Document Type: EA-Administrative Record
Index Field: Environmental Assessment
Project Name: Economic Development Grant Proposal for the Development of Snapps Ferry Road Industrial Site
Project Number: 2024-5

ECONOMIC DEVELOPMENT GRANT PROPOSAL FOR THE DEVELOPMENT OF SNAPPS FERRY ROAD INDUSTRIAL SITE

ENVIRONMENTAL ASSESSMENT

Greene County, Tennessee (Greeneville)

Prepared by:

TENNESSEE VALLEY AUTHORITY
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May 2024

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Table of Contents

List of Tables

List of Figures

List of Attachments

1.0 PROPOSED ACTION AND NEED

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/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 Greene County Partnership (GCP) to assist with development of a portion of the Snapps Ferry Road Industrial Site (SFRIS) in Greene County, Tennessee. The area of TVA's Proposed Action (herein referred to as the Project Area) encompasses 49.2 acres of mostly open grassy land with some forested strips and patches located adjacent to Snapps Ferry Road and Gass Drive, 0.2 mile from U.S. Highway 321, in Greeneville, Tennessee (see Figure 1 below and Attachment 1, Figure 1-A). TVA funds would be matched with non-TVA funds and used for clearing 4.11 acres of trees. Trees and stumps would be burned onsite. The Project Area would be graded to create a 350,000 square foot (SF) dirt building pad along with a gravel marketing road, three detention basins, and stabilization after grading activities are completed. These activities, herein referred to as the Proposed Action, are further detailed in Section 3.2 below.

The proposed grant to the GCP would assist with tree clearing, grading, and access 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. Multiple industrial or commercial sites exist within 1 mile north, northeast, east, southwest, and west of the Project Area, including Imery's Fused Minerals Greeneville, Inc., Sopakco Distribution, BoomCo Equipment Rental, Sav-Mor Foods, Harbor Freight Tools, Staples, and Meco Corporation. Target industries include advanced manufacturers, plastics, medical devices, automotive suppliers, food processing, aerospace/defense suppliers, consumer products, and industrial products. Pursuant to the National Environmental Policy Act (NEPA) and its implementing regulations 40CFR 1500 – 1508 and TVA's implementing regulations 18 CFR 1318, this Environmental Assessment (EA) evaluates the environmental impacts that would potentially result from TVA's Proposed Action. TVA's decision is whether to provide the requested funding to the GCP.

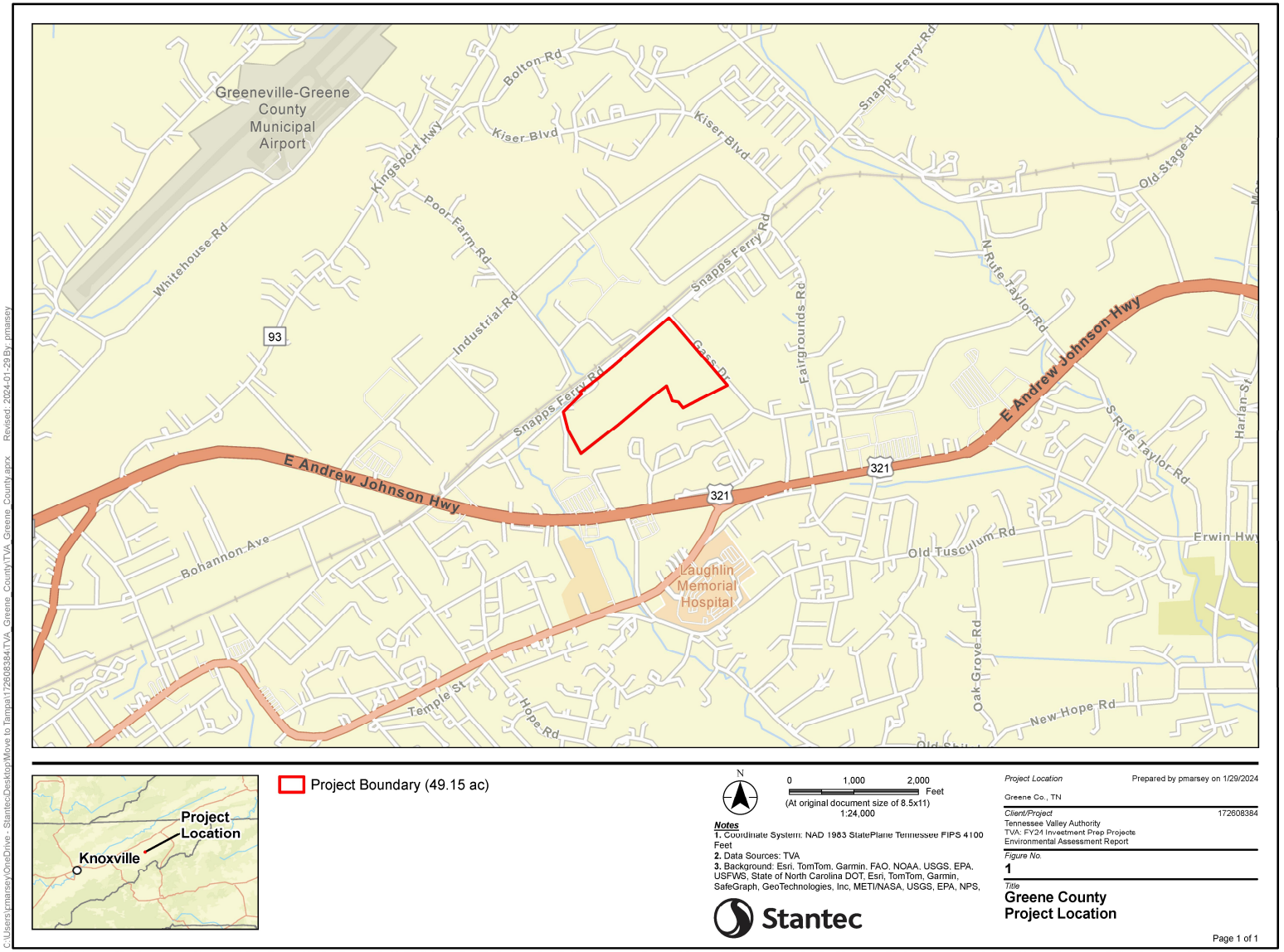

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Figure 1. Project Location Map

2.0 OTHER ENVIRONMENTAL REVIEWS AND DOCUMENTATION

In preparation for site development, other studies have been performed by the GCP at the 49.2-acre Project Area. The various studies were performed at different times.

A Phase I Environmental Site Assessment (Phase I ESA) of the Project Area was performed consistent with the procedures included in E 1527-13 (Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process). The Phase I ESA was conducted by S&ME, Inc. (S&ME) in September 2022 (S&ME 2022a) on approximately 50 acres of the SFRIS including the Project Area. The purpose of the Phase I ESA was to identify the presence of recognized environmental conditions (REC) or other environmental liabilities within the Project Area. The results of the Phase I ESA indicated no evidence of RECs except that numerous 55-gallon drums, used oil containers, and old vehicle fuel tanks were observed (S&ME 2022a).

A Preliminary Geotechnical Exploration report for a portion of the SFRIS, including approximately 20 acres of the northern portion of the Project Area, was performed by S&ME in November 2022 (S&ME 2022b). The purpose of the geotechnical investigation was to characterize site subsurface conditions to support design, grading, and foundation considerations within a portion of the Project Area. The report discussed findings, recommendations, and considerations for foundations and construction.

TVA staff biologists performed field surveys for terrestrial zoology and botany in the Project Area. These surveys also included assessments for the presence of federally or state-listed species and their habitats. Common species were observed. No federally or state-listed species were documented. Suitable summer roosting habitat for federally listed bats is present throughout the entire forested acreage of Project Area; otherwise, habitats were not suitable for listed species as discussed in more detail below.

S&ME (2023) also performed a geophysical assessment of a portion of the SFRIS, including approximately 20 acres of the northern portion of the Project Area. The purpose of the assessment was to expand upon information obtained in the Preliminary Geotechnical Exploration discussed above, with particular attention to identification of potential karst areas, subsurface conditions, and depth to bedrock. Potential karst areas were identified.

Stantec performed an evaluation of aquatic resources (i.e., waterbodies) and wetlands in the Project Area on February 8, 2024. The results were identification of four presumed jurisdictional streams and two presumed jurisdictional wetlands, along with four presumed non-jurisdictional water features, which are discussed further below (Stantec 2024a).

Stantec performed an evaluation of archaeology resources in the Project Area in January 2024 (Stantec 2024b). No new archaeological sites were found within the Area of Potential Effect (APE). No additional survey was recommended (Stantec 2024b). The Phase I ESA, preliminary geotechnical exploration report, geophysical assessment, Stantec aquatics/wetlands survey, TVA staff field surveys, and archaeology resources survey reports were used in the preparation of this EA.

3.0 ALTERNATIVES

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

3.1 The No Action Alternative

Under the No Action Alternative, TVA would not provide InvestPrep funds to the GCP. TVA would not be furthering its mission of promoting economic development by assisting the local community to compete successfully for new jobs and capital investment through the Proposed Action. If the GCP were to secure alternate funding and proceed with its current plans, the overall environmental consequences would be similar to those expected from implementing the Action Alternative. In the event the project were postponed, any environmental effects would be delayed for the duration of the postponement. If the project were 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.

3.2 The Action Alternative

Under the Action Alternative, TVA would provide InvestPrep funds to the GCP for site improvements to the Project Area. These improvements would include tree clearing of 4.11 acres with trees and stumps burned onsite, grading of a 350,000 SF dirt building pad, with no off-site borrow needed, to an elevation of approximately 1,592 feet above mean sea level (msl), a gravel marketing road connecting Gass Drive to the dirt building pad, three detention basins, removal of near-surface rock with blasting as the preferred method, and site stabilization including seeding and mulch after grading is complete, all within the Project Area. Activities required for the Action Alternative would occur over approximately 14 months and would require a small workforce that would most likely be assigned from a local contractor. For ease of discussion in this EA, the Proposed Actions are collectively described as grading and/or construction.

The GCP, 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 sediment and erosion controls (silt fences, sediment traps, etc.), management of fugitive dust, and daytime work hours.

TVA's preferred alternative is the Action Alternative. 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 development of the adjacent lots is beyond the scope of this EA.

4.0 AFFECTED ENVIRONMENT AND ANTICIPATED IