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ECONOMIC DEVELOPMENT GRANT PROPOSAL FOR THE MURRAY SOUTH INDUSTRIAL PARK (SITE 8) ENVIRONMENTAL ASSESSMENT

Murray County, Georgia

EAXX-455-00-000-1756977062

PREPARED BY:
TENNESSEE VALLEY AUTHORITY
KNOXVILLE, TENNESSEE

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FINDING OF NO SIGNIFICANT IMPACT

ECONOMIC DEVELOPMENT GRANT PROPOSAL FOR THE MURRAY SOUTH INDUSTRIAL PARK (SITE 8) ENVIRONMENTAL ASSESSMENT

INTRODUCTION

An integral part of Tennessee Valley Authority's (TVA) mission is to promote economic development within the TVA service area. TVA provides financial assistance to help bring to market new or improved sites and facilities within 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 Murray County Industrial Development Authority (MCIDA), to assist with the development of Site 8 of the Murray South Industrial Park (MSIP) in Murray County, Georgia. TVA funds would be matched with non-TVA funds and used to assist with site improvements. As part of the site improvements, the disturbed areas would be stabilized. The area of TVA's Proposed Action (herein referred to as the Project Area) encompasses 39.2 acres of mixed grassy and shrubby areas with some trees, in Chatsworth, Georgia.

PURPOSE AND NEED FOR ACTION

The proposed grant to the MCIDA would assist with the site improvements to allow prospects to better envision the development potential of the site. The proposed improvements would lead to an increased probability of achieving TVA's core mission of job creation and capital investment.

ALTERNATIVES

TVA evaluated potential impacts of the Proposed Action (i.e., the Action Alternative) as well as the alternative of not implementing the action (i.e., the No Action Alternative). Under the No Action Alternative, TVA would not provide InvestPrep funds to the MCIDA. TVA would not further its mission of promoting economic development by assisting the local community to compete successfully for new jobs and capital investment through the Proposed Action. The MCIDA may seek alternate funding (if available) to combine with their existing funds to develop the site. Success in obtaining alternate funding would result in similar impacts and benefits as the Action Alternative. In the event the Project was postponed, any effects would be delayed for the duration of the postponement. If the MCIDA were not able to secure the funding for the Proposed Action, the site would likely remain unchanged, no environmental impacts would be anticipated, and the economic benefits associated with the Action Alternative would not be accomplished.

Under the Action Alternative, TVA would provide InvestPrep funds to the MCIDA, to be matched with non-TVA funds to facilitate the development of a portion of the MSIP Site 8. TVA funds for the 39.2-acre Project Area would be used for tree clearing, grubbing, geotechnical borings, and grading of a dirt building pad and stormwater management pond. Felled trees and stumps would be cut and burned on site. Following the site improvements, the disturbed areas

would be stabilized. Activities required for the Action Alternative would occur over approximately six months and would require a small workforce that would most likely be assigned through a local contractor.

TVA's preferred alternative is the Proposed Action Alternative. This alternative would meet the purpose of the Project and would further TVA's mission to promote economic development in the TVA service area.

SUMMARY OF ENVIRONMENTAL IMPACTS

The potential impacts of the Action Alternative are described in detail in the Environmental Assessment (EA). Implementation of the Action Alternative would have no impact on solid and hazardous materials, land use, floodplains, managed or natural areas, recreation, surface water, and aquatic zoology resources.

Resources that could potentially be impacted (negatively or positively) by implementing the Action Alternative include air quality and climate change, groundwater, soils, prime farmland, wetlands, terrestrial zoology including threatened and endangered species, and botany including threatened and endangered species. Implementation of the Action Alternative could also create potential impacts to the human environment, including cultural resources, visual effects, noise, socioeconomics, and transportation issues.

Construction-related activities, including generation of dust and the burning of trees and stumps, would result in minor and short-term impacts on air quality and climate change. With the use of best management practices (BMPs), impacts would be minimal, temporary, and localized; and would not be anticipated to result in any violation of applicable ambient air quality standards, impact regional air quality, or affect nearby persons.

Proposed ground disturbance activities would not intersect public groundwater supplies or result in significant impacts to groundwater resources.

Soils would be disturbed by the Proposed Action, including tree clearing and grubbing, tree and stump burning, general site grading, and geotechnical borings. Stabilization of disturbed soils following grading to sufficiently reduce sedimentation would occur by the implementation of erosion control measures in accordance with a project-specific construction general permit/stormwater pollution prevention plan. BMPs would be used during site development to avoid runoff of sediment downgradient of the Project Area. These factors would effectively avoid or minimize impacts on soils from soil erosion.

Prime farmland is defined by the United States (U.S.) Department of Agriculture Natural Resources Conservation Service (NRCS) as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. One soil map unit in the Project Area, Capshaw silt loam, is considered prime farmland and accounts for 1.75 acres. Coordination with the NRCS and completion of Form AD-1006 for the Project Area resulted in a score of 96 points, which is less than the

threshold of 160 points that would trigger consideration of alternative actions. No further coordination with NRCS regarding the Farmland Protection Policy Act is required.

The Action Alternative could affect nine palustrine wetlands. The jurisdictional status of the wetlands has not been determined. The MCIDA would coordinate with the U.S. Army Corps of Engineers (USACE) to determine jurisdictional status of any wetlands that cannot be avoided. Unavoidable impacts to jurisdictional wetlands would not occur unless authorized by the USACE through the Clean Water Act Section 404 permitting process. If required, mitigation measures would be incorporated into the final design of the Project.

The Proposed Action would not be likely to significantly affect populations of wildlife species common to the area, due to the extent of previous disturbance in the Project Area and the amount of similarly suitable habitat in areas immediately adjacent to the Project Area. The proposed action would not significantly impact any federally listed threatened or endangered species. In accordance with Section 7 of the Endangered Species Act, the Proposed Action would not impact the endangered rusty patched bumble bee as Murray County is within the historical but extirpated range of rusty patched bumble bee. Vegetation removal and grading could impact proposed threatened monarch butterfly's foraging habitat. However, no milkweeds were observed within the Project Area; and therefore, breeding habitat for this species would not be impacted. The Proposed Action would not impact the threatened (due to similarity of appearance) Alabama map turtle due to lack of suitable habitat in the Project Area. Impacts to protected bald eagle as a result of the Proposed Action would not be anticipated given the distance to known nesting records and with implementation of BMPs. The Proposed Action would not jeopardize the continued existence of protected whooping crane due to a lack of suitable migration habitat in the Project Area.

No caves, suitable roosting structures, or suitable summer roost trees for endangered gray bat, endangered northern long-eared bat or proposed endangered tricolored bat were observed within the Project Area during the field survey. No impacts to gray bat or northern long-eared bat roosting habitat are expected as a result of the Proposed Action. No impacts to tricolored bat winter roosting habitat are expected as a result of the Proposed Action. Approximately 2.3 acres of pine stand proposed for removal within the Project Area provide suitable summer roosting habitat for tricolored bat. As part of the Proposed Action, TVA recommends that tree removal not occur May 15 to July 31 to avoid impacts to non-volant tricolored bats during pup season. Conservation measures detailed in the TVA Bat Strategy Project Screening Form would be implemented as part of the Proposed Action. Given the implementation of these conservation measures, the Proposed Action would not jeopardize the continued existence of the tricolored bat.

The Action Alternative would affect nine vegetation communities in the Project Area. Much of the Project Area is previously disturbed and contains numerous invasive plant species. Impacts to plant communities would be minor given their previously disturbed status, and the large amount of similar habitat and plant communities located both adjacent to the Project Area and regionally. Approximately 2.32 acres of trees would be cleared in the Project Area.

The Proposed Action could potentially impact habitat for three state-listed plant species. Potentially suitable habitat was identified for the Pink Lady's-slipper, which is state-listed as "unusual," the Cumberland rose gentian, a state-listed "rare" species, and the Georgia aster, a state-listed threatened species. No state or federally listed or ranked plant species were observed during the field survey. Given that much of the Project Area is previously disturbed and contains numerous invasive plant species, the overall habitat quality is low and no state listed or ranked species were observed, no impacts to listed plant species are anticipated.

The desktop review of the Area of Potential Effects and the Stantec phase I archaeological survey revealed that no known cultural resources are located within the Project Area or within direct line of sight of the Project Area. As such, TVA finds that the proposed undertaking, as currently planned, would have no effect on historic properties. On March 2, 2026, TVA consulted with the Georgia Historic Preservation Division-State Historic Preservation Office (GHPD-SHPO) and all federally recognized Tribes with an interest in the Project Area regarding TVA's National Register of Historic Places (NRHP) eligibility determinations and findings of effect. The GHPD-SHPO concurred with TVA's finding of no effect to historic properties, on March 31, 2026. TVA received no objections from the consulted Tribes on the proposed undertaking.

Construction activities would have a minor visual impact over the temporary construction period due to the presence of construction vehicles and equipment, as well as a minor permanent impact due to construction activities. Drivers along surrounding roads and some homeowners may be able to view construction activity in the Project Area, although the activity would not be inconsistent with an industrial park and its development or with existing industrial and commercial facilities in the vicinity. Homeowners to the east and northeast would maintain at least some visual screening due to a forested area located outside the Project Area. While motorists may notice a change in the viewshed, this change would be minor given the brief period that drivers would be in the area. Implementation of the Action Alternative would result in a minor decrease in visual quality for residents in the viewshed.

Construction noise would be localized, intermittent, and temporary, and no receptor would be exposed to significant noise levels for an extended period. Further, construction activities would be anticipated to be conducted during daylight hours, when ambient noise levels are often higher, and most individuals are less sensitive to noise. It is anticipated that sound levels would not exceed 85 decibels in the Project Area per Occupational Safety and Health Administration standards. Thus, noise-related impacts resulting from the implementation of the Action Alternative are anticipated to be temporary and minor.

Minor beneficial socioeconomic impacts during the construction of the Proposed Action would occur. No long-term impacts on community services are anticipated and there would be no impacts on low-income communities in the area.

Additional traffic would be generated during construction activities. Because of the anticipated limited volume of workers on the site required for tree clearing activities and grading, as well as

the relatively short 6-month timeframe of the proposed work, direct or indirect impacts to local traffic and roadways are anticipated to be temporary and minor.

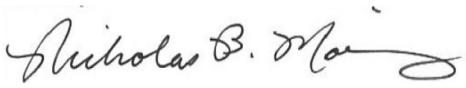
MITIGATION MEASURES

As the grantee of funding for the proposed action, TVA would require adherence to the routine environmental protection measures listed in Section 2.3.1 of the EA. The measures include BMPs, permit conditions in the associated stormwater permit issued by the Georgia Department of Natural Resources, and dust control measures pursuant to the State of Georgia Rule 391-3.

Wetland W002 would be avoided. If impacts to wetlands cannot be avoided, coordination with the Georgia Department of Natural Resources – Environmental Protection Division and USACE would be required.

CONCLUSION AND FINDINGS

Based on the findings listed above and the analyses in the EA, we conclude that the Proposed Action of TVA funding to assist with the development of a portion of the MSIP Site 8 would not be a major federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required.



Nicholas B. Morris on behalf of
Dawn Booker, Senior Manager
NEPA Compliance
Tennessee Valley Authority

May 20, 2026
Date Signed

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CHAPTER 1 PURPOSE AND NEED FOR ACTION

An integral part of the Tennessee Valley Authority's (TVA) mission is to promote economic development within the TVA service area. TVA provides financial assistance to help bring to market new or improved sites and facilities within 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 Murray County Industrial Development Authority (MCIDA), to assist with the development of Site 8 of the Murray South Industrial Park (MSIP) in Murray County, Georgia (Figure 1) as described in more detail below.

The List of Preparers for this Environmental Assessment (EA) is presented in Appendix A and the List of Symbols, Acronyms, and Abbreviations is located in Appendix B.

1.1 BACKGROUND

The MCIDA indicated that multiple opportunities for economic development of the Project Area had been lost in recent years due to the time required and cost needed to improve the site's suitability for development. The Proposed Action would improve the MSIP and put it into a more marketable position. The MSIP was established in 2018 via purchase of the property by the MCIDA with the intent to develop an industrial park. Historically the MSIP was used for timber production. The MCIDA received a grant from the Appalachian Regional Commission for other site improvements including an access road and a water line.

1.2 PURPOSE AND NEED

The area of TVA's Proposed Action (herein referred to as the Project Area) encompasses 39.2 acres of mixed grassy and shrubby areas with some trees, in Chatsworth, Georgia. TVA funds would be matched with non-TVA funds and used to assist with tree clearing, grubbing, geotechnical borings, and grading of a dirt building pad and stormwater management pond. Following the site improvements, the disturbed areas would be stabilized. These activities, herein referred to as the Proposed Action (Action Alternative), are further detailed in Section 2.1.2 below.

The proposed grant to the MCIDA would assist with the above-mentioned site improvements to allow prospects to better envision the development potential of the site. The proposed improvements would lead to an increased probability of achieving TVA's core mission of job creation and capital investment. Developed industrial sites currently in the immediate vicinity of the Project Area include Polytech Fibers and All-American Manufacturing. Target industries include advanced manufacturing, clean energy products, and consumer goods. Pursuant to the National Environmental Policy Act (NEPA) and TVA's implementing regulations 18 CFR 1318, this EA evaluates the environmental impacts that would potentially result from TVA's Proposed Action.

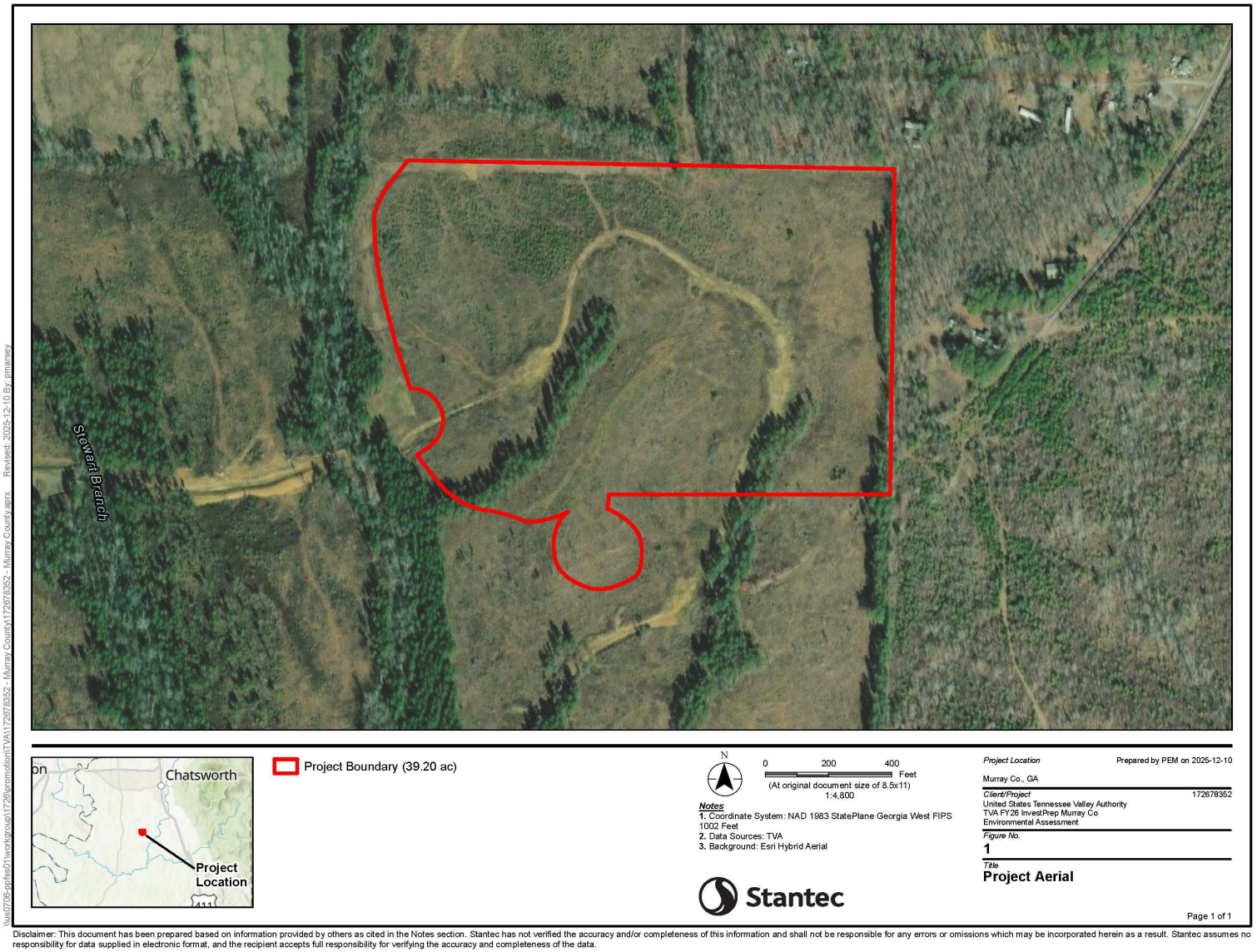


Figure 1. Map of Murray South Industrial Park Site 8 in Murray County, Georgia for the Proposed Action

1.3 DECISION TO BE MADE

TVA's decision is whether to provide the requested funding to the MCIDA.

1.4 RELATED ENVIRONMENTAL REVIEWS

In preparation for site development, other studies have been performed by the MCIDA or others at the MSIP including the 39.2-acre Project Area. The various studies were performed at different times and sometimes included areas beyond the Project Area.

- A Wetland Delineation for 380 acres of the MSIP encompassing the Project Area prepared by Terracon (2018) in June 2018.
- A Cultural Resources Reconnaissance of 378 acres of the MSIP encompassing the Project Area prepared by Brockington and Associates, Inc. (2018) in June 2018.
- Stantec performed a delineation of surface waters and wetlands of the Project Area in December 2025 with a report submitted to TVA in January 2026 (Stantec 2026a).
- Stantec performed a botany survey, including assessment for the presence of federally or state-listed plant species and their habitats, of the Project Area in December 2025 with a report submitted to TVA in February 2026 (Stantec 2026b).
- Stantec performed an archaeology survey of the Project Area in January 2025 with a report submitted to TVA in February 2026 (Stantec 2026c).

1.5 NECESSARY PERMITS, LICENSES, AND CONSULTATIONS

The following permits, licenses, or consultations would be required for completion of the Project:

- TVA contacted the Georgia Department of Community Affairs – Historic Preservation Division (GHPD) / State Historic Preservation Office (SHPO) regarding cultural resources in the Project Area in a letter dated March 2, 2026 (TVA 2026). Clearance for Section 106 of the National Historic Preservation Act (NHPA) was obtained from the GHPD-SHPO on March 31, 2026 (GHPD-SHPO 2026).
- Coordination with the U.S. Army Corps of Engineers (USACE) and the Georgia Department of Natural Resources – Environmental Protection Division (GDNR-EPD) regarding wetlands.
- National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges Associated with Construction Activities (GAR100001).
- Section 7 of the Endangered Species Act, addressed in TVA's programmatic consultation with the United States (U.S.) Fish and Wildlife Service (USFWS).
- Farmland Protection Policy Act (FPPA) coordination with the Natural Resources Conservation Service (NRCS) in regard to prime farmland.

CHAPTER 2 ALTERNATIVES

This chapter describes and compares the alternatives to be considered.

2.1 DESCRIPTION OF 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.

2.1.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not provide InvestPrep funds to the MCIDA. TVA would not further 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 MCIDA secured alternate funding and proceeded with its current plans, the overall environmental consequences would be similar to those expected from implementing the Action Alternative. In the event the project was postponed, any environmental effects would be delayed for the duration of the postponement. If the Project was cancelled, no direct environmental effects would be anticipated, as environmental conditions on the site would remain essentially unchanged from the current conditions for the foreseeable future.

2.1.2 Alternative B – Proposed Action Alternative

Under the Action Alternative, TVA would provide InvestPrep funds to the MCIDA for site improvements to the Project Area. The Action Alternative would include tree clearing, grubbing, geotechnical borings, grading, and post-grading stabilization. Details of the Proposed Action include:

- Cutting of approximately 2.3 acres of trees, removal of stumps, and burning of the woody debris.
- Geotechnical borings at the building pad described below.
- Grading of a 400,000 square foot (SF) building pad without the need for off-site borrow; approximately 25,000 cubic yards of soil from Site 8 would be stockpiled on the designated area within Site 7. Existing topography of the Project Area is depicted in Appendix C, Figure 1-A.
- Grading of a stormwater pond (preliminarily estimated at 450 by 120 feet) that would be located adjacent to the building pad.
- Following grading, the Project Area would be stabilized with seed and mulch.

These improvements with TVA funds would be matched with non-TVA funds. Activities required for the Action Alternative would occur over approximately six months and would require a small workforce that would most likely be assigned through a local contractor. Work activities would not be anticipated at night, but work on weekends is possible. For ease of discussion in this EA, the Proposed Action is collectively described as construction.

The MCIDA, or its contractors, would obtain all required permits and authorizations, and, in compliance with those permits, take appropriate feasible measures, such as implementing best management practices (BMPs) and best construction practices, to minimize or reduce the potential environmental effects of the Proposed Action to insignificant levels. These practices would include the installation of erosion prevention and sediment control measures (silt fences, sediment traps, etc.), management of fugitive dust, and daytime work hours.

2.1.3 Alternatives Considered but Eliminated from Further Discussion

No other alternatives were considered for the Project.

2.2 COMPARISON OF ALTERNATIVES

A summary of the environmental impacts associated with the two alternatives is provided in table 2-1. The environmental impacts are discussed in more detail in Chapter 3.

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

Resource Area	Impacts From No Action Alternative	Impacts From the Proposed Action Alternative
Solid and Hazardous Materials	No Impacts Identified	No Impacts Identified
Land Use	No Impacts Identified	No Impacts Identified
Floodplains	No Impacts Identified	No Impacts Identified
Managed and Natural Areas	No Impacts Identified	No Impacts Identified
Recreation	No Impacts Identified	No Impacts Identified
Surface Water	No Impacts Identified	No Impacts Identified
Aquatic Zoology	No Impacts Identified	No Impacts Identified
Air Quality and Climate Change	No Impacts Identified	Minor Impacts
Groundwater	No Impacts Identified	Minor Impacts
Soils	No Impacts Identified	Minor Impacts
Prime Farmland	No Impacts Identified	Minor Impacts
Wetlands	No Impacts Identified	Minor Impacts
Terrestrial Zoology (including Threatened and Endangered Species)	No Impacts Identified	Minor Impacts
Botany (including Threatened and Endangered Species)	No Impacts Identified	Minor Impacts
Cultural Resources	No Impacts Identified	No Impacts Identified
Visual Resources	No Impacts Identified	Minor Impacts
Noise	No Impacts Identified	Minor Impacts
Socioeconomics	No Impacts Identified	Minor Impacts
Transportation	No Impacts Identified	Minor Impacts

2.3 IDENTIFICATION OF STANDARD PRACTICES AND MITIGATION MEASURES

2.3.1 Standard Practices and Routine Measures

To minimize or reduce the environmental effects of site activities associated with the Action Alternative, the MCIDA, or its contractors, would ensure all grading activities conducted would be 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 would be handled outside of riparian areas and in such a manner as to prevent these items from reaching a watercourse. 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 would be collected and disposed of properly.

The MCIDA, or its contractors, would be expected to comply with the Rules and Regulations of the State of Georgia Rule 391-3, which requires reasonable precautions to prevent particulate matter (PM) from becoming airborne. Such reasonable precautions include grading of roads and the use of water or chemicals for control of dust in construction operations on dirt roads and stockpiles, as needed (Office of Georgia Secretary of State 2026).

Measures, such as compensatory mitigation, may be required in coordination with the U.S. Army Corps of Engineers (USACE) and associated permitting based on unavoidable impacts to the identified wetlands if the wetlands are determined to be regulated.

2.3.2 Non-routine Mitigation Measures

No non-routine mitigation measures have been identified.

2.4 THE PREFERRED ALTERNATIVE

TVA’s preferred alternative is Alternative B, the proposed Action Alternative.

CHAPTER 3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the baseline environmental conditions (affected environment) of environmental resources in the Project Area and the anticipated environmental consequences (or impacts) that would occur from implementation of the alternatives described in Chapter 2. Within this chapter, the environmental impacts analyzed may be beneficial or adverse. Impact severity is dependent upon the relative magnitude and intensity and resource sensitivity. In this document, four descriptors are used to characterize the level of impacts as follows:

- No Impact – resource not present or affected by project alternatives under consideration.
- Minor (or small) – environmental effects are not detectable or are so minor that they would neither destabilize nor noticeably alter any important attribute of the resource.
- Moderate – environmental effects are sufficient to alter noticeably, but not to destabilize, important attributes of the resource.
- Large (or significant) – environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

3.1 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

TVA prepared this EA to comply with NEPA and its implementing procedures at 18 CFR part 1318. TVA reviewed the Proposed Action and identified the following resource areas to be evaluated in detail:

- Air Quality and Climate Change
- Groundwater
- Soils
- Prime Farmland
- Wetlands
- Terrestrial Zoology
- Terrestrial Zoology – Threatened and Endangered (T&E) Species
- Botany
- Botany – T&E Species
- Cultural Resources
- Visual Resources

- Noise
- Socioeconomics
- Transportation

The following resources were considered but ultimately dismissed from further analysis in the EA:

- Hazardous Materials and Solid Waste: The Proposed Action does not involve demolition or removal of aboveground structures. Since the Proposed Action does not involve demolition or removal of aboveground structures, there are no known areas of hazardous waste, and the Project Area was used for timber production prior to development as an industrial park, the topic of solid and hazardous materials was excluded from further evaluation.
- Land Use: The Proposed Action would change the Project Area from a mixed grassy and shrubby area with some trees to a developed lot designed to attract industrial development. The MSIP is zoned as Industrial land. Given the industrial zoning, the MCIDA's planned development of the MSIP as an industrial park, and existing industrial and commercial facilities located to the west and southwest of the Project Area, the Proposed Action would not cause a change in land use.
- Floodplains: Based on aerial photography, Murray County, Georgia, the Stantec (2026a) delineation of surface waters and wetlands of the Project Area, Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map panel 13213C021D effective 9/29/2010, and the FEMA Map Service Center for Murray County, Georgia for effective, pending, and preliminary products, the Proposed Action would not be located within either FEMA-identified or unmapped 100-year floodplains (see Appendix C, Figure 1-B), which would be consistent with Executive Order (EO) 11988, Floodplain Management. . Therefore, there would be no direct or indirect impacts to floodplains and their natural and beneficial values.
- Managed and Natural Areas: A review of the TVA Regional Natural Heritage Database (NHD) identified one managed and natural area within three miles of the Project Area, the Chattahoochee Oconee National Forest (approximately 2.8 miles from the Project Area). This area does not directly overlap with the Project Area, and given the scope of the Project and the distance of the natural area relative to the Project Area, no impacts to managed natural areas are anticipated.
- Recreation: TVA conducted a desktop-level review of all recreation areas within a three-mile radius of the Project Area (Table 3-1). All four sites were located within Murray County, Georgia. None of those areas were identified to be less than one mile away from the Project Area, and none were identified to overlap with the Project Area.

Table 3-1. Recreation Areas within Three Miles of the Project Area in Murray County, Georgia

Recreation Area	Distance/Direction from Project Area
Spring Lakes Golf Club	2.0 miles north
Le Bonheur Equestrian	2.5 miles south
Dawgwood Speedway	2.7 miles southwest
North Georgia Speedway	2.7 miles southwest

These areas do not directly overlap with the Project Area, and given the scope of the Project and the distances of any recreation areas relative to the Project Area, no impacts to localized recreation areas or activities are anticipated.

- Aquatic Resources (surface water and aquatic zoology): A preliminary map of waters and wetland features based on the U.S. Geological Survey National Hydrography Dataset and USFWS National Wetland and Water Inventory is provided in Appendix C, Figure 1-C (USGS 2022). As noted above, Terracon (2018) performed a wetland delineation identifying surface waters and wetlands of the 380-acre MSIP which included the 39.2 acre Project Area and areas outside the Project Area. Terracon identified multiple streams and wetlands in the larger MSIP, however only one ephemeral stream was identified in the Project Area. No wetlands were identified in the Project Area. Given that the Terracon delineation is over seven years old, Stantec performed a delineation for surface waters and wetlands in the Project Area in December 2025 (Stantec 2026a). Stantec identified one wet weather conveyance. Because the Proposed Action would not affect a perennial or intermittent flowing surface waterbody or a pond, no impacts on surface water would occur.

  Because the Proposed Action would not affect a perennial flowing surface waterbody or a pond, and no fish, crayfish, bivalves or mussels, or aquatics insects were observed (Stantec 2026a), there would be no effects on aquatic zoology resources.

TVA's review of potential impacts resulted in identification of multiple resources requiring a more detailed assessment. Resources that could potentially be impacted (negatively or positively) by implementing the Action Alternative include air quality and climate change, groundwater, soils, prime farmland (Appendix C, Figure 1-D), wetlands (Appendix C, Figure 1-E), terrestrial zoology including threatened and endangered species, and botany including threatened and endangered species. Implementation of the Action Alternative could create potential impacts to the human environment, including cultural resources, visual resources, noise, socioeconomics, 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.

3.2 REASONABLY FORESEEABLE FUTURE ACTIONS

There are no known reasonably foreseeable future actions expected to occur within the Project Area or its immediate vicinity. The Action Alternative does not include the 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 defined. Given this uncertainty, an analysis of the potential impacts for the development of the adjacent lots or the eventual build-out, occupation, and future use is beyond the scope of this EA.

3.3 AIR QUALITY AND CLIMATE CHANGE

This section describes air quality in the Project Area and compares the alternatives considered as they relate to air quality and climate change.

3.3.1 Affected Environment - Air Quality and Climate Change

Federal and state regulations protect ambient air quality. With authority granted by the Clean Air Act (CAA) 42 US Code (USC) 7401 et seq., as amended in 1977 and 1990, the U.S. Environmental Protection Agency (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 (NO_2), carbon monoxide (CO), ozone, sulfur dioxide (SO_2), lead, PM with an aerodynamic diameter equal to or less than 10 microns (PM_{10}), 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 Murray County, Georgia, is designated as being in attainment with respect to the criteria pollutants (USEPA 2026). A portion of Murray County approximately 4 miles from the Project Area was re-designated from non-attainment (2004 to 2006) to attainment (maintenance) for 8-Hour Ozone (1997) in November 2007 (USEPA 2026).

Other pollutants, such as hazardous air pollutants (HAPs) and greenhouse gases (GHG) are also a consideration in air quality impact analyses. Section 112(b) of the CAA lists HAPs, also known as toxic air pollutants or air toxins, 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.

GHG are gases that trap heat in the atmosphere, are non-toxic and non-hazardous at normal ambient concentrations. At this time, there are no applicable ambient air quality standards or emission limits for GHG under the CAA. GHG 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 GHG since the

industrial age and are the primary contributor to climate change. The principal GHG are carbon dioxide (CO_2), methane, and nitrous oxide.

3.3.2 Environmental Consequences - Air Quality and Climate Change

This section assesses the environmental consequences and impacts on air quality and climate change resulting from the two alternatives considered.

3.3.2.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not provide funding to the MCIDA, and there would be no impact on air quality and climate change.

3.3.2.2 Alternative B – Proposed Action

Under the Action Alternative, TVA would utilize InvestPrep funding matched with non-TVA funding to assist with the Proposed Action as described in Section 2.1.2. Air quality impacts associated with activities under the Action Alternative include emissions from fossil fuel-fired equipment and fugitive dust from ground disturbances and building pad grading. Fossil fuel-fired equipment is a source of combustion emissions, including nitrogen oxides (NO_X), CO, volatile organic compounds (VOCs), SO_2, PM_{10}, $PM_{2.5}$, GHG, and small amounts of HAPs. Gasoline and diesel engines used as a result of the Action Alternative would be expected to be in compliance 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 (ppm). Trees would also be cleared as part of the Proposed Action under the Action Alternative, and burning of trees and stumps is also anticipated on site. Burning of woody debris produces smoke containing CO, CO_2, PM, NO_2, and VOCs (ORCAA 2024). Smoke inhalation can cause irritation, breathing issues, and respiratory diseases.

Fugitive dust is a source of respirable airborne PM, including PM_{10} 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 MCIDA, or its contractors, would be expected to comply with the Rules and Regulations of the State of Georgia, Chapter 391-3-1 Air Quality Control, which requires reasonable precautions to prevent PM from becoming airborne. Such reasonable precautions include grading of roads and the use of water or chemicals for control of dust in construction operations on dirt roads and stockpiles, as needed.

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

Concerning climate change, trees, like other green plants, are carbon sinks that use photosynthesis to convert CO_2 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 CO_2 from the atmosphere. Although forests do release some CO_2 from natural processes such as decay and respiration, a healthy forest typically stores carbon at a greater rate than it releases carbon. Trees would be cleared by construction equipment as part of the Proposed Action, and since the Project Area is mostly pastureland with some trees, it functions as a carbon sink. However, on a national or global scale, the Proposed Action that involves clearing 2.3 acres of trees, including the emissions caused by use of the construction equipment, would have minor impacts on climate change.

3.4 GROUNDWATER

This section describes groundwater resources in the Project Area and compares the alternatives considered as they relate to groundwater.

3.4.1 Affected Environment – Groundwater

The Project Area is located within the Tennessee Section of the Valley and Ridge Province (USGS 2023). Locally, the aquifers used are referenced by the geologic formations present; the prominent formation near the Project Area is referred to as the Conasauga Group, Cambrian aged shales, limestones, dolostones and sandstones (USGS 1995a). 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 (USGS 1995b).

In the northwestern part of Georgia, the principal aquifers in the Valley and Ridge Province consist of sedimentary rocks that are primarily Cambrian and Ordovician in age, with minor Silurian, Devonian, and Mississippian rocks also present (USGS 1995b). The valleys consist of underlying rock formations that are easily eroded, while erosion resistant rocks comprise the ridges. The sedimentary rocks of the Valley and Ridge physiographic province are mostly comprised of shale, sandstone and limestone, with lesser amounts of dolomite, chert and siltstone present. Due to folding, thrusting and erosion, the geologic formations in this area can vary greatly based on the processes that have occurred throughout geologic time. Underlying the Project Area, the lower unit of the Conasauga Group is present, which consists of olive-green, pale red and tan shale and sandstone layers with a thickness of approximately 1,000 feet (Cressler 1974). Wells in this area are approximately 300 to 500 feet deep (Cressler 1974).

Water quality in the carbonate aquifers of the Valley and Ridge Province is characterized as hard, with dissolved solids concentrations of 140 milligrams per liter or less (USGS 1995a). In general, 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 1995b). The Valley and Ridge geologic formations are recharged by precipitation that infiltrates in outcrop areas of recharge. The presence of shale beds tend to slow vertical infiltration resulting in lateral movement of water via sandstone beds (USGS 1995a).

3.4.2 Environmental Consequences - Groundwater

This section assesses the environmental consequences and impacts upon groundwater resulting from the two alternatives considered.

3.4.2.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not provide funding to the MCIDA, and there would be no impact on groundwater resources.

3.4.2.2 Alternative B – Proposed Action

Under the Action Alternative, TVA would utilize InvestPrep funding matched with non-TVA funding to assist with the Proposed Action as described in Section 2.1.2. Implementation of the Action Alternative would result in ground disturbance during construction activities. Tree clearing and subsequent tree and stump burning would result in minor ground disturbance at shallow depths. Site grading and compaction for a 400,000 SF dirt building pad, geotechnical borings within the area of the proposed building pad, grading of a stormwater pond, and stabilization using seeding and mulch would result in greater ground disturbance at moderate depths. Ground disturbances are not anticipated to be at depths that would intersect public groundwater supplies (approximately 50 to 250 feet beneath the land surface) (USGS 2016) or result in significant impacts to groundwater resources.

Shallow aquifers could sustain minor impacts from changes in overland water flow and recharge caused by clearing and grading 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.

3.5 SOILS

This section describes soils in the Project Area and compares the alternatives considered as they relate to soils.

3.5.1 Affected Environment – Soils

The Project Area is located within the Tennessee Section of the Valley and Ridge Province (USGS 2023). Soil types and descriptions were obtained from the NRCS Web Soil Survey (NRCS 2026) (see Appendix C, Figure 1-D). Soil types found within the Project Area include: Capshaw silt loam (0 to 2 percent slopes, Consociation), Conasauga silt loam (6 to 10 percent slopes, Consociation), Ketona silt loam (0 to 2 percent slopes, occasionally flooded, Consociation) and Montevallo-Townley complex (6 to 15 percent slopes, complex).

3.5.2 Environmental Consequences - Soils

This section assesses the environmental consequences and impacts upon soils resulting from the two alternatives considered.

3.5.2.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not provide funding to the MCIDA, and there would be no impact on soils or from soil erosion.

3.5.2.2 Alternative B – Proposed Action

Under the Action Alternative, TVA would utilize InvestPrep funding matched with non-TVA funding to assist with the Proposed Action as described in Section 2.1.2.

Under the Action Alternative, soils in the Project Area would be disturbed by construction. The Proposed Action includes the stabilization of disturbed soils following grading. Further, BMPs would be required as part of the NPDES General Permit for Discharges Associated with Construction Activities (GAR100001). This permit requires the development and implementation of an Erosion, Sedimentation and Pollution Control Plan (ESPCP). The ESPCP would identify specific BMPs to address construction-related activities that would be adopted to minimize erosion-related impacts. BMPs, as described in the Manual for Erosion and Sediment Control in Georgia (GSWCC 2016) would be used during site development to avoid soil erosion and sedimentation into surface water in and near the Project Area. These factors would effectively avoid or minimize impacts on soils and from soil erosion. Given these measures, it is anticipated that construction activities would result in minor effects on soils during the aforementioned site improvements.

3.6 PRIME FARMLAND

This section describes prime farmland in the Project Area and compares the alternatives considered as they relate to prime farmland.

3.6.1 Affected Environment - Prime Farmland

Prime farmland is defined by the U.S. Department of Agriculture NRCS as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. Of the four soil map units in the Project Area, one (CaA – Capshaw silt loam, 0 to 2 percent slopes) is considered prime farmland and account for 1.75 acres. Appendix C, Figure 1-D, depicts soil unit descriptions and locations.

The FPPA discourages federal activities that would convert farmland to nonagricultural purposes (7 CFR Part 658). The Proposed Action would result in disturbance within the Project Area. The Proposed Action could result in the conversion of 1.75 acres of Prime Farmland.

Completion of NRCS Form AD-1006, “Farmland Conversion Impact Rating”, Parts VI and VII was required prior to proceeding with the Proposed Action. Form AD-1006’s impact rating serves as a reporting mechanism to track loss of prime farmland by projects funded by federal dollars. For project sites where the total points equal or exceed 160, NRCS may prompt consideration of alternative actions, as appropriate, that could reduce adverse impacts (e.g., alternative sites, modifications, or mitigation).

3.6.2 Environmental Consequences - Prime Farmland

This section assesses the environmental consequences and impacts upon prime farmland resulting from the two alternatives considered.

3.6.2.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not provide funding to the MCIDA, and there would be no impact on prime farmland.

3.6.2.2 Alternative B – Proposed Action

Under the Action Alternative, TVA would utilize InvestPrep funding matched with non-TVA funding to assist with the Proposed Action as described in Section 2.1.2. Under the Action Alternative, 1.75 acres of prime farmland in the Project Area could be disturbed by the Proposed Action. The completion of the NRCS documentation described above was required. The final AD-1006 form was submitted to NRCS on February 13, 2026, with a score of 96, well below the threshold of 160 that would trigger additional considerations. No further coordination with NRCS regarding FPPA is required (Appendix D). The impacts to prime farmland would be considered minor on a county level, as based on available data; the Action Alternative would convert only 0.03 percent of the prime farmland in Murray County, Georgia.

3.7 WETLANDS

This section describes wetlands in the Project Area and compares the alternatives considered as they relate to wetlands.

3.7.1 Affected Environment - Wetlands

Stantec performed field surveys of the entire Project Area on December 8-9, 2025, to document wetlands. The Study Area is located within the Bullpen Branch-Holly Creek watershed defined by the 12-digit Hydrologic Unit Code (HUC) 031501010406, which falls within the Conasauga watershed defined by the 8-digit HUC 03150101 (USEPA 2017).

The USEPA and USACE utilizes the U.S. Supreme Court’s May 25, 2023, decision in the case of Sackett v. Environmental Protection Agency (Sackett). In light of this decision, the agencies are interpreting Waters of the U.S. (WOTUS) consistent with the Supreme Court’s decision in Sackett. On September 8, 2023, the final rule was published by the USEPA and USACE redefining the definition of WOTUS to conform to the 2023 Supreme Court decision. This conforming rule, also known as the Sackett Rule, amends the provisions of the agencies' definition of WOTUS that are invalid under the Supreme Court's interpretation of the Clean Water Act (CWA) in the 2023 decision (USEPA 2023), most notably the ‘significant nexus’ test.

With pending litigations, Georgia is using the Pre-2015 Regulatory Regime Consistent with the Sackett operative definition. The final authority regarding CWA jurisdiction remains with USACE and USEPA.

Wetland determinations were performed using the routine on-site determination methods described in the USACE Wetlands Delineation Manual (USACE 1987), hereafter referred to as

the "1987 Manual," and is consistent with the methods, guidelines, and indicators present in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (EMP) Version 2.0 (USACE 2012). For each wetland observed onsite, scoring was conducted using the Tennessee Valley Authority Rapid Assessment Method (TVARAM).

Based on the analysis of the delineation, nine wetlands were identified in the Project Area.

Table 3-2: Wetlands Identified in the Project Area

Wetland ID	Description	TVARAM Score (and Rating)	Estimated Acreage of Aquatic Resource in Project Area
W001	Palustrine Emergent (PEM) Wetland	27 (low resource value)	0.02
W002	Palustrine Scrub-Shrub Wetland	30 (low resource value)	0.10
W003	Palustrine Scrub-Shrub Wetland	19 (low resource value)	0.02
W004	Palustrine Scrub-Shrub Wetland	18 (low resource value)	0.002
W005	Palustrine Scrub-Shrub Wetland	21 (low resource value)	0.01
W006	Palustrine Scrub-Shrub Wetland	22 (low resource value)	0.001
W007	Palustrine Emergent Wetland	17 (low resource value)	0.01
W008	Palustrine Scrub-Shrub Wetland	22 (low resource value)	0.03
W009	Palustrine Scrub-Shrub Wetland	32 (moderate resource value)	0.05
		Total Wetland Area	0.243

Nine wetlands were observed within the Project Area, all of which were preliminarily and unofficially determined to be isolated based on Stantec's delineation. Two of these wetlands were classified as PEM wetlands and seven were classified as Palustrine Scrub/Shrub wetlands. All wetlands were assessed using the USACE EMP datasheet and the TVARAM form. Eight wetlands had a TVARAM rating of "low resource value" and one wetland was rated as having "moderate resource value." The delineated wetlands are depicted in Appendix C, Figure 1-E.

3.7.2 Environmental Consequences - Wetlands

This section assesses the environmental consequences and impacts upon wetlands resulting from the two alternatives considered.

3.7.2.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not provide funding to the MCIDA, and there would be no impact on wetlands.

3.7.2.2 Alternative B – Proposed Action

Under the Action Alternative, TVA would utilize InvestPrep funding matched with non-TVA funding to assist with the Proposed Action as described in Section 2.1.2. Some or all of the nine wetlands could be disturbed by tree clearing and grubbing, geotechnical borings, grading, or stabilization activities. Coordination with the USACE regarding the wetlands has not yet occurred, and their jurisdictional status is undetermined at this time. The MCIDA indicated that it would avoid Wetland W-002. It is possible that the MCIDA may be able to avoid other wetlands during site development. The MCIDA would coordinate with the USACE to determine jurisdictional status of any wetlands that cannot be avoided. Unavoidable impacts to jurisdictional wetlands would not occur unless authorized by the USACE through the CWA Section 404 permitting process. If required, mitigation measures would be incorporated into the final design of the Project.

The MCIDA would ensure compliance with required permits authorizing disturbance to the wetlands, if applicable, including provision of impact minimization measures and compensatory mitigation, as necessary. Given these factors, impacts to the wetlands would not be significant. Implementation of the Proposed Action would be consistent with EO 11990 and the CWA Sections 401 and 404.

3.8 TERRESTRIAL ZOOLOGY

This section describes terrestrial zoology in the Project Area and compares the alternatives considered as they relate to terrestrial zoology.

3.8.1 Affected Environment - Terrestrial Zoology

The 39.2-acre Project Area consists of approximately 36.9 acres of early-successional habitat dominated by pine saplings with a dirt road bisecting the property, and 2.3 acres of pine stand. Adjacent to the Project Area, similar habitat occurs with cleared and regenerating vegetation to the east, west, and north, while pastureland dominates the southern boundary. The surrounding landscape is a mix of agricultural fields, industrial development, scattered wooded patches, and rural residences. Overall, the area reflects a highly modified landscape with ongoing transitions between forest, agriculture, and industrial use. A field survey of the Project Area was conducted on October 15, 2025, by a TVA terrestrial zoologist.

The mix of early-successional habitat and small pine stands creates habitat opportunities for a range of terrestrial species. Avian species commonly found in these habitats include pine warbler (*Setophaga pinus*), brown-headed nuthatch (*Sitta pusilla*), and eastern towhee (*Pipilo erythrophthalmus*) (National Geographic 2002). Mammals frequently associated with early-successional habitats include white-tailed deer (*Odocoileus virginianus*), eastern cottontail (*Sylvilagus floridanus*), and hispid cotton rat (*Sigmodon hispidus*) (Kays and Wilson 2009). Amphibians and reptiles that may occur in these habitats include Cope's gray treefrog (*Hyla chrysoscelis*), five-lined skink (*Plestiodon fasciatus*), and gray ratsnake (*Pantherophis spiloides*) (Powell et al. 2016). A variety of invertebrates were observed within the Project Area during the field survey, including banded garden spider (*Argiope trifasciata*), , common buckeye (*Junonia*

coenia), gulf fritillary (*Dione vanilla*), variegated fritillary (*Euptoieta claudia*) and other orthopteran and arachnid species.

Review of the TVA NHD database on September 18, 2025, resulted in no known records of caves within three miles of the Project Area. No caves or cave-like structures were observed in the Project Area during the field survey. No other unique terrestrial habitat is known within three miles of the Project Area.

No records of heronries or aggregations of migratory birds have been documented within three miles of the Project Area. Review of the USFWS Information for Planning and Consultation (IPaC) tool identified 11 species of Migratory Birds of Conservation Concern (MBCC) that have the potential to occur within the Project Area: bald eagle, bobolink, cerulean warbler, chimney swift, chuck-will's-widow, eastern whip-poor-will, Kentucky warbler, prairie warbler, red-headed woodpecker, rusty blackbird, and wood thrush. See Section 3.9 for a full bald eagle impact analysis and effects determination.

Bobolink is a long-distance migratory bird that prefers large, older grass fields with low amounts of vegetative cover where they forage on grains, seeds, and invertebrates. This species nests in pastures and hayfields in the northeastern U.S. An isolated breeding population has been documented within the TVA service area in western North Carolina (Renfrew et al. 2020).

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

Chimney swifts are associated with human settlement and primarily use chimneys as nesting habitat; when chimneys are unavailable, swifts may utilize other human-made structures, such as barns, silos, and vents made of porous materials such as brick, stone, or mortar (Bogart 2025). They forage over a variety of habitats, including open terrain, forests, and residential areas (Steeves et al. 2020).

Chuck-will’s-widow nests directly on leaf litter in open pine or oak woodlands, mixed forests, and forest edges near clearings. This nocturnal species forages at dusk and dawn by capturing flying insects in open areas and along woodland edges. It breeds across the southeastern U.S. (Straight and Cooper 2020).

Eastern whip-poor-will nests directly on leaf litter in dry deciduous or mixed forests with little underbrush. Forest composition is not as important as the degree of openness in their breeding habitat. This species forages at dusk and dawn by preying on insects (Cink et al. 2020).

Kentucky warbler nests on the ground or on small shrubs in mature deciduous forests with a dense understory. These forests are typically bottomlands or near streams (McDonald 2020).

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

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

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

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

3.8.2 Environmental Consequences - Terrestrial Zoology

This section assesses the environmental consequences and impacts upon terrestrial animals and their habitats resulting from the two alternatives considered.

3.8.2.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not provide funding to the MCIDA, and there would be no impact on terrestrial animals and their habitats.

3.8.2.2 Alternative B – Proposed Action

Under the Action Alternative, TVA would utilize InvestPrep funding matched with non-TVA funding to assist with the Proposed Action as described in Section 2.1.2.

The Proposed Action would result in the displacement of wildlife (primarily common, habituated species) currently using the area. Direct effects on 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 extent of previous disturbance in the Project Area and the amount of similarly suitable habitat in areas immediately adjacent to the Project Area, minor impacts to populations of common wildlife species could occur as a result of the Action Alternative.

The Project Area does not fall within the breeding range of bobolink, cerulean warbler, and rusty blackbird. Additionally, suitable nesting habitat does not exist within the Project Area for chimney swift, Kentucky warbler, and wood thrush. As such, individuals that may be present during the course of the Proposed Action would be mobile and expected to flush upon disturbance. Populations of these MBCC would not be impacted by the Action Alternative.

Suitable nesting habitat for chuck-will's-widow, eastern whip-poor-will, prairie warbler, and red-headed woodpecker is available within the Project Area. The Action Alternative could result in destroyed nests, eggs, or juveniles of these species if they are present within the Project Area while Proposed Actions are ongoing. However, given the abundance of similar or superior habitat surrounding the Project Area, impacts to populations of these MBCC resulting from the Action Alternative would be minor.

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

3.9 TERRESTRIAL ZOOLOGY – THREATENED AND ENDANGERED SPECIES

This section describes threatened and endangered terrestrial animal species in the Project Area and compares the alternatives considered as they relate to threatened and endangered terrestrial species.

3.9.1 Affected Environment - Terrestrial Zoology – Threatened and Endangered Species

The Endangered Species Act (16 USC §§ 1531-1543) was passed to conserve the ecosystems upon which endangered and threatened species depend, and to conserve and recover those species. An endangered species is defined by the Endangered Species Act as any species in danger of extinction throughout all or a significant portion of its range. A threatened species is likely to become endangered within the foreseeable future throughout all or a significant part of its range. Critical habitats, essential to the conservation of listed species, also can be designated under the Endangered Species Act. The Endangered Species Act establishes programs to conserve and recover endangered and threatened species and makes their conservation a priority for Federal agencies. Section 7(a)(2) of the Endangered Species Act requires federal agencies to consult with USFWS when their proposed actions may affect endangered or threatened species or their critical habitats.

Review of the TVA Regional NHD on September 18, 2025, resulted in no records of proposed listed, federally or state-listed species identified within three miles of the Project Area. One federally protected species (bald eagle [*Haliaeetus leucocephalus*]), one species proposed for federal listing (tricolored bat [*Perimyotis subflavus*]), and four federally listed species (Alabama map turtle [*Graptemys pulchra*], gray bat [*Myotis grisescens*], northern long-eared bat [*Myotis septentrionalis],* and rusty patched bumble bee [*Bombus affinis*]) have been recorded in Murray County, Georgia. Review of the USFWS IPaC tool identified one additional species proposed for federal listing (monarch butterfly [*Danaus plexippus*]), and one species with federal protections related to its status as non-essential experimental population (whooping crane [*Grus americana*]) as having the potential to occur within the Project Area. Federally listed terrestrial species reported from Murray County and other species of conservation concern documented within a three-mile radius of the Project Area can be found in Table 3-3. Species-specific information and habitat suitability within the Project Area are discussed below.

Table 3-3. Federally Listed Terrestrial Animal Species Reported from Murray County, Georgia and Other Species of Conservation Concern Documented Within 3 Miles of the Project Area

Common Name	Scientific Name	Status Federal (Rank)	Status State (Rank)	Suitable Habitat Present
Insects				
Monarch butterfly[1]	*Danaus plexippus*	PT	-(S4)	Y
Rusty patched bumble bee[2]	*Bombus affinis*	E	E(SH)	Y
Reptiles				
Alabama map turtle[2]	*Graptemys pulchra*	SAT	R(S3)	N
Birds				
Bald eagle[2]	*Haliaeetus leucocephalus*	DM	T(S3)	N
Whooping crane	*Grus americana*	EXPN	-(S1)	N
Mammals				
Gray bat[2]	*Myotis grisescens*	E	E(S2)	N
Northern long-eared bat[2]	*Myotis septentrionalis*	E	E(S1)	Y
Tricolored bat[2]	*Perimyotis subflavus*	PE	-(S2)	Y

Source: TVA Regional NHD and USFWS IPaC online system (IPaC: Home) extracted September 18, 2025 and April 14, 2026 (USFWS 2025a).

1. Historically, this species has not been tracked by state or federal heritage programs; USFWS has determined that this species could occur within the Project Area.
2. Species that has not been documented within three miles of the Project Area but has been documented within Murray County, Georgia.
3. Species has not been documented within three miles of the Project Area, nor from Murray County, Georgia; USFWS has determined this species has the ability to occur within the Project Area.

Key:

DM = Delisted but Being Monitored
E = Endangered
EXPN = Experimental Population, Non-Essential
PE = Proposed Endangered
PT = Proposed Threatened
R = RareS1 = Critically Imperiled
S2 = Imperiled
S3 = Vulnerable
S4 = Apparently Secure
SAT = Similarity of Appearance (Threatened)
SH = Possibly Extirpated
T = Threatened

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 (Schweitzer et al. 2025). Although monarch butterfly has not been historically tracked by state or federal heritage programs, the

USFWS IPaC tool determined that this species could occur within the Project Area. Forest edges and early-successional habitat within the Project Area contain flowering plant species that provide suitable foraging habitat for adult monarchs. Abundant milkweed plants suitable for developing larvae were not observed during the field survey.

Rusty patched bumble bees inhabit grasslands, prairies, woodlands, marshes, agricultural landscapes, and residential parks and gardens. They require both diverse, abundant flowers from early spring through fall and undisturbed nesting sites nearby in order to have sufficient food and overwintering sites for queens. They often establish nests in abandoned rodent cavities (USFWS 2016). One historical record of rusty patched bumble bee is known from Murray County, Georgia, approximately 12 miles from the Project Area. While potentially suitable habitat is available for this species within the Project Area, this species has been ranked as potentially extirpated from the Project Area. Murray County occurs outside of mapped “high potential zones” and potential dispersal areas for known populations, such that Section 7 consultation is not required (USFWS 2016).

The Alabama map turtle is a riverine species that requires large rivers and streams with sandbars and abundant basking sites such as logs and rocks. These turtles rely on habitats rich in aquatic vegetation and mollusks, as their diet consists largely of freshwater mussels and snails. Females have been observed nesting in river sandbars from late April through August. This species is endemic to the Mobile Bay drainage system (Lovich et al. 2014). Two records of this species have been documented in Murray County, Georgia, the nearest being approximately 5.0 miles from the Project Area. Habitat for this species is not available within the Project Area.

The bald eagle is federally protected under the Bald and Golden Eagle Protection Act (16 USC 668- 668d). This species is associated with strong, mature trees capable of supporting their large nests, which they build near larger waterways where they forage primarily for fish (USFWS 2007). One bald eagle nest record is known from Murray County, Georgia, approximately 10.8 miles from the Project Area. Foraging habitat for bald eagle is not available within the Project Area. Neither individuals nor their nests were observed in the Project Area during the field survey.

The whooping crane is a large bird that once occurred throughout North America but has declined to one self-sustaining wild population that breeds in Canada and winters in coastal Texas. Whooping cranes from this population are listed as Endangered in the Southwest, USFWS Region 2 (USFWS 2025b). In the eastern U.S., an additional population has been established from captive-raised birds that breed in Wisconsin and overwinter in Florida. This additional population is categorized as a non-essential experimental population (USFWS 2001). For the purposes of consultation on private land, non-essential experimental populations are treated as a proposed species with no section 7(a)(2) requirements. Federal agencies must not jeopardize their existence in carrying out proposed actions in accordance with Endangered Species Act Section 7(a)(4) (16 USC 1531-1544). During migration, whooping cranes may be

found in coastal marshes, estuaries, agricultural fields, and other large wetland habitats (USFWS 2001). The Project Area does not provide migration habitat for this species.

Gray bats roost in caves year-round and migrate between summer and winter roosts during spring and fall (Tuttle 1976). Gray bats have also been documented roosting in manmade structures such as on bridges and in abandoned buildings. This species disperses over bodies of water at dusk where they forage for insects (USFWS 1982). One gray bat capture record is known from Murray County, Georgia, approximately 9.8 miles from the Project Area. Additionally, the USFWS IPaC tool indicated that this species could occur within the Project Area. No caves are known within three miles of the Project Area, and no ranked hibernacula are known within 10 miles. No caves or other suitable roosting structures for gray bats were observed within the Project Area during the field survey. Foraging habitat for this species was not observed.

Northern long-eared bat (NLEB) predominantly overwinters in large hibernacula such as caves, abandoned mines, and cave-like structures. During fall and spring, they utilize entrances of caves and the surrounding forested areas for swarming and staging. In summer, NLEBs roost individually or in colonies beneath exfoliating bark or in crevices of both live and dead trees (typically greater than or equal to three inches in diameter). This species also roosts in abandoned buildings and under bridges. NLEBs emerge at dusk to forage below the canopy of mature forests on hillsides and roads, and occasionally over forest clearings and along riparian areas (USFWS 2022). Twenty-three records of NLEB are known from Murray County, the nearest of which is documented approximately 6.5 miles from the Project Area. While all known records within Murray County are from 2010 to 2015 (pre-White Nose Syndrome) , the Project Area occurs in a location where NLEB is reasonably certain to occur, as defined by the USFWS IPaC tool. No caves are known within three miles of the Project Area, and no ranked hibernacula are known within 10 miles. No caves, suitable artificial roosting structures, or suitable summer roost trees for NLEB were observed within the Project Area during the field survey. Although not optimal, foraging habitat is available over and around trees within the Project Area.

The tricolored bat is generally solitary or found in small groups. They are associated with a variety of forested landscapes where they forage along forest edges and along waterways. Summer roosts are primarily in live and dead leaf clusters of live or recently dead deciduous hardwood trees, Spanish moss, and beard lichen. However, this species has also been documented roosting in clusters of dead pine needles, live cedars, and artificial structures such as bridges and culverts, and sometimes barns during summer months. In winter, this species is most commonly found in caves and mines but may also use culverts, abandoned wells, tree cavities, and rock shelters (USFWS 2021). Ten records of tricolored bat are known from Murray County, Georgia, the nearest of which was documented approximately 3.7 miles from the Project Area. All records within the county are pre-White-nose Syndrome records, one from 1963 and the rest from 2010. Based on the progression of White-nose Syndrome, the abundance of this species has significantly declined in the area. Nevertheless, the Project Area is located within the area where tricolored bat is reasonably certain to occur, as defined by the

USFWS IPaC tool. No caves are known within three miles of the Project Area, and no ranked hibernacula are known within 10 miles. No caves or other suitable artificial roosting structures were observed within the Project Area during the field survey. Approximately 2.32 acres of pine proposed for removal in the Project Area could provide suitable summer roosting habitat for tricolored bat. Foraging habitat for tricolored bat is available over and around trees within the Project Area.

3.9.2 Environmental Consequences - Terrestrial Zoology – Threatened and Endangered Species

This section assesses the environmental consequences and impacts upon threatened and endangered animal species and their habitats resulting from the two alternatives considered.

3.9.2.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not provide funding to the MCIDA, and there would be no impact on threatened and endangered terrestrial wildlife species or their habitats.

3.9.2.2 Alternative B – Proposed Action

Under the Action Alternative, TVA would utilize InvestPrep funding matched with non-TVA funding to assist with the Proposed Action as described in Section 2.1.2.

Milkweed plants suitable for developing monarch butterfly larvae were not observed during the field survey. The Action Alternative would not jeopardize the continued existence of monarch butterfly.

The Project Area is within the historical range of the rusty patched bumble bee. The species, however, has been potentially extirpated from Murray County. The Action Alternative would have no effect on rusty patched bumble bee.

Habitat for Alabama map turtle is not available within the Project Area; nevertheless, BMPs must be implemented within the Project Area to minimize impacts from runoff and sedimentation to nearby larger bodies of water where suitable habitat may be present. With implementation of BMPS, the Action Alternative would have no effect on Alabama map turtle.

Foraging habitat for bald eagles is not available within the Project Area, and neither individuals nor their nests were observed during the field survey. BMPs would be implemented around water bodies within the Project Area to minimize potential impacts of runoff and sedimentation to the extent practicable. Given the distance to known nesting records (10.8 miles) and with the implementation of BMPs, no impacts to bald eagles would be anticipated as a result of the Action Alternative. The Action Alternative is in compliance with the National Bald Eagle Management Guidelines.

Migration habitat for whooping crane does not exist within the Project Area, and the Action Alternative would not jeopardize the continued existence of whooping crane.

No impacts to tricolored bat winter roosting habitat are expected as a result of the Action Alternative. Approximately 2.32 acres of suitable summer roosting habitat for tricolored bat is proposed for removal under the Proposed Action. If clearing occurs during the non-winter season (March 15 – May 14; August 1 – September 30) direct effects to bats could occur if individuals are roosting in trees within the Project Area. However, individuals roosting during this time would be expected to be mobile and able to flush to nearby suitable habitat if disturbed. Direct adverse effects to non-volant pups could occur if tree removal takes place during pup season (May 15 – July 31) (USFWS 2024). To avoid direct adverse impacts to listed and proposed listed bats, TVA recommends removing trees within the Project Area during the winter clearing window (October 1 – March 14) when tricolored bats are not present on the landscape. The Action Alternative would not jeopardize the continued existence of tricolored bat.

No impacts to gray bat or NLEB roosting habitat are expected as a result of the Action Alternative. BMPs would be implemented within the Project Area to minimize potential impacts to nearby bodies of water where suitable foraging habitat for these species may be available. A number of activities associated with the proposed Project were addressed in TVA's programmatic consultation with the USFWS on routine actions for federally listed bats in accordance with Endangered Species Act Section 7(a)(2), completed in April 2018 and updated in May 2023 and November 2024.. For those activities with potential to affect bats, TVA committed to implement specific conservation measures. These activities and associated conservation measures are listed in the TVA Bat Strategy Project Screening Form (Appendix E) and must be reviewed and implemented as part of the Project. With implementation of conservation measures identified in Appendix E, the Proposed Action Alternative may affect but is not likely to adversely affect gray bat or NLEB. Gray bat and NLEB would not be significantly impacted by the Proposed Alternative.

The proposed Action Alternative would not result in significant impacts to any listed terrestrial species or their habitats.

3.10 BOTANY

This section describes plant species in the Project Area and compares the alternatives considered as they relate to botany.

1.1.1 Affected Environment - Botany

The Project occurs in the Ridge and Valley (67) USEPA Level III Ecoregion. The Ridge and Valley ecoregion is made up of a relatively low-lying region between the Blue Ridge Mountains to the east and the Southern Appalachians to the west (Griffith et al. 2001).

The Project occurs within the USEPA Level IV Ecoregion Southern Shale Valleys (67g) of the Ridge and Valley ecoregion (Griffith et al. 2001). This region is characterized by undulating to rolling valleys with rounded hills and steep valleys. Forested habitats in this ecoregion include stands of mixed oak forest, oak-hickory-pine forest, and bottomland oak forest. Much of the natural forest has been removed and converted to loblolly pine (*Pinus taeda*) plantations. Other

common landcover includes pasture and cropland for beef, poultry, corn, soybean, and hay production; mixed and deciduous forest; rural residential, urban and industrial lands.

Field surveys were conducted by Stantec on December 8 and 9, 2025, to document plant communities, presence of invasive plants, and to search for possible threatened and endangered plant species in areas where construction would occur, following the 2023 TVA Guidelines for Conducting Biological and Cultural Survey and Impact Analyses (TVA 2023). Using the National Vegetation Classification System (Grossman et al. 1998), vegetation types observed during field surveys are listed in Table 3-4 below.

Table 3-4. Vegetative Communities within the Project Area

Vegetative Community	Area (acres) Within the Project	Percentage of the Total Vegetated Project Area[1]
Evergreen Shrub-Scrub Vegetative Community	26.94	68.71%
Evergreen Forest (Early successional) Vegetative Community	6.37	16.25%
Evergreen Forest (Secondary Growth) Vegetative Community	1.94	4.96%
Sparsely Vegetated Vegetative Community	1.78	4.53%
Herbaceous Perennial Graminoid and Forb (Right-of-way) Vegetative Community	0.97	2.52%
Mixed Forest (Secondary Growth) Vegetative Community	0.56	1.44%
Herbaceous Perennial Graminoid and Forb (Old Field) Vegetative Community	0.36	0.91%
Hydromorphic Rooted Vegetative Community	0.24	0.60%
Deciduous Forest (Secondary Growth) Vegetative Community	0.05	0.13%
Total	**39.21 acres**	**100.00%**

[1] Note: percentages may not sum to 100 percent due to rounding.

The Evergreen Shrub-Scrub Vegetative Community encompasses the majority of the Project with approximately 26.94 acres (68.71 percent of the Project Area). It includes early growth loblolly pine stands. Because of the relatively young age of this community, there is no overstory. Small trees, primarily loblolly pine with some deciduous species mixed in, attain a height that is less than 16 feet, thus representing a shrub layer. Woody species include loblolly pine with 1 – 2 inches diameter at breast height (DBH) ranging from approximately 4 to 10 feet tall. Other woody species found in the shrub layer included autumn olive (*Elaeagnus umbellata*), Bradford pear (*Pyrus calleryana*), blackjack oak (*Quercus marilandica*), eastern redbud (*Cercis canadensis*), green ash (*Fraxinus pennsylvanica*), pignut hickory (*Carya glabra*), post oak (*Quercus stellata*), Chinese privet (*Ligustrum sinense*), red maple (*Acer rubrum*), shagbark hickory (*Carya ovata*), silky dogwood (*Cornus amomum*), sweetgum (*Liquidambar styraciflua*), sycamore (*Platanus occidentalis*), tuliptree (*Liriodendron tulipifera*), and winged elm (*Ulmus alata*). Vines such as crossvine (*Bignonia capreolata*) and Japanese honeysuckle (*Lonicera japonica*) were present. The herbaceous layer consisted of Allegheny blackberry

(*Rubus allegheniensis*), broomsedge bluestem (*Andropogon virginicus*), dogfennel (*Eupatorium capillifolium*), wrinkle-leaved goldenrod (*Solidago rugosa*), roundleaf thoroughwort (*Eupatorium rotundifolium*), slender woodoats (*Chasmanthium laxum*), small woodland sunflower (*Helianthus microcephalus*), Small's ragwort (*Packera anonyma*), sugarcane plumegrass (*Saccharum giganteum*), tall goldenrod (*Solidago altissima*), velvet panicgrass (*Dichanthelium scoparium*), Virginia meadowbeauty (*Rhexia virginica*), and seedlings of the shrub and tree species found in the shrub layer.

The Evergreen Forest (Early successional) Vegetative Community is primarily located in the northern portion of the Project Area and is characterized by planted loblolly pine along with other opportunistic vegetation. The vegetative community is composed primarily of evergreen and some deciduous trees ranging from 8 to 20 feet tall and 1 to 4-inches DBH. This vegetative community encompasses approximately 6.37 acres (16.25 percent). The overstory community is dominated by loblolly pine. Additional species in the overstory include green ash, red maple, sweetgum, and winged elm. Shrub species in this community include Allegheny blackberry, Bradford pear, Chinese privet, devil's walking stick (*Aralia spinosa*), and eastern baccharis (*Baccharis halimifolia*). Sapling and seedling species in the shrub layer include post oak, sweetgum, black cherry (*Prunus serotina*), winged elm, and winged sumac (*Rhus copallinum*). The vine layer was dense and dominated by Japanese honeysuckle. The herbaceous and graminoid plants in the community include bushy bluestem (*Andropogon glomeratus*), Chinese bushclover (*Lespedeza cuneata*), dogfennel, greasegrass/purpletop tridens (*Tridens flavus*), hyssopleaf thoroughwort (*Eupatorium hyssopifolium*), green foxtail (*Setaria viridis*), slender woodoats, Small's ragwort, sugarcane plumegrass, tall goldenrod, and velvet panicgrass.

The Evergreen Forest (Secondary Growth) Vegetative Community is present within the small valleys surrounded by the Shrub-Scrub Vegetative Community in the southern portion of the Project Area. The Evergreen Forest (Secondary Growth) Vegetative Community comprises approximately 1.94 acres (4.96 percent). It is characterized by older loblolly pine with 6 to 14-inches DBH. The midstory ranges from open to moderately dense. Midstory tree species have a DBH of 1 to 5-inches and include eastern redbud, green ash, loblolly pine, pignut hickory, red maple, southern red oak (*Quercus falcata*), sycamore, Virginia pine (*Pinus virginiana*), and white oak (*Quercus alba*). The shrub layer consists of American elm (*Ulmus americana*), bitternut hickory (*Carya cordiformis*), Chinese privet, highbush blueberry (*Vaccinium corymbosum*), loblolly pine, red maple, silky dogwood, and possumhaw (*Ilex decidua*). The vine layer included Japanese honeysuckle, roundleaf greenbriar (*Smilax rotundifolia*), sawtooth greenbriar (*S. bona-nox*), and wild grape (*Vitis* sp.). Ground cover species include Christmas fern (*Polystichum acrostichoides*), common boneset (*Eupatorium perfoliatum*), cranefly orchid (*Tipularia discolor*), greater tickseed (*Coreopsis major*), littleleaf ginger (*Hexastylis arifolia*), and slender woodoats.

The Sparsely Vegetated Community is found in highly disturbed areas that are affected by activities such as tree clearing or addition of gravel for vehicle access. These roadbed areas are characterized by 20 percent or less vegetation. This area comprises 1.78 acres (4.53 percent) in a corridor that transects the central portion of the Project Area. The herbaceous and graminoid plants in the community include aster (*Aster* sp.), broomsedge bluestem, forked bluecurls

(*Trichostema dichotomum*), goldenrod (*Solidago* sp.), greasegrass, Japanese honeysuckle, largebracted plantain (*Plantago aristata*), loblolly pine seedlings, shrubby lespedeza (*Lespedeza bicolor*), sugarcane plumegrass, and trailing lespedeza (*Lespedeza procumbens*).

The Herbaceous Perennial Graminoid and Forb (Right-of-way) Vegetative Community was observed along the north side of the Project Area and consists of maintained utility corridor areas that are mowed regularly. This vegetative community makes up approximately 0.97 acres (2.52 percent). Due to mowing, no overstory or midstory woody vegetation is present. Herbaceous graminoid and forb species include beaked panicgrass (*Panicum anceps*), broomsedge bluestem, bull thistle (*Cirsium vulgare*), Carolina horsenettle (*Solanum carolinense*), Carolina rose (*Rosa carolina*), curly dock (Rumex *crispus*), gray goldenrod (*Solidago nemoralis*), great mullein (*Verbascum thapsus*), greater tickseed, horseweed (*Conyza canadensis*), Japanese honeysuckle, narrowleaf plantain (*Plantago lanceolata*), prairie fleabane (*Erigeron strigosus*), Ravenel's rosette grass (*Dichanthelium ravenelii*), roundleaf thoroughwort, slender woodoats, and Small's ragwort.

The Mixed Forest (Secondary Growth) Vegetative Community is located along the eastern boundary of the Project. This vegetative community comprises 0.56 acres (1.44 percent) of the Project Area. This mixed pine-oak forest is characterized by an overstory dominated by 6 to 10 inches DBH loblolly pine, sweetgum, and white oak. The midstory is moderately dense and consists of 2 to 5 inches DBH eastern red cedar (*Juniperus virginiana*), post oak, red maple, southern red oak, water oak (*Quercus nigra*), and winged elm. Japanese honeysuckle vines were present climbing over some of the ground and shrub layer. The shrub layer was moderately open and dominated by eastern red cedar and sparkleberry (*Vaccinium arboreum*). Understory species included wrinkle-leaved goldenrod and slender woodoats.

The Herbaceous Perennial Graminoid and Forb (Old Field) Vegetative Community is represented by old fields which are periodically mowed or disturbed, but relatively infrequently compared to the right-of-way vegetative community. A low amount of young woody vegetation indicates significant previous disturbances. This community is interspersed throughout the Project Area and makes up approximately 0.36 acres (0.91 percent). Woody vegetation in these areas is sparse but consists primarily of Allegheny blackberry, loblolly pine, burning bush (*Euonymus alatus*), and winged sumac. Vines are less frequent and consist of Japanese honeysuckle. The herbaceous layer is dominated by blackeyed Susan (*Rudbeckia hirta*), broomsedge bluestem, tall goldenrod), Chinese bushclover, dogfennel, wrinkle-leaved goldenrod, gray goldenrod, greater tickseed, hyssopleaf thoroughwort, roundleaf thoroughwort, smallfruit rosette grass (*Dichanthelium dichotomum ssp. microcarpon*), Small's ragwort, sweet everlasting (*Pseudognaphalium obtusifolium*), and sweet goldenrod (*Solidago odora*).

The Hydromorphic Rooted Vegetative Community encompasses a total of approximately 0.24 acres (0.60 percent). Rooted hydromorphic vegetation is found within the nine emergent or shrub-scrub wetlands delineated within the Project Area. Dominant woody species within the shrub-scrub areas includes Allegheny blackberry, black willow (*Salix nigra*), Chinese privet,

common elderberry (*Sambucus nigra ssp. canadensis*), green ash, loblolly pine, possumhaw, red maple, silky dogwood, sycamore, and winged sumac. Herbaceous vegetation found within the Rooted Hydromorphic Vegetative Community is variable and includes broadleaf cattail (*Typha latifolia*), bushy bluestem, clustered beaksedge (*Rhynchospora glomerata*), common boneset, common rush (*Juncus effusus*), dwarf St. Johnswort (*Hypericum mutilum*), giant goldenrod (*Solidago gigantea*), green bulrush *(Scirpus atrovirens*), rosepink (*Sabatia angularis*), seedbox (*Ludwigia alternifolia*), shortfruit rush (*Juncus brachycarpus*), smallfruit rosette grass, Small's ragwort, smallspike false nettle (*Boehmeria cylindrica*), velvet panicgrass, white grass (*Leersia virginica*), and woolgrass (*Scirpus cyperinus*).

The Deciduous Forest (Secondary Growth) Vegetative Community encompasses 0.05 acres (0.13 percent). The overstory is dominated by scarlet oak (*Quercus coccinea*), post oak, shagbark hickory, sweetgum, water oak , and black cherry. Trees in the overstory have a DBH of 6 to 14 inches. Midstory tree species have a DBH of 2 to 4 inches and include American beech (*Fagus grandifolia*), eastern red cedar, flowering dogwood (*Cornus florida*), loblolly pine, and water oak. Shrub species in the Deciduous Forest (Secondary Growth) Vegetative Community include sparkleberry along with saplings of southern red oak and water oak. The vine layer includes round-leaf greenbrier (*Smilax rotundifolia*). Herbaceous species include slender woodoats and striped prince's pine (*Chimaphila maculata*).

EO 13112 directed TVA and other federal agencies to prevent the introduction of invasive species (both plants and animals), control their populations, restore invaded ecosystems and take other related actions. EO 13751 amends EO 13112 and directs actions by federal agencies to continue coordinated federal prevention and control efforts related to invasive species. This order incorporates considerations of human and environmental health, climate change, technological innovation, and other emerging priorities into federal efforts to address invasive species; and strengthens coordinated, cost-efficient federal action. Some invasive plants have been introduced accidentally, but most were brought here as ornamentals or for livestock forage. Because these robust plants arrived without their natural predators (insects and diseases), their populations spread quickly across the landscape, displacing native species and degrading ecological communities or ecosystem processes (Miller 2010). Several invasive plant species were documented within the Project Area, including autumn olive, Bradford pear, bull thistle, burning bush, Chinese bushclover, Chinese privet, great mullein, Japanese honeysuckle, and shrubby lespedeza. These species are listed as invasive by the Georgia Invasive Species Council (GISC 2023). No federally listed noxious weeds were observed within the Project Area at the time of the survey (USDA 2010). No unique habitats or rare plant communities were observed within the Project.

3.10.1 Environmental Consequences - Botany

This section assesses the environmental consequences and impacts upon plants resulting from the two alternatives considered.

3.10.1.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not provide funding to the MCIDA, and there would be no impact on plant communities.

3.10.1.2 Alternative B – Proposed Action

Under the Action Alternative, TVA would utilize InvestPrep funding matched with non-TVA funding to assist with the Proposed Action as described in Section 2.1.2. Adoption of the Proposed Action would not significantly affect the terrestrial ecology of the region. The majority of herbaceous vegetation at the site has been heavily disturbed by previous land use, dominated by non-native invasive plant species, and possesses little conservation value. The forested areas have a large component of non-native invasive plant species and removal of these common forested communities would not impact the terrestrial plant ecology of the region. The majority of the Project Area currently has a substantial component of non-native invasive terrestrial plants and adoption of the Proposed Action would not significantly affect the extent or abundance of these species at the county, regional, or state level.

3.11 BOTANY – THREATENED AND ENDANGERED SPECIES

This section describes threatened and endangered plant species in the Project Area and compares the alternatives considered as they relate to listed plant species.

3.11.1 Affected Environment - Botany – Threatened and Endangered Species

Based on the NHD data, nine plant species of concern have been recorded within a 5-mile radius of the Project Area including three state-listed threatened species, one-state listed rare species, one state listed unusual species, and four that did not have a state status (Table 3-5). One of the state-threatened species, the large-flowered skullcap (*Scutellaria montana*) is also listed as federally threatened and was identified in the USFWS IPaC data accessed on January 6, 2026 (USFWS 2026). The IPaC data also identified the federally endangered Tennessee yellow-eyed grass (*Xyris tennesseensis*) with potential to occur within the Project Area (USFWS 2025a). Critical habitat for either federally listed species has not been designated.

Table 3-5. Federal and State-Listed Plant Species with Potential to Occur Within the Project Area.

Species	Database Listing[a]	Federal Status[b]	State Rank, State Status[c, d]	Preferred Habitat
Cumberland rose gentian (*Sabatia capitata*)	NHD	--	S2, R	Openings in oak-hickory-pine forests, wet meadows over sandstone or shale and roadsides and utility line corridors through these habitats (Chafin 2020a).
Georgia aster (*Symphyotrichum georgianum*)	NHD	--	S3, T	Upland oak-hickory-pine forests and openings; sometimes with *Echinacea laevigata* or over amphibolite (Chafin 2020b).

Species	Database Listing[a]	Federal Status[b]	State Rank, State Status[c, d]	Preferred Habitat
Granite gooseberry (*Ribes curvatum*)	NHD	--	S2, --	Rocky upland forests; bouldery mesic slopes (GADNR n.d.-b 2026).
Lance-leaf trillium (*Trillium lancifolium*)	NHD	--	S3, --	Floodplain forests; also lower rocky slopes over basic soils (GADNR n.d.-c 2026).
Large-flowered skullcap (*Scutellaria montana*)	IPaC, NHD	T	S3, T	Mesic hardwood-shortleaf pine forests; usually mature forest with open understory, sometimes without a pine component (Chafin 2020c).
Pink lady's-slipper (*Cypripedium acaule*)	NHD	--	S4, U	Upland oak-hickory-pine forests; piney woods (Chafin 2020d).
Purple sedge (*Carex purpurifera*)	NHD	--	S2, --	Mesic hardwood forests over limestone (GADNR n.d.-a 2026).
Spreading false-foxglove (*Aureolaria patula*)	NHD	--	S1, T	Circumneutral alluvial bottoms (Chafin 2020e).
Tennessee leafcup (*Polymnia laevigata*)	NHD	--	S1, --	Bouldery sandstone slopes (Chafin 2020f).
Tennessee yellow-eyed grass (*Xyris tennesseensis*)	IPaC	E	S1, E	Seepy margins of limestone spring runs (Chafin 2020g).

a Database query in which species was listed as potential to occur within the Project Area.
b Status as designated by the Endangered Species Act: E – Endangered, T – Threatened
c State Rank: S1 – Critically imperiled, S2 – Imperiled, S3 – Vulnerable, S4 – Apparently Secure
d State Status: E – Endangered, T – Threatened, R – Rare, U – Unusual

Cumberland rose gentian (*Sabatia capitata*) is a Georgia state-listed rare and state-ranked imperiled perennial herb that has been recorded in the northwestern portion of the state(Chafin 2020d). Openings in oak-hickory-pine forests, wet meadows over sandstone caprock or shale, roadsides, and utility rights-of-way provide suitable habitat for this species. In Georgia, habitat for the Cumberland rose gentian consists of meadows over sandstone or shale. Flowers have little to no stalk and are found singly or in tight clusters near the top of the stem. Petals are usually eight in number but can range from seven to twelve and appear dark pink to almost white with a yellow mark at the base.

Georgia aster (*Symphyotrichum georgianum*) is a Georgia state-listed threatened and state-ranked vulnerable perennial herb that is primarily distributed throughout the northern portion of the state of Georgia with older records occurring in Harris, Houston, McDuffie, and Richmond Counties (Chafin 2020f). Habitat for this species consists of edges and openings in rocky, upland oak-hickory-pine forests; prairies, woodlands, and savannas; and roadsides and rights-of-way. It

is found on circumneutral soils developed over mafic bedrock. Individuals of this species are characterized by flower heads with bright purple ray flowers and white to lavender disk flowers that are approximately 2 inches wide. Stems are roughly hairy and can reach 20 to 40 inches in height. Leaves are wide, alternate, thick, and have roughly hairy surfaces. Leaves are 20 to 40 inches wide.

Granite gooseberry (*Ribes curvatum*) is a state-ranked imperiled species of concern (GADNR n.d.-b). Records exist in Dade, Dekalb, Murray, and Walker Counties. Suitable habitat in Georgia includes rocky upland forests and bouldery mesic slopes. The granite gooseberry is a perennial shrub that can reach 9 feet tall, but it is more commonly 3 to 5 feet tall (Keener et al. 2025). The leaves are rounded with three lobes, appear bright green, and margins are serrated. Leaves exhibit an alternate arrangement. White flowers can be solitary or found in two to four flowered racemes.

Lance-leaf trillium (*Trillium lancifolium*) is a state-ranked vulnerable perennial herb found primarily in northwestern Georgia including Murray County, but with older records in Decatur, Houston, and Elbert Counties. Like other trilliums, the lance-leaf trillium is a rhizomatous herb with unbranched stems in the Liliaceae (lily) family. The plant produces no true leaves or stems aboveground; what is commonly referred to as the “stem” is actually an extension of the rhizome (Stritch n.d.). The “leaves” of this trillium are mottled with dark green and are lanceolate. The petals of the flower are long-lasting, erect, and maroon-red, purple, greenish tan, or bi-colored. Fruits are purplish and appear almost winged (eFloras.org n.d.). This species has a disjunct distribution over its range. It typically grows in alluvial soil and reaches its largest size in floodplain areas. It can also be found in rocky upland woodlands, brushy thickets, cane breaks, in heavy shade, or in thin, open woods. This species flowers from February to early May.

Large-flowered skullcap (*Scutellaria montana*) is a federally listed threatened, and Georgia state threatened and state-ranked vulnerable species that can be found in the northwestern portions of the state including Murray County (Chafin 2020e). Habitat for the large-flowered skullcap includes moist hardwood and hardwood-pine forests with open understory. Flowers are clustered with 2 to 20 paired flower stalks at the top of the stems and are approximately 1 to 1.4 inches long. The flowers appear as a white, erect tube, pale blue upper lip, and a spreading, pale blue lower lip with two white streaks bordered by dark blue lines and splotches. Stems can reach 1 to 2 feet in height and are covered with soft hairs. The leaves are 2 to 4 inches, oppositely arranged, have hair on both surfaces, and have toothed margins.

Pink lady's-slipper (*Cypripedium acaule*) is state-listed as unusual and state ranked as apparently secure and occurs within the central to northern portions of Georgia (Chafin 2020b). Upland pine and mixed pine-hardwood forests with acidic soil provide suitable habitat for this species. Additionally, it often occurs near edges of rhododendron thickets and mountain bogs in mountainous areas. The pink lady’s-slipper is a perennial herb that produces 2.6 inch long flowers that display a pink pouch- or slipper-shaped lip petal and two narrow, twisted, reddish-brown or green outwardly spreading petals. Flowers are found singly at the top of a 2-foot tall

stalk. Leaves of this species appear green and hairy on the upper surface and a contrasting gray on the lower surface. Leaves range from 3.5 to 12 inches long.

Purple sedge (*Carex purpurifera*) is a state-ranked imperiled perennial graminoid found in northern Georgia. It has tufted, erect, ascending culms and leaves with purple basal sheaths. Its habitat includes moist deciduous, or, rarely, mixed deciduous-evergreen forests, around limestone escarpments, washes, sinks, and cave entrances from 650 to 3,600 feet in elevation (Bryson and Naczi 2020). This species prefers moist, rich cove forests at low elevations, over calcareous or mafic rocks and flowers May-June (Weakley et al. 2026).

Spreading false-foxglove (*Aureolaria patula*) is a perennial herb that is a Georgia state-listed threatened species and state ranked as critically imperiled(Chafin 2020a). The range for the spreading false-foxglove within Georgia includes Bartow, Floyd, Glenn, and Murray counties. Broader suitable habitat includes steep limestone bluffs in the shade of rather open stands of mixed hardwoods (Roth et al. 1997); suitable habitat in Georgia includes circumneutral alluvial bottoms (Chafin 2020a). Spreading false-foxglove is a hemiparasite and is known to parasitize sweetgum, eastern redbud, ironwood (*Carpinus caroliniana*), and flowering dogwood. This species has yellow flowers that are 1.4 inches long with a funnel-shaped tube and five spreading flowers that sit atop a flower stalk that is 0.5 to 1 inch long.

Tennessee leafcup (*Polymnia laevigata*) is a perennial herb found in Dade, Walker, and Murray counties (Chafin 2020c). This state-ranked critically imperiled herb grows 3 to 8 feet tall. Except for the upper branches which may be finely hairy, the stem is generally smooth. Leaf blades are 1.6 to over 16 inches long and opposite. The leaves are deeply cut and lobed. Upper leaves decrease in size higher up the steams and have fewer lobes. Ray flowers are pale yellow to white, up to 0.4 inch long, with 2 to 6 per head; disc flowers are pale yellow with around 12 to over 30 per head. This species is important to pollinators including bees, bugs, wasps, flies, and ants, as well as birds and small mammals which eat the large seeds.

Tennessee yellow-eyed grass (*Xyris tennesseensis*) is a state-listed and federally-listed endangered and state ranked as critically imperiled perennial herb found in several counties in northwest Georgia (Chafin 2020g). This species has a tall, straight flower stalk that grows 12 to 28 inches tall and leaves that are wide, erect, flat, or slightly twisted and 5.5 to 18 inches long. The flower stalk is topped by a single, cone-like flower with three oblong, yellow petals. It typically produces one flower per day. This species is found in sunny, wet habitats over calcareous bedrock such as spring runs, wet meadows, seeps, or the edges of shallow streams and ponds. Flowering occurs in August to September.

Likelihood of Listed Species Occurrence by Vegetative Community

Due to the lack of ideal ground conditions in the Evergreen Shrub-Scrub Vegetative Community, primarily created by converting the area into commercial forestland, the suitability for state-listed plant species is low to absent in the Evergreen Shrub-Scrub Vegetative Community. The target species from the listed species table would not be expected in this habitat type.

Due to the lack of ideal ground conditions in the Evergreen Forest (Early-successional) Vegetative Community, primarily created by converting the area into commercial forestland, the suitability for state-listed plant species is low to absent. Early-successional evergreen forest is not expected to support the target species(Table 3-5).

The Evergreen Forest (Secondary Growth) Vegetative Community potentially provides low-quality habitat for pink lady's-slipper, which prefers “piney” upland forests dominated by pine or by a mix of pine, oak, and hickory.

Due to heavy disturbance and lack of suitable habitat in the Sparsely Vegetated Community, target species would not be expected in this habitat type.

Due to frequent disturbance and lack of suitable habitat in the Herbaceous Perennial Graminoid and Forb (right-of-way) Vegetative Community, target species would not be expected in this habitat type. However, the edges of this vegetative community do provide low-quality habitat for Cumberland rose gentian and Georgia aster.

The Mixed Forest (Secondary Growth) Vegetative Community could provide low-quality habitat for the Pink lady’s slipper, which prefers forests that are dominated by pine or a mix of pine-oak-hickory.

The Herbaceous Perennial Graminoid and Forb (Old Field) Vegetative Community does provide low-quality habitat for Cumberland rose gentian and Georgia aster, but past soil disturbance may have removed it, if it was ever present.

Hydromorphic Rooted Vegetative Community wetland areas may provide low- to moderate-quality habitat for the Cumberland rose gentian, especially close to the edges of wetlands.

The Deciduous Forest (Secondary Growth) Vegetative Community potentially provides moderate-quality habitat for Pink lady’s-slipper.

3.11.2 Environmental Consequences - Botany – Threatened and Endangered Species

This section assesses the environmental consequences and impacts upon threatened and endangered plants resulting from the two alternatives considered.

3.11.2.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not provide funding to the MCIDA, and there would be no impact on threatened and endangered plants.

3.11.2.2 Alternative B – Proposed Action

Under the Action Alternative, TVA would utilize InvestPrep funding matched with non-TVA funding to assist with the Proposed Action as described in Section 2.1.2. Adoption of the Action Alternative could potentially impact three state-listed species.

Much of the Project Area has been heavily altered by commercial forestry, specifically loblolly pine silviculture, or by tree clearing for rights-of-way and/or vehicle access. The suitability for rare, threatened, or endangered plant species is low to absent within the Evergreen Shrub-Scrub, Evergreen Forest (Early-successional), Herbaceous Perennial Graminoid and Forb (both Old Field and Right-of-Way), or Sparsely Vegetated communities.

Potential habitat was identified for the Pink lady's-slipper, which is state-listed as "unusual," in the Evergreen Forest (Secondary Growth), Deciduous Forest (Secondary Growth), and Mixed Forest (Secondary Growth) vegetative communities, which encompass a total of 2.6 acres (6.5 percent of the Project Area). The Cumberland rose gentian, a state-listed "rare" species, may potentially have suitable habitat in the Herbaceous Perennial Graminoid and Forb (both Old Field and Right-of-Way) and the Hydromorphic Rooted vegetative community, particularly around the edges of wetlands. These vegetative communities represent a total of 1.6 acres (4.0 percent) of the Project Area. The Georgia aster, a state-listed threatened species, could have potential habitat in the Herbaceous Perennial Graminoid and Forb (Right-of-way) Vegetative Community and the Herbaceous Perennial Graminoid and Forb (Old Field) Vegetative Community, which total 1.3 acres (3.4 percent) of the Project Area.

No state or federally listed or ranked plant species were observed during the field survey. Given that much of the Project Area is previously disturbed, contains numerous invasive plant species, and the overall habitat quality is low, no impacts to listed plant species are anticipated. The proposed Action Alternative would have no effect on federally listed plants.

3.12 CULTURAL RESOURCES

This section describes cultural resources in the Project Area and compares the alternatives considered as they relate to cultural resources.

3.12.1 Affected Environment - Cultural Resources

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

1. are associated with important historical events; or
2. are associated with the lives of significant historic persons; or
3. embody distinctive characteristics of a type, period, or method of construction or represent the work of a master, or have high artistic value; or

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

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

Section 106 of the NHPA requires federal agencies to consider the potential effects of their actions on historic properties and to allow the Advisory Council on Historic Preservation an opportunity to comment on the action. Section 106 involves four steps: 1) initiate the process; 2) identify historic properties; 3) assess adverse effects; and 4) resolve adverse effects. This process is conducted in consultation with the SHPO of the state in which the action would occur, all federally recognized Tribes with interest in the Project location, and with other interested consulting parties. Section 110 of the NHPA sets out the broad historic preservation responsibilities of federal agencies and is intended to ensure that historic preservation is fully integrated into their ongoing programs. Federal agencies are responsible for identifying and protecting historic properties and avoiding unnecessary damage to them. Section 110 also charges each federal agency with the affirmative responsibility for considering projects and programs that further the purposes of the NHPA, and it declares that the costs of preservation activities are eligible project costs in all undertakings conducted or assisted by a federal agency.

Given that the proposed Project does not involve the construction of permanent above-ground structures, the potential to impact historic architectural resources is low. Furthermore, background research indicates that one historic structure identified by Brockinton and Associates, Inc. (2018) was located approximately 0.5 mile north of the Project Area with intervening topography and forested areas, providing visual screening. As such, TVA has determined, through consultation with the GHPD-SHPO and all Federally Recognized Tribes with an interest in Murray County, Georgia, that the cultural resources area of potential effects (APE) is to be considered the Project footprint (39.2 acres), where physical effects would occur. There are also no known American Civil War sites or Native American Removal Routes in the APE or within a half-mile radius of the Project Area.

Secretary of the Interior-Qualified cultural resource specialists from TVA conducted a desktop review and reconnaissance of the Project Area and vicinity. A Cultural Resources Desktop Assessment was prepared by Brockinton and Associates, Inc. (2018) in June 2018 for Thomas and Hutton. Brockinton and Associates, Inc. examined records for approximately 378 acres in and outside the Project Area and performed a limited field reconnaissance. Brockinton and Associates, Inc. concluded that there was very low potential for discovery of NRHP-eligible cultural resources.

Stantec (2026c) then performed a Phase I cultural resources survey of the APE in January 2026. Stantec’s background review indicated that there were no previously identified historic above-

ground structures or archaeological sites present in the APE. A review of previous cultural resource surveys indicated that the entirety of the APE has not been previously surveyed.

The Stantec field survey consisted of systematic shovel testing at 30-meter (m) intervals with site bounding shovel tests at 10-m intervals. A total of 186 potential shovel test locations were investigated within the APE of which 184 were negative for cultural materials, with two that could not be excavated due to their location along a gravel road.

As a result of the Phase I investigation, no new archaeological sites were identified (Stantec 2026c) and no additional work is recommended.

3.12.2 Environmental Consequences - Cultural Resources

This section assesses the environmental consequences and impacts upon cultural resources resulting from the two alternatives considered.

3.12.2.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not provide funding to the MCIDA, and there would be no impact on cultural resources.

3.12.2.2 Alternative B – Proposed Action

Under the Action Alternative, TVA would utilize InvestPrep funding matched with non-TVA funding to assist with the Proposed Action as described in Section 2.1.2. The undertaking would involve ground-disturbing activities in the APE.

Both the desktop review of the APE and the Stantec (2026c) survey revealed that no known cultural resources are located within the Project Area or within direct line of sight of the Project Area. As such, TVA finds that the proposed undertaking, as currently planned, would have no effect on historic properties.

On March 2, 2026, TVA consulted with the GHPD-SHPO and all federally recognized Tribes with an interest in the Project Area regarding TVA's NRHP eligibility determinations and findings of effect (Appendix D). The GHPD-SHPO concurred with TVA's finding of no effect to historic properties, on March 31, 2026 (Appendix D). TVA received no objections from the consulted Tribes on the proposed undertaking.

3.13 VISUAL RESOURCES

This section describes visual resources in the Project Area and compares the alternatives considered as they relate to visual resources.

3.13.1 Affected Environment - Visual Resources

The Project Area is bordered to the north, west, and south by mostly mixed grassy and shrubby areas with some trees. No houses are located within 0.25 mile of the Project Area to the north, west, and south and intervening patchy forested areas would provide some screening. There are two houses located within 150 feet of the Project Area to the east and northeast, but those

houses, and others farther away to the east and northeast, are screened by a forested area. The Project Area is near Smyrna Church Road located approximately 0.5 mile to the west, Poly Tech Drive which accesses the Project Area from the west, and Wilson Road located south and east of the Project Area.

3.13.2 Environmental Consequences - Visual Resources

This section assesses the environmental consequences and impacts upon visual resources resulting from the two alternatives considered.

3.13.2.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not provide funding to the MCIDA, and there would be no impact on visual quality.

3.13.2.2 Alternative B – Proposed Action

Under the Action Alternative, TVA would utilize InvestPrep funding matched with non-TVA funding to assist with the Proposed Action as described in Section 2.1.2. Under the Action Alternative, construction vehicles and equipment visible during construction activities would have a minor visual impact over the temporary construction period, as well as a minor permanent impact due to tree cutting, removal of stumps, burning of woody debris, geotechnical borings, and grading, and stabilization by seeding and mulch. Drivers along Wilson Road and some homeowners to the east and northeast may be able to view construction activity, although the activity would not be inconsistent with an industrial park and its development or with existing industrial and commercial facilities in the vicinity. Homeowners would have moderate or better visual screening due to a wooded area located to the east and northeast of the Project Area. While motorists may notice a change in the viewshed, this change would be minor given the brief period that drivers would be in the area. Implementation of the Action Alternative would result in a minor decrease in visual quality for residents in the viewshed.

3.14 NOISE

This section describes the noise environment in the Project Area and compares the alternatives considered as they relate to noise.

3.14.1 Affected Environment - 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, and potential noise receptors such as homes, are primarily associated with traffic along the surrounding roads and the surrounding businesses and residences, particularly to the east and northeast as described above in section 3.13.

3.14.2 Environmental Consequences - Noise

This section assesses the environmental consequences and impacts upon the noise environment resulting from the two alternatives considered.

3.14.2.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not provide funding to the MCIDA, and there would be no impact on noise receptors.

3.14.2.2 Alternative B – Proposed Action

Under the Action Alternative, TVA would utilize InvestPrep funding matched with non-TVA funding to assist with the Proposed Action as described in Section 2.1.2. Noise impacts associated with construction activities would be primarily from the use of heavy equipment. Construction activities would likely involve the operation of an excavator, bulldozer, dump truck, or similar vehicles, and heavy machinery over the temporary duration of construction. Heavy equipment noise levels would fluctuate depending on the number and type of vehicles and equipment in use at any given time. The Action Alternative would be implemented over approximately six months, during which construction-related noise may be generated. 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. It is anticipated that sound levels would not exceed 85 decibels in the Project Area per Occupational Safety and Health Administration standards.

Primary sensitive noise receptors in the area include residential homes located east and northeast of the Project Area as described in section 3.13. The construction noise would be localized, intermittent, and temporary, and no receptor would be exposed to significant noise levels for an extended period of time. Further, construction activities would be anticipated to be conducted during daylight hours, when ambient noise levels are often higher, and most individuals are less sensitive to noise. Each of the homes would have a forested buffer between the home and the Project Area, which would at least partially minimize construction noise for receptors. The homes, which are also adjacent to Wilson Road and a spur off of Wilson Road, would already be subject to ambient noise from traffic. Construction noise is possible on weekends. Industrial and commercial facilities adjacent to busy roads and highways are accustomed to noise. Overall, noise-related impacts resulting from the implementation of the Action Alternative would be anticipated to be temporary and minor.

3.15 SOCIOECONOMICS

This section describes socioeconomics in the Project Area and compares the alternatives considered as they relate to socioeconomics.

3.15.1 Affected Environment - Socioeconomics

This section evaluates the potential impact of the Action Alternative on socioeconomic resources. It also considers the range of communities impacted to determine whether the Action Alternative is likely to have impacts on minority and low-income populations.

While socioeconomic analysis typically focuses on state, county, or block group level data, the scale of the analysis is dependent on the specific type of impacts that are likely to occur. For this analysis, publicly available statistics generated by the U.S. Census Bureau and the U.S. Bureau of Labor Statistics were used to characterize socioeconomic conditions in the host state (Georgia), county (Murray), and closest locality (City of Dalton) (Table 3-6). Dalton, Georgia (located approximately 10 miles west of both Chatsworth and the Project Area in adjacent Whitfield County) was used as the locality. Details of the Action Alternative were then used to evaluate likely effects on existing socioeconomic resources. The demographics and income of the host county were considered relative to the demographics and income levels at the state level, to identify the potential for impacts on minority and low-income populations.

Table 3-6. Population, Demographics, Income, and Employment in the Host State, County, and Locality

	Georgia	Murray County	City of Dalton, Georgia
Population[1]			
July 2024 Population	11,180,878	41,316	34,970
April 2020 Population	10,713,755	39,975	34,461
Population, Percent Change	4.4%	3.4%	1.5%
Population per Square Mile[2]	185.6	116.0	1,627.9
Demographics [1]			
White Alone, not Hispanic or Latino	48.8%	79.4%	34.3%
Black or African American Alone	33.1%	1.7%	6.3%
American Indian and Alaska Native Alone	0.7%	1.0%	5.1%
Asian Alone	5.2%	0.7%	2.2%
Native Hawaiian and Other Pacific Islander Alone	0.1%	0.3%	0.1%
Two or More Races	2.6%	1.6%	13.2%
Hispanic or Latino (may overlap with other demographic categories)	11.6%	17.2%	54.7%
Income [1]			
Median Household Income	$74,664	$67,880	$61,236
Per Capita Income	$39,525	$30,205	$31,047
Percent with Income Below the Poverty Level	12.6%	14.4%	17.3%
Employment (Not Seasonally Adjusted): September 2025[2]			
Labor Force	5,408,978	19,332	16,258
Employed	5,225,359	18,652	15,660
Unemployed	183,619	680	598
Unemployment Rate (%)	3.4	3.5	3.7

[1] Source: U.S. Census Bureau (2026)

[2] Source: U.S. Bureau of Labor Statistics (2026)

Note: Percentages have been rounded and may not sum to 100 percent.

The evaluation determined the following:

- Relative to the average Georgia resident, the residents of Murray County live at a lower population density and have a lower population growth. Relative to the average Georgia resident, the residents of the City of Dalton, Georgia, live at a higher population density, but have a lower population growth.
- Relative to the average Georgia resident, the residents of Murray County are less likely to self-identify as a minority race or ethnicity. Relative to the average Georgia resident, the residents of the City of Dalton are more likely to self-identify as a minority race or ethnicity.
- Per capita income and median household income are both lower in Murray County than in Georgia. Per capita income and median household income are both lower in the City of Dalton than in Georgia as a whole. Residents of Murray County are more likely to live below the poverty level than residents of Georgia as a whole. Residents of the City of Dalton are more likely to live below the poverty level than residents of Georgia as a whole.
- The unemployment rate in both Murray County and the City of Dalton is higher than the unemployment rate in Georgia.

There are no residential subdivisions within a 0.5-mile radius of the Project Area; however, there are approximately 34 residential homes within a 0.5-mile radius. The following demographic characteristics were identified for this area relative to the State of Georgia: these census block groups in aggregate have 45 percent people of color, 35 percent of low-income population, 9 percent of linguistic isolation, and 43 percent of population with less than a high school education (PEDP 2026).

As described in Section 2.1.2 above, the Action Alternative would include tree clearing and grubbing, burning of woody debris, geotechnical borings, grading, and stabilization.

This effort is expected to take place over approximately six months and would require a small workforce, likely drawn from a local contractor.

3.15.2 Environmental Consequences - Socioeconomics

This section assesses the environmental consequences and impacts upon socioeconomics resulting from the two alternatives considered.

3.15.2.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not provide funding to the MCIDA, and positive economic activity and socioeconomic changes would not be realized.

3.15.2.2 Alternative B - Proposed Action

Under the Action Alternative, TVA would utilize InvestPrep funding matched with non-TVA funding to assist with the Proposed Action as described in Section 2.1.2. Implementation of the Action Alternative is not anticipated to materially impact the local economy or the local workforce. In addition, no negative socioeconomic impacts would be anticipated from the Proposed Action; therefore, no negative impacts would be anticipated to minority or low-income populations as a result of the Action Alternative. Minor positive indirect impacts may be noted through the increase in employment as a result of the Action Alternative.

There is minimal potential that the Action Alternative would result in negative impacts on minority and low-income populations. This conclusion is based on two observations. First, the Action Alternative would have a minor positive effect on the local economy. Second, as described throughout this document, environmental effects associated with the Action Alternative would be minor, temporary, and would generally be constrained to the 39.2-acre Project Area.

3.16 TRANSPORTATION

This section describes transportation resources in the Project Area and compares the alternatives considered as they relate to transportation.

3.16.1 Affected Environment - Transportation

The Project Area can be accessed during construction activities from the west via a spur from Poly Tech Drive or from the south or west via a spur from Wilson Road. Poly Tech Drive terminates at Smyrna Church Road to the west of the Project Area. Smyrna Church Road transects Highway 225 to the southwest of the Project Area and terminates at Highway 441/76/61 to the northeast of the Project Area.

Poly Tech Drive is a local asphalt road which provides access to industrial and rural properties to the west of the Project Area. Poly Tech Drive is a paved two-lane road to the west of the Project Area that is sufficiently wide for a single lane of traffic in each direction. Based on preliminary review of Google Street View images (recorded August 2024), and incidental observations by Stantec field crews, the road is in good condition with grassy swales on each side of the road. Poly Tech Drive is not classified by the Functional Classification System by the Georgia Department of Transportation (GDOT) (GDOT 2024). The site entrance location and configuration should consider safe sight distances and other safety concerns for the traffic that would enter Poly Tech Drive from the Project Area. Necessary precautions would be taken during mobilization and demobilization, such as reduced speed in areas of poor visibility or poor road conditions, with other precautions such as a flagman or traffic control to be considered if required.

Smyrna Church Road is a local road which provides access to commercial, residential, and rural properties to the north and south of the Project Area. Smyrna Church Road is a paved, two-lane road that is sufficiently wide for a single lane of traffic in each direction. Based on preliminary review of Google Street View images (recorded August 2024), and incidental observations by

Stantec field crews, the road is in good condition with narrow shoulders and grassy swales on each side of the road. Smyrna Church Road is not defined by the Functional Classification System by GDOT (GDOT 2024). Normal care would be taken by workers entering regarding traffic safety.

Highway 225 is a two-lane paved highway with stop signs and yellow flashing traffic lights at the intersection of Smyrna Church Road. Based on preliminary review of Google Street View images (recorded August 2024), and incidental observations by Stantec field crews, the road is in good condition with paved shoulders and a grassy median. Highway 225 is listed as a minor arterial on the Functional Classification System by GDOT (GDOT 2024). Normal care would be taken by workers entering or crossing Highway 225 regarding traffic safety.

Highway 441/76/61 is a four-lane paved highway with a dedicated turning lane at the intersection of Smyrna Church Road. Based on preliminary review of Google Street View images (recorded August 2024), and incidental observations by Stantec field crews, the road is in good condition, curbed with a dedicated turning lane. Highway 441/76/61 is listed as a principal arterial on the Functional Classification System by GDOT (GDOT 2024). Normal care would be taken by workers entering or crossing Highway 441/76/61 regarding traffic safety.

Based on a review of GDOT historical traffic data (GDOT 2024), there are no traffic count stations on Poly Tech Drive or Smyrna Church Road. The nearest traffic count stations are located on Highway 225 and Highway 441/76/61 southwest and northeast and of the Project Area. The 2024 annual average daily traffic count (AADT) for the relevant stations are presented in Table 3-7 below.

Table 3-7. Georgia Department of Transportation Traffic Count Data for the Project Area

Route Description	Location ID	Distance from Project Area (Miles)	Year	AADT
Highway 225	213-0105	4.1	2024	5,940
Highway 441/76/61	213-0201	3.3	2024	11,800

Source: Georgia Department of Transportation 2024 (Traffic Counts in Georgia), extracted 02/02/2026.

3.16.2 Environmental Consequences - Transportation

This section assesses the environmental consequences and impacts upon transportation resources resulting from the two alternatives considered.

3.16.2.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not provide funding to the MCIDA, a and there would be no impact on overall traffic volumes and level of service.

3.16.2.2 Alternative B – Proposed Action

Under the Action Alternative, TVA would utilize InvestPrep funding matched with non-TVA funding to assist with the Proposed Action as described in Section 2.1.2. In the context of the existing AADT road volumes, the anticipated traffic generated by the Proposed Action would be

minor. It is anticipated that existing traffic volumes for Poly Tech Drive would be minor, as it provides access to limited other sites, and any increase in traffic volumes for Smyrna Church Road, Highway 225 or Highway 441/76/61 would be minor. Because of the anticipated limited volume of workers on the site required for tree clearing activities and grading, as well as the relatively short timeframe of the proposed work, direct or indirect impacts to local traffic and roadways are anticipated to be temporary and minor.

3.17 UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS

Unavoidable adverse impacts are the effects of the Proposed Action on natural and human resources that would remain after mitigation measures or BMPs have been applied. Mitigation measures and BMPs are typically implemented to minimize and avoid potential impacts associated with Proposed Actions, which may still have the potential to cause unavoidable adverse effects on several environmental resources. Activities associated with the use of construction equipment may result in varying amounts of dust, air emissions, and noise that may potentially impact both onsite workers and nearby offsite residences and parks. Emissions from onsite construction activities and equipment would be minimized through implementation of BMPs including proper maintenance of construction equipment and vehicles. During construction, BMPs to minimize runoff would be implemented but there could still be some uncontrolled runoff that could affect nearby outfalls and water bodies. During construction, there would be an increase in traffic on public roads due to use by the construction workforce and construction-related equipment and materials being transported to the Project Area. This additional construction-related traffic would also increase noise and fugitive dust in areas proximate to these roads. Emissions from construction equipment are minimized through implementation of BMPs including proper maintenance of construction equipment and vehicles.

There would be no unavoidable adverse impacts associated with the Proposed Action.

3.18 RELATIONSHIP OF SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

NEPA requires a discussion of the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity. This EA focuses on the analyses of environmental impacts associated with the Proposed Action. For the purposes of this section, activities associated with construction are considered short-term uses of the environment and the long-term impacts to site productivity are those from future development and activities beyond the life of the Project. The Proposed Action would have no effect (solid and hazardous materials, land use, floodplains, managed or natural areas, recreation, surface water, and aquatic zoology) or a minor negative effect on identified environmental resources (air quality and climate change, groundwater, soils, prime farmland, wetlands, terrestrial zoology including threatened and endangered species, botany including threatened and endangered species, cultural resources, visual resources, noise, and transportation) based on short-term use as described above. Minor positive indirect impacts on socioeconomics may be noted through the increase in employment as result of the Action Alternative. These impacts are anticipated to be temporary and/or minor.

Under the Proposed Action, TVA would provide InvestPrep funds to the MCIDA for site improvements to the Project Area. This short-term investment could lead to industrial development resulting in long-term gains in economic prosperity in Murray County, Georgia. If this goal is realized, implementation of the Proposed Action would help to fulfill one of TVA's missions, which is to promote economic development within the TVA service area.

3.19 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

A resource commitment is considered irreversible when impacts from its use would limit future use options and the change cannot be reversed, reclaimed, or repaired. Irreversible commitments generally occur to nonrenewable resources such as minerals or cultural resources and to those resources that are renewable only over long timespans, such as soil productivity. A resource commitment is considered irretrievable when the use or consumption of the resource is neither renewable nor recoverable for use by future generations until reclamation is successfully applied. Irretrievable commitments generally apply to the loss of production, harvest, or other natural resources and are not necessarily irreversible. Resources required for the Proposed Action, including labor, materials, land, and fossil fuels would be irretrievably lost. Nonrenewable fossil fuels would be irretrievably lost by gasoline and diesel-powered equipment during construction. Although the Proposed Action would require irretrievable use of some resources, it is unlikely that their limited use would adversely affect the overall future availability of these resources.

3.20 NEPA COMPLIANCE CERTIFICATION

Consistent with 18 CFR 1318.106(e) and 1318.301(f), TVA certifies that this document represents TVA's good-faith effort to fulfill the requirements of NEPA within the Congressional timeline established at NEPA Section 107(g) and according to page limits established at NEPA Section 107(e) and that the NEPA process is substantially complete. In this document, TVA prioritizes documentation of the most important considerations required by NEPA within the Congressionally mandated page limits based on its expert judgement. Any considerations addressed briefly or unaddressed are, in TVA's judgment, comparatively not of a substantive nature that meaningfully inform the consideration of environmental effects and the resulting decision on how to proceed. In TVA's expert opinion, the factors mandated by NEPA have been thoroughly considered, and in TVA's judgment, the analysis contained in this document is adequate to inform and reasonably explain TVA's final decision regarding the proposed federal action.

CHAPTER 4 LITERATURE CITED

Avery, M. L. 2020. Rusty Blackbird (*Euphagus carolinus*), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.rusbla.01. Available online at: https://birdsoftheworld.org/bow/species/rusbla/1.0/introduction. Accessed January 2026.

Bogart, R. 2025. On the Wing with Chimney Swifts. U.S. Fish and Wildlife Service. Available online at: https://www.fws.gov/story/chimney-swifts. Accessed January 2026.

Brockington and Associates, Inc. 2018. Cultural Resources Reconnaissance, Murray South Industrial Park, GRAD Certification. June 2018.

Bryson, C.T. and Naczi, R.F.C. 2020. Carex purpurifera. Flora of North America. https://floranorthamerica.org/Carex_purpurifera. Accessed January 2026.

Buehler, D. A., P. B. Hamel, and T. Boves. 2020. Cerulean Warbler (*Setophaga cerulea*), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.cerwar.01. Available online at: https://birdsoftheworld.org/bow/species/cerwar/1.0/introduction. Accessed January 2026.

Chafin, L. G. 2020a. *Sabatia capitata* (Raf.) Blake (Cumberland Rose-gentian). Georgia Biodiversity Portal. Retrieved January 7, 2026, from https://georgiabiodiversity.org/portal/profile?group=all&es_id=20383.

Chafin, L. G. 2020b. *Symphyotrichum georgianum* (Alexander) Nesom (Georgia Aster). Georgia Biodiversity Portal. Retrieved January 7, 2026, from https://georgiabiodiversity.org/portal/profile?group=all&es_id=19402.

Chafin, L. G. 2020c. *Scutellaria montana* Chapman (Large-flowered Skullcap). Georgia Biodiversity Portal. Retrieved January 7, 2026, from https://georgiabiodiversity.org/portal/profile?group=all&es_id=20397.

Chafin, L. G. 2020d. *Cypripedium acaule* Ait. (Pink Lady's-slipper). Georgia Biodiversity Portal. Retrieved January 7, 2026, from https://georgiabiodiversity.org/portal/profile?group=all&es_id=19349.

Chafin, L. G. 2020e. *Aureolaria patula* (Chapman) Pennell Cumberland Oak-leech. Georgia Biodiversity Portal. Retrieved January 7, 2026, from https://georgiabiodiversity.org/portal/profile?group=all&es_id=19070.

Chafin, L. G. 2020f. *Polymnia laevigata* Beadle Tennessee Leafcup. Georgia Biodiversity Portal. Retrieved January 7, 2026, from https://georgiabiodiversity.org/portal/profile?group=all&es_id=19614.

Chafin, L. G. 2020g. *Xyris tennesseensis* Kral Tennessee Yellow-eyed-grass. Georgia Biodiversity Portal. Retrieved January 7, 2026, from https://georgiabiodiversity.org/portal/profile?group=all&es_id=17987.

Cink, C. L., P. Pyle, and M. A. Patten. 2020. Eastern Whip-poor-will (*Antrostomus vociferus*), version 1.0. In Birds of the World (P. G. Rodewald, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.whip-p1.01. Available online at: https://birdsoftheworld.org/bow/species/easwpw1/1.0/introduction. Accessed January 2026.

Cressler, C.W., 1974. Geology and Ground-Water Resources of Gordon, Whitfield and Murray Counties, Georgia. Information Circular 47. Atlanta 1974.Available online at: https://dlg.usg.edu/record/dlg_ggpd_s-ga-bn200-pg3-bs1-bi5-bno-p-b47. Accessed February 2026.

Davis, A. and Howard, E. 2005. Spring Recolonization Rate of Monarch Butterflies in Eastern North America: New Estimates from Citizen-Science Data. Journal of the Lepidopterists' Society. 59(1): 1-5. Available online at: https://images.peabody.yale.edu/lepsoc/jls/2000s/2005/2005(1)1-Davis.pdf. Accessed January 2026.

eFloras.org. n.d. Flora of North America. Trillium lancifolium (Lance-leaved trillium). http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=242101997. Accessed January 2026.

Evans, M., E. Gow, R. R. Roth, M. S. Johnson, and T. J. Underwood. 2020. Wood Thrush (Hylocichla mustelina), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.woothr.01. Available online at: https://birdsoftheworld.org/bow/species/woothr/1.0/introduction. Accessed January 2026.

Executive Order (EO) 11988, Floodplain Management, Federal Register Vol. 42, No. 101, May 25, 1977. pp. 26951-26957. URL:https://www.archives.gov/federal-register/codification/executive-order/11988.html.

Frei, B., K. G. Smith, J. H. Withgott, P. G. Rodewald, P. Pyle, and M. A. Patten. 2020. Red-headed Woodpecker (*Melanerpes erythrocephalus*), version 1.0. In Birds of the World (P. G. Rodewald, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.rehwoo.01. Available online at: https://birdsoftheworld.org/bow/species/rehwoo/1.0/introduction. Accessed January 2026.

GHPD-SHPO. 2026. Letter Dated March 31, 2026 Regarding Compliance with Section 106 of the National Historic Preservation Act – Site Development, 3752 Smyrna Church Road , Chatsworth, Murray County, Georgia, HP-260302-001.

Georgia Department of Natural Resources (GADNR). n.d.-a. *Carex purpurifera* Mackenzie (Purple Sedge). Georgia Biodiversity Portal. Retrieved January 7, 2026, from https://georgiabiodiversity.org/portal/profile?group=all&es_id=20104.

GADNR. n.d.-b. *Ribes curvatum* Small (Granite Gooseberry). Georgia Biodiversity Portal. Retrieved January 7, 2026, from https://georgiabiodiversity.org/portal/profile?group=all&es_id=16065.

GADNR. n.d.-c. 2026. *Trillium lancifolium* Raf. (Lanceleaf Trillium) Georgia Biodiversity Portal. Retrieved January 7, 2026, from https://georgiabiodiversity.org/portal/profile?group=all&es_id=20421.

Georgia Department of Transportation (GDOT 2024). Georgia Functional Classification System. 2024. Available online at: Traffic Counts in Georgia. Accessed February 2, 2026.

Georgia Invasive Species Council (GISC). 2023. Invasive Plants: Plant List. Retrieved January 11, 2026, from https://gainvasivespeciescouncil.org/list/invasive-plants/.

Georgia Soil and Water Conservation Commission (GSWCC). 2016. Manual for Erosion and Sediment Control in Georgia. 2016. Available online at: https://gaswcc.georgia.gov/documents-list#field_related_links-95-M. Accessed February 2026.

Griffith, G.E., Omernik, J.M., Comstock, J.A., Lawrence, S., Martin, G., Goddard, A., Hulcher, V.J., and Foster, T., 2001, Ecoregions of Alabama and Georgia, (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,700,000).

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

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

Keener, B.R., A.R. Diamond, T.W. Barger, L.J. Davenport, P.G. Davison, S.L. Ginzbarg, C.J. Hansen, D.D. Spaulding, J.K. Triplett, and M. Woods. 2025. Alabama Plant Atlas. [S.M. Landry and K.N. Campbell (original application development), Florida Center for Community Design and Research. University of South Florida]. University of West Alabama, Livingston, Alabama.

Lovich, J. E., Godwin, J. C., & McCoy, C. J. 2014. *Graptemys pulchra* Baur 1893 – Alabama Map Turtle. In A. G. J. Rhodin, P. C. H. Pritchard, P. P. van Dijk, R. A. Saumure, K. A. Buhlmann, J. B. Iverson, & R. A. Mittermeier (Eds.), *Conservation biology of freshwater turtles and tortoises: A compilation project of the IUCN/SSC tortoise and freshwater turtle specialist group* (Chelonian Research Monographs No. 5, pp. 072.1–072.6). Chelonian Research Foundation. Available online at: https://doi.org/10.3854/crm.5.072.pulchra.v1.2014. Accessed January 2026.

McDonald, M. V. 2020. Kentucky Warbler (*Geothlypis formosa*), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.kenwar.01. Available online at: https://birdsoftheworld.org/bow/species/kenwar/1.0/introduction. Accessed January 2026.

Miller, J.H., S.T. Manning, and S.F. Enloe. 2010. A management guide for invasive plants in the Southern forests. Gen. Tech. Rep. SRS-131. US Department of Agriculture, Forest Service, Southern Research Station: 1-3.

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

NRCS (Natural Resources Conservation Service). 2026. Web Soil Survey. Available at: Web Soil Survey (usda.gov). Accessed February, 2026.

Nolan Jr, V., E. D. Ketterson, and C. A. Buerkle. 2020. Prairie Warbler (*Setophaga discolor*), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.prawar.01. Available online at: https://birdsoftheworld.org/bow/species/prawar/1.0/introduction. Accessed January 2026.

Office of Georgia Secretary of State. 2026. Rules and Regulations of the State of Georgia – Subject 391-3-1 Air Quality Control. Available online at: https://rules.sos.ga.gov/gac/391-3-1.

ORCAA (Olympic Region Clean Air Agency). 2024. Land Clearing Burning Management Handbook – Burning Techniques for Good Smoke Management. Available online at: Land-clearing-handbook.pdf (orcaa.org). Accessed January 2026.

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

Public Environmental Data Partners (PEDP). 2026. EJ Screen. Available online at: https://pedp-ejscreen.azurewebsites.net/. Accessed January 2026.

Renfrew, R., A. M. Strong, N. G. Perlut, S. G. Martin, and T. A. Gavin. 2020. Bobolink (*Dolichonyx oryzivorus*), version 1.0. In Birds of the World (P. G. Rodewald, Editor). Cornell Lab of

Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.boboli.0. Available online at: https://birdsoftheworld.org/bow/species/boboli/1.0/introduction. Accessed January 2026.

Roth, E., rev. Crouch, V., & rev. White, D. (1997). *Aureolaria patula* Spreading Yellow False Foxglove. NatureServe Explorer. Retrieved January 7, 2026, from https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.132298/Aureolaria_patula

Schweitzer, D. F., Jepsen, S., and Cornelisse, T. 2025. Monarch: *Danaus plexippus*. NatureServe Explorer [Web application]. NatureServe, Arlington, VA. Available online at: https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.108245/Danaus_plexippus Accessed January 2026.

Stantec. 2026a. Environmental Report, Murray County, Georgia, Wetlands and Aquatics Report. January 16, 2026.

Stantec. 2026b. Vegetation Assessment Report, InvestPrep Round 13, Murray County, Georgia. February 13, 2026.

Stantec. 2026c. Phase I Archaeological Survey for the Murray South Industrial Park, Chatsworth, Murray County, Georgia. February 9, 2026.

Steeves, T. K., S. B. Kearney-McGee, M. A. Rubega, C. L. Cink, and C. T. Collins. 2020. Chimney Swift (*Chaetura pelagica*), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.chiswi.01. Available online at: https://birdsoftheworld.org/bow/species/chiswi/1.0/habitat. Accessed January 2026.

Straight, C. A. and R. J. Cooper. 2020. Chuck-will's-widow (*Antrostomus carolinensis*), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.chwwid.01. Available online at: https://birdsoftheworld.org/bow/species/chwwid/cur/introduction. Accessed January 2026.

Stritch, L. n.d. Lance-leaved Trillium (*Trillium lancifolium*). United States Department of Agriculture, Forest Service. https://www.fs.usda.gov/managing-land/wildflowers/plant-of-the-week/trilliumlancifolium. Accessed January 2026.

(TVA) Tennessee Valley Authority. 2023. Guidelines for Conducting Biological and Cultural Surveys and Impact Analysis. October 2023.

TVA. 2026. Letter to the State Historic Preservation Office – Department of Community Affairs Regarding the Murray South Industrial Park. March 2, 2026.

Terracon Consultants, Inc. 2018. Wetland Delineation, Murray South Industrial Park. June 1, 2018.

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

U.S. Army Corps of Engineers (USACE). 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. Vicksburg, MS: Waterways Experiment Station.

USACE. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0). USACE Engineer Research and Development Center.

United States Bureau of Labor Statistics. 2026. One-Screen Data Search, Local Area Unemployment Statistics. Available online at: One-Screen Data Search (bls.gov). Accessed January 2026.

United States Census Bureau. 2026. Quick Facts. Available online at: U.S. Census Bureau QuickFacts: United States. Accessed January 2026.

United States Department of Agriculture. 2010. Federal Noxious Weed List. https://www.aphis.usda.gov/plant_health/plant_pest_info/weeds/downloads/weedlist.pdf. Accessed January 2026.

U.S. Environmental Protection Agency. 2017. *EnviroAtlas watershed statistics by hydrologic unit code (HUC)* [Data set]. U.S. Environmental Protection Agency. https://www.epa.gov/enviroatlas/data-download.

United States Environmental Protection Agency. 2023. Definition of Waters of the United States Under the Clean Water Act. Website: https://www.epa.gov/cwa-404/definition-waters-unitedstates-under-clean-water-act. Site Accessed December 2025.

United States Environmental Protection Agency. 2026. Georgia Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants | Green Book | US EPA. Available online at: https://www3.epa.gov/airquality/greenbook/anayo_ga.html. Accessed February 27, 2026.

USFWS (U.S. Fish and Wildlife Service). 1982. Gray Bat Recovery Plan. Minneapolis, MN, USA. Available online: https://www.nrc.gov/docs/ML1214/ML12146A326.pdf.

USFWS (U.S. Fish and Wildlife Service). 2001. Endangered and Threatened Wildlife and Plants; Establishment of a Nonessential Experimental Population of Whooping Cranes in the Eastern United States, Federal Register 66:123. Available online at:

https://www.govinfo.gov/content/pkg/FR-2001-06-26/pdf/01-15791.pdf#page=1. Accessed January 2026.

USFWS United State Fish and Wildlife Service. 2025a. Information for Planning and Consultation (IPaC) website. Accessed on September 18, 2025, at: https://ipac.ecosphere.fws.gov/.

USFWS United State Fish and Wildlife Service. 2026. Information for Planning and Consultation (IPaC) website. Accessed on January 5, 2026, at: https://ipac.ecosphere.fws.gov/.

USFWS (U.S. Fish and Wildlife Service). 2007. National bald eagle management guidelines. Arlington (VA): U.S. Fish and Wildlife Service, Division of Migratory Bird Management. 23 p. Available online at: National Bald Eagle Management Guidelines PDF. Accessed January 2026.

USFWS (U.S. Fish and Wildlife Service). 2016. Species Status Assessment Report for the Rusty Patched Bumble Bee (*Bombus affinis*), Version 1. June 2016. Available online at: Rusty Patched Bumble Bee (*Bombus affinis*) Species Status Assessment. Accessed January 2026.

U.S. Fish and Wildlife Service (USFWS). 2021. Species Status Assessment Report for the Tricolored Bat (Perimyotis subflavus), Version 1.1. December 2021. Hadley, MA. Available online at: https://ecos.fws.gov/ServCat/DownloadFile/221212. Accessed January 2026.

U.S. Fish and Wildlife Service (USFWS). 2022. Species Status Assessment Report for the Northern long-eared bat (*Myotis septentrionalis*), Version 1.1. March 22, 2022. Bloomington, MN, USA, Available online at: https://ecos.fws.gov/ServCat/DownloadFile/215290.

U.S. Fish and Wildlife Service (USFWS). 2025b. Species profile for Whooping crane (*Grus americana*). ECOS Environmental Conservation Online System. Available online at: https://ecos.fws.gov/ecp/species/758. Accessed January 2026.

USGS. 2023. Data Catalog. Physiographic divisions of the conterminous U.S. Available online at: Physiographic divisions of the conterminous U. S. | USGS Science Data Catalog. Accessed February 2026.

USGS. 1995a. Ground Water Atlas of the United States, Alabama, Florida, Georgia and South Carolina HA 730-G Regional Summary. 1995. Available online: HA 730-G Ground Water Atlas of the United States. Accessed February 2026.

USGS. 1995b. Ground Water Atlas of the United States, Illinois, Indiana, Kentucky, Ohio, Tennessee HA 730-K Regional Summary. 1995. Available online: https://pubs.usgs.gov/ha/ha730/ch_k/K-text6.html. Accessed February 2026.

USGS. 2016. Groundwater Quality in the Valley and Ridge and Piedmont and Blue Ridge Carbonate-Rock Aquifers, Eastern United States. 2016. Available online: https://pubs.usgs.gov/fs/2016/3079/fs20163079.pdf. Accessed February 2026.

(USGS) United States Geological Survey. 2022. The National Map (TNM) Download V2. Published 2022. Accessed online December 2025. https://apps.nationalmap.gov/downloader.

Weakley, A.S. and Southeastern Flora Team. 2026. Flora of the Southeastern United States Web App. University of North Carolina Herbarium, North Carolina Botanical Garden, Chapel Hill, North Carolina. https://fsus.ncbg.unc.edu/main.php?pg=showtaxon.php&family=&plantname=Carex+purpurifera&habitat=. Accessed January 2026.

Appendix A – List of Preparers

NEPA Project Management

Brittany Kunkle
Education: B.S., Environmental and Soil Science
Project Role: Economic Development Grant Project NEPA Compliance Manager
Experience: 7 years in Project Management, managing and performing NEPA analyses.

Other Contributors

Julia Prins (TVA)
Education: M.S. Environmental Science; B.S. Environmental Science
Project Role: Threatened and Endangered Plants, Plant Ecology, Invasive Plant Species
Experience: 3 years in floristic surveys, threatened and endangered plant species, and invasive plant species. 1 year in Endangered Species Act and NEPA compliance.

Zach Buecker (TVA)
Education: B.S., Biology
Project Role: Surface Water
Experience: 16 years in water/wetland permitting, assessment, and CWA compliance.

Derek Reaux (TVA)
Education: Ph.D., Anthropology; M.A., Anthropology; B.A., Anthropology
Project Role: Cultural Resources, NHPA, Section 106 compliance
Experience: 13 years of experience in archaeological research, cultural resource management, and Section 106 compliance.

Matt Reed (TVA)
Education: M.S., Wildlife and Fisheries Science; QHP
Project Role: Aquatic Ecology, Aquatic T&E Species
Experience: 15 years working with threatened and endangered aquatic species in the southeastern U.S.; 8 years in Endangered Species Act, NEPA, and CWA compliance and stream assessments.

Guy Thomas "Tom" Zimmerman, P.E. (TN) (TVA)
Education: M.S. Environmental Engineering, Water Resources; B.S. Civil Engineering
Project Role: Floodplains and Flood Risk
Experience: 18 years water resources, civil, and environmental engineering including 13 years River Management and 0.5 year Floodplains and Flood Risk

Carrie Williamson, P.E. (TN), CFM (TVA)
Education: M.S., Civil Engineering; B.S., Civil Engineering
Project Role: Floodplains QA/QC
Experience: 13 years in Floodplains and Flood Risk, 1 years in Compliance Monitoring, 3 years in River Forecasting.

Ryan Gupton (TVA)
Education: B.S. Environmental Science
Project Role: Recreation
Experience: 1 year in Public Land Management

Chloe Sweda (TVA)
Education: B.S., Earth and Environmental Sciences
Project Role: Managed and Natural Areas
Experience: 7 years in Natural Resource Management

Maria Aguirre (TVA)
Education: B.S., Environmental Science
Project Role: Terrestrial Zoology, T&E Species
Experience: 4 years consultation for T&E; 5 years in biological field studies.

Sara McLaughlin-Johnson (TVA)

Education: B.S., Wildlife and Fisheries Science
Project Role: Terrestrial Zoology, T&E Species
Experience: 13 years in biological compliance, NEPA compliance, and Endangered Species Act consultation for T&E; 18 years in biological field studies.

Fallon Parker Hutcheon (TVA)
Education: M.S., Environmental Studies; B.S., Biology
Project Role: Wetlands
Experience: 7 years in wetland delineation, wetland impact analysis, and NEPA and CWA compliance.

Douglas Mooneyhan (Stantec)
Education: M.S., Biology; B.S., Wildlife and Fisheries Science
Project Role: EA Program and Project Manager, Purpose and Need for Action, Alternatives, QA/QC
Experience: 36 years in managing and performing environmental studies, Project Manager for a variety of different project types including NEPA, construction monitoring, natural resources, water resources, and fisheries biology.

Jaclyn Martin (Stantec)
Education: M.S., Environmental Sciences; B.S., Biology
Project Role: Air Quality and Climate Change, Visual, QA/QC
Experience: 11 years in environmental consulting in the preparation and review of NEPA compliance reports, environmental assessments, and permitting for a variety of telecommunication, alternative energy, and FERC-regulated projects.

Duane Simpson (Stantec)
Education: M.A., Anthropology; B.A., Anthropology

Project Role: Archaeology
Experience: 29 years in archaeological consulting, including management of projects across the Southeast and Mid-Atlantic regions. Principal Investigator for over 16 years.

Josh Yates, P.G. (Stantec)
Education: M.S., Geology; B.S., Natural Resources Management and Engineering
Project Role: Groundwater
Experience: 18 years of hydrogeologic assessments and water resources permitting experience. This experience includes water supply planning, hydrogeologic investigations, groundwater modeling, water use permitting, well construction oversight, EIS and EA preparation, minimum flow and level impact analysis, monitoring well network design, aquifer performance tests, and GIS analysis.

Lavinia DiSanto (Stantec)
Education: B.A., Biological Sciences
Project Role: QA/QC
Experience: 26 years in environmental consulting, specializing in NEPA assessments.

Shane Kelley, TN-QHP (Stantec)
Education: B.S., Natural Resources & Environmental Science
Project Role: Aquatics, Wetlands
Experience: Biologist with 12 years of experience in multiple areas of the environmental field with a particular focus on USACE Section 404 permitting, Section 7 protected species consultation, and various ecological and biological field surveys.

Brenton Jenkins, P.E. (Stantec)
Education: B.S., Environmental Engineering
Project Role: Transportation
Experience: 11 years in environmental consulting for various private and public sector clients, including engineering design, permitting, and assessments, primarily in the oil and gas sector.

Kathleen Pangan (Stantec)
Education: M.S., Biology; B.S., Biology: Ecology, Behavior and Evolution
Project Role: Surface Water, Aquatics, Wetlands
Experience: Biologist with more than 17 years of experience in ecology, technical analysis, and scientific fieldwork.

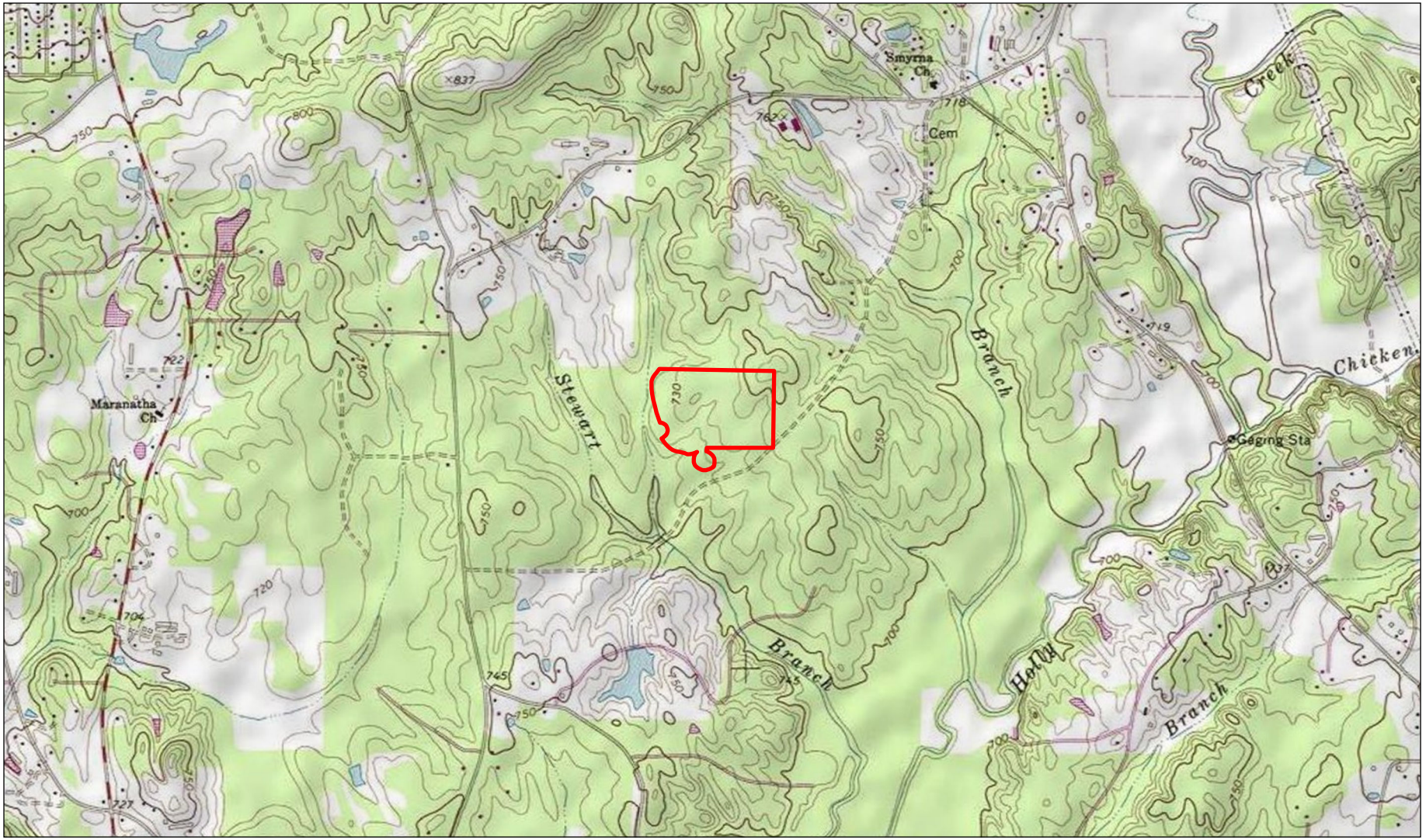
Afton Tankersley (Stantec)
Education: M.S., Environmental Science; B.S., Biology
Project Role: Air Quality and Climate Change, Noise, Visual Resources
Experience: Biologist with experience preparing multiple NEPA documents, including EISs for the FERC and the Nuclear Regulatory Commission.

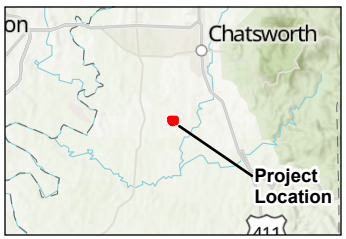
Appendix B – Symbols, Acronyms, and Abbreviations

Symbols, Acronyms, and Abbreviations

AADT	Annual average daily traffic
APE	Area of potential effects
BMP	Best management practices
CAA	Clean Air Act
CWA	Clean Water Act
DBH	Diameter at breast height
EA	Environmental Assessment
EMP	Eastern Mountains and Piedmont
ESPCP	Erosion, Sedimentation and Pollution Control Plan
FEMA	Federal Emergency Management Agency
FPPA	Farmland Protection Policy Act
GDOT	Georgia Department of Transportation
GHG	Greenhouse gases
HUC	Hydrologic Unit Code
IPaC	Information for Planning and Consultation
MBCC	Migratory Birds of Conservation Concern
MCIDA	Murray County Industrial Development Authority
MSIP	Murray South Industrial Park
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHD	Natural Heritage Database
NHPA	National Historic Preservation Act
NLEB	Northern long-eared bats
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PEM	Palustrine Emergent Wetland
PM	Particulate matter
SF	Square foot
SHPO	State Historic Preservation Office
T&E	Threatened and Endangered
TVA	Tennessee Valley Authority
TVARAM	Tennessee Valley Authority Rapid Assessment Method
U.S.	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
WOTUS	Waters of the U.S.

Appendix C – Project Figures





Project Boundary (39.20 ac)

N

0 1,000 2,000 Feet

(At original document size of 8.5x11)
1:24,000

Notes
1. Coordinate System: NAD 1983 StatePlane Georgia West FIPS 1002 Feet
2. Data Sources: TVA
3. Background: USGS Topographic

Stantec

Project Location
Murray Co., GA

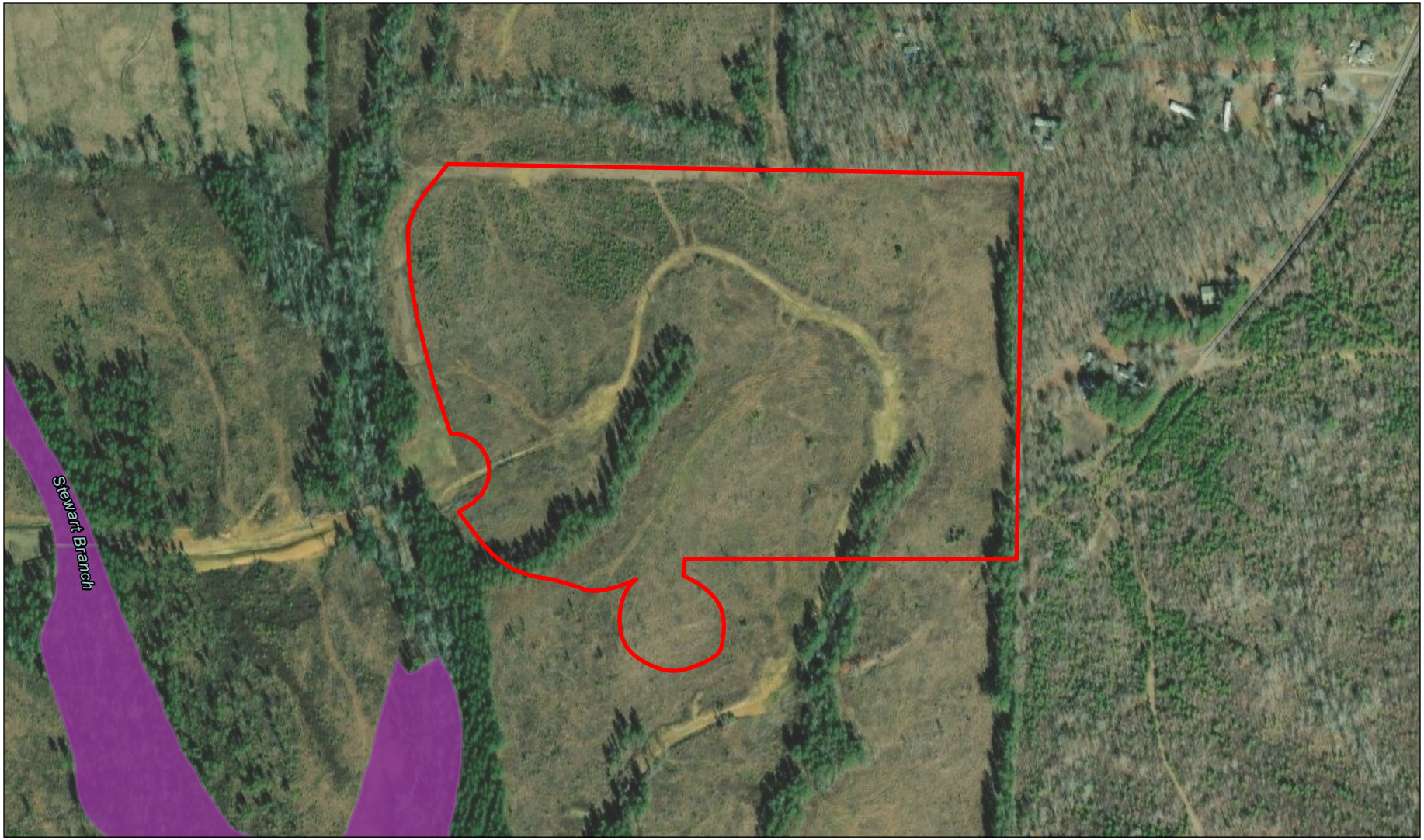
Prepared by PEM on 2025-12-10

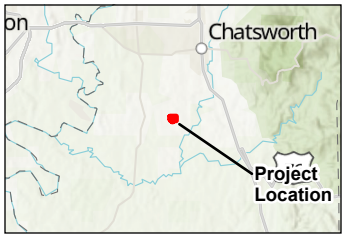
Client/Project
United States Tennessee Valley Authority
TVA FY26 InvestPrep Murray Co
Environmental Assessment

172678352

Figure No.
1A

Title
USGS Topographic





Project Boundary (39.20 ac)

1% Annual Chance Flood Hazard

FIRM Panel 13213C0210D, eff. 9/29/2010

N

0 200 400 Feet

(At original document size of 8.5x11)
1:4,800

Notes

1. Coordinate System: NAD 1983 StatePlane Georgia West FIPS 1002 Feet
2. Data Sources: FEMA, TVA
3. Background: Esri Aerial Hybrid

Stantec

Project Location
Murray Co., GA

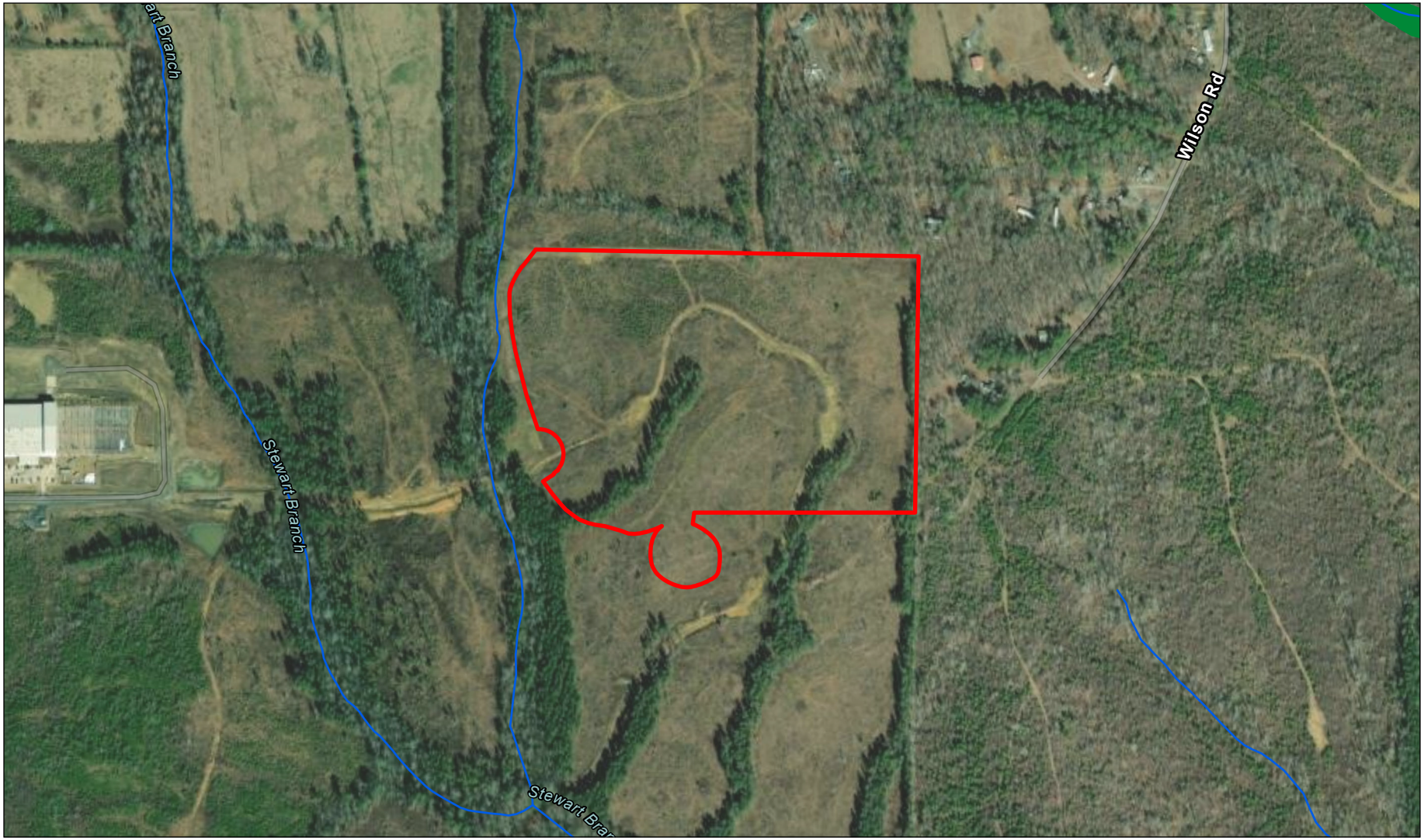
Prepared by PEM on 2025-12-10

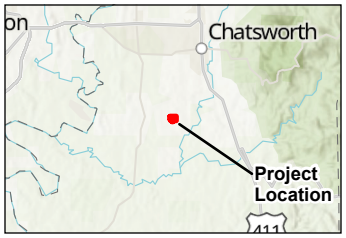
Client/Project
United States Tennessee Valley Authority
TVA FY26 InvestPrep Murray Co
Environmental Assessment

172678352

Figure No.
1B

Title
FEMA Floodplain





Project Boundary (39.20 ac)

NHDFlowline

NWI Wetlands

Freshwater Forested/Shrub Wetland

N

0 200 400 Feet

(At original document size of 8.5x11)

1:7,200

Notes

1. Coordinate System: NAD 1983 StatePlane Georgia West FIPS 1002 Feet

2. Data Sources: USFWS, USGS, TVA

3. Background: Esri Aerial Hybrid

Stantec

Project Location

Murray Co., GA

Prepared by PEM on 2025-12-10

Client/Project

United States Tennessee Valley Authority
TVA FY26 InvestPrep Murray Co
Environmental Assessment

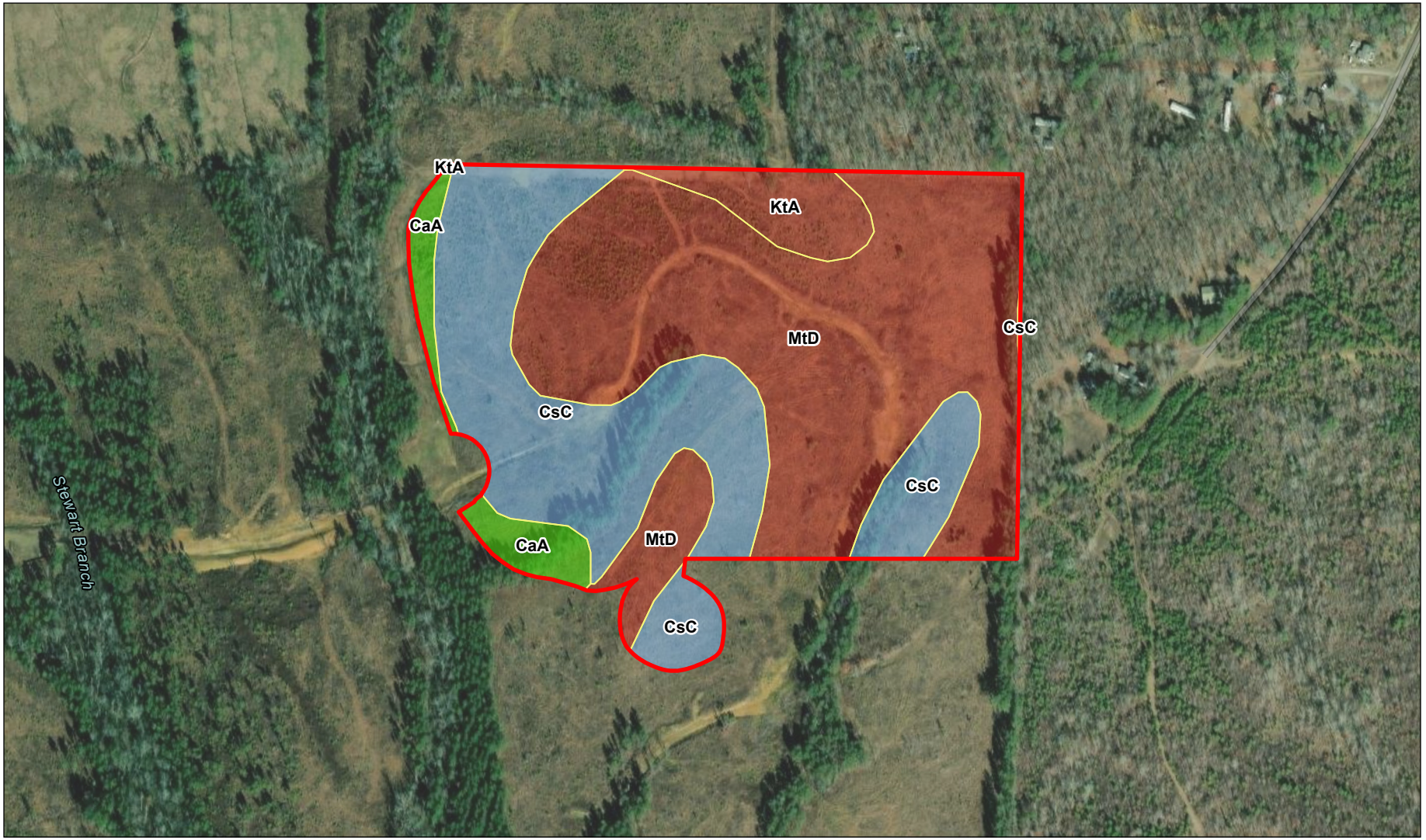
172678352

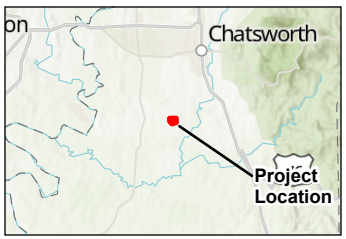
Figure No.

1C

Title

National Wetlands Inventory/ National Hydrography Dataset





- Project Boundary (39.20 ac)
- CaA - Capshaw silt loam, 0 to 2 percent slopes, Consociation (1.75 ac)
- CsC - Conasauga silt loam, 6 to 10 percent slopes, Consociation (13.50 ac)
- KtA - Ketona silt loam, 0 to 2 percent slopes, occasionally flooded, Consociation (1.97 ac)
- MtD - Montevallo-Townley complex, 6 to 15 percent slopes, Complex (21.98 ac)
- All areas are prime farmland (1.75 ac)
- Farmland of statewide importance (13.50 ac)
- Not prime farmland (23.95 ac)

N

0 200 400 Feet

(At original document size of 8.5x11)
1:4,800

Notes

1. Coordinate System: NAD 1983 StatePlane Georgia West FIPS 1002 Feet
2. Data Sources: USDA, TVA
3. Background: Esri Aerial Hybrid

Stantec

Project Location
Murray Co., GA

Prepared by PEM on 2025-12-10

Client/Project
United States Tennessee Valley Authority
TVA FY26 InvestPrep Murray Co
Environmental Assessment

172678352

Figure No.
1D

Title
NRCS Soils

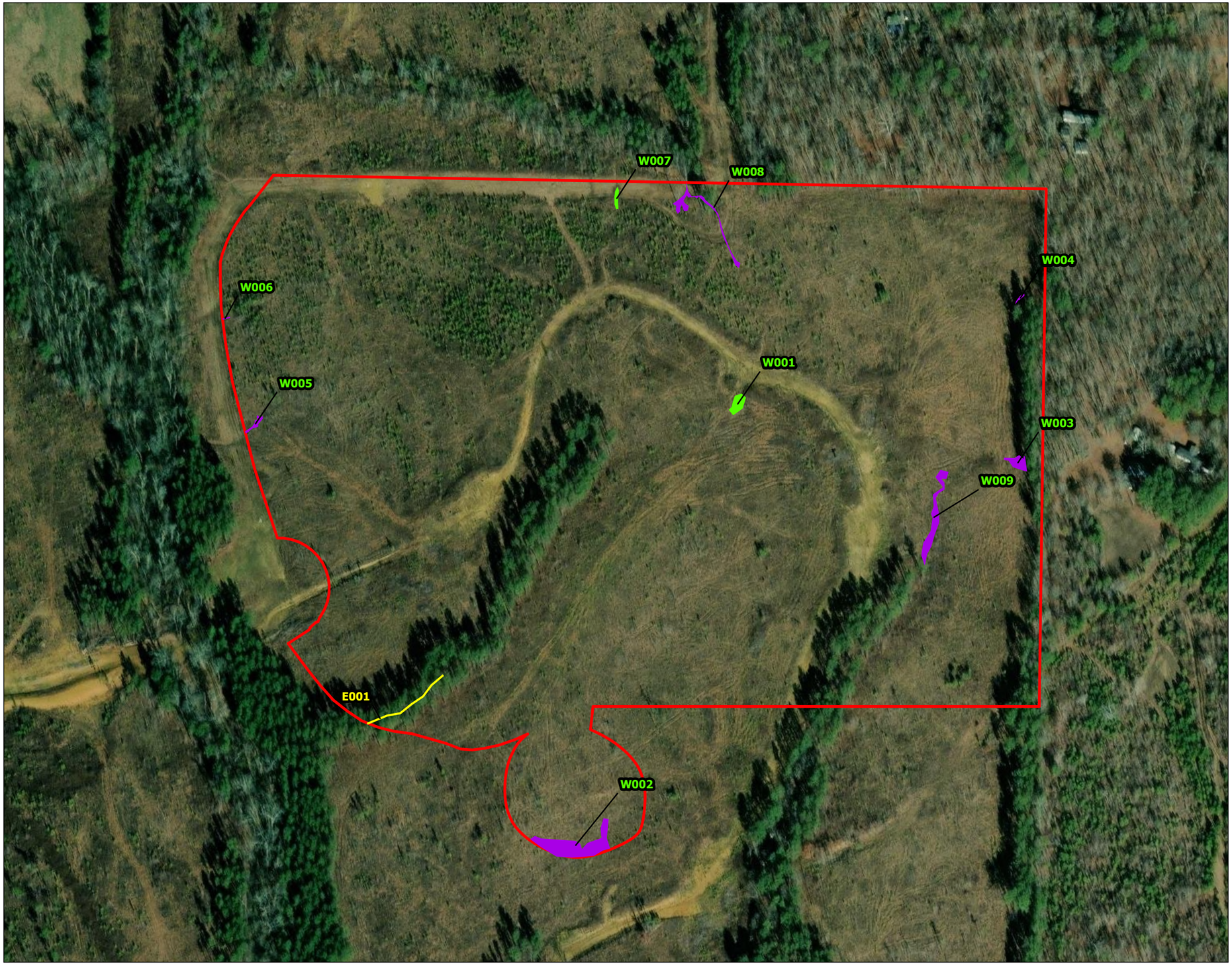


Figure No.
1E

Title
Wetland and Waterbody Delineation Overview Map

Client/Project 172678352
Tennessee Valley Authority
TVA InvestPrep FY26
Environmental Assessment Report

Project Location
Murray County,
Georgia

Prepared by MNA on 2026-02-02
TR by SPK on 2026-02-02
IR by DM on 2026-02-03

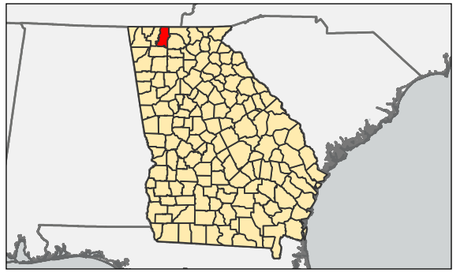
N

0 200 400 Feet

(At original document size of 11x17)
1 inch = 200 feet

Legend
- Project Boundary
- Wet Weather Conveyance

Delineated Wetlands
- PEM
- PSS



Notes
1. Coordinate System: NAD 1983 2011 StatePlane Georgia West FIPS 1002 Ft US
2. Data Sources: TVA, Stantec
3. Background: Esri Aerial Imagery Hybrid Basemap

Stantec

C:\Users\mangel\Stantec\Tennessee Valley Authority - Documents\FY 26 Projects\Murray County, GA\Environmental Reports\Murray_GA_InvestPrep_FY26_Maps.aprx Revised: 2026-02-02 By: mangel

Appendix D – Agency Correspondence

TENNESSEE VALLEY AUTHORITY

400 West Summit Hill Drive, Knoxville, Tennessee 37902

March 2, 2026

Ms. Jennifer Flood
Deputy Director, State Historic Preservation Office
Department of Community Affairs
60 Executive Park South, NE
Atlanta, Georgia 30329

Dear Ms. Flood:

TENNESSEE VALLEY AUTHORITY (TVA), ECONOMIC DEVELOPMENT, MURRAY SOUTH INDUSTRIAL PARK, CHATSWORTH, MURRAY COUNTY, GEORGIA (34.717944, -84.793064) (TVA TRACKING NUMBER – CRMS ID 143568555269)

TVA is providing financial assistance to support the clearing, grubbing, and grading of a compacted 400,000 square foot building pad on Site 8 in the Murray South Industrial Park in Chatsworth, Murray County, Georgia (Figure 1). TVA has determined that this project is an undertaking (as defined at 36 CFR § 800.16(y)) that has the potential to cause effects on historic properties. Given that the proposed project does not involve the construction of above-ground structures, visual impacts to historic architectural resources are unlikely. Therefore, TVA recommends that the Area of Potential Effects (APE) be considered the project footprint (39.2 acres) where physical effects could occur.

Based on TVA's background research, the project area has historically been used for timber production, and much of the APE has likely been heavily disturbed by lumber related activities. Additionally, there are no known American Civil War sites or Native American Removal Routes in the APE or the surrounding area. No formal phase I surveys have been conducted in the project area and there are no known archaeological sites within the footprint. As such, TVA contracted Stantec Consulting Services Inc. (Stantec) to conduct a full Phase I archaeological survey of the property.

During the Phase I survey, Stantec excavated 184 shovel test probes, 184 of which were negative for cultural material and two that could not be excavated due to the presence of a road. As a result of the survey, no new archaeological sites or cultural resources were identified in the APE. Stantec recommended no additional work for the project area. TVA agrees with Stantec's recommendations. Please find attached the Phase I survey report titled, *Phase I Archaeological Survey for the Murray South Industrial Park, Chatsworth, Murray County, Georgia.*

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

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

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

Sincerely,

Michaelyn Harle
Manager, Cultural Projects, Economic Development, and Environment
Deputy Federal Preservation Officer
Cultural Resources, External Strategy & Regulatory Oversight

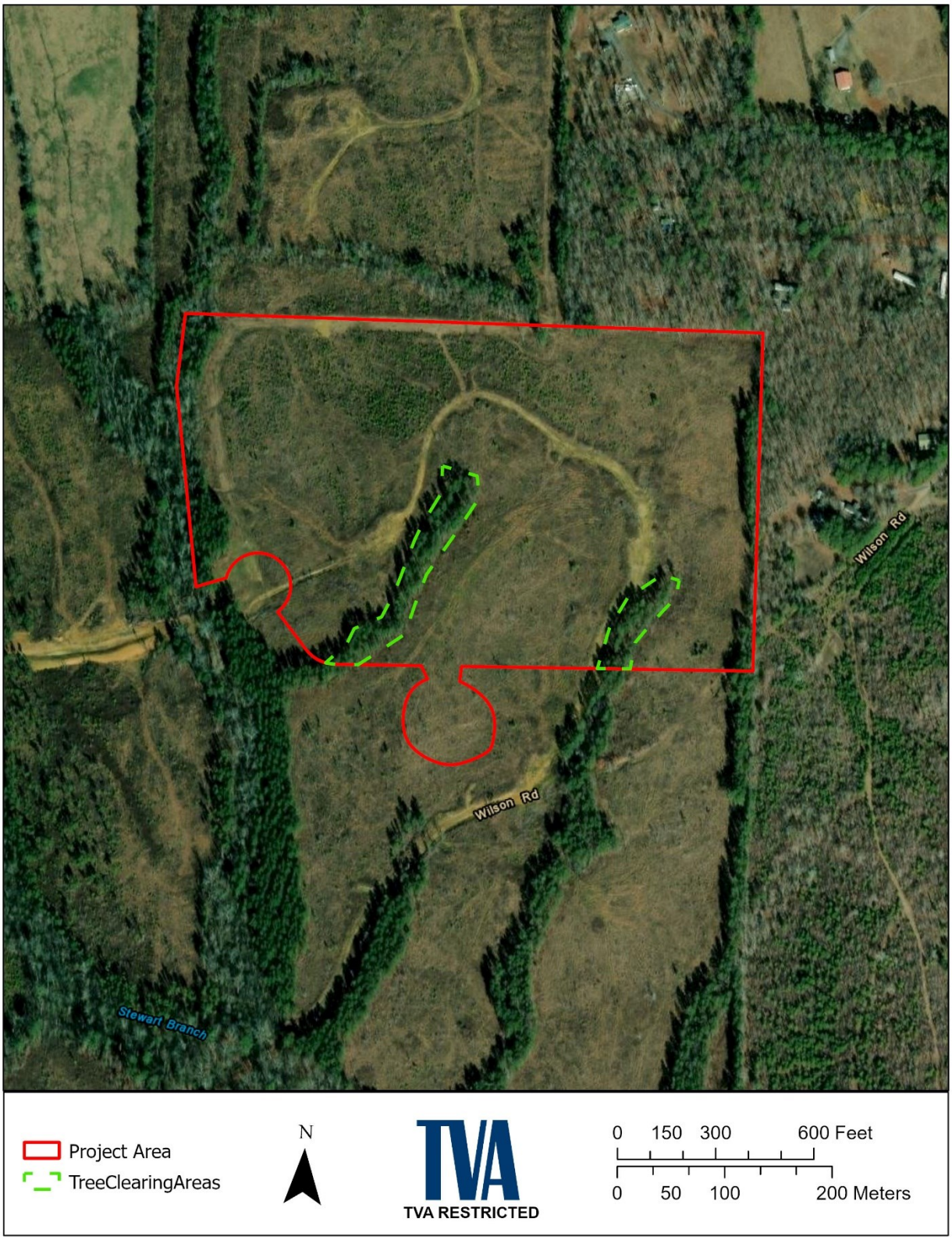


Figure 1. Project area on modern aerial imagery.

