18 distinct soil map units (USDA NRCS 2021). No soils in the Project Area are classified as hydric soils. The USDA NRCS soil map units within the Project Area are shown in Attachment 1, Figure 1-D, and summarized in Table 4-1. Topsoil depths within the Project Area range from 3 to 12 inches below the ground surface. Within the geotechnical borings conducted during a 2017 subsurface investigation of the Project Area, cultivated and residual soils were also identified (S&ME, Inc. 2017a).

Dewey silt loam, 6 to 15 percent slopes (DeC) and Emory silt loam, 0 to 4 percent slopes, occasionally flooded (Em) are the dominant soils in the Project Area and account for approximately 46.7% of the area. These soils have a drainage class of well drained (USDA NRCS 2021).

Table 4-1. USDA NRCS-mapped Soils Within the Project Area

Map Unit Symbol	Map Unit Name	Hydric Criteria	Drainage Class	Farmland Classification	Acreage Within Project Area ¹	Percentage of Project Area ¹
DeC	Dewey silt loam, 6 to 15 percent slopes	No	Well drained	Not prime farmland	47.6	33.4
Em	Emory silt loam, 0 to 4 percent slopes, occasionally flooded	No ²	Well drained	All areas are prime farmland	18.9	13.3
DcC	Decatur silt loam, 5 to 12 percent slopes	No	Well drained	Not prime farmland	10.9	7.7
DgD3	Dewey silty clay loam, 15 to 25 percent slopes, severely eroded	No	Well drained	Not prime farmland	8.4	5.9
LtC	Litz shaly silt loam, 5 to 12 percent slopes (sil)	No	Well drained	Not prime farmland	7.6	5.3
SeC2	Sequoia silt loam, 5 to 12 percent slopes, eroded	No	Well drained	Not prime farmland	7.1	5.0
DcD2	Decatur silt loam, 12 to 20 percent slopes, eroded	No	Well drained	Not prime farmland	6.8	4.8

Map Unit Symbol	Map Unit Name	Hydric Criteria	Drainage Class	Farmland Classification	Acreage Within Project Area ¹	Percentage of Project Area ¹
EtB	Etowah silt loam, 2 to 6 percent slopes	No	Well drained	All areas are prime farmland	5.6	3.9
WbD	Waynesboro loam, 15 to 25 percent slopes	No	Well drained	Not prime farmland	5.4	3.8
TS	Tellico and Dewey soils, gullied	No	Well drained	Not prime farmland	4.8	3.3
DeD2	Dewey silt loam, 15 to 25 percent slopes, eroded	No	Well drained	Not prime farmland	4.1	2.9
EtC	Etowah silt loam, 6 to 12 percent slopes	No	Well drained	Not prime farmland	3.8	2.7
SeB	Sequoia silt loam, 2 to 5 percent slopes	No	Well drained	Not prime farmland	3.6	2.5
WbC	Waynesboro loam, 6 to 15 percent slopes	No	Well drained	Not prime farmland	2.9	2.0
LeB	Leadvale silt loam, 2 to 5 percent slopes	No	Moderately well drained	All areas are prime farmland	2.7	1.9
FtD	Fullerton gravelly silt loam, 15 to 25 percent slopes	No	Well drained	Not prime farmland	1.1	0.8
DcB	Decatur silt loam, 2 to 5 percent slopes	No	Well drained	All areas are prime farmland	0.8	0.5
uDcC2	Dewey-Collegedale complex, 6 to 15 percent slopes, moderately eroded	No	Well drained	Not prime farmland	0.5	0.3
Total³					142.6	100.0
Source: USDA NRCS 2021						
¹ Acreages and percentages are rounded to 0.01.						
² This soil unit has one hydric component (1% of the total) but is predominantly non-hydric.						
³ Total values may differ slightly from total expected values due to rounding.						

Implementation of the Action Alternative would result in ground disturbance during construction activities, including tree clearing and construction of a gravel access road. Ground disturbance could lead to increased soil erosion. Soil erosion would be temporary and would be controlled by implementation of appropriate BMPs and would not significantly affect soil within the Project Area. Potential soil erosion is further discussed in Section 4.2.3. Because the Project Area is located in an area zoned for heavy industrial use, implementation of the Action Alternative is not anticipated to result in impacts to prime farmland soils.

Under the No Action Alternative, TVA would not provide InvestPrep funds to the TRDA. If the TRDA were to obtain alternate funding and proceed with its current plans, the overall environmental consequences would be similar to those anticipated from implementing the

Action Alternative. If the TRDA was unable to secure other funding or the Project was cancelled, the Proposed Action would not occur and there would be no impacts to soils as environmental conditions on the site would remain essentially unchanged from the current conditions.

4.2.2 Groundwater

The Project Area is located within the Valley and Ridge Province (National Park Service 2017). The Valley and Ridge Province extends southwest to northeast and is characterized by a sequence of folded and faulted, Paleozoic sedimentary rocks that form a series of alternating valleys and ridges that extend from Alabama and Georgia to New York (United States Geological Survey [USGS] 1995).

In the eastern part of Tennessee, the principal aquifers in the Valley and Ridge Province consist of carbonate rocks that are primarily Cambrian and Ordovician in age, with minor Silurian, Devonian, and Mississippian rocks also present (USGS 1995). Locally this system is referred to as the East Tennessee aquifer system and consists of soluble carbonate rocks and some easily eroded shales underlie the valleys while more erosion-resistant siltstone, sandstone, and some cherty dolomite underlie ridges (USGS 1986). Water quality in the carbonate aquifers of the Valley and Ridge Province is characterized as hard, with dissolved solids concentrations of 170 milligrams per liter or less. Due to the complex network of fractures, bedding planes, and solution openings in the carbonate rocks in areas with thin residuum overlying the substrate, water recharges rapidly and water quality in these aquifers is susceptible to contamination by human activities (USGS 1995). Recharge occurs primarily along the flanks of the ridges and groundwater flow is generally from the ridges (higher groundwater levels) toward major streams and center of the valleys where groundwater levels are lower (USGS 1995).

Existing topography ranges from approximately ± 860 feet (262.1 meters) above MSL to ± 940 feet (286.5 meters) above MSL. The geotechnical borings conducted onsite by S&ME, Inc., in 2017, indicate the Project Area is situated in rolling terrain and a karst geologic area. Geotechnical soil borings were conducted onsite at depths ranging from 11 to 35 feet deep. Groundwater was encountered in three borings at depths of 16, 24, and 23 feet. Upon completion of drilling, the geotechnical investigations revealed that the Project Area soils are moderately plastic clays and silts that exist at moisture contents higher than optimum compaction moistures. Additionally, groundwater depths can vary based upon season and prevailing weather conditions. Significant amounts of groundwater are not expected to be encountered during grading necessary to construct the gravel access road; however, perched water may be present (S&ME, Inc. 2017a).

Implementation of the Action Alternative would result in ground disturbance due to tree clearing and the grading and construction of the gravel access road. These activities would result in minor ground disturbance at shallow depths. Ground disturbances are not anticipated to be at depths that would intersect public groundwater supplies (typically 142 to 202 feet beneath the land surface [USGS 2021]) or result in significant impacts to groundwater resources. Shallow aquifers could sustain minor impacts from changes in overland water flow and recharge caused by tree clearing and the grading and construction of the gravel access road within the Project Area. Water infiltration, which is normally enhanced by vegetation, would be reduced until vegetation is re-established. In addition, near-surface soil compaction caused by heavy construction vehicles could reduce the ability of soil to absorb water. These minor impacts would be temporary and would not significantly affect groundwater resources. Furthermore, it is

expected that the TRDA, or its contractors, would conduct operations involving chemical or fuel storage or resupply and equipment and vehicle servicing with care to avoid leakage, spillage, and subsequent ground water contamination.

Under the No Action Alternative, TVA would not provide InvestPrep funds to the TRDA. If the TRDA were to obtain alternate funding and proceed with its current plans, the overall environmental consequences would be similar to those anticipated from implementing the Action Alternative. If the TRDA was unable to secure other funding or the Project was cancelled, the Proposed Action would not occur and there would be no impacts to groundwater resources as environmental conditions on the site would remain essentially unchanged from the current conditions.

4.2.3 Surface Water and Soil Erosion

The Project Area is located in Monroe County, TN, in the Southern Limestone/Dolomite Valleys and Low Rolling Hills and Southern Shale Valleys level four ecoregions. The Project Area drains to streams within the Lower Tellico Lake watershed (Hydrologic Unit Code [HUC]-10 0601020405). The surface water streams in the vicinity of the Project include Moree Branch, Island Creek, and the Little Tennessee River. These streams are all located outside of the Project Area (Attachment 1, Figure 1-E and Figure 1-F).

Precipitation in the vicinity of the Project Area averages about 54 inches per year. The average annual air temperature ranges from a monthly average of 27 degrees Fahrenheit to 88 degrees Fahrenheit (BestPlaces 2022).

A hydrologic determination conducted in December 2022 identified 15 wet weather conveyances (WWCs) within the Project Area totaling approximately 2,888 feet (SWCA 2023). The WWCs did not appear as features on the United States Fish and Wildlife Service (USFWS) National Wetlands Inventory or the National Hydrography Dataset (USGS 2023, USFWS 2022a). Alterations to WWCs are permitted in accordance with Tennessee State Code Section 69-3-108(q) without notice or application to the State.

SWCA (2023) conducted a jurisdictional waters assessment concurrently with the hydrologic determination. As of September 3, 2021, the United States Environmental Protection Agency (USEPA) and U.S. Army Corps of Engineers (USACE) have halted implementation of the June 22, 2020, "Navigable Waters Protection Rule" and are currently interpreting Waters of the United States (WOTUS) consistent with the pre-2015 regulatory regime (40 CFR 230.3). As such, all ephemeral features and adjacent wetlands are likely subject to jurisdiction, if it is determined they share a significant nexus with a traditional navigable water. SWCA's professional opinion is that all delineated WWCs are potentially non-jurisdictional as the features identified are isolated from mapped National Wetlands Inventory/National Hydrography Dataset features and/or the 100-year floodplain.

An Approved Jurisdictional Determination (AJD) request was submitted to the USACE Nashville District on June 26, 2017, and was issued by the USACE on October 4, 2017, stating that the features delineated in 2017 by S&ME are non-jurisdictional waters of the U.S. However, AJD's are only valid for five years, and due to the changes in administration as they relate to the implementation of the WOTUS rule, a Potential Jurisdictional Determination (PJD) or an AJD would need to be submitted, to determine if the USACE would regulate the features identified within the Project Area. If the USACE determined that aquatic features within the Project Area

are WOTUS, a dredge and fill authorization from the USACE under Section 404 of the Clean Water Act (CWA) would be required for impacts to the WWCs. The TRDA or its contractors would be responsible for obtaining the Section 404 CWA permit necessary for the project.

The federal CWA requires all states to identify all waters where required pollution controls are not sufficient to attain or maintain applicable water quality standards and to establish priorities for the development of limits based on the severity of the pollution and the sensitivity of the established uses of those waters. States are required to submit reports to the USEPA. The term “303(d) list” refers to the list of impaired and threatened streams and water bodies identified by the state. The 2022 field study did not identify any waterbodies that are on Tennessee 303(d) listed waters (Tennessee Department of Environment and Conservation [TDEC] 2022). However, the Tellico Reservoir portion of the Little Tennessee River, which is located approximately 0.2 mile east of the Project Area, is listed as impaired for polychlorinated biphenyls (PCBs) due to contaminated sediments. Likewise, Island Creek, a tributary to the Tellico Reservoir, located approximately 0.7 mile south of the Project Area, is listed as impaired due to *Escherichia coli* (TDEC 2022). When surface water leaves the Project Area, it flows downgradient south by southeast, and has the potential to enter Tellico Reservoir and Island Creek. TDEC identifies waterbodies with unavailable parameters as segments of surface waters that have been identified by the division as failing to support one or more classified uses (TDEC 2021). Tellico Reservoir and Island Creek are not listed as waters with unavailable parameters because they are not impaired due to siltation (TDEC 2023a). Additionally, a desktop investigation identified a segment of Island Creek flowing into the Tellico Reservoir section of the Little Tennessee River located 1.47 miles northeast of the Project Area as an Exceptional Tennessee Water (TDEC 2023b). Implementation of BMPs would reduce the possibility of potential contaminants or sediment associated with construction activities leaving the Project Area and entering the Little Tennessee River and Island Creek. The primary designations for Tellico Reservoir are domestic water supply, industrial water supply, fish and aquatic life, recreation, livestock watering and wildlife, irrigation, and navigation. Island Creek is not listed on the TDEC list for Use Classifications of Surface Waters (TDEC 2019).

Implementation of the Action Alternative would result in ground disturbance during construction activities, including tree clearing and the grading and construction of a gravel access road, that has the potential to temporarily affect surface water via stormwater runoff. Impervious surfaces prevent rain from percolating through the soil and result in additional runoff of water and pollutants into storm drains, ditches, and streams. The Action Alternative would increase impervious flows in the Project Area. Soil erosion and sedimentation can clog small streams, threaten aquatic life, and contribute to degraded water quality. It is expected that the TDRA, or its contractors, would comply with all appropriate federal, state, and local permit requirements. Appropriate BMPs would be followed, and all proposed Project activities would be conducted in a manner to ensure that waste materials are contained, and the introduction of pollution materials to nearby receiving waters would be adequately minimized. A general construction stormwater permit would be required since more than one acre would be disturbed as part of the Action Alternative. This permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP would identify specific BMPs to address construction-related activities that would be adopted to minimize stormwater impacts. BMPs, as described in the Tennessee Erosion and Sediment Control Handbook (TDEC 2012), would be used to avoid contamination of the three identified surface water features within the

Project Area that are located outside the area of proposed ground disturbance. Under the required permits, all flows would need to be properly treated with either implementation of the BMPs or an engineered discharge drainage system that could handle any increased flows prior to discharge through the outfall(s).

It is expected that portable toilets would be provided for the construction workforce as needed. These toilets would be pumped out regularly, and the sewage would be transported by tanker truck to a publicly-owned wastewater treatment plant. Equipment washing and dust control discharges would be handled in accordance with BMPs described in the SWPPP for water-only cleaning.

Under the No Action Alternative, TVA would not provide InvestPrep funds to the TRDA. If the TRDA were to obtain alternate funding and proceed with its current plans, the overall environmental consequences would be similar to those anticipated from implementing the Action Alternative. If the TRDA was unable to secure other funding or the Project was cancelled, the Proposed Action would not occur and there would be no impacts to surface water resources, including impacts resulting from soil erosion, as environmental conditions on the site would remain essentially unchanged from the current conditions.

4.2.4 Wetlands

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

Activities in wetlands are regulated by state and federal agencies to ensure no more than minimal impacts to the aquatic environment and no net loss of wetland resources. Under CWA Section 404, activities resulting in the discharge of dredge or fill material in jurisdictional waters of the U.S. (including wetlands) must be authorized by the United States Army Corps of Engineers (USACE) through a Nationwide, Regional, or Individual Permit. CWA Section 401 mandates state water quality certification for projects requiring USACE approval and permitting. In Tennessee, an Aquatic Resource Alteration Permit (ARAP) authorized by TDEC provides Water Quality Certification under CWA Section 401. An ARAP 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) and in alignment with Tennessee's anti-degradation policy (§69-3-108, 0400-40-04). Compliance with USACE and TDEC permitting is required for regulated activities within jurisdictional waters and wetlands, which could require mitigation based on the proposed Project impacts. Lastly, Executive Order 11990 requires federal agencies such as TVA to minimize wetland destruction, loss, or degradation, and preserve and enhance natural and beneficial wetland values, while carrying out agency responsibilities.

As noted in Section 2.0, a field survey was conducted in December 2022 to document wetlands in the Project Area (SWCA 2023). Surveys were performed according to USACE standards *Corps of Engineers Wetlands Delineation Manual* (Manual) (USACE 1987) and the subsequent *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Version 2.0) (Regional Supplement) (USACE 2012), which require documentation of hydrophytic vegetation, hydric soil, and wetland hydrology. Broader definitions of wetlands, such as the one used by the USFWS (Cowardin et al. 1979), and as

defined under 18 CFR Part 1318.40, were also considered in this review. Additionally, SWCA reviewed the S&ME, Inc., wetland delineation report and jurisdictional determination performed in 2017 (S&ME, Inc. 2017b, USACE 2017). The findings in the report and jurisdictional determination are consistent with the delineation performed in 2022.

A single, depressional, palustrine forested (PFO) wetland (0.03 acres) was identified within the Project Area (see Attachment 1, Figure 1-F). The PFO wetland is a low-quality aquatic resource, which was assigned a score of 36 using the Tennessee Rapid Assessment Method (TRAM). PFO wetlands are comprised of woody vegetation that is at least 20 feet tall. The wetland was observed as a riverine feature located within a possible man-made berm. Wetland species observed included swamp white oak (*Quercus bicolor*) and Virginia wild rye (*Elymus virginicus*). Implementation of the Action Alternative would result in ground disturbance during construction activities, including tree clearing and the grading and construction of a gravel access road, which would result in the permanent fill and loss of the 0.03-acre wetland. Wetland impacts will be permitted in accordance with regulatory requirements, including provision of compensatory mitigation per the terms and conditions of the issued permit.

Under the No Action Alternative, TVA would not provide InvestPrep funds to the TRDA. If the TRDA were to obtain alternate funding and proceed with its current plans, the overall environmental consequences would be similar to those anticipated from implementing the Action Alternative. If the TRDA was unable to secure other funding or the Project was cancelled, the Proposed Action would not occur and there would be no impacts to wetland resources as environmental conditions on the site would remain essentially unchanged from the current conditions.

4.2.5 Aquatic Ecology

4.2.5.1 Aquatic Resources

As described in Section 4.2.3, surface waters in the vicinity of the Project Area are Island Creek, Moree Branch, Little Tennessee River, and 15 WWCs. Island Creek, Moree Branch, and Little Tennessee River are located outside of the Project Area (see Attachment 1, Figure 1-F). The Little Tennessee River is a perennial waterbody that lies approximately 0.2 mile southeast of the Project Area. Temporary impacts to surface waters in the vicinity of the Project Area due to stormwater runoff during construction activities are described in Section 4.2.3.

Implementation of the Action Alternative would result in ground disturbance during construction activities, including tree clearing and the grading and construction of a gravel access road. Impacts to the WWCs identified in the Project Area are proposed under the Action Alternative due to the grading and clearing construction activities. However, WWCs are man-made or natural watercourses, including natural watercourses that have been modified by channelization. There is not sufficient water to support fish or multiple populations of obligate lotic aquatic organisms whose life cycle includes an aquatic phase of at least two months (TDEC 2011) and therefore, WWCs are not aquatic resources able to support aquatic species. As such, with proper implementation of BMPs, no significant indirect impacts from erosion and sedimentation to aquatic species or their habitats would occur.

Construction activities would not involve moving aquatic species or water from different locations, and equipment and materials used during construction would be clean and free of

debris that could introduce exotic species and adversely affect aquatic habitat. Thus, the Action Alternative would not contribute to the spread of exotic or invasive aquatic species.

Under the No Action Alternative, TVA would not provide InvestPrep funds to the TRDA. If the TRDA were to obtain alternate funding and proceed with its current plans, the overall environmental consequences would be similar to those anticipated from implementing the Action Alternative. If the TRDA was unable to secure other funding or the Project was cancelled, the Proposed Action would not occur and there would be no impacts to aquatic resources as environmental conditions on the site would remain essentially unchanged from the current conditions.

4.2.5.2 Threatened and Endangered Aquatic Species

The Endangered Species Act (ESA) provides broad protection for species of fish, wildlife, and plants listed as threatened or endangered in the United States. The ESA outlines procedures for federal agencies to follow when taking actions that may jeopardize federally listed species or their designated critical habitat. The policy directs federal agencies to conserve endangered and threatened species and use their authorities in furtherance of the ESA’s purposes. The State of Tennessee provides protection for species considered threatened, endangered, or deemed in need of management in the state in addition to those federally listed under the ESA.

A March 2023 query of the TVA Regional Natural Heritage Database for records of listed aquatic animal species indicated there are no federally listed fish species within the Lower Tellico Lake watershed (HUC-10 0601020405) encompassing the Project Area (Table 4-2). Three state-listed fish species (snail darter [*Percina tanasi*], blotchside logperch [*Percina burtoni*], and lake sturgeon [*Acipenser fulvescens*]) have been documented within this watershed. Additionally, a review of the USFWS Information for Planning and Consultation (IPaC) tool identified one federally listed snail, Anthony’s riversnail (*Athearnia anthonyi*), as having potential to occur in the Project Area.

Table 4-2. Records of Federal and State-listed Aquatic Animal Species within the Lower Tellico Lake 10-digit HUC (0601020405) Watershed (TVA Request ID 41614)¹

Common Name	Scientific Name	Element Rank ²	Federal Status ³	State Status (Rank ⁴)
Fish				
Snail darter	<i>Percina tanasi</i>	H?	–	T (S2S3)
Blotchside logperch	<i>Percina burtoni</i>	H	–	D (S2)
Lake sturgeon	<i>Acipenser fulvescens</i>	E	–	E (S1)
Mollusk				
Anthony’s riversnail	<i>Athearnia anthonyi</i>	–	E	E (S1)

¹ Source: TVA Regional Natural Heritage Database, queried on 10/03/2022; USFWS 2023a.

² Heritage Element Occurrence Rank: E = extant record ≤25 years old; H=historical record ≥ 25 years old; H? =possibly historical

³ Status Codes: E = Listed Endangered; T = Listed Threatened; D = Deemed in Need of Management

⁴ State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S#S# = Denotes a range of ranks because the exact rarity of the element is uncertain (e.g., S1S2)

Brief habitat descriptions of protected species potentially occurring in the Project Area are provided below. Habitat requirements are as described in NatureServe (2023) and USFWS

(2023b). No suitable habitat for any federally or state-listed aquatic species is present within the Project Area. Furthermore, no suitable habitat for threatened and endangered aquatic species was documented during a 2017 survey of the Project Area (S&ME, Inc. 2017c).

Snail darter primarily occupies moderately flowing large creeks to rivers with abundant vegetation. Areas with sand and gravel substrates appear to be the most suitable for the species. No suitable habitat for this species occurs within the Project Area.

Blotchside logperch habitat includes runs and riffles of large creeks to medium rivers with moderate gradients and clear water. Areas with silt-free gravel, cobble, or rubble substrates appear to be the most suitable for the species. No suitable habitat for this species occurs within the Project Area.

Lake sturgeon preferred habitat includes large, freshwater rivers and lakes with silt-free sand, gravel, or rock substrates. They typically occur at depths of 5–10 meters in lakes and 4–9 meters of mid-river areas. No suitable habitat for this species occurs within the Project Area.

Anthony's riversnail habitat includes large creeks to rivers with moderate to high gradients and cobble/boulder substrates. No suitable habitat for this species occurs within the Project Area.

Implementation of the Action Alternative would result in ground disturbance during construction activities, including tree clearing and the grading and construction of a gravel access road. Implementation of the Action Alternative would not result in direct impacts to aquatic species or their habitats. No designated critical habitat for federally listed aquatic species overlaps the watershed (Lower Tellico Lake watershed [HUC 0601020405]) where the proposed Project would occur. Furthermore, ground disturbance would be minimized, and all work conducted in accordance with applicable BMPs to minimize erosion and subsequent sedimentation in streams. Therefore, with proper implementation of BMPs, there would be no effect to threatened and endangered aquatic species or unique or important aquatic habitats.

Under the No Action Alternative, TVA would not provide InvestPrep funds to the TRDA. If the TRDA were to obtain alternate funding and proceed with its current plans, the overall environmental consequences would be similar to those expected from implementing the Action Alternative, with no impacts to threatened and endangered aquatic species. If the TRDA were not able to secure other funding or the Project was cancelled, the Proposed Action would not occur and there would also be no impacts to threatened and endangered aquatic species.

4.2.6 Botany

4.2.6.1 Vegetation

Field surveys of the Project Area were conducted in November and December 2022 to document terrestrial plant and wildlife communities, including threatened and endangered species, and delineate wetlands and waterbodies. According to National Land Cover Dataset (NLCD) (USGS 2019), the Project Area predominately consists of Hay/Pasture with some mixed forest and deciduous forest lands. No forested areas in the proposed Project Area were observed to have structural characteristics indicative of old growth forest stands (Leverett 1996).

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. Common herbaceous species observed in disturbed areas, including the dirt road that longitudinally bisects the forested section into two halves and ATV trails in the eastern half of the forested section, include

Japanese stiltgrass (*Microstegium vimineum*), purpletop tridens (*Tridens flavus*), sericea lespedeza (*Lespedeza cuneata*), and tall goldenrod (*Solidago altissima*). Woody plants include black raspberry (*Rubus occidentalis*), Japanese honeysuckle (*L. japonica*), roundleaf greenbrier (*Smilax rotundifolia*), and sawtooth blackberry (*R. pensilvanicus*).

Deciduous forest, where deciduous tree species account for more than 75 percent of the canopy cover, is the most common forest type within the Project Area. Common trees in this area include mockernut hickory (*Carya tomentosa*), post oak (*Quercus stellata*), red maple (*A. rubrum*), southern red oak (*Q. falcata*), Virginia pine (*Pinus virginiana*), American beech (*Fagus grandifolia*), American sycamore (*Platanus occidentalis*), black cherry (*Prunus serotina*), box elder (*Acer negundo*), eastern red cedar (*Juniperus virginiana*), northern hackberry (*Celtis occidentalis*), scarlet oak (*Q. coccinea*), tulip poplar (*Liriodendron tulipifera*), and white oak (*Q. alba*). The understory is comprised of eastern dogwood (*Cornus florida*), woody shrubs such as autumn olive (*Elaeagnus umbellata*) and Chinese privet (*Ligustrum sinense*), the woody vines crossvine (*Bignonia capreolata*), saw greenbrier (*S. bona-nox*), cat greenbrier (*S. glauca*), Japanese honeysuckle, and poison ivy (*Toxicodendron radicans*) and saplings of some of the trees found in the overstory. The herbaceous layer in these forest stands is sparse and not well developed; common species include ebony spleenwort (*Asplenium platyneuron*), little brown jugs (*Hexastylis* sp.), wild garlic (*Allium vineale*), Christmas fern (*Polystichum acrostichoides*), and spotted wintergreen (*Chimaphila maculata*).

Evergreen forest, which occurs in the easternmost section of the forested area, is the least common forest type in the Project Area. This forest has low species diversity and is dominated by eastern red cedar and Virginia pine. The understory is comprised of saplings of the overstory, Bradford pear (*Pyrus calleryana*), and Chinese privet with Amur honeysuckle (*Lonicera maackii*), Christmas fern, Japanese honeysuckle, Japanese stiltgrass, poison ivy, and sawtooth blackberry.

Documented invasive plant species within the Project Area include sericea lespedeza, Japanese stiltgrass, Japanese honeysuckle, Amur honeysuckle, Bradford pear, autumn olive, Chinese privet, and wild garlic.

Based on the field surveys, the proposed Project Area does not support high quality plant communities with significant conservation value.

Implementation of the Action Alternative would result in ground disturbance during construction activities, including tree clearing and the grading and construction of a gravel access road, which would not result in adverse impacts to vegetation on any appreciable scale.

Approximately 54.9 acres would be cleared and graded. Impacts to vegetation may be permanent, but the vegetation found onsite is comprised of native and non-native plants that do not have significant conservation value.

Under the No Action Alternative, TVA would not provide InvestPrep funds to the TRDA. If the TRDA were to obtain alternate funding and proceed with its current plans, the overall environmental consequences would be similar to those expected from implementing the Action Alternative, with impacts to 54.9 acres of native and non-native plants that do not have significant conservation value. If the TRDA were not able to secure other funding or the Project was cancelled, the Proposed Action would not occur and the plant communities within the Project Area would remain in their current condition.

4.2.6.2 Threatened and Endangered Species

An October 2022 query of the TVA Regional Natural Heritage Database indicated that two state-listed plant species, the Alabama snow-wreath (*Neviusia alabamensis*) and spreading false foxglove (*Aureolaria patula*), have been previously reported within a 5-mile vicinity of the Project Area. No federally threatened or endangered plant species were identified by the TVA Regional Natural Heritage Database within a 5-mile vicinity of the Project Area. Additionally, a review of the USFWS IPaC tool identified one federally listed plant, the white fringeless orchid (*Platanthera integrilabia*), as having potential to occur in the Project Area. This species has previously been reported in Monroe County, TN. No designated critical habitat for plants occurs in the Project Area. Table 4-3 summarizes the listed species that may occur in the Project Area.

Table 4-3. Plant Species of Conservation Concern known from within 5 Miles of the Project Area and Federally Listed Plants in Monroe County, TN¹

Common Name	Scientific Name	Federal Status	State Status ²	State Rank ³
Plants				
Alabama snow-wreath	<i>Neviusia alabamensis</i>	–	THR	S2
Spreading false foxglove	<i>Aureolaria patula</i>	–	SPCO	S3
White fringeless orchid	<i>Platanthera integrilabia</i>	THR	END	S2S3
¹ Source: TVA Natural Heritage Database, queried October 2022; USFWS 2023a. ² Status Codes: END = Listed as Endangered; THR = Listed as Threatened; SPCO= Listed as Special Concern ³ State Ranks: S2 = Imperiled; S3= Vulnerable; S#S# = Denotes a range of ranks because the exact rarity of the element is uncertain.				

Brief habitat descriptions of protected plant species potentially occurring in the Project Area are provided below. Habitat requirements are as described in NatureServe (2023), and USFWS (2023b). Field surveys conducted in November 2022 indicate that no habitat for state or federally listed plant species occurs within the Project Area. The majority of the Project Area is highly disturbed and populated primarily with non-native weedy species. Additionally, no federally or state-listed species or their suitable habitat were documented during a 2017 survey of the area (S&ME, Inc. 2017c).

Alabama snow-wreath occurs within a variety of soil types on forested bluffs and stream banks. They typically occur on thin soil over limestone in forested areas. Field surveys conducted in November 2022 indicate that no habitat for this species occurs within the Project Area and no individuals were observed.

Spreading false foxglove habitat includes limestone bluffs along large streams and rivers in open stands of mixed hardwood forest. Field surveys conducted in November 2022 indicate that no habitat for this species occurs within the Project Area and no individuals were observed.

White fringeless orchid habitat includes wet, boggy areas or seepage slopes with partial shade and acidic sand or mucky soils. Due to the land cover and soils within the Project Area, potential for the white fringeless orchid to occur is very low, and no individuals or habitat were observed during the November 2022 field survey.

Previous clearing activities within the proposed Project Area have resulted in significant disturbance that makes the parcel incapable of supporting threatened or endangered plant

species. Implementation of the Action Alternative would result in ground disturbance during construction activities, including tree clearing and the grading and construction of a gravel access road, but these actions would not affect federal or state-listed plants because those species are not present.

Under the No Action Alternative TVA would not provide InvestPrep funds to the TRDA. If the TRDA were to obtain alternate funding and proceed with its current plans, the overall environmental consequences would be similar to those expected from implementing the Action Alternative, with no impacts to threatened and endangered plant species. If the TRDA were not able to secure other funding or the Project was cancelled, the Proposed Action would not occur and impacts to threatened and endangered plant species within the Project Area would also not occur since the parcel currently does not support them or their habitats.

4.2.7 Terrestrial Zoology

4.2.7.1 Terrestrial Wildlife

The Project Area is a 142.6-acre parcel consisting of open meadow, young successional forest, and some mature forested areas (S&ME, Inc. 2017c). The forested areas are largely in the middle of the parcel and primarily consist of early successional forest with maple, sweet gum, box elder, ash, hackberry, and cedar trees. The mature forested sections contain red oak, white oak, and hickory trees. The ground cover includes beauty berry, blackberry, greenbrier, privet, and small cedars. A field survey was conducted on November 10, 2022, by a TVA Terrestrial Zoologist.

Fields covered in herbaceous growth provide habitat for common birds such as field sparrow (*Spizella pusilla*), indigo bunting (*Passerina cyanea*), white-eyed vireo (*Vireo griseus*), and yellow-breasted chat (*Icteria virens*) (National Geographic 2002). Mammals such as bobcat (*Lynx rufus*), coyote (*Canis latrans*), eastern mole (*Scalopus aquaticus*), golden mouse (*Ochrotomys nuttalli*), groundhog (*Marmota monax*), and white-tailed deer (*Odocoileus virginianus*) also may utilize habitat like this in this region (Whitaker 1996). Reptiles that may use these habitats in this region include black racer (*Coluber constrictor*), eastern kingsnake (*Lampropeltis getula*), gray rat snake (*Pantherophis spiloides*), and red milksnake (*Lampropeltis triangulum sypila*) (Gibbons and Dorcas 2005).

The forested areas within the Project Area contain deciduous hardwood species, shrubs, and cedars which provide habitat for common birds such as Carolina chickadee (*Poecile carolinensis*), Carolina wren (*Thryothorus ludovicianus*), cedar waxwing (*Bombycilla cedrorum*), chipping sparrow (*Spizella passerine*), eastern blue bird (*Sialia sialis*), eastern towhee (*Pipilo erythrophthalmus*), golden crowned kinglet (*Regulus satrap*), northern cardinal (*Cardinalis cardinalis*), northern flicker (*Colaptes auratus*), northern mockingbird (*Mimus polyglottos*), prairie warbler (*Setophaga discolor*), pine warbler (*Setophaga pinus*), red tailed hawk (*Buteo jamaicensis*), song sparrow (*Melospiza melodia*), tufted titmouse (*Baeolophus bicolor*), and white-throated sparrow (*Zonotrichia albicollis*) (National Geographic 2002). During the field survey, an individual American woodcock (*Scolopax minor*) was observed along the edge of the forested area. Mammals found in these habitats include common raccoon (*Procyon lotor*), white-tailed deer, eastern gray squirrel (*Sciurus carolinensis*), and Virginia opossum (*Didelphis virginiana*) (Whitaker 1996). Evidence of deer (tracks and scat), opossum (tracks), and burrowing mammals (burrows) were observed during the field survey. Common reptile species also use similar habitats, including American toad (*Anaxyrus americanus*), eastern box turtle

(*Terrapene carolina carolina*), eastern garter snake (*Thamnophis sirtalis sirtalis*), and Fowler's toad (*Anaxyrus fowleri*) (Powell et al. 2016).

No cave records are known within 3 miles of the Project Area. No caves were observed during the field survey.

Review of the USFWS IPaC tool identified five migratory bird species of conservation concern that have the potential to occur within the Project Area: bald eagle (*Haliaeetus leucocephalus*), chimney swift (*Chaetura pelagica*), eastern whip-poor-will (*Antrostomus vociferous*), red-headed woodpecker (*Melanerpes erythrocephalus*), and wood thrush (*Hylocichla mustelina*). See Section 4.2.7.2 for discussion on bald eagles.

Chimney swifts are summer residents in Tennessee and use chimneys in urban areas as nesting sites and communal roosts (Palmer-Ball 1996). No chimney-like structures exist within the Project Area.

Eastern whip-poor-will are summer residents in Tennessee that have shown preference for nesting in mixed forest types above 610 meters (m) (approximately 2,000 feet) (Cink et al. 2020). Mixed-deciduous forest is present within the Project Area, but at approximately 250–300 m elevation (approximately 800–1,000 feet).

Red-headed woodpeckers use a variety of treed habitats but show preference for forested areas exhibiting more openness and a high number of tree snags available (Reller 1972). Red-headed woodpecker habitat is present within the mature forest sections of the Project Area.

Wood thrushes are summer residents in Tennessee that are associated with larger tracts of mature mixed-deciduous forests with open forest floors (Evans et al. 2020). The forested areas within the Project Area are large enough that wood thrushes may use the area as breeding habitat.

Implementation of the Action Alternative would result in ground disturbance during construction activities, including tree clearing and the grading and construction of a gravel access road. Actions are proposed to begin in the late Summer of 2023 and be completed in Spring 2024.

The Action Alternative would result in displacement of any 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 resources, shelter, and to reestablish territories. Due to the amount of similarly suitable habitat in areas immediately adjacent to the Project Area, populations of common wildlife species likely would not be impacted by the proposed project actions.

The USFWS IPaC tool identified five migratory birds of conservation concern that could occur within the Project Area: bald eagle, chimney swift, eastern whip-poor-will, red-headed woodpecker, and wood thrush. See Section 4.2.7.2 for discussion on bald eagles. Breeding and foraging habitat does not exist for chimney swift within the Project Area. Eastern whip-poor-will breeding habitat is not present within the Project Area. Within the forested areas in the Project Area, mature stands of trees and snags exist that may provide suitable breeding habitat for the red-headed woodpecker and wood thrush. Tree removal actions are proposed to begin in November 2023 when breeding season for both species are over and the wood thrush would be

overwintering in Central America. Red-headed woodpeckers may still be on the landscape during the winter, but individuals would be expected to be able to flush due to any disturbance to nearby suitable habitat. Considering the timing of tree removal, the proposed Project actions are not expected to impact populations of migratory bird species.

Under the No Action Alternative, TVA would not provide InvestPrep funds to the TRDA. If the TRDA were to obtain alternate funding and proceed with its current plans, the overall environmental consequences would be similar to those expected from implementing the Action Alternative. If the TRDA was unable to secure other funding or the Project was cancelled, the Proposed Action would not occur and there would be no impacts to terrestrial wildlife and their habitats, as environmental conditions on the site would remain essentially unchanged from the current conditions.

4.2.7.2 Threatened and Endangered Species

Review of the TVA Regional Natural Heritage Database identified records of one state-listed species (hellbender [*Cryptobranchus alleganiensis*]), one species of state conservation concern (osprey [*Pandion haliaetus*]) and one federally protected species (bald eagle) within 3 miles of the Project Area. A search for federally listed species within Monroe County, TN, identified four species: Indiana bat (*Myotis sodalis*), northern long-eared bat (*Myotis septentrionalis*), rusty patched bumble bee (*Bombus affinis*), and Carolina northern flying squirrel (*Glaucomys sabrinus coloratus*). Review of the USFWS IPaC tool identified the gray bat (*Myotis grisescens*), monarch butterfly (*Danaus plexippus*) (candidate for federal listing), the tricolored bat (*Perimyotis subflavus*) (proposed endangered), and whooping crane (*Grus americana*) (endangered, experimental population, non-essential) as species that have the potential to occur within the Project Area. Table 4-4 contains a list of terrestrial wildlife species of conservation concern (state-listed or state ranked S1–S3) within 3 miles of the Project Area, federally listed species within Monroe County, and USFWS IPaC species results for the Project Area.

Table 4-4. Federally listed Terrestrial Species in Monroe County, TN, and Other Species of Conservation Concern Documented within 3 Miles of the Project Area¹

Common Name	Scientific Name	Federal Status ²	State Status (Rank) ³
Amphibians			
Hellbender	<i>Cryptobranchus alleganiensis</i>	–	E(S3)
Invertebrates			
Monarch butterfly ^{4,5}	<i>Danaus plexippus</i>	C	(S4)
Rusty patched bumble-bee ⁶	<i>Bombus affinis</i>	E	(S1)
Birds			
Bald eagle ⁴	<i>Haliaeetus leucocephalus</i>	DL	D(S3)
Osprey	<i>Pandion haliaetus</i>	–	(S3)
Whooping crane	<i>Grus americana</i>	E(XPN)	--
Mammals			
Carolina northern flying squirrel ⁶	<i>Glaucomys sabrinus coloratus</i>	E	E(S1S2)

Common Name	Scientific Name	Federal Status ²	State Status (Rank) ³
Gray bat ⁵	<i>Myotis grisescens</i>	E	E(S2)
Indiana bat ⁶	<i>Myotis sodalis</i>	E	E(S1)
Northern long-eared bat ⁶	<i>Myotis septentrionalis</i>	E	T(S1S2)
Tricolored bat ⁵	<i>Perimyotis subflavus</i>	PE	T(S2S3)

¹ Source: TVA Regional Natural Heritage Database, extracted 10/4/2022 and USFWS Information for Planning and Consultation (IPaC) resource list (<https://ecos.fws.gov/ipac/>), accessed 1/27/2023.

² Status Codes: C = Candidate species; D = Deemed in Need of Management; DL = Delisted; E = Endangered; PE = Proposed Endangered; T = Threatened; XPN = Experimental Population.

³ State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S4 = Apparently Secure.

⁴ Historically this species has not been tracked by state or federal heritage programs.

⁵ USFWS has determined that this species could occur within the Project Area.

⁶ Species known from Monroe County, TN but not from within 3 miles of the Project Area.

Bald eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S. Code [U.S.C.] 668–668d). This species is associated with large mature trees capable of supporting their nests that can weigh several hundred pounds and are typically built near larger waterways where they forage primarily for fish (USFWS 2007a). Bald eagles are most reproductively successful in areas where human disturbance is minimized (Wilson et al. 2018). Adults exhibit high pair and nest site fidelity throughout their lifetime (Jenkins and Jackman 1993). Several bald eagle nests occur within Monroe County. The nearest bald eagle nest is approximately 2.7 miles from the Project Area in Loudon County. No bald eagles or nests were observed during the November 2022 field survey. Foraging habitat is not present within the Project Area but is available approximately 0.2 mile away near the Little Tennessee River.

Ospreys are medium-sized raptors that are typically associated with water since they forage exclusively for fish (Bierregaard et al. 2020). In Tennessee, ospreys arrive on the landscape in March to begin their breeding season, building nests and hatching young from April through July. Ospreys build nests in trees or man-made structures (e.g., transmission structures) near or over water. In October, ospreys migrate south for the winter non-breeding period (Poole 1989). One osprey nest record is known within three miles of the Project Area, approximately 2.6 miles away. Foraging habitat is not present within the Project Area but is present near the Little Tennessee River approximately 0.2 mile from the Project Area. No ospreys or osprey nests were observed during the November 2022 field survey.

Whooping cranes migrate through Tennessee twice per year in small flocks of three to five birds. During this migration they stop to feed and rest in wetland complexes, marshes, ponds, lakes, rivers, and agricultural fields (USFWS 2023b). Historically the Project Area has been undeveloped agricultural land (specifically for hay production) but has been left fallow for several years. The area no longer contains sufficient quantities of agricultural grains that would attract these birds. No emergent wetlands, ponds, or lakes exist on the site either. Therefore, the Project Area does not provide suitable habitat for whooping crane.

The monarch butterfly is a highly migratory species, with eastern 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 on. Adults will drink nectar from other blooming wildflowers when milkweeds are not in bloom (NatureServe 2023). The field within the Project Area has been used for agriculture/hay production in the past and the plants present are not typically used for monarch foraging. Though some flowering plants may occur in the field, significant breeding or foraging habitat is not present within the Project Area. Though this species has not been historically tracked by state or federal heritage programs, the USFWS IPaC tool indicated that they could occur within the Project Area. Monarchs were not observed during the field survey of the Project Area in November 2022; however, it is expected that most individuals would be located in their overwintering grounds at the time of year when the field survey was conducted.

Rusty patched bumblebees inhabit grasslands, prairies, woodlands, marshes, agricultural landscapes, and residential parks and gardens. They require both diverse, abundant flowers from April to September and undisturbed nesting sites nearby in order to have sufficient food and overwintering sites for queens. They often build nests in abandoned, underground rodent cavities of large clumps of grass (USFWS 2018). One record of rusty patched bumblebee is present in Monroe County, approximately 10.7 miles from the Project Area. This record is listed as possibly historical due to the age of the record (1966) and has been potentially extirpated from the Project Area. Though the Project Area contains a large meadow, it is routinely disturbed from mowing and was previously used for agriculture, limiting the variety of flowering species. Based on guidance provided by the USFWS, the Project Area is in the historical range of the species.

Carolina northern flying squirrels are nocturnal arboreal species, typically found at high elevation (> 1,200 m or 4,000 feet) coniferous forests in the southern Appalachians (Payne et al 1989). Flying squirrels will den in tree cavities in live and dead trees or in stick nests in foliage (Weigl et al. 1999). The nearest record of a Carolina northern flying squirrel is approximately 24.8 miles from the Project Area in the Cherokee National Forest. Further, the Project Area is at approximately 250–300 m (approximately 800–1,000 feet) above sea level. Habitat for northern flying squirrel is not present within the Project Area.

Gray bats roost in caves year-round and migrate between summer and winter roosts during spring and fall (Brady et al. 1982; Tuttle 1976a, 1976b). Bats disperse over bodies of water at dusk where they forage for insects emerging from the surface of the water (Harvey 2011). There are no known gray bat records from Monroe County, TN, but the USFWS has determined that this species could be expected to occur within the Project Area. No caves are known within the Project Area or were observed during the field survey in November 2022. Aquatic foraging habitat is not present within the Project Area.

Indiana bats hibernate in caves in winter and use areas around them in fall and spring (for swarming and staging), prior to migration back to summer habitat. During the summer, Indiana bats roost under the exfoliating bark of dead and living trees in mature forests with an open understory, often near sources of water. Indiana bats are known to change roost trees frequently throughout the season, yet still maintain site fidelity, returning to the same summer roosting areas in subsequent years. This species forages in forest canopies, along forest edges and tree lines, and occasionally over bodies of water (Kurta et al. 2002, USFWS 2007b, USFWS 2022b). The nearest known Indiana bat record is from a summer roost tree approximately 7.2 miles from the Project Area.

The northern long-eared bat predominantly overwinters in large hibernacula such as caves, abandoned mines, and cave-like structures. During the fall and spring, they utilize entrances of caves and the surrounding forested areas for swarming and staging. In the summer, northern long-eared bats roost individually or in colonies beneath exfoliating bark or in crevices of both live and dead trees. Roost selection by northern long-eared bat is similar to that of Indiana bat, however northern long-eared bats are thought to be more opportunistic in roost site selection. This species also roosts in abandoned buildings and under bridges. Northern long-eared bats emerge at dusk to forage below the canopy of mature forests on hillsides and roads, and occasionally over forest clearings and along riparian areas (USFWS 2014). The nearest northern long-eared bat is known from a summer mist-net capture site approximately 11 miles from the Project Area.

Tricolored bats hibernate in caves or man-made structures such as culverts or bridges (Fujita and Kunz 1984, Newman et al 2021). During the summer, tricolored bats roost in clumps of tree foliage, often in oak and hickory trees (Veilleux et al. 2003, O'Keefe et al. 2009, Schaefer 2017, Thames 2020). Foraging studies of tricolored bats are lacking, but it is believed they typically forage near their roost trees in forested areas and riparian corridors. There are no known tricolored bat records for Monroe County, TN, but the USFWS has determined that this species could occur within the Project Area.

No caves are known within 3 miles of the Project Area, and no caves were observed during the field survey in November 2022. The wooded sections proposed for removal as part of the Project were assessed for potential summer roosting and foraging sites for state and federally listed bat species following the Range-Wide Indiana Bat and Northern Long-eared Bat Survey Guidelines (USFWS 2022b). Approximately 16.8 acres of suitable summer roosting habitat was observed for tricolored, northern long-eared, and Indiana bats. Habitat quality ranged from low to moderate based on the presence of trees with exfoliating bark, crevices, or holes and open forest understory. Suitable summer roosting areas were comprised of mixed-deciduous hardwood patches dominated by a mixture of white oaks, red oaks, shagbark hickories, and snags. Foraging habitat for, tricolored, Indiana, and northern long-eared bat exists along the wooded edges within the Project Area. Wet weather conveyances and one small forested wetland are present in the Project Area and may offer a small amount of mostly ephemeral aquatic foraging habitat. Additional permanent foraging habitat is available near the Little Tennessee River approximately 0.2 mile from the Project Area. Gray bat roosting habitat is not present within the Project Area.

Implementation of the Action Alternative would result in ground disturbance during construction activities, including tree clearing and the grading and construction of a gravel access road. Actions are proposed to begin in the late Summer of 2023 and be completed in Spring 2024.

Due to the distance from known records to the Project Area (approximately 2.7 miles), no bald eagle nests would be impacted by the Proposed Action, which is in compliance with the National Bald Eagle Management Guidelines. Bald eagles would not be impacted under the Action Alternative.

Similarly, due to the distance from known records to the Project Area (approximately 2.6 miles), no osprey nests would be impacted by the Proposed Action. Ospreys would not be impacted under the Action Alternative.

No impacts to whooping crane are anticipated under the Action Alternative due to the lack of habitat in the Project Area.

Although breeding habitat was not observed during field survey, some monarch butterfly habitat may exist within the Project Area. Construction of a compacted gravel access road may impact some areas of potential foraging habitat. Several areas adjacent to the Project Area offer similar habitat that adult individuals could utilize if they are disturbed during construction. This species is currently listed as a candidate species and is not subject to Section 7 consultation under the ESA. Significant impacts to the monarch butterfly are not anticipated as a result of the Action Alternative.

Based on guidance provided by the USFWS, the Project Area is in the historical range of the rusty patched bumble bee and Section 7 consultation is not needed. Rusty patched bumble bee is not present and would not be impacted as a result of the Action Alternative.

Carolina northern flying squirrel habitat is not present within the Project Area and would not be impacted as a result of the Action Alternative.

Due to the lack of caves and lack of aquatic foraging habitat, it is unlikely that gray bats would utilize the Project Area for roosting or foraging. Indiana bat, northern long-eared bat, and tricolored bat have the potential to occur within the Project Area for summer roosting or foraging. No caves or other hibernacula for Indiana bat, northern long-eared bat, or tricolored bat are known within the Project Area or within three miles of the Project Area. Approximately 16.8 acres of suitable summer roosting habitat for Indiana bat and northern long-eared bat occurs throughout the Project Area and would be cleared and burned under the Action Alternative (see Attachment 1, Figure 1-G). This area also provides suitable summer roosting habitat for the tricolored bat. The remaining forested areas consist largely of young successional forest species (small maples, hackberry, and cedar) that do not offer suitable roosting habitat but may offer foraging habitat for all three species. A small amount of mostly ephemeral aquatic foraging habitat is present within the Project Area. Tree removal is proposed to begin in November 2023 and conclude by March 31, 2024, when Indiana bats, northern long-eared bats, and tricolored bats are not expected to be on the landscape. Removal of suitable habitat during this timeframe would avoid direct impacts to these species as bats are roosting underground at that time.

A number of activities associated with the proposed Project, including tree removal and burning, were addressed in TVA's programmatic consultation with the USFWS on routine actions and federally listed bats in accordance with ESA Section 7(a)(2), originally completed in April 2018, and updated in May 2023. For those activities with potential to affect bats, TVA committed to implementing specific conservation measures. These activities and associated conservation measures are identified on pages 5 and 6 of the TVA Bat Strategy Project Screening Form (Attachment 2) and should be reviewed/implemented as part of the proposed Project. Considering the scope of the proposed project actions, distance to known bat records, and implementation of conservation measures, including winter tree removal, significant impacts to gray bat, Indiana bat, and northern long-eared bat are not anticipated under the Action Alternative. The proposed actions under the Action Alternative would not jeopardize the continued existence of the tricolored bat.

Under the No Action Alternative, TVA would not provide InvestPrep funds to the TRDA. If the TRDA were to obtain alternate funding and proceed with its current plans, the overall

environmental consequences would be similar to those expected from implementing the Action Alternative, with no significant impacts to threatened and endangered terrestrial animal species and their habitats. If the TRDA was unable to secure other funding or the Project was cancelled, the Proposed Action would not occur and there would be no impacts to threatened and endangered terrestrial animal species and their habitats.

4.2.8 Managed and Natural Areas

Managed areas include lands held in public ownership that are managed by an entity (e.g., TVA, U.S. Department of Agriculture, 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 (WMAs); 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. Developed recreational facilities such as parks and golf courses are not included in the assessment of managed and natural areas and are discussed in Section 4.2.11.

A review of data from the TVA Regional Natural Heritage Database identified ten natural areas located within 3 miles of the Project Area (Table 4-5; see Attachment 1, Figure 1-H).

Table 4-5. Managed/Natural Areas within 3 Miles of the Project Area¹

Natural Area	Distance/Direction from Project Area	County	Acres
Tellico Dam Reservation	0.2 mi east	Multiple	25,657.4
Ft. Loudoun State Historical Area	2.3 mi east	Monroe	900.6
Bat Creek Knobs Farm	1.9 mi northwest	Monroe	538.7
Tellico River	2.2 mi east	Multiple	133.8
Little Tennessee River	1.1 mi east	Multiple	74.8
Tellico Lake Wildlife Management Area	Overlap	Multiple	5,693.6
Fort Loudon State Historic Park	2.3 mi east	Monroe	900.6
Jerry I. Lay II Farms	2.3 mi west	Monroe	166.9
Wildcat Rock Recreation Area - TVA	2.5 mi east	Multiple	255.5
Foothills Land Conservancy - Knobs Farm Conservation Easement	1.8 mi northwest	Monroe	538.7

¹ Source: TVA Regional Natural Heritage Database, queried on 10/03/2022.

Two of the 10 managed and natural areas fall within 0.5 mile of the Project Area: The Project Area is located within a section of the Tellico Lake WMA, which is managed by the Tennessee Wildlife Resources Agency (TWRA), and the Tellico Dam Reservation, a TVA asset, is located 0.2 mile east of the Project Area.

Impacts to the Tellico Dam Reservation might include increased noise and traffic during construction of the Project but would likely be temporary and minor. These impacts, which are discussed further in Sections 4.2.13 and 4.2.16, could be minimized with the use of standard BMPs. Although the Project Area is located within the Tellico Lake WMA, the area is also part of the Tellico West Site and therefore no long-term impacts would be expected. No direct impacts are expected to the remaining natural areas given their distance from the Project Area.

Implementation of the Action Alternative would result in ground disturbance during construction activities, including tree clearing and the grading and construction of a gravel access road. Based on the preceding analysis, there may be short-term, minor impacts to the Tellico Dam Reservation. TRDA would coordinate with TWRA prior to any construction activities to minimize any potential temporary construction impacts to the Tellico Lake WMA. Through this coordination and with the use of BMPs no long-term impacts to these or any other managed or natural areas are expected.

Under the No Action Alternative, TVA would not provide InvestPrep funds to the TRDA. If the TRDA were to obtain alternate funding and proceed with its current plans, the overall environmental consequences would be similar to those expected from implementing the Action Alternative, with possible short-term, minor impacts to the Tellico Dam Reservation. If the TRDA were not able to secure other funding or the Project was cancelled, the Proposed Action would not occur and there would be no impacts to natural or managed areas as environmental conditions on the site would remain unchanged from current conditions.

4.2.9 Cultural Resources

Cultural resources, including archaeological and architectural resources, are protected under various federal laws, including: the Archaeological Resources Protection Act, the Native American Graves Protection and Repatriation Act, and the National Historic Preservation Act (NHPA). Section 106 of the NHPA requires federal agencies to consult with the respective State Historic Preservation Officer (SHPO) when proposed federal actions could affect these resources.

The Project comprises approximately 142.6 acres within the Tellico West Site in Vonore, Monroe County, TN. Implementation of the Action Alternative would result in ground disturbance during construction activities, including tree clearing and the grading and construction of a gravel access road.

Pursuant to Section 106 of the NHPA and implementing regulations 36 CFR 800, a historic architectural survey and archaeological survey were completed by SWCA to identify National Register of Historic Places (NRHP) listed, eligible, or potentially eligible historic structures and archaeological sites within the Project Area.

The archaeological survey, which was conducted January 11–15, 2023, included a pedestrian inspection with subsurface testing. A total of 958 shovel tests were excavated within the Project Area. No cultural resources were identified as a result of the pedestrian and shovel testing survey. Previous archaeological survey work within and adjacent to the Project Area identified

four archaeological sites (40MR321, 40MR322, 40MR325, and 40MR342) along the Project Area boundaries (Thomas 1999). No material associated with these, or other archaeological sites were encountered by SWCA suggesting the sites have been destroyed or are located outside the current Project Area.

The historic architectural survey was conducted January 10–11, 2023. Prior to the field survey, a review of the site survey files and other resources available at the Tennessee Historical Commission (THC) was completed. Background research conducted via the Tennessee Historic Property Viewer, historic cartographic resources, and modern aerial photographs revealed six properties that are 50-years of age or older within the Area of Potential Effect (APE) for the Project Area, which included the 142.6-acre Project Area and 0.5-mile unobstructed viewshed. One of the six sites was a previously identified resource documented with the THC, but no recommendations were made regarding its eligibility. During the field survey, SWCA identified five additional historic architectural resources within the APE, none of which were deemed eligible for listing in the NRHP (Table 4-6).

Table 4-6. Cultural Resources Identified during the Phase I Cultural Resource Survey

Cultural Resource Number	Description	Eligibility Recommendation
MR-IP-005	231 Pressley Road, Vonore, TN 37885: 1965 one-story, Ranch style house	Not Eligible
MR-IP-006	219 Pressley Road, Vonore, TN 37885: 1964, one-story, Ranch style house	Not Eligible
MR-IP-008	195 Pressley Road, Vonore, TN 37885: 1972 one-story, Ranch style house	Not Eligible
MR-IP-009	194 Pressley Road, Vonore, TN 37885: ca. 1935 one-story, church	Not Eligible
MR-IP-010	453 Summit Road, Vonore, TN 37885: 1964 one-story, Ranch style house	Not Eligible
MR-601	150 Pressley Road, Vonore, TN 37885: 1940 one-story, frame vernacular	Not Eligible

Implementation of the Action Alternative would result in ground disturbance during construction activities, including tree clearing and the grading and construction of a gravel access road. Based on the background research and the Phase I cultural resources survey, implementation of the Action Alternative is not anticipated to result in impacts to cultural resources.

TVA consulted with the Tennessee SHPO in letters dated March 29 and April 18, 2023, regarding TVA's findings and recommendations. In a letter dated April 18, 2023, the Tennessee SHPO concurred with TVA's findings and recommendations (Attachment 3). Pursuant to 36 CFR Part 800.3(f) (2), TVA also consulted with federally recognized Indian tribes regarding properties that may have religious and cultural significance to their tribe and eligible for the NRHP. TVA received no responses from the federally recognized Indian tribes regarding the Action Alternative.

Under the No Action Alternative, TVA would not provide InvestPrep funds to the TRDA. If the TRDA were to obtain alternate funding and proceed with its current plans, the overall environmental consequences would be similar to those anticipated from implementing the Action Alternative, with no impacts to cultural resources. If the TRDA was unable to secure other funding or the Project was cancelled, the Proposed Action would not occur and there would also be no impacts to cultural resources.

4.2.10 Air Quality and Climate Change

Federal and state regulations protect ambient air quality. With authority granted by the Clean Air Act (CAA) 42 U.S.C. 7401 et seq. as amended in 1977 and 1990, the USEPA established National Ambient Air Quality Standards (NAAQS) to protect human health and public welfare. The USEPA codified NAAQS in 40 CFR 50 for the following “criteria pollutants”: nitrogen dioxide (NO₂), carbon monoxide (CO), ozone, sulfur dioxide (SO₂), lead, particulate matter (PM) with an aerodynamic diameter equal to or less than 10 microns (PM₁₀), and PM with an aerodynamic diameter equal to or less than 2.5 microns (PM_{2.5}). The NAAQS reflect the relationship between pollutant concentrations and health and welfare effects. Primary standards protect human health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards are designed to protect public welfare, including visibility, animals, crops, vegetation, and buildings. These standards reflect the latest scientific knowledge and have an adequate margin of safety intended to address uncertainties and provide a reasonable degree of protection. The air quality in Monroe County, TN meets the ambient air quality standards and is in attainment with respect to the criteria pollutants (USEPA 2023).

Other pollutants, such as hazardous air pollutants (HAPs) and greenhouse gases (GHGs) are also a consideration in air quality impacts analyses. Section 112(b) of the CAA lists HAPs, also known as toxic air pollutants or air toxics, because they present a threat of adverse human health effects or adverse environmental effects. Although there are no applicable ambient air quality standards for HAPs, their emissions are limited through permit thresholds and technology standards as required by the CAA.

GHGs are gases that trap heat in the atmosphere. They are non-toxic and non-hazardous at normal ambient concentrations. Currently, there are no applicable ambient air quality standards or emission limits for GHGs under the CAA. GHGs occur in the atmosphere both naturally and resulting from human activities, such as the burning of fossil fuels. GHG emissions due to human activity are the main cause of increased atmospheric concentration of GHGs since the industrial age and are the primary contributor to climate change. The principal GHGs are carbon dioxide (CO₂), methane, and nitrous oxide.

Air quality impacts associated with activities under the Action Alternative include emissions from fossil fuel-fired equipment, fugitive dust from ground disturbances, and emissions from the burning of wood debris. Fossil fuel-fired equipment are a source of combustion emissions, including nitrogen oxides (NO_x), CO, volatile organic compounds (VOCs), SO₂, PM₁₀, PM_{2.5}, GHGs, and small amounts of HAPs. Gasoline and diesel engines used as a result of the Action Alternative would comply with the USEPA mobile source regulations in 40 CFR Part 85 for on-road engines and 40 CFR Part 89 for non-road engines. These regulations are designed to minimize emissions and require a maximum sulfur content in diesel fuel of 15 parts per million.

Fugitive dust is a source of respirable airborne PM, including PM₁₀ and PM_{2.5}, which could result from ground disturbances such as land clearing, grading, excavation, and travel on unpaved roads. The amount of dust generated is a function of the activity, silt and moisture content of the soil, wind speed, frequency of precipitation, vehicle traffic, vehicle types, and roadway characteristics. The TRDA, or its contractors, would comply with TDEC Air Pollution Control Rule 1200-3-8, which requires reasonable precautions to prevent PM from becoming airborne. Such reasonable precautions include, but are not limited to, the use of water or chemicals for control of dust in construction operations, grading of roads, or the clearing of land. In addition,

the application of asphalt, water, or suitable chemicals on dirt roads, material stockpiles, and other surfaces which can create airborne dusts, are also considered reasonable precautions.

Many variables affect emissions from ground-level open burning, including wind, ambient temperature, composition, and moisture content of the debris burned, and compactness of the pile. In general, the relatively low temperatures associated with open burning increase emissions of NO_x, CO, VOCs, PM₁₀, PM_{2.5}, GHGs, and HAPs. The TRDA, or its contractors, would be subject to local burn permits and the requirements in TDEC Air Pollution Control Rule 1200-3-4, which provides open burning prohibitions, exceptions, and certification requirements.

With the use of BMPs and other permit-required measures described above to reduce emissions associated with the Action Alternative, air quality impacts would be minimal, temporary, and localized; and would not be anticipated to result in any violation of applicable ambient air quality standards or impact regional air quality.

Concerning climate change, trees, like other green plants, are carbon sinks that use photosynthesis to convert CO₂ into sugar, cellulose, and other carbon-containing carbohydrates that they use for food and growth. Carbon sequestration is the process by which carbon sinks remove CO₂ from the atmosphere. Although forests do release some CO₂ from natural processes such as decay and respiration, a healthy forest typically stores carbon at a greater rate than it releases carbon. The majority of the 142.6 acres that make up the Project Area is comprised of dense regenerated eastern red cedar interspersed with mature mixed-deciduous-evergreen forest and open fields of grass. The clearing of approximately 54.9 acres of trees for the Action Alternative would result in a minor loss of carbon sequestration capacity in the area since evergreen and deciduous forest habitat is common and well represented throughout the region and in the immediate vicinity of the Project Area.

Under the No Action Alternative, if the TRDA were to obtain alternate funding and proceed with its current plans, similar emissions from equipment, ground disturbances, and burning would occur, resulting in similar air quality and climate change impacts as those described above for the Action Alternative. If the TRDA were not able to secure other funding or the Project was cancelled, emissions from equipment, ground disturbances, and burning would not occur and there would be no impacts to air quality and climate change.

4.2.11 Recreation

The proposed Project Area is located within a section of the Tellico Lake WMA, which provides various recreational opportunities, including hunting. The Tellico Dam Reservation, a TVA asset, is located 0.2 mile east of the Project Area. Tellico Dam Reservation offers many recreational opportunities, including a day-use area, boat ramp, and trails.

There are two golf courses within 2 miles of the Project Area: the Rarity Golf and Country Club is located approximately 1.9 miles to the north and the Kahite Pro Shop is located approximately 2 miles to the southeast. The Old Lutheran Cemetery is located across SR 72, approximately 0.6 mile from the Project Area. There are numerous parks to the north and east along the Little Tennessee River such as the Fort Loudoun State Historic Park and the McGee Carson Peninsula Recreation Area. The Project Area is bordered by DHL to the north and JTEKT Automotive Tennessee to the east. An automotive company, electronics company, the Cleveland Community College and the Grand Vista Hotel and Suites border the Project Area to the south along Excellence Way and Grand Vista (Google Maps 2023a).

Implementation of the Action Alternative would result in ground disturbance during construction activities, including tree clearing and the grading and construction of a gravel access road. Because the Project Area is located in an area zoned for heavy industrial use, and is located in a primarily industrial area, implementation of the Action Alternative is not anticipated to impact nearby recreational opportunities. Furthermore, no impacts on public use of the Tellico Lake WMA, the Tellico Dam Reservation, or any other nearby recreation areas are anticipated because of the distances between the Project Area and developed recreation areas.

Under the No Action Alternative, TVA would not provide InvestPrep funds to the TRDA. Similar to the Proposed Action, if the TRDA were to obtain alternate funding and proceed with its current plans, impacts to recreational opportunities would also not be anticipated. If the TRDA was unable to secure other funding or the Project was cancelled, the Proposed Action would not occur, impacts to recreational opportunities would not be anticipated, and environmental conditions on the site would remain essentially unchanged from the current conditions.

4.2.12 Visual

The Project Area is situated within an area consisting of open land with tall grasses and dense tree growth. The Project Area is surrounded by a mix of land uses including dense forested areas to the east, industrial and commercial development to the north and south and scattered rural residential development to the west of SR 72. The Little Tennessee River is located approximately 0.5 mile to the east. The Project Area is zoned as heavy industrial.

Development to the west of the Project Area (on the western side of SR 72) consists of small clusters of rural residences, commercial developments, and farms, which all have geometric forms and straight and angular lines. SR 72 is lined with a dense band of trees on either side of the highway, limiting potential views of the Project Area. Industrial and commercial development to the north and south of the Project Area includes warehouses and shipping facilities (long geometric one to three story buildings with neutral colors) to hotels and local businesses (small geometric one to two story buildings with a wide variety of colors). Other development in the area includes roadway signage along SR 72, a small substation near the northwest corner of the Project Area, and tall vertical repeating monopole transmission lines that run along the western and northern borders of the Project Area.

Project actions that could influence visual change in the landscape would include the clearing of approximately 54.9 acres of trees and construction of an approximately 1,100-foot compacted gravel access road to provide access into the Project Area. Impacts to visual resources in this area were measured by comparing the existing visual conditions of the Project Area, the proposed Project elements, and the degree of contrast created from the change of landscape as viewed. The degree to which a project affects the visual quality of a landscape depends on the visual contrast created between a project and the existing landscape. The contrast can be evaluated by comparing the project features with the major features in the existing landscape. The basic design elements of form, line, color, and texture are used to make this comparison and to describe the visual contrast created by the Project. This assessment process provides a means for determining visual impacts and for identifying measures (if applicable) to mitigate these impacts. The degree of contrast and subsequent degree of impact was evaluated as none, low, moderate, and high using the criteria in Table 4-7.

Table 4-7. Criteria for Degree of Contrast and Impact

Degree of Contrast/Impact	Criteria
None	The landscape when viewed appears unaltered and project elements would not attract attention or project components would repeat the form, line, color, texture, or scale common in the landscape.
Low	The landscape when viewed appears slightly altered and project elements would begin to introduce form, line, color, texture, or scale in the landscape that would be visually subordinate.
Moderate	The landscape when viewed appears moderately altered and project elements would introduce form, line, color, texture, or scale not common in the landscape and would be visually prominent in the landscape.
High	The landscape when viewed appears heavily altered and project elements would be out of scale or contain detail that is out of character with the existing landscape as viewed.

Visual impacts during construction would result from the presence of workers, dust caused by construction traffic and equipment or grading activities in the Project Area and the removal of vegetation. During implementation of the Project, construction activities and equipment (e.g., an excavator, bulldozer, dump truck, or similar vehicles and heavy machinery) would be visible. This is anticipated to be primarily limited to infrequent views from SR 72 and occasional views from existing industrial or commercial areas to the north and south. Views of construction activities would be mostly obstructed due to the amount of topographical change in the area as well as the degree of existing vegetation. Construction would begin to introduce changes to the existing landscape character with the introduction of forms, lines, colors, and textures not currently found in the Project Area that would be associated with Project elements. During the infrequent occasions where construction activities would be visible it is anticipated that viewers would experience a low degree of visual contrast and result in a low visual impact during construction. These impacts would be lessened by implementing dust control measures, such as a low construction speed limit for vehicles and occasional spraying of water from water trucks to reduce airborne dust in disturbed areas.

Implementation of the Action Alternative would result in ground disturbance during construction activities, including tree clearing and the grading and construction of a gravel access road. The proposed Project elements would result in minor long-term visual impacts. Removal of existing vegetation would contrast with the existing dense forested area on the east side of the Project Area. The introduction of a gravel access road would introduce form, line, color, and textures not currently existing in the Project Area. These project elements would be similar to the form, line, color, and texture of development visible in the surrounding area reducing the degree of impacts to low.

Current views of the Project Area would change from an open field with areas of dense forests to open fields. However, implementation of the Action Alternative would result in an overall low degree of impact to visual resources given the degree of topographic change from the Project Area to surrounding areas and the existing dense vegetation that screens views of the Project Area. Furthermore, there is a significant amount of existing industrial development in the area. The Project would introduce form, line, and color similar to development in the area and the landscape within the Project Area is anticipated to appear slightly altered and remain visually subordinate to the existing landscape character.

Under the No Action Alternative, TVA would not provide InvestPrep funds to the TRDA. If the TRDA were to obtain alternate funding and proceed with its current plans, similar visual quality impacts would occur as described above for the Action Alternative. If the TRDA was unable to secure other funding or the Project was cancelled, the Proposed Action would not occur, and existing site conditions would likely be maintained resulting in no visual quality impacts.

4.2.13 Noise

Existing ambient noise levels, or background noise levels, are the current sounds from natural and artificial sources at receptors. The magnitude and frequency of background noise at any given location may vary considerably over the course of a day or night and throughout the year. The variations are caused in part by weather conditions, seasonal vegetative cover, and human activity. Existing sources of noise in the vicinity of the Project Area are primarily associated with traffic along the surrounding roads and the surrounding businesses and residences.

Noise impacts associated with construction activities under the Action Alternative would be primarily from construction equipment. Construction activities would involve operation of an excavator, bulldozer, dump truck, or similar vehicles and heavy machinery over the temporary duration of construction. Construction equipment noise levels are temporary and rarely steady; they fluctuate depending on the number and type of vehicles and equipment in use at any given time. In addition, construction-related sound levels experienced by a noise sensitive receptor in the vicinity of construction activity 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.

Primary sensitive noise receptors in the area include the businesses directly adjacent to Deer Crossing Road, Excellence Way, and the Project Area and the residences and businesses located on the other side of SR 72, west of the Project Area. The noise would be localized and temporary, and no receptor would be exposed to significant noise levels for an extended period. Further, construction activities would be conducted during daylight hours only, when ambient noise levels are often higher, and most individuals are less sensitive to noise. Thus, noise-related impacts resulting from implementation of the Action Alternative are anticipated to be temporary and minor.

Under the No Action Alternative, TVA would not provide InvestPrep funds to the TRDA. If the TRDA were to obtain alternate funding and proceed with its current plans, the proposed actions would occur, resulting in similar noise-related impact as described above for the Action Alternative. If the TRDA were not able to secure other funding or the Project was cancelled, the Proposed Action would not occur and there would be no noise-related impacts.

4.2.14 Socioeconomics

This analysis evaluates the effects of the proposed Project on socioeconomic indicators in Monroe County, TN. These indicators include population level and demographics, employment, housing, tourism, and demand for public services.

The first step in the assessment is to characterize existing conditions in the county using information compiled by the U.S. Census Bureau (USCB) as part of their American Community Survey and other publicly available information. The information on existing conditions is integrated with project-specific data to characterize expected socioeconomic impacts.

Table 4-8 summarizes the population, labor force, and income levels for Monroe County. Table 4-8 also reports housing and public service statistics for the county. Similar information is provided at the state level for comparison purposes.

Table 4-8. Population, Labor Force, Housing, and Public Services

	Tennessee	Monroe County
Population (Five-Year Estimates Ending in Designated Year)^{a,b}		
Total Population (2011)	6,297,991	44,396
Total Population (2021)	6,859,497	46,041
Population Change (2011 to 2021)	8.9%	3.7%
Persons per Square Mile (2021)	166.4	72.4
Labor Force (2017–2021 Five-Year Estimates)^c		
Civilian Labor Force	3,380,708	19,096
Employed	3,201,140	17,909
Unemployed	179,568	1,187
Average Annual Unemployment Rate	5.3%	6.2%
Income (2017–2021 Five-Year Estimates)^c		
Per Capita Income	\$32,908	\$24,921
Median Household Income	\$58,516	\$48,488
Percent of Persons Below Poverty Level	14.3%	16.3%
Housing (2017–2021 Five-Year Estimates)^{d,e}		
Total Housing Units	3,011,124	21,246
Total Occupied Housing Units	2,664,791	18,574
Total Vacant Units	346,333	2,672
Homeowner Vacancy Rate	1.2%	2.4%
Rental Vacancy Rate	6.7%	2.7%
Number of Hotels/Motels ^f	NR	5
Number of RV Parks/Campgrounds ^g	NR	20
Public Services and Facilities		
Police Departments ^h	NR	5
Fire Departments ^f	NR	11
Hospitals ⁱ	NR	1
Public Schools ⁱ	NR	16
NR: Not Reported		
^a USCB 2011		
^b USCB 2021a		
^c USCB 2021b		
^d USCB 2021c		
^e USCB 2021d		
^f Google Maps 2023b		
^g Allstays 2023		

^h USACOPS 2023 ⁱ USEPA 2020
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With a population density less than half the state average, Monroe County is reasonably characterized as rural. As is often the case in rural areas, the county has a lower per capita income and higher rates of poverty and unemployment than the state average. Employment is centered in three sectors: 1) education, health care, and social assistance; 2) manufacturing; and 3) retail trade (USCB 2021b). The rental vacancy rate is below the state average which is consistent with an expanding population.

Tree clearing and the grading and construction of the gravel access road is anticipated to take place over an approximately 6-month period and require a small local workforce. Due to the small size of the workforce and the short duration of construction activities, the Project is characterized as having a negligible effect on economy, employment, and income.

Because the workforce would likely be drawn from the surrounding area, there would be no impact on the population level or demographics in Monroe County. Workers who live in the surrounding area would typically commute to and from the Project Area on a daily basis rather than use temporary housing. Further, demand for public services such as education, emergency medical, and law enforcement would not be affected.

While there are 20 RV parks/campgrounds in the county, no major tourist attractions have been identified within 1 mile of the Project. The Project Area is surrounded by an existing industrial park, so development of the Tellico West Site does not represent a significant change from current land use in the area. Therefore, the Project is not likely to affect Monroe County tourism.

Due to the small scale of construction activities associated with the Project, the Project is not anticipated to have a material impact on tax revenue at the state or county level.

Implementation of the Action Alternative would result in ground disturbance during construction activities, including tree clearing and the grading and construction of a gravel access road. Based on the preceding analysis, the overall impact of the Project on socioeconomic conditions in Monroe County, TN, would be negligible.

Under the No Action Alternative, TVA would not provide InvestPrep funds to the TRDA. If the TRDA were to obtain alternate funding and proceed with its current plans, the overall environmental consequences would be similar to those anticipated from implementing the Action Alternative. If the TRDA was unable to secure other funding or the Project was cancelled, the Proposed Action would not occur and there would be no impacts to the socioeconomic conditions in Monroe County, TN.

4.2.15 Environmental Justice

An environmental justice analysis was conducted to determine if the Project would be likely to have disproportionate and adverse human health or environmental effects on minority and low-income populations. Environmental justice analyses are typically implemented in three steps: 1) census data are used to identify environmental justice communities; 2) information characterizing the project's impact on environmental resources is used to determine if the Project is likely to affect environmental justice communities disproportionately and adversely; and 3) if disproportionate and adverse impacts to minority or low-income communities are anticipated, plans to mitigate those impacts are recommended.

4.2.15.1 Identifying Environmental Justice Communities

The environmental justice analysis was performed at the census block group level, which is the smallest geographic unit for which the necessary demographic data are reported.

The environmental justice analysis area includes all block groups within 1 mile of the Project Area. This distance was selected because potential impacts to humans arising from project-related changes in parameters such as air quality, groundwater quality, noise, and aesthetics are likely to be most acute near the Project and then dissipate further from the Project Area.

Table 4-9 summarizes race/ethnicity and poverty data for the two block groups in the environmental justice analysis area. Information for Tennessee and Monroe County are provided as a basis of comparison. Block groups were identified as communities of potential environmental justice concern if either of the following is true:

1. The percentage of the block group’s population self-identifying as something other than “white-alone not Hispanic” (referred to as “minority”) exceeds 50 percent *OR* if the percentage of the block group’s population self-identifying as something other than “white-alone not Hispanic” is 10 percentage points greater than the same measure in the corresponding county.
2. The percentage of the block group living below the poverty level is greater than the same measure in the corresponding county.

One of the two block groups in the environmental justice analysis area for the Project Area is characterized as a community of potential environmental justice concern. This is because block group 2 of census tract 9250.02 has a poverty rate greater than the poverty rate in Monroe County.

Furthermore, the USEPA’s EJScreen reports that block group 1 of census tract 9250.02 falls in the 53rd state percentile of “Less Than HS Education”. This indicates that the proportion of persons with a high school education in this block group is neither unusually high nor unusually low. In contrast, block group 2 of census tract 9250.02 falls in the 38th state percentile of “Less Than HS Education,” indicating that the proportion of persons with a high school education is somewhat higher than might be expected.

Table 4-9. Race/Ethnicity and Poverty Data

	Tennessee	Monroe County	Census Tract 9250.02, Block Group 1 (53 rd)	Census Tract 9250.02, Block Group 2 (38 th)
Race/Ethnicity (2017–2021 Five-Year Estimates)^a				
Total Population	6,859,497	46,041	1,667	2,220
White-Alone Not Hispanic	72.9%	89.4%	80.0%	92.1%
Black or African American	16.3%	2.1%	8.6%	0.0%
American Indian and Alaska Native	0.2%	0.1%	0.3%	0.0%
Asian	1.8%	0.4%	0.0%	0.0%
Native Hawaiian and Other Pacific Islander	0.1%	0.0%	0.0%	0.0%

	Tennessee	Monroe County	Census Tract 9250.02, Block Group 1 (53 rd)	Census Tract 9250.02, Block Group 2 (38 th)
Some other race	0.3%	0.1%	0.0%	0.0%
Two or more races	2.7%	3.5%	1.0%	2.7%
Hispanic or Latino	5.8%	4.5%	10.1%	5.2%
Total Racial Minority	27.1%	10.6%	20.0%	7.9%
Low-Income (2017–2021 Five-Year Estimates)^b				
Percent of Households Below Poverty Level	14.1%	18.1%	13.1%	22.0%
^a USCB 2021e ^b USCB 2021f Low-income or minority populations exceeding the established thresholds are indicated with orange shading.				

4.2.15.2 Evaluating the Potential for Disproportionate and Adverse Impacts

The Bureau of Land Management (2022) reports that determining whether the effect of a project on an environmental justice population is likely to be disproportionate is a matter of professional judgement. Specifically, they note that determining whether the effect of an impact would “appreciably exceed... those on the general population is a matter of judgment, taking all relevant information into account.” It is suggested that the analyst ask whether members of the environmental justice community are more sensitive to Project-related impacts than the general public because of income status, historical exclusion based on race or ethnicity, an inability to respond to the action, or increased exposure potential.

When conducting this environmental justice assessment, the full range of potential changes that could affect humans was considered (e.g., changes in air quality, changes in water quality, degradation of cultural resources, and socioeconomic alterations). In each instance, the analyst asked whether minority and low-income populations would have different ways, relative to the general population, of being adversely affected by the Project. Three specific questions were posed, and both direct and indirect Project impacts were considered when answering these questions:

1. Are residents of environmental justice communities likely to be disproportionately and adversely affected because they are more sensitive to a given level of exposure due to pre-existing medical conditions and/or reduced access to health care and/or because they are exposed to higher baseline concentrations of health stressors, such as particulate matter (i.e., PM_{2.5})?
2. Are residents of environmental justice communities likely to be disproportionately and adversely affected due to lifestyle approaches such as subsistence fishing and/or because they have different cultural, community, or religious practices?
3. Are residents of environmental justice communities likely to be disproportionately and adversely affected because their economic status or language barriers prevent them from taking mitigating actions that general members of the public might readily adopt, such as closing doors and windows to limit dust exposure?

In addition to reviewing the resource-specific analysis reported in the remainder of this EA, USCB data were used to identify potential language barriers in the area. No block groups in the environmental justice analysis area were identified as limited English proficiency communities (USCB 2021g).¹

Implementation of the Action Alternative would result in ground disturbance during construction activities, including tree clearing and the grading and construction of a gravel access road. Based on this analysis, the Project would not result in environmental justice-related issues. This is because the provision of an economic development grant to the TRDA to assist with the development of the Project Area for future industrial use is generally not expected to disproportionately affect low-income or minority populations in the greater community.

Under the No Action Alternative, TVA would not provide InvestPrep funds to the TRDA. If the TRDA were to obtain alternate funding and proceed with its current plans, the overall environmental consequences would be similar to those expected from implementing the Action Alternative, with no impacts to environmental justice communities anticipated. Similar to the Proposed Action, if the TRDA was unable to secure other funding or the Project was cancelled, the Proposed Action would not occur and there would also be no impacts to environmental justice communities.

4.2.16 Transportation

The Project Area would be accessed from Excellence Way. The primary site entrance would be on the southeastern side of the Project Area and would require installation of a new entrance from Excellence Way to facilitate the grading and construction of a compacted gravel access road, approximately 1,100 feet in length.

Excellence Way is a semicircular access road that is paved along its length and is sufficiently wide for a single lane of traffic in each direction. Excellence Way provides access to commercial properties and terminates at SR 72 to the east and west. Based on a desktop review of August 2007 Google Streetview images (Google Earth 2007) and September 2019 Google Earth imagery (Google Earth 2019), the road is in good condition and has narrow, vegetated verges. Excellence Way is not listed on the Functional Classification System for Monroe County (Tennessee Department of Transportation [TDOT] 2018). It is expected that necessary precautions would be taken for entering Excellence Way during mobilization and de-mobilization such as reduced speed in areas of poor visibility or poor road condition, with other precautions such as a flagman or traffic control to be considered if required. Excellence Way intersects with SR 72 to the west with traffic lights currently used. It is expected that normal care would be taken by workers entering SR 72 with regards to traffic safety.

Based on a review of TDOT historical traffic data (2021), there are no traffic count stations located on Excellence Way. It is anticipated that existing traffic volumes for these local roads would be minor as they provide access to a limited number of other sites, and two points of access to SR 72. Because of the anticipated limited volume of workers on the site required for

¹ The identification process defines limited English proficiency persons (LEPPs) as individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English. Block groups with more than 5% LEPPs and/or more than 1,000 LEPPs are characterized as LEP communities.

tree clearing and grading activities, and the short timeframe of the proposed work, impacts to local traffic would be temporary and minor.

The nearest traffic count station on SR 72 is located approximately 0.58 mile south of the Project Area entrance. The Project Area is located approximately 1.12 miles north of the intersection of SR 72 and Highway 411. The nearest traffic station for Highway 411 is located 0.46 mile west of the intersection with SR 72. The 2021 annual average daily traffic counts (AADT) for the relevant stations are presented in Table 4-10.

Table 4-10. Tennessee Department of Transportation Traffic Count Data for the Project Area¹

Route Description	Location ID	Distance from Project Area (Miles)	Year	AADT	PA	BC
SR 72 (North of Madisonville)	62000106	0.58	2021	13,767	12,968 (94%)	799 (6%)
Highway 411 (Northeast of Madisonville)	62000109	1.12	2021	14,812	13,315 (90%)	1,497 (10%)

Where: AADT = annual average daily traffic count; PA = passenger vehicles; and BC = business/commercial vehicles
¹ Source: Tennessee Department of Transportation ([Annual Average Daily Traffic \(AADT\) \(tn.gov\)](https://www.tn.gov/transportation/traffic-counts)), extracted 2/8/2023.

Implementation of the Action Alternative would result in ground disturbance during construction activities, including tree clearing and the grading and construction of a gravel access road. In the context of the existing AADT volumes of these highways, the anticipated traffic generated by the proposed activities would be negligible. It is anticipated that implementation of the Action Alternative would have negligible impact on overall traffic volumes and level of service of either SR 72 or Highway 411.

Under the No Action Alternative, TVA would not provide InvestPrep funds to the TRDA. If the TRDA were to obtain alternate funding and proceed with its current plans, similar temporary and negligible impacts on overall traffic volumes and level of service would occur as described above for the Action Alternative. If the TRDA was unable to secure other funding or the Project was cancelled, the Proposed Action would not occur, and existing site conditions would likely be maintained resulting in no impacts on overall traffic volumes and level of service.

5.0 PERMITS, LICENSES, AND APPROVALS

The Action Alternative would result in greater than 1 acre of earth disturbing activities; therefore, it would be necessary to obtain coverage under the 2021 (or current version) NPDES General Permit for Discharges Associated with Construction Activity (TNR100000). Coverage would require submittal of a Notice of Intent (NOI) and development of a site-specific SWPPP. Implementation of the Action Alternative would impact 0.03 acre of wetlands and would require an ARAP from TDEC and, if determined to be WOTUS, would also require a CWA Section 404 permit from the USACE and a CWA Section 401 Water Quality Certification. Impacts to any Waters of the State of Tennessee (not currently proposed) would require an ARAP from the TDEC, which would include the Section 401 Water Quality Certification. Onsite burning activities would be conducted in compliance with local burn permits and the requirements in TDEC Air

Pollution Control Rule 1200-3-4. The TRDA, or its contractors, would be responsible for obtaining local, state, or federal permits, licenses, and approvals necessary for the Project.

6.0 BEST MANAGEMENT PRACTICES AND MITIGATION MEASURES

To minimize or reduce the environmental effects of site activities associated with the Action Alternative, the TRDA or its contractors are expected to ensure all clearing and grading activities are conducted in compliance with stormwater permitting requirements and use applicable BMPs to minimize and control erosion and fugitive dust during these actions.

Operations involving chemical or fuel storage or resupply and vehicle servicing are expected to be handled outside of riparian areas and in such a manner as to prevent these items from reaching a watercourse. Earthen berms or other effective means are expected to be installed to protect nearby stream channels from direct surface runoff. Servicing of equipment and vehicles is expected to be done with care to avoid leakage, spillage, and subsequent surface or groundwater contamination. Oil waste, filters, and other litter are expected to be collected and disposed of properly.

Specific avoidance and conservation measures would be implemented as a part of the Action Alternative to reduce effects to Indiana bat and northern long-eared bat. These measures are identified in the TVA Bat Strategy Project Screening Form (see Attachment 2).

7.0 LIST OF PREPARERS

Table 7-1 summarizes the expertise and contribution made to the EA by the Project Team.

Table 7-1. Environmental Assessment Project Team

Name/Education	Experience	Project Role
TVA		
Brittany Kunkle <i>B.S. Environmental and Soil Science</i>	4 years of professional experience in NEPA and environmental compliance	NEPA Project Manager
Lori Whitehorse	19 years in environmental regulatory compliance and 7 years in NEPA and permitting.	Environmental Program Manager
Susan Housley	16 ½ years in river and reservoir monitoring, 1 ½ years in NEPA compliance	NEPA Compliance
Britta Lees <i>M.S., Botany, North Carolina State University</i> <i>B.A., Biology, Earlham College</i>	25 years in wetland assessment, field biology, NEPA analyses, and water regulation and permitting	Surface Water, Soil Erosion
Fallon Parker Hutcheon <i>M.S., Environmental Studies</i> <i>B.S., Biology</i>	4 years in wetland delineation, wetland impact analysis, and NEPA and CWA compliance	Wetlands
Carrie Williamson, P.E., CFM <i>B.S., and M.S., Civil Engineering</i>	10 years in Floodplain and Flood Risk; 11 years in Compliance Monitoring; 3 years in River Forecasting	Floodplains

Name/Education	Experience	Project Role
Adam Dattilo <i>M.S., Forestry</i> <i>B.S., Natural Resource Conservation Management</i>	21 years in ecological restoration and plant ecology, 16 years in botany	Botany
David Nestor <i>M.S., Botany</i> <i>B.S., Aquacultural, Fisheries & Wildlife Biology</i>	25 years in botany, 19 years in Biological NEPA & ESA compliance; 25 years in T&E and invasive plant species surveys	Botany
Derek Reaux <i>B.A., Anthropology, University of Kentucky</i> <i>M.A./Ph.D., Anthropology, University of Nevada</i>	11 years of experience in cultural resource management and archaeological research.	Cultural resources, NHPA, Section 106 compliance
Matt Reed <i>M.S., Wildlife and Fisheries Science</i>	13 years working with threatened and endangered aquatic species in the Southeastern United States; 7 years in ESA, NEPA, and CWA compliance and stream assessments	Aquatic Ecology
Chloe Sweda	5 years experience in Natural Resource Management	Managed and Natural Areas
Sara Bayles <i>M.S., Sport and Recreation Management</i>	3 years experience in Outdoor Recreation Management	Recreation
Megan Wallrichs <i>M.S. Natural Resources, Delaware State University</i> <i>B.S. Biology, University of North Carolina at Greensboro</i>	14 years of experience in wildlife management and research. 2 years in NEPA Compliance and ESA consultation for T&E terrestrial animals	Terrestrial Zoology
Elizabeth Burton Hamrick <i>M.S., Wildlife and Fisheries Science, University of Tennessee</i> <i>B.A., Biology, B.A., Anthropology, Grinnell College</i>	22 years in biological field studies, 9 years in biological compliance, NEPA compliance, and ESA consultation for T&E terrestrial animals	Terrestrial Zoology
SWCA		
Rachel Bell, PMP <i>B.S., Environmental Science, Auburn University</i>	17 years in natural resources planning and NEPA compliance, including project management, preparation of EAs and Environmental Impact Statements (EISs), state and federal permitting, and biological and environmental studies and analysis.	EA Program Manager QA/QC

Name/Education	Experience	Project Role
Angie Morrow, PMP <i>B.S., Biology, University of Dayton</i>	23 years of experience in the environmental consulting field. This experience includes program and project management, environmental impact assessments, preparation of EAs, design and implementation of various environmental studies, and data analysis.	EA Project Manager QA/QC Purpose and Need, Other Environmental Documentation, Alternatives, Site Description, Permits, Licenses and Approvals, Best Management Practices and Mitigation Measures
Hillary Skowronski <i>M.S., Environmental Biology, University of West Florida</i> <i>B.S., Marine Biology, Waynesburg University</i>	9 years of experience in the natural sciences, including environmental surveys, reporting, and compliance for various public and private sector clients as well as extensive watershed, and aquatic habitat research. She has performed considerable work designing, implementing, and coordinating surveys and survey results, preparing EAs and reports, and providing project management and coordination.	Land Use, Soils, and Recreation
Fiona Cook <i>B.S., Marine Biology, Texas A&M University at Galveston</i>	10 years of experience in the environmental consulting field. This experience includes wetland and waterbody delineations, wetland and waterbody assessments, wetland monitoring, threatened and endangered species surveys, vegetation surveys, as well as permitting.	Land Use, Soils, and Recreation
Sean Peacock <i>B.S., Environmental Science, Georgia College & State University</i>	7 years of experience in the environmental consulting field. He regularly conducts wetland and stream delineation; wildlife surveys and monitoring; gopher tortoise surveys, monitoring, and relocations; NPDES inspections, and water quality sampling.	Groundwater, Surface Water and Soil Erosion, Wetlands
Madison Cross <i>B.S., Environmental Science, University of West Florida</i>	4 years of experience in natural resource management and permitting. Her expertise includes environmental permitting, wetland delineation, listed species surveys, preliminary site assessments, and environmental policy/regulation.	Aquatic Ecology, Botany
Brent Handley <i>M.A., Anthropology, University of Connecticut</i> <i>B.A., Geography/Anthropology, University of Southern Maine</i>	30 years of experience in academic research and cultural resource management projects. This experience includes supervising all phases of cultural resource assessment, including logistical organization, daily field operations, primary and background research, artifact analysis, and the writing of final reports. Mr. Handley is a Registered Professional Archaeologist (RPA) and exceeds the Secretary of the Interior's (SOI) standards for archaeology.	Archaeology

Name/Education	Experience	Project Role
Derek Duquette <i>M.A., Public History, Temple University</i> <i>B.A., History, West Chester University of Pennsylvania</i>	5 years of experience in cultural resources consultation including leading reconnaissance- and intensive-level historic architectural surveys, environmental consulting, historic preservation planning documentation, reporting, and Section 106 compliance.	Historic Structures and Sites
Brad Sohm <i>B.S., Chemical Engineering w/ Environmental Engineering Option</i>	19 years in air quality and environmental planning, including preparation of EAs and EISs, state and federal air quality permitting, and noise studies and analysis.	Air Quality and Climate Change, Noise
Hillary Skowronski <i>M.S., Environmental Biology, University of West Florida</i> <i>B.S., Marine Biology, Waynesburg University</i>	9 years of experience in the natural sciences, including environmental surveys, reporting, and compliance for various public and private sector clients as well as extensive watershed, and aquatic habitat research. She has performed considerable work designing, implementing, and coordinating surveys and survey results, preparing EAs and reports, and providing project management and coordination.	Land Use, Prime Farmland, Recreation
Garet Openshaw <i>MLA, Landscape Architecture and Environmental Planning, Utah State University</i> <i>BLA, Landscape Architecture and Environmental Planning, Utah State University</i>	6 years of experience in landscape architecture and environmental planning including visual resources. His area of expertise includes the inventory of visual resources, technical writing and authorship and analysis of impacts to visual resources associated with large scale solar, wind, mine, transmission, and other developments.	Visual
Tony Theis <i>M.S., Statistics, University of Minnesota</i> <i>B.S., Wildlife Ecology, University of Wisconsin-Madison</i>	5 years in ecology, technical writing, and economics. He has experience conducting surveys and analyzing demographic data, experimental design, and statistical consulting. He has authored numerous socioeconomic, environmental justice, land use, recreational, and visual sections for a variety of EAs/EISs and Resource Reports.	Socioeconomics and Environmental Justice
Allison McKenzie <i>M.S., Forestry, Mississippi State University</i> <i>B.A., Biological Sciences and Wildlife Conservation, University of Delaware</i>	11 years of experience in the natural sciences, including environmental assessments, permitting, and compliance for various public and private sector clients as well as extensive fisheries, watershed, and forestry research. She has performed considerable work implementing and interpreting surveys and survey results, preparing EAs and reports, and providing project management and coordination.	Transportation

8.0 AGENCIES AND OTHERS CONSULTED

The following federal and state agencies and federally recognized Indian Tribes were consulted.

- Tennessee Historical Commission

- Tribes Absentee Shawnee Tribe of Indians of Oklahoma, Alabama-Coushatta Tribe of Texas, Cherokee Nation, Coushatta Tribe of Louisiana, Eastern Band of Cherokee Indians, Eastern Shawnee Tribe of Oklahoma, Jena Band of Choctaw Indians, Kialegee Tribal Town, The Muscogee (Creek) Nation, The Seminole Nation of Oklahoma, Shawnee Tribe, Thlopthlocco Tribal Town, and United Keetoowah Band of Cherokee Indians in Oklahoma.

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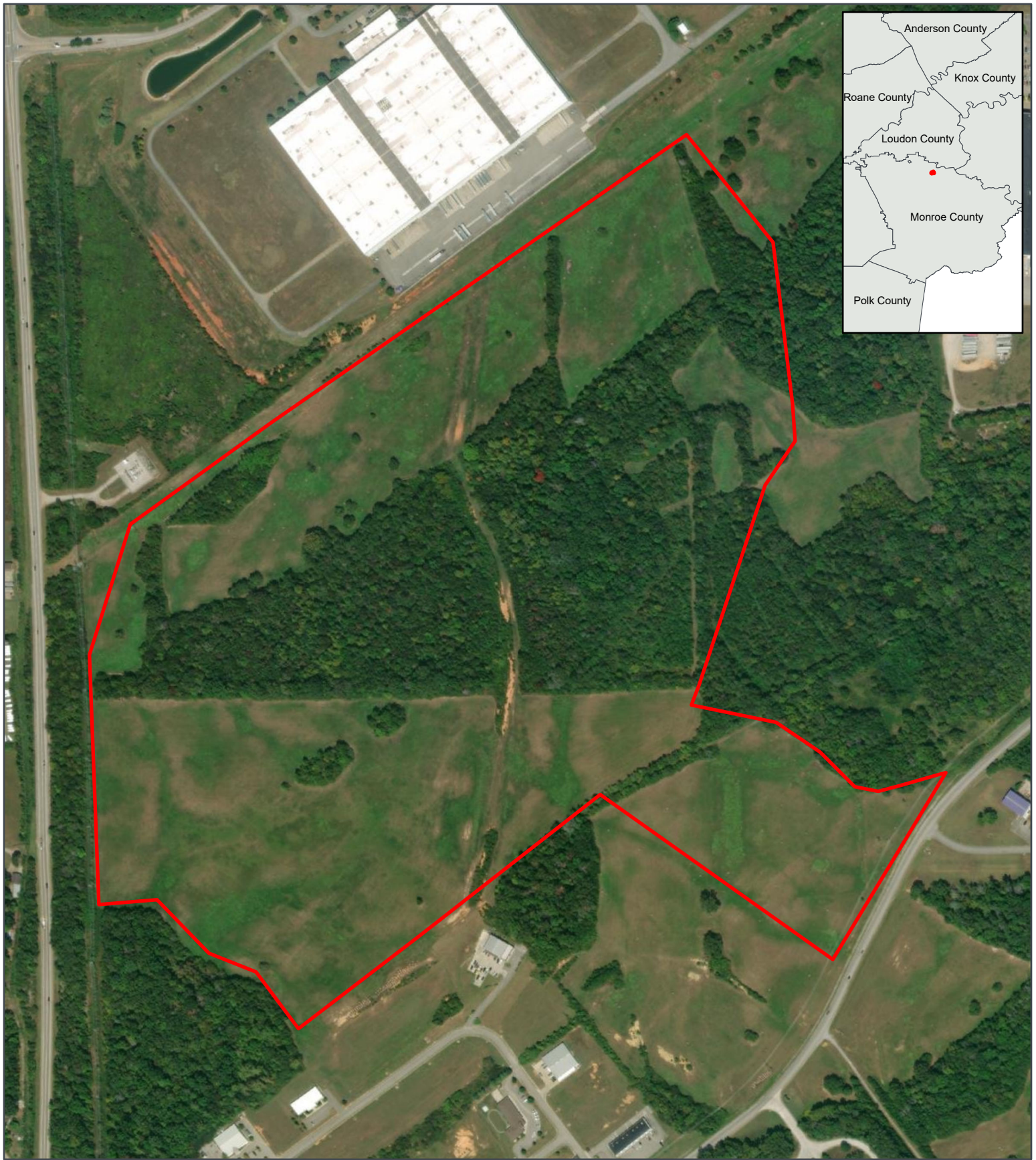
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ATTACHMENT 1
Project Figures

Figure 1-A
Aerial Map

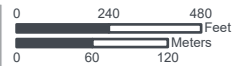


TVA FY23 ECONOMIC
DEVELOPMENT PROJECTS
MONROE COUNTY, TENNESSEE

**Figure 1-A:
Aerial Map**

 Project Area

Monroe County, TN
USGS 7.5' Quadrangle:
Madisonville, TN, 35084-E3
NAD 1983 StatePlane
Tennessee FIPS 4100 Feet
35.6004°N 84.2672°W

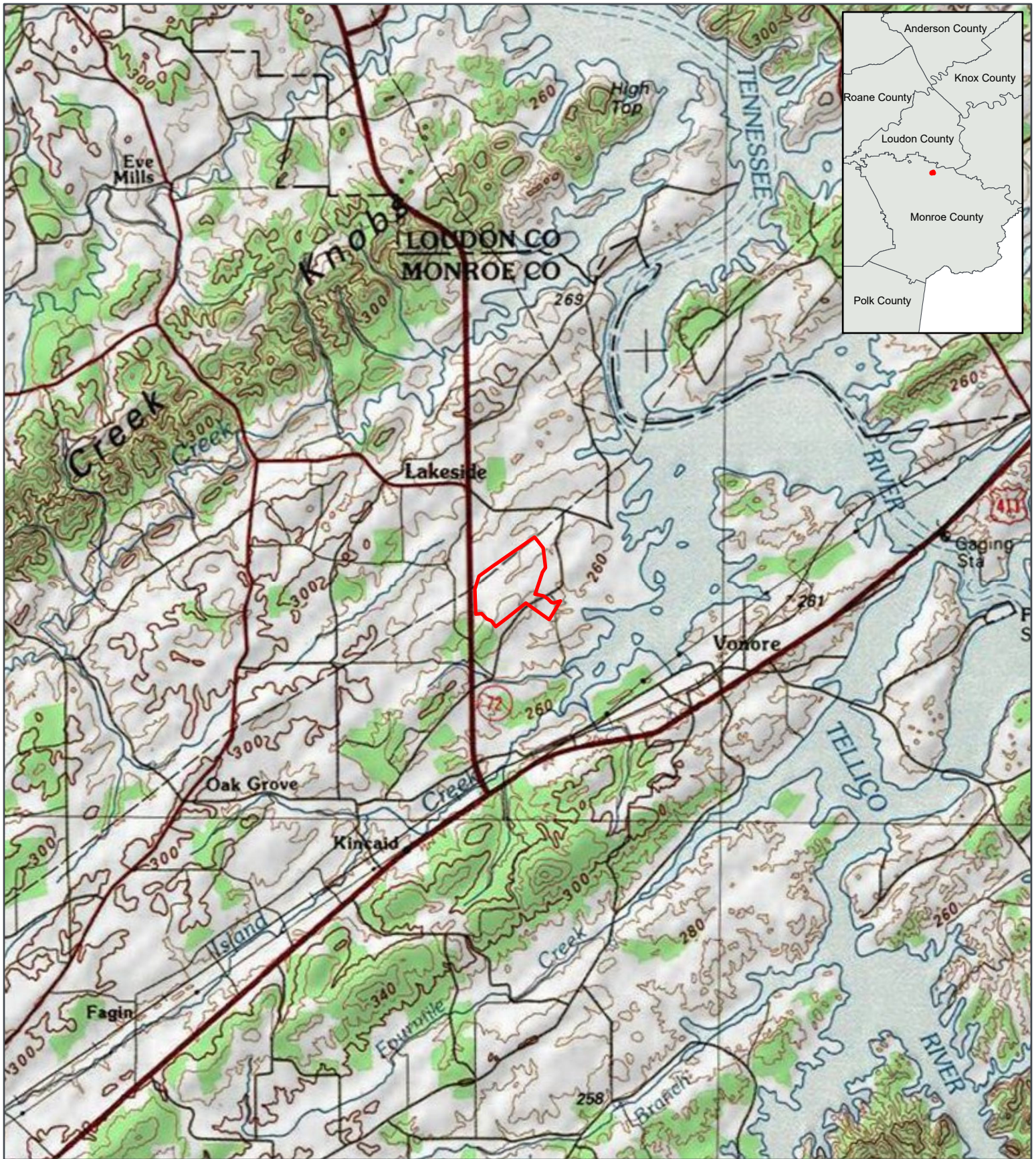


Base Map: ESRI ArcGIS Online,
accessed March 2023
Updated: 3/16/2023
Project No. 78536
Layout: Fig1A - Aerial
Aprx: 78536_tvaMonroeCounty

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Figure 1-B
USGS Quadrangle Map



TVA FY23 ECONOMIC DEVELOPMENT PROJECTS LAWRENCE COUNTY, TENNESSEE
Figure 1-B:
USGS Quadrangle Map

 Project Area

Monroe County, TN
 USGS 7.5' Quadrangle:
 Madisonville, TN, 35084-E3
 NAD 1983 StatePlane
 Tennessee FIPS 4100 Feet
 35.6004°N 84.2672°W

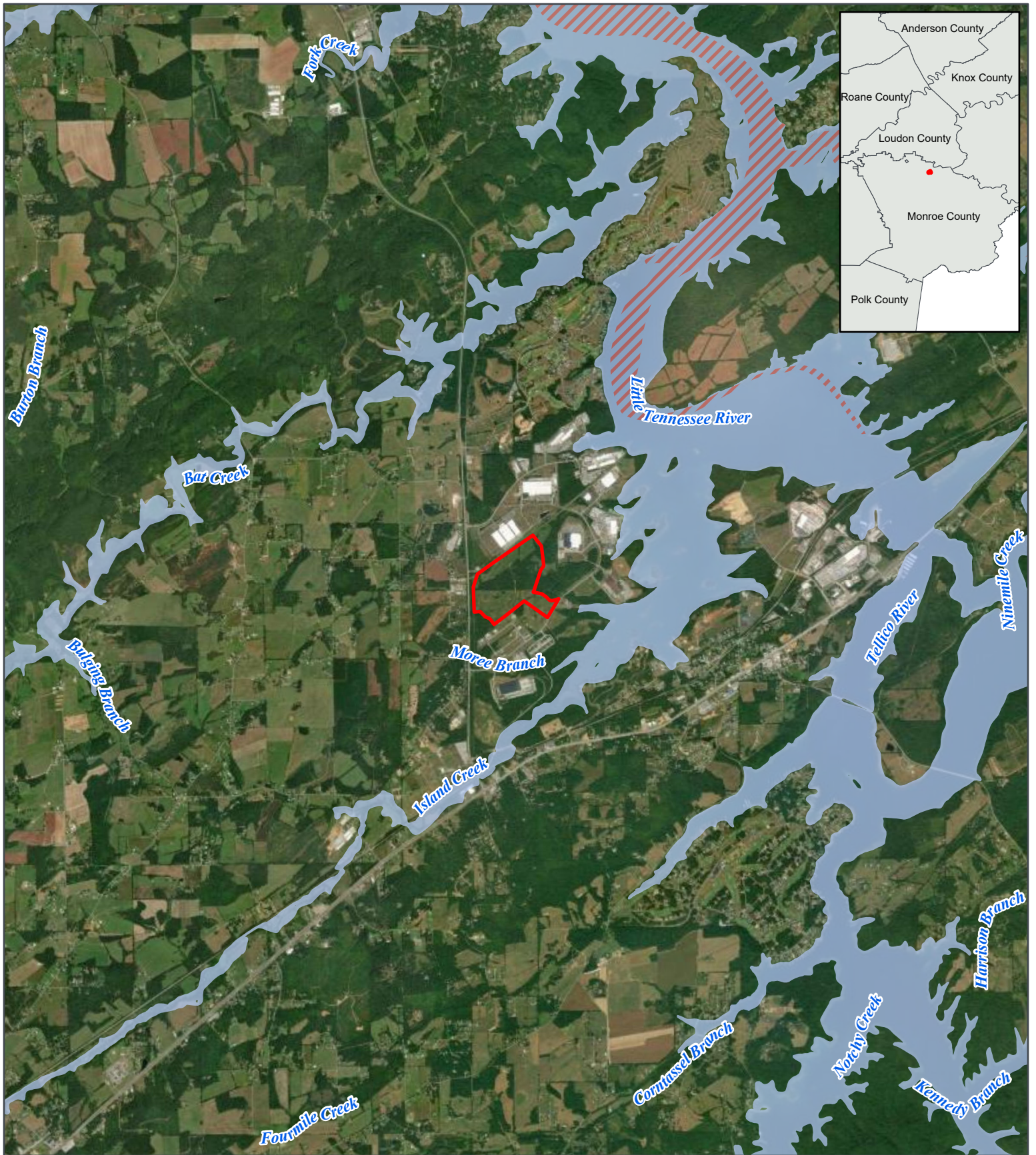


Base Map: ESRI ArcGIS Online,
 accessed March 2023
 Updated: 3/16/2023
 Project No. 78536
 Layout: Fig1B- Topo
 Aprx: 78536_tvaMonroeCounty

1:60,000



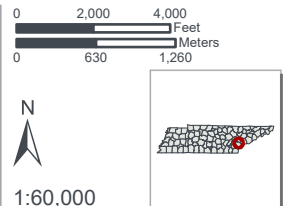
Figure 1-C
FEMA Floodplain Map



TVA FY23 ECONOMIC DEVELOPMENT PROJECTS
 MONROE COUNTY, TENNESSEE
**Figure 1-C:
 FEMA Floodplain
 Map**

- Project Area
- 100-Year Floodplain
- Floodway

Monroe County, TN
 USGS 7.5' Quadrangle:
 Madisonville, TN, 35084-E3
 NAD 1983 StatePlane
 Tennessee FIPS 4100 Feet
 35.6004°N 84.2672°W



Base Map: ESRI ArcGIS Online,
 accessed May 2023
 Updated: 5/4/2023
 Project No. 78536
 Layout: Fig1C- Floodplain
 Aprx: 78536_tvaMonroeCounty

1:60,000

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Figure 1-D
NRCS Soils Map

Soil Unit Key

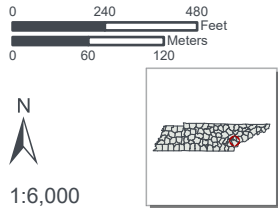
- DcB : Decatur silt loam, 2 to 5 percent slopes
- DcC : Decatur silt loam, 5 to 12 percent slopes
- DcD2 : Decatur silt loam, 12 to 20 percent slopes, eroded
- DeC : Dewey silt loam, 6 to 15 percent slopes
- DeD2 : Dewey silt loam, 15 to 25 percent slopes, eroded
- DgD3 : Dewey silty clay loam, 15 to 25 percent slopes, severely eroded
- DmC : Dunmore silt loam, 5 to 12 percent slopes
- Em : Emory silt loam, 0 to 4 percent slopes, occasionally flooded
- EtB : Etowah silt loam, 2 to 6 percent slopes
- ETC : Etowah silt loam, 6 to 12 percent slopes
- FtD : Fullerton gravelly silt loam, 15 to 25 percent slopes
- LeB : Leadvale silt loam, 2 to 5 percent slopes
- LtC : Litz shaly silt loam, 5 to 12 percent slopes (sil)
- SeB : Sequoia silt loam, 2 to 5 percent slopes
- SeC2 : Sequoia silt loam, 5 to 12 percent slopes, eroded
- TS : Tellico and Dewey soils, gullied
- WbC : Waynesboro loam, 6 to 15 percent slopes
- WbD : Waynesboro loam, 15 to 25 percent slopes



TVA FY23 ECONOMIC DEVELOPMENT PROJECTS
 MONROE COUNTY, TENNESSEE
**Figure 1-D:
 NRCS Soils Map
 Map**

- Project Area
- Soil Unit Boundary

Monroe County, TN
 USGS 7.5' Quadrangle:
 Madisonville, TN, 35084-E3
 NAD 1983 StatePlane
 Tennessee FIPS 4100 Feet
 35.601°N 84.2673°W

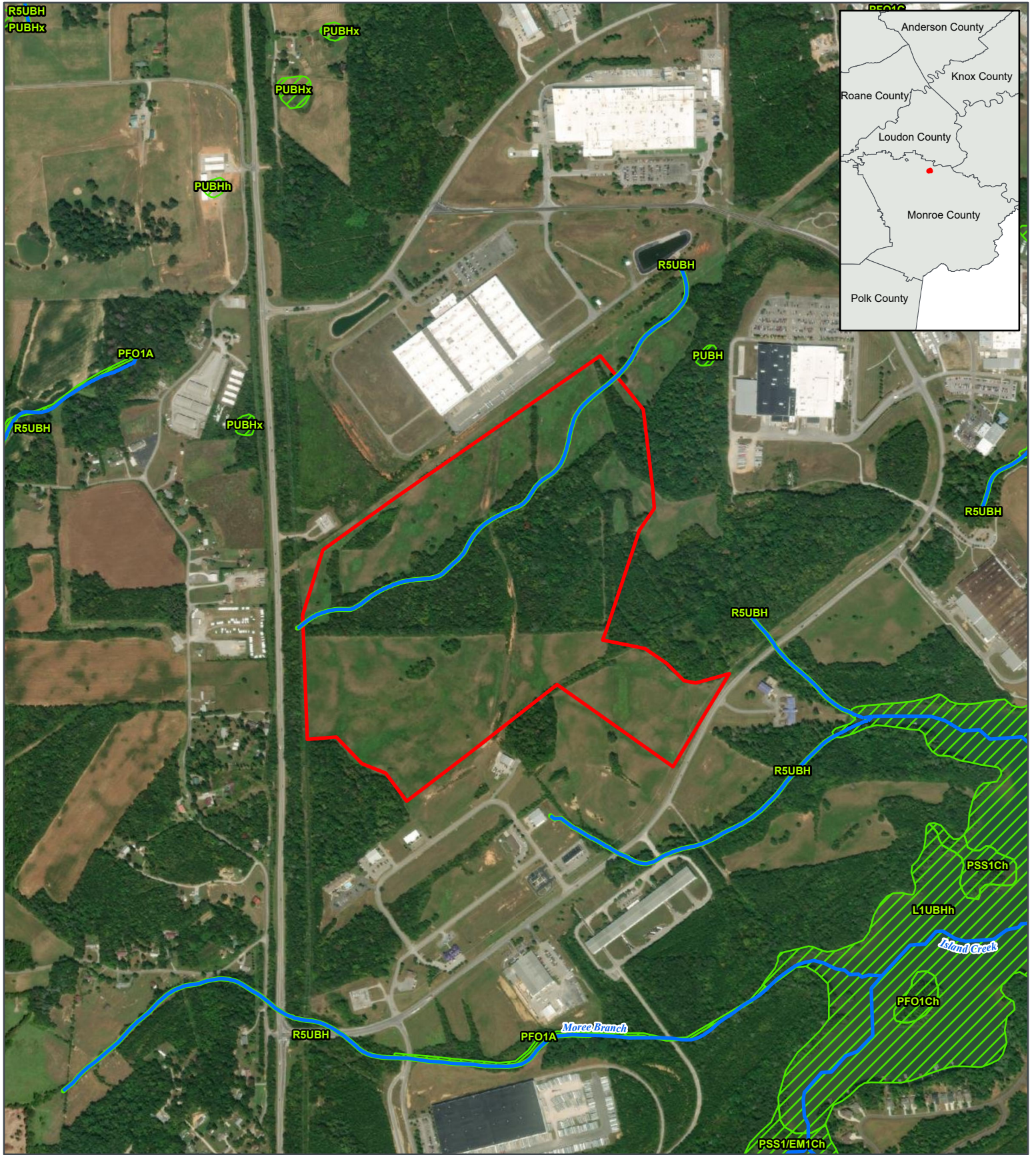


Base Map: ESRI ArcGIS Online,
 accessed March 2023
 Updated: 3/16/2023
 Project No. 78536
 Layout: Fig1D- Soils
 Aprx: 78536_tvaMonroeCounty

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Figure 1-E
USFWS NWI and USGS NHD Map



TVA FY23 ECONOMIC DEVELOPMENT PROJECTS
 MONROE COUNTY, TENNESSEE
**Figure 1-E:
 USFWS NWI and
 Water Resources
 Inventory Map**

- Project Area
- NHD Flowline
- NWI Wetlands

Monroe County, TN
 USGS 7.5' Quadrangle:
 Madisonville, TN, 35084-E3
 NAD 1983 StatePlane
 Tennessee FIPS 4100 Feet
 35.6004°N 84.2672°W

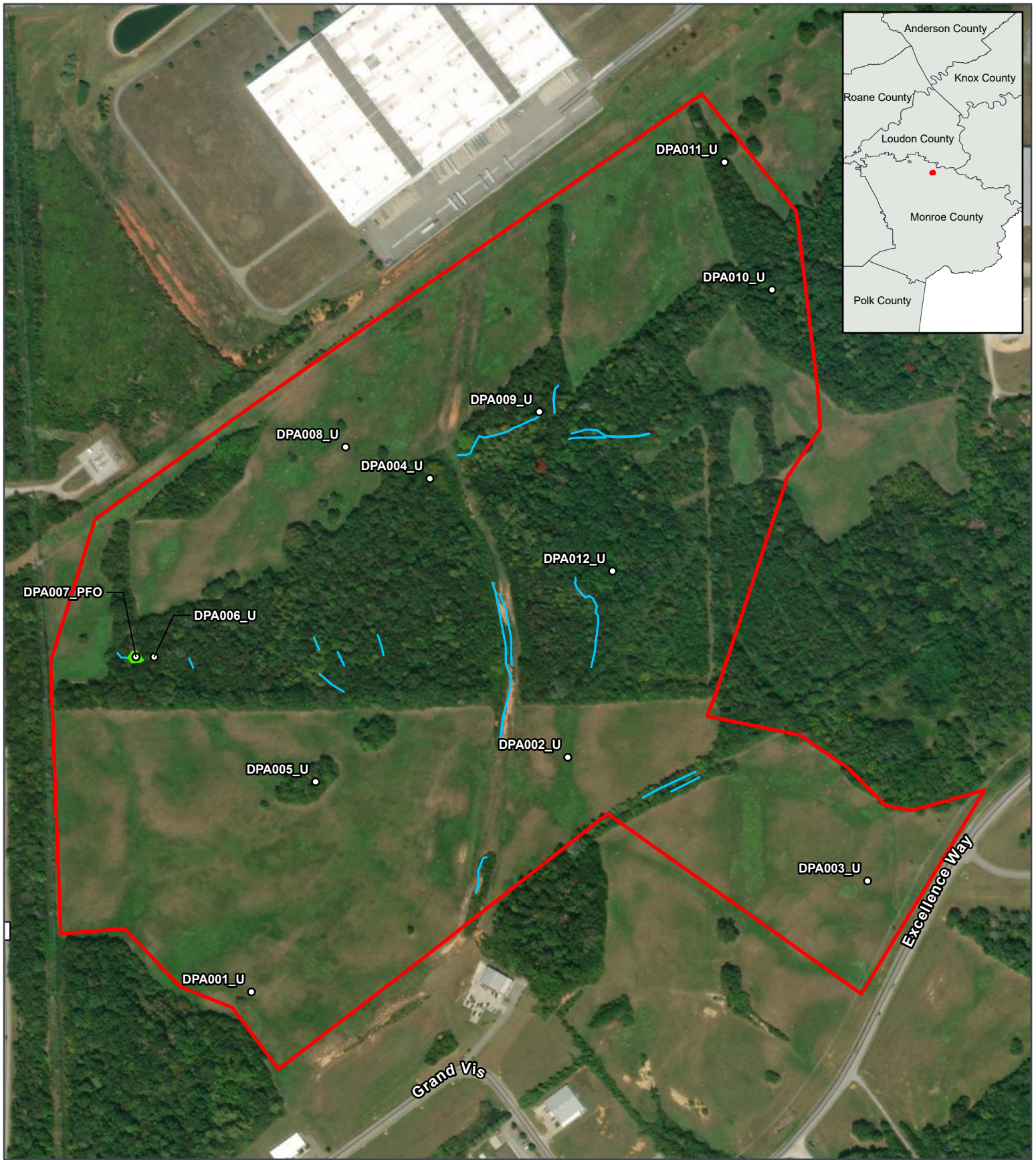


Base Map: ESRI ArcGIS Online,
 accessed March 2023
 Updated: 3/16/2023
 Project No. 78536
 Layout: Fig1E- NWI_NHD
 Aprx: 78536_tvaMonroeCounty

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Figure 1-F
Wetlands and Waterbodies Map



TVA FY23 ECONOMIC DEVELOPMENT PROJECTS
 MONROE COUNTY, TENNESSEE
**Figure 1-F:
 Wetlands and
 Waterbodies Map**

- Project Area
- Data Point
- Wet-Weather Conveyance
- Forested Wetland

Monroe County, TN
 USGS 7.5' Quadrangle:
 Madisonville, TN, 35084-E3
 NAD 1983 StatePlane
 Tennessee FIPS 4100 Feet
 35.6004°N 84.2672°W



Base Map: ESRI ArcGIS Online,
 accessed March 2023
 Updated: 3/16/2023
 Project No. 78536
 Layout: Fig1F-WDR
 Aprx: 78536_tvaMonroeCounty




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Figure 1-G
Terrestrial Zoology Resources Map

Suitable Bat Summer Bat Roosting Habitat (Approximately 16.8 acres) in the Monroe County Invest Prep Project Area (ESCS ID 41641)

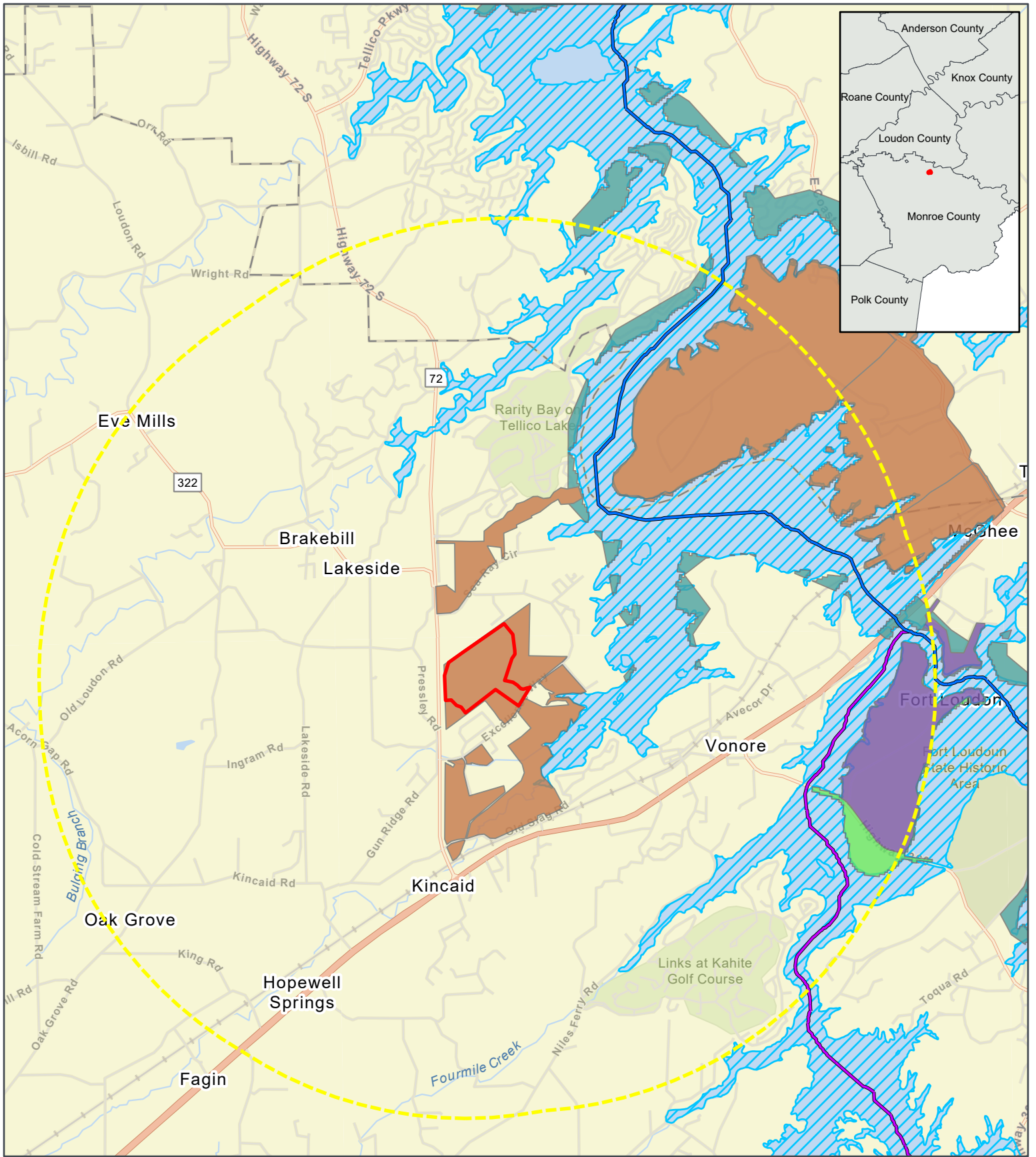


-  Monroe_County_Suitable_Bat_Roosting_Habitat
-  Monroe_County_Tree_Clearing
-  Monroe_County_Project_Area

Map Created by Megan Wallrichs,
TVA Terrestrial Zoologist Contractor
January 2023

0 0.05 0.1 0.2 Miles

Figure 1-H
Natural Areas Map

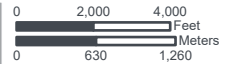


TVA FY23 ECONOMIC DEVELOPMENT PROJECTS
MONROE COUNTY, TENNESSEE

Figure 1-H: Managed and Natural Areas Map

- Project Area
- Buffer - 3mile
- Fort Loudon State Historic Area
- Fort Loudon State Historic Park
- Tellico Lake Wildlife Management Area
- Tennessee Valley Authority (TVA)
- Tellico Dam Reservation
- Little Tennessee River
- Tellico River

Monroe County, TN
USGS 7.5' Quadrangle:
Madisonville, TN, 35084-E3
NAD 1983 StatePlane
Tennessee FIPS 4100 Feet
35.6097°N 84.2632°W



Base Map: ESRI ArcGIS Online,
accessed March 2023
Updated: 3/31/2023
Project No. 78536
Layout: Fig1H - Natural Areas
Aprx: 78536_tvaMonroeCounty

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ATTACHMENT 2
TVA Bat Strategy Project Screening Form

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

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

Project Name: InvestPrep - Monroe County, TN EA **Date:** Oct 12, 2022
Contact(s): Brittany Kunkle **CEC#:** **Project ID:** 41641
Project Location (City, County, State): Tellico, Monroe County, Tennessee

Project Description:

Utilize TVA InvestPrep funding matched with non-TVA funding to assist with the construction of a compacted gravel access road and select tree clearing on the Tellico West 200-Acre Site.

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:

- | | |
|---|--|
| <input type="checkbox"/> 1 Manage Biological Resources for Biodiversity and Public Use on TVA Reservoir Lands | <input type="checkbox"/> 6 Maintain Existing Electric Transmission Assets |
| <input type="checkbox"/> 2 Protect Cultural Resources on TVA-Retained Land | <input type="checkbox"/> 7 Convey Property associated with Electric Transmission |
| <input type="checkbox"/> 3 Manage Land Use and Disposal of TVA-Retained Land | <input type="checkbox"/> 8 Expand or Construct New Electric Transmission Assets |
| <input type="checkbox"/> 4 Manage Permitting under Section 26a of the TVA Act | <input checked="" type="checkbox"/> 9 Promote Economic Development |
| <input type="checkbox"/> 5 Operate, Maintain, Retire, Expand, Construct Power Plants | <input type="checkbox"/> 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.

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

<input type="checkbox"/> 18. Erosion control, minor	<input type="checkbox"/> 57. Water intake - non-industrial	<input type="checkbox"/> 79. Swimming pools/associated equipment
<input type="checkbox"/> 24. Tree planting	<input type="checkbox"/> 58. Wastewater outfalls	<input type="checkbox"/> 81. Water intakes – industrial
<input type="checkbox"/> 30. Dredging and excavation; recessed harbor areas	<input type="checkbox"/> 59. Marine fueling facilities	<input type="checkbox"/> 84. On-site/off-site public utility relocation or construction or extension
<input type="checkbox"/> 39. Berm development	<input type="checkbox"/> 60. Commercial water-use facilities (e.g., marinas)	<input type="checkbox"/> 85. Playground equipment - land-based
<input type="checkbox"/> 40. Closed loop heat exchangers (heat pumps)	<input type="checkbox"/> 61. Septic fields	<input type="checkbox"/> 87. Aboveground storage tanks
<input type="checkbox"/> 45. Stream monitoring equipment - placement and use	<input type="checkbox"/> 66. Private, residential docks, piers, boathouses	<input type="checkbox"/> 88. Underground storage tanks
<input type="checkbox"/> 46. Floating boat slips within approved harbor limits	<input type="checkbox"/> 67. Siting of temporary office trailers	<input type="checkbox"/> 90. Pond closure
<input type="checkbox"/> 48. Laydown areas	<input type="checkbox"/> 68. Financing for speculative building construction	<input type="checkbox"/> 93. Standard License
<input type="checkbox"/> 50. Minor land based structures	<input type="checkbox"/> 72. Ferry landings/service operations	<input type="checkbox"/> 94. Special Use License
<input type="checkbox"/> 51. Signage installation	<input type="checkbox"/> 74. Recreational vehicle campsites	<input type="checkbox"/> 95. Recreation License
<input type="checkbox"/> 53. Mooring buoys or posts	<input type="checkbox"/> 75. Utility lines/light poles	<input type="checkbox"/> 96. Land Use Permit
<input type="checkbox"/> 56. Culverts	<input type="checkbox"/> 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.

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

STEP 3) Project includes one or more activities in Table 3?

YES (Go to Step 4)

NO (Go to Step 13)

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

- a) Will project involve continuous noise (i.e., ≥ 24 hrs) that is greater than 75 decibels measured on the A scale (e.g., loud machinery)? **NO** (NV2 does not apply) **YES** (NV2 applies, subject to records review)
- b) Will project involve entry into/survey of cave? **NO** (HP1/HP2 do not apply) **YES** (HP1/HP2 applies, subject to review of bat records)
- c) If conducting **prescribed burning (activity 23)**, estimated acreage: and timeframe(s) below; **N/A**

STATE	SWARMING	WINTER	NON-WINTER	PUP
GA, KY, TN	<input type="checkbox"/> Oct 15 - Nov 14	<input type="checkbox"/> Nov 15 - Mar 31	<input type="checkbox"/> Apr 1 - May 31, Aug 1 - Oct 14	<input type="checkbox"/> Jun 1 - Jul 31
VA	<input type="checkbox"/> Sep 16 - Nov 15	<input type="checkbox"/> Nov 16 - Apr 14	<input type="checkbox"/> Apr 15 - May 31, Aug 1 - Sept 15	<input type="checkbox"/> Jun 1 - Jul 31
AL	<input type="checkbox"/> Oct 15 - Nov 14	<input type="checkbox"/> Nov 15 - Mar 15	<input type="checkbox"/> Mar 16 - May 31, Aug 1 - Oct 14	<input type="checkbox"/> Jun 1 - Jul 31
NC	<input type="checkbox"/> Oct 15 - Nov 14	<input type="checkbox"/> Nov 15 - Apr 15	<input type="checkbox"/> Apr 16 - May 31, Aug 1 - Oct 14	<input type="checkbox"/> Jun 1 - Jul 31
MS	<input type="checkbox"/> Oct 1 - Nov 14	<input type="checkbox"/> Nov 15 - Apr 14	<input type="checkbox"/> Apr 15 - May 31, Aug 1 - Sept 30	<input type="checkbox"/> Jun 1 - Jul 31

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

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

STATE	SWARMING	WINTER	NON-WINTER	PUP
GA, KY, TN	<input type="checkbox"/> Oct 15 - Nov 14	<input checked="" type="checkbox"/> Nov 15 - Mar 31	<input type="checkbox"/> Apr 1 - May 31, Aug 1 - Oct 14	<input type="checkbox"/> Jun 1 - Jul 31
VA	<input type="checkbox"/> Sep 16 - Nov 15	<input type="checkbox"/> Nov 16 - Apr 14	<input type="checkbox"/> Apr 15 - May 31, Aug 1 - Sept 15	<input type="checkbox"/> Jun 1 - Jul 31
AL	<input type="checkbox"/> Oct 15 - Nov 14	<input type="checkbox"/> Nov 15 - Mar 15	<input type="checkbox"/> Mar 16 - May 31, Aug 1 - Oct 14	<input type="checkbox"/> Jun 1 - Jul 31
NC	<input type="checkbox"/> Oct 15 - Nov 14	<input type="checkbox"/> Nov 15 - Apr 15	<input type="checkbox"/> Apr 16 - May 31, Aug 1 - Oct 14	<input type="checkbox"/> Jun 1 - Jul 31
MS	<input type="checkbox"/> Oct 1 - Nov 14	<input type="checkbox"/> Nov 15 - Apr 14	<input type="checkbox"/> Apr 15 - May 31, Aug 1 - Sept 30	<input type="checkbox"/> Jun 1 - Jul 31

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

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

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

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

YES **NO** (Go to Step 13)

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

OSAR Reviewer (name) Date

Terrestrial Zoologist (name) Date

- Gray bat records: None Within 3 miles* Within a cave* Within the County
- Indiana bat records: None Within 10 miles* Within a cave* Capture/roost tree* Within the County
- Northern long-eared bat records: None Within 5 miles* Within a cave* Capture/roost tree* Within the County
- Virginia big-eared bat records: None Within 6 miles* Within the County
- Caves: None within 3 mi Within 3 miles but > 0.5 mi Within 0.5 mi but > 0.25 mi* Within 0.25 mi but > 200 feet* Within 200 feet*

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

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

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

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

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

STEP 7) Project will involve:

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

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

STEP 9) Presence/absence survey results, on NEGATIVE POSITIVE N/A

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

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

TVA Action	Total 20-year	Winter	Volant Season	Non-Volant Season
9 Promote Economic Development	7,442.92	6,749.79	693.13	0

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

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

SECTION 3: REQUIRED CONSERVATION MEASURES

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

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

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

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

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

Manual Override

Name: Megan Wallrichs

Check if Applies to Project	Activities Subject To Conservation Measure	Conservation Measure Description
		<p>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.</p>
		<p>TR4* - Removal of suitable summer roosting habitat within potential habitat for Indiana bat or northern long-eared bat will be tracked, documented, and included in annual reporting. Project will therefore communicate completion of tree removal to appropriate TVA staff.</p>
		<p>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.</p>
		<p>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.</p>

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

Hide All Unchecked Conservation Measures

- HIDE
- UNHIDE

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

- HIDE
- UNHIDE

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

No caves or roost trees known within 3 miles of Project Area. Tree clearing and burning will occur during winter season.

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

Brittany Kunkle

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

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

For Use by Terrestrial Zoologist Only

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

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

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

ATTACHMENT 3
Agency Correspondence

Reaux, Derek

From: TN Help <tnhelp@service-now.com>
Sent: Tuesday, April 18, 2023 2:21 PM
To: Beliles, Emily
Cc: Harle, Michaelyn S; Reaux, Derek
Subject: Tellico West Industrial Properties Development, CRMS 25817337216 - Project # SHPO0002830

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.



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

04-18-2023 13:19:27 CDT

Michaelyn Harle
TVA
MHarle@tva.gov

RE: Tennessee Valley Authority (TVA), Tellico West Industrial Properties Development, CRMS 25817337216, Project#: SHPO0002830, Monroe County, TN

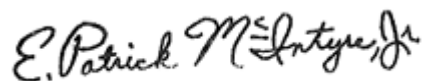
Dear Dr. Harle:

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

Considering the information provided, we concur that no 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 Jennifer Barnett, who drafted this response, at Jennifer.Barnett@tn.gov, +16156874780.

Sincerely,

A handwritten signature in black ink that reads "E. Patrick McIntyre, Jr." in a cursive style.

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

Ref:MSG8006278_OrI3JCTL4rBXLwI0AJa0