Brian P. Kemp
Governor

Christopher Nunn
Commissioner

GEORGIA DEPARTMENT *of* COMMUNITY AFFAIRS

March 31, 2026

Michaelyn S. Harle
Manager, Cultural Project Reviews
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902
Attn: Derek Reaux, Archaeologist

RE: Site Development, 3752 Smyrna Church Road, Chatsworth
Murray County, Georgia
HP-260302-001

Dear Ms. Harle,

The Historic Preservation Division (HPD) has received the information submitted concerning the above referenced undertaking, including the report entitled *Phase I Archaeological Survey for the Murray South Industrial Park, Chatsworth, Murray County, Georgia*, prepared by Stantec and dated February 9, 2026. Our comments are offered to assist the Tennessee Valley Authority (TVA) in complying with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA).

The subject project consists of clearing, grubbing, and grading a portion of the vacant property located at 3752 Smyrna Church Road in Chatsworth. Based on the information provided, HPD concurs that no historic properties that are listed or eligible for listing in the National Register of Historic Places (NRHP) will be affected by this undertaking, as defined in 36 CFR Part 800.4(d)(1).

This letter evidences consultation with our office for compliance with Section 106 of the NHPA. Please note that historic and/or archaeological resources may be located within the project's area of potential effect (APE). However, at this time it appears that they will not be impacted by the above-referenced project, due to the scope and location of work. It is important to remember that any changes to this project as it is currently proposed, including but not limited to future construction or other development on the project site, may require additional consultation. HPD encourages federal agencies to discuss such changes with our office to ensure that potential effects to historic resources are adequately considered in project planning.

Please refer to project number **HP-260302-001** in any future correspondence regarding this project. If we may be of further assistance, please contact Olivia Kendrick, Environmental Review Historian, at Olivia.Kendrick@dca.ga.gov or (404) 486-6425 or Lucas Chapman, Compliance Review Archaeologist, at Lucas.Chapman@dca.ga.gov or (404) 679-0649.

Sincerely,

Stacy Rieke, MHP
Program Manager
Environmental Review & Preservation Planning

SMR/olk

cc: Julianne Meadows, Northwest Georgia Regional Commission
Patrick Vickers, DCA Regional Services, Region 1

From: Pederson, Dee - FPAC-NRCS, GA
To: Martin, Jaclyn
Cc: Mooneyhan, Douglas; Kunkle, Brittany Renee
Subject: RE: [External Email]RE: FPPA - Murray County
Date: Friday, February 13, 2026 10:13:00 AM
Attachments: image001.png

Hi Jaclyn,

Thank you for returning the completed form to keep with our records.

Once NRCS performs the evaluation, our Agency has fulfilled its part for FPPA purposes. If, after the Federal funding agency or its designee complete the remaining sections, the total site assessment points total >160, alternate sites should be considered. In the case of this project, the total site assessments points equals 92, well below the 160-point threshold.

Have a good weekend –

Take care,
Dee

Dee Cabaniss (Pederson)
Assistant state soil scientist
Acting state resource inventory coordinator (NRI)
Farm Production and Conservation Mission Area | Soils
Georgia State Office


U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service
355 East Hancock Avenue, Athens, Georgia 30601
p: (706) 552-2532

From: Martin, Jaclyn <jaclyn.martin@stantec.com>
Sent: Friday, February 13, 2026 9:33 AM
To: Pederson, Dee - FPAC-NRCS, GA <dee.pederson@usda.gov>
Cc: Mooneyhan, Douglas <douglas.mooneyhan@stantec.com>; Kunkle, Brittany Renee <brkunkle@tva.gov>
Subject: RE: [External Email]RE: FPPA - Murray County

Hi Dee,

I have filled out the remaining parts of the form (see attached). Do you have any further comments, and is there anything else we need to do?

Regards,

Jaclyn

From: Pederson, Dee - FPAC-NRCS, GA <dee.pederson@usda.gov>

Sent: Monday, February 9, 2026 12:59 PM
To: Martin, Jaclyn <jaclyn.martin@stantec.com>
Cc: Mooneyhan, Douglas <douglas.mooneyhan@stantec.com>; Kunkle, Brittany Renee <brkunkle@tva.gov>
Subject: RE: [External Email]RE: FPPA - Murray County

Good afternoon Jaclyn,

This correspondence is about your request for a Farmland Conversion Impact Rating for the project in Murray County.

Attached you will find the completed AD-1006 form evaluating the project site as requested. This evaluation fulfills the responsibility of NRCS for FPPA purposes.

NRCS appreciates the opportunity to serve you. Please contact me via email if you have any questions.

Take care,
Dee

Dee Cabaniss (Pederson)
Assistant state soil scientist
Acting state resource inventory coordinator (NRI)
Farm Production and Conservation Mission Area | Soils
Georgia State Office

USDA U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service
355 East Hancock Avenue, Athens, Georgia 30601
p: (706) 552-2532

From: Martin, Jaclyn <jaclyn.martin@stantec.com>
Sent: Friday, February 6, 2026 4:28 PM
To: Pederson, Dee - FPAC-NRCS, GA <dee.pederson@usda.gov>
Cc: Mooneyhan, Douglas <douglas.mooneyhan@stantec.com>; Kunkle, Brittany Renee <brkunkle@tva.gov>
Subject: [External Email]RE: FPPA - Murray County

Hi Dee,

I hope you're having a nice week. I'm not sure if my second email with the form filled out came through. I've reattached it just in case. I just wanted to check in on the status of our request. I appreciate your time!

-Jaclyn

From: Martin, Jaclyn
Sent: Friday, January 16, 2026 6:31 PM
To: 'Pederson, Dee - FPAC-NRCS, GA' <dee.pederson@usda.gov>
Cc: Mooneyhan, Douglas <douglas.mooneyhan@stantec.com>; Kunkle, Brittany Renee <brkunkle@tva.gov>
Subject: RE: FPPA - Murray County

Hi Dee,

Thank you for your fast response. We will make sure to fill out the form.

Have a great weekend!

Jaclyn

From: Pederson, Dee - FPAC-NRCS, GA <dee.pederson@usda.gov>
Sent: Friday, January 16, 2026 12:48 PM
To: Martin, Jaclyn <jaclyn.martin@stantec.com>
Cc: Mooneyhan, Douglas <douglas.mooneyhan@stantec.com>; Kunkle, Brittany Renee <brkunkle@tva.gov>
Subject: RE: FPPA - Murray County

> You don't often get email from dee.pederson@usda.gov. Learn why this is important

Hi Jaclyn,

We typically perform these environmental reviews in two phases. The first is an early coordination review that sometimes exempts a project from the provisions of the FPPA. I asked my colleague who performs these initial reviews to do this one today, and it is not exempt; his response is attached.

I attached the AD-1006 form that should be completed in part by the federal funding agency or its designee. Parts I and III are to be completed by you and submitted to me for completion of Parts II, IV, and V. I will return the form to you within 10 business days.

Should you have any questions, please feel free to contact me.

Take care,
Dee

Dee Cabaniss (Pederson)
Assistant state soil scientist

Acting state resource inventory coordinator (NRI)
Farm Production and Conservation Mission Area | Soils
Georgia State Office

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service
355 East Hancock Avenue, Athens, Georgia 30601
p: (706) 552-2532

From: Martin, Jaclyn <jaclyn.martin@stantec.com>
Sent: Friday, January 16, 2026 11:30 AM
To: Pederson, Dee - FPAC-NRCS, GA <dee.pederson@usda.gov>
Cc: Mooneyhan, Douglas <douglas.mooneyhan@stantec.com>; Kunkle, Brittany Renee <brkunkle@tva.gov>
Subject: RE: FPPA - Murray County

Hello Dee, I hope you are doing well.

Stantec is assisting TVA this year in evaluation of some new FY26 TVA InvestPrep project sites. The InvestPrep projects involve use of federal funds and the purpose of the TVA InvestPrep Program is to promote economic development within the TVA region.

One site in Murray County, Georgia may warrant coordination with NRCS regarding applicability of the FPPA due to its rural designation. We are attaching a soils map showing the extent of prime farmland and a map showing urban / rural areas as defined by the U.S. Census Bureau. The site is zoned as industrial. I am also attaching shapefiles and a kmz file of the Project Area if that helps.

A few notes about the Murray County site:

Name: Murray South Industrial Park
• Address: Polytech Dr, Chatsworth, GA
• Lat/Long: 34.717944, -84.793064
• Total Site Acreage: 40 acres
• InvestPrep Project Area: 39.2 acres
• Tree Clearing Acreage: 2.32 acres
• Current Zoning: Industrial
• Ownership: Public (Murray County Industrial Development Authority)

Project Scope: Utilize TVA InvestPrep funding matched with non-TVA funding to assist with the clearing, grubbing, and grading of a compacted/seeded 400,000 SF building pad on Site 8 in the Murray South Industrial Park.

Please let us know your thoughts about potential applicability of the FPPA to this site. Based on our coordination with NRCS in other states about FPPA applicability, we believe the Murray South Industrial Park Site may be exempt from FPPA due to its zoning as Industrial. We appreciate your time and assistance in navigating the FPPA program.
Please let me know if you have any additional questions.

-Jaclyn Martin

From: Pederson, Dee - FPAC-NRCS, GA <dee.pederson@usda.gov>
Sent: Friday, January 16, 2026 10:40 AM

To: Martin, Jaclyn <jaclyn.martin@stantec.com>
Subject: FPPA

> You don't often get email from dee.pederson@usda.gov. Learn why this is important

Hi Jaclyn,

Sending an email just in case we keep playing phone tag! If you have questions I can address via email, feel free to send them. Otherwise, we can schedule a phone call.

Take care,
Dee

Dee Cabaniss (Pederson)
Assistant state soil scientist
Acting state resource inventory coordinator (NRI)
Farm Production and Conservation Mission Area | Soils
Georgia State Office

USDA U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service
355 East Hancock Avenue, Athens, Georgia 30601
p: (706) 552-2532

Caution: This email originated from outside of Stantec. Please take extra precaution.

Attention: Ce courriel provient de l'extérieur de Stantec. Veuillez prendre des précautions supplémentaires.

Caution: This email originated from outside of Stantec. Please take extra precaution.

Attention: Ce courriel provient de l'extérieur de Stantec. Veuillez prendre des précautions supplémentaires.

Atención: Este correo electrónico proviene de fuera de Stantec. Por favor, tome precauciones adicionales.

Appendix E – Project Review Form - TVA Bat Strategy

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

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

Project Name: Economic Development Grant Proposal for the Murray South Industrila Park **Date:** 9/4/2025

Contact(s): Brittany Kunkle and Jess Wykoff **CEC#:** **Project ID:** 47055

Project Location (City, County, State): Murray County, GA

Project Description:

Utilize TVA InvestPrep funding matched with non-TVA funding to assist with the clearing, grubbing, and grading of a compacted/seeded 400,000 SF building pad on Site 8 in the Murray South Industrial Park.

SECTION 1: PROJECT INFORMATION - ACTION AND ACTIVITIES

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

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

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

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

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

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

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

STEP 3) Project includes one or more activities in Table 3? ◉ **YES (Go to Step 4)** ○ **NO (Go to Step 12)**

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

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

a) Will project involve continuous noise (i.e., ≥ 24 hrs) that is greater than 75 decibels measured on the A scale (e.g., loud machinery)?

◉ **NO** (NV2 does not apply)
○ **YES** (NV2 applies, subject to records review)

b) Will project involve entry into/survey of cave?

◉ **NO** (HP1/HP2 do not apply)
○ **YES** (HP1/HP2 applies, subject to review of bat records)

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

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

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

d) Will the project involve vegetation piling/burning?

○ **NO** (SSPC4/ SHF7/SHF8 do not apply)
◉ **YES** (SSPC4/SHF7/SHF8 applies, subject to review of bat records)

e) If **tree removal (activity 33 or 34)**, estimated amount: [2.32] ◉**ac** ○**trees** ○**N/A**

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

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

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

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

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

STEP 5) **Review of bat/cave records conducted by Heritage Reviewer?** ◉ **YES** ○ **NO** (Go to Step 12)

Info below completed by: ☐ **Heritage Reviewer** (name) [ ] Date [ ]
■ **Terrestrial Zoologist** (name) [Maria Aguirre] Date [9/18/25]

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

Amount of SUITABLE habitat to be removed/burned (may differ from STEP 4e): [0.00] **(**○**ac** ○**trees)*** ◉**N/A**

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

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

MYSE and PESU records are pre-wns; however, USFWS has determined that they can occur in the APE. Habitat no suitable for MYSE; Habitat within the project area is only suitable for PESU.

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

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

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

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

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

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

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

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

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

Take Estimates are for TVA Action 9 - Promote Economic Development

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

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

SECTION 3: REQUIRED CONSERVATION MEASURES

STEP 12) Review Conservation Measures in Table 4 and ensure those selected are relevant to the project. If not, manually override and uncheck irrelevant measures, and explain why in ADDITIONAL NOTES below Table 4.

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

○ **NO** (Go to Step 13)

◉ **YES** (STOP HERE; Submit for Terrestrial Zoology Review. Click File/Save As, name form as "ProjectLead_BatForm_CEC-or-ProjectIDNo_Date", and submit with project information).

Manual Override

Maria Aguirre

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

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

Check if Applies to Project	Activities Subject To Conservation Measure	Conservation Measure Description
■	15, 16, 17, 18, 22, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 45, 47, 48, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 90, 91, 92, 93, 94, 95, 96	**NV1** - Noise will be short-term, transient, and not significantly different from urban interface or natural events (i.e., thunderstorms) that bats are frequently exposed to when present on the landscape.
☐	16, 25, 26, 37, 47, 52, 62, 63, 64, 65, 70, 71, 73, 78, 80, 82, 83, 86, 91	**NV2** - Drilling, blasting, or any other activity that involves continuous noise (i.e., longer than 24 hours) disturbances greater than 75 decibels measured on the A scale (e.g., loud machinery) **within a 0.5 mile radius of documented winter and/or summer roosts** (caves, trees, unconventional roosts) will be conducted when bats are absent from roost sites.
☐	16, 26, 62	**NV3** - Drilling or blasting **within a 0.5 mile radius of documented cave** (or unconventional) roosts will be conducted in a manner that will not compromise the structural integrity or alter the karst hydrology of the roost site.
☐	16, 26, 62	**NV4** - Drilling or blasting **within 0.5 miles of a documented roost site** (cave, tree, unconventional roost) that needs to occur when bats are present will first involve development of project-specific avoidance or minimization measures in coordination with the USFWS.
☐	15, 26, 92	**HP1** - Site-specific cases in which potential impact of human presence is heightened (e.g., conducting environmental or cultural surveys within a roost) will be closely coordinated with staff bat biologists to avoid/ minimize impacts below any potential adverse effect. Any take from these activities would be covered by TVA's Section 10 permit.
☐	15, 26, 92	**HP2** - Entry into roosts known to be occupied by federally listed bats will be communicated to the USFWS when impacts to bats may occur if not otherwise communicated (i.e., via annual monitoring reports per TVA's Section 10 permit). Any take from these activities would be covered by TVA's section 10 permit.
☐	23	**SHF1** - Fire breaks will be used to define and limit burn scope.
☐	17, 23, 34	**SHF2** - Site-specific conditions (e.g., acres burned, transport wind speed, mixing heights) will be considered to ensure smoke is limited and adequately dispersed away from caves so that smoke does not enter cave or cave-like structures.
☐	23	**SHF3** - Acreage will be divided into smaller units to keep amount of smoke at any one time or location to a minimum and reduce risk for smoke to enter caves.
■	17, 23, 34	**SHF4** - If burns need to be conducted when there is some potential for bats to present on the landscape and more likely to enter torpor due to colder temperatures, burns will only be conducted if the air temperature is 55° or greater, and preferably 60° or greater.
☐	23	**SHF5** - Fire breaks will be plowed immediately prior to burning, will be plowed as shallow as possible, and will be kept to minimum to minimize sediment.
☐	23	**SHF6** - Tractor-constructed fire lines will be established **greater than 200 feet from cave entrances**. Existing logging roads and skid trails will be used where feasible to minimize ground disturbance and generation of loose sediment.
☐	17, 22, 23, 32, 33, 34, 35, 36	**SHF7** - Burning will only occur if site specific conditions (e.g. acres burned, transport wind speed, mixing heights) can be modified to ensure that smoke is adequately dispersed away from caves or cave-like structures. This applies to prescribed burns and burn piles of woody vegetation.
☐	17, 22, 23, 32, 33, 34, 35, 36	**SHF8** - Brush piles will be burned a **minimum of 0.25 mile from documented, known, or obvious caves or cave entrances** and otherwise in the center of newly established ROW when proximity to caves on private land is unknown.

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

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

☐	16, 17, 18, 21, 22, 24, 25, 26, 27, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 39, 48, 50, 51, 56, 61, 62, 63, 64, 65, 67, 69, 84, 89	**SSPC1** (**Transmission only**) - Transmission actions and activities will continue to Implement A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities. This focuses on control of sediment and pollutants, including herbicides. Following are key measures: o BMPs minimize erosion and prevent/control water pollution in accordance with state-specific construction storm water permits. BMPS are designed to keep soil in place and aid in reducing risk of other pollutants reaching surface waters, wetlands and ground water. BMPs will undertake the following principles: • Plan clearing, grading, and construction to minimize area and duration of soil exposure. • Maintain existing vegetation wherever and whenever possible. • Minimize disturbance of natural contours and drains. • As much as practicable, operate on dry soils when they are least susceptible to structural damage and erosion. • Limit vehicular and equipment traffic in disturbed areas. Keep equipment paths dispersed or designate single traffic flow paths with appropriate road BMPs to manage runoff. • Divert runoff away from disturbed areas. • Provide for dispersal of surface flow that carries sediment into undisturbed surface zones with high infiltration capacity and ground cover conditions. • Prepare drainage ways and outlets to handle concentrated/increased runoff. • Minimize length and steepness of slopes. Interrupt long slopes frequently. • Keep runoff velocities low and/or check flows. • Trap sediment on-site. • Inspect/maintain control measures regularly & after significant rain. • Re-vegetate and mulch disturbed areas as soon as practical. o Specific guidelines regarding sensitive resources and buffer zones: • Extra precaution (wider buffers) within SMZs is taken to protect stream banks and water quality for streams, springs, sinkholes, and surrounding habitat. • BMPs are implemented to protect and enhance wetlands. Select use of equipment and seasonal clearing is conducted when needed for rare plants; construction activities are restricted in areas with identified rare plants. • Standard requirements exist to avoid adverse impacts to caves, protected animals, unique/ important habitat (e.g., cave buffers, restricted herbicide use, seasonal clearing of suitable habitat).
☒	16, 17, 18, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 48, 50, 51, 52, 53, 54, 55, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 70, 71, 73, 76, 77, 78, 80, 81, 82, 83, 86, 87, 88, 89, 90	**SSPC2** - Operations involving chemical/fuel storage or resupply and vehicle servicing will be handled outside of riparian zones (streamside management zones) in a manner to prevent these items from reaching a watercourse. Earthen berms or other effective means are installed to protect stream channel from direct surface runoff. Servicing will be done with care to avoid leakage, spillage, and subsequent stream, wetland, or ground water contamination. Oil waste, filters, other litter will be collected and disposed of properly. Equipment servicing and chemical/fuel storage will be limited to locations greater than 300-ft from sinkholes, fissures, or areas draining into known sinkholes, fissures, or other karst features.

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

☑	17, 18, 21, 22, 24, 25, 26, 30, 31, 33, 34, 35, 36, 40, 46, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 66, 67, 68, 69, 70, 72, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 87, 88, 91, 93, 95, 96	**SSPC5** (**26a, Solar, Economic Development only**) - Section 26a permits and contracts associated with solar projects, economic development projects or land use projects include standards and conditions that include standard BMPs for sediment and contaminants as well as measures to avoid or minimize impacts to sensitive species or other resources consistent with applicable laws and Executive Orders.
☐	21, 54	**SSPC6** - Herbicide use will be avoided **within 200 ft of portals associated with caves, cave collapse areas, mines and sinkholes** are capable of supporting cave-associated species. Herbicides are not applied to surface water or wetlands unless specifically labeled for aquatic use. Filter and buffer strips will conform at least to federal and state regulations and label requirements.
☐	17, 21, 25, 26, 27, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 54, 55	**SSPC7** - Clearing of vegetation **within a 200-ft radius of documented caves** will be limited to hand or small machinery clearing only (e.g., chainsaws, bush-hog, mowers). This will protect potential recharge areas of cave streams and other karst features that are connected hydrologically to caves.
☑	16, 26, 36, 37, 38, 39, 48, 50, 52, 59, 60, 62, 66, 67, 69, 72, 75, 77, 78, 79, 86	**L1** - Direct temporary lighting away from suitable habitat during the active season.
☑	16, 26, 36, 37, 38, 39, 48, 50, 52, 59, 60, 62, 66, 67, 69, 72, 75, 77, 78, 79, 86	**L2** - Evaluate the use of outdoor lighting during the active season and seek to minimize light pollution when installing new or replacing existing permanent lights by angling lights downward or via other light minimization measures (e.g., dimming, directed lighting, motion-sensitive lighting).

[1]Bats addressed in consultation (04/2018) and updates (05/2023 and 10/2024), which includes gray bat (listed in 1976), Indiana bat (listed in 1967), northern long-eared bat (listed in 2015), tricolored bat (anticipated listing in the future), and Virginia big-eared bat (listed in 1979).

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

Habitat suitable for Tricolored Bat. No Take required. Tree removal is expected to occur during the bat summer occupancy season before May 15 or after July 31 in order to avoid their pup season (May 15 – July 31).

STEP 13) Save completed form (Click File/Save As, name form as "ProjectLead_BatForm_CEC-or-ProjectIDNo_Date") in project environmental documentation (e.g. CEC, Appendix to EA) AND send a copy of form to batstrategy@tva.gov
Submission of this form indicates that Project Lead/Applicant:

Brittany Kunkle and Jess Wykoff (name) is (or will be made) aware of the requirements below.

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

For Use by Terrestrial Zoologist Only

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

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

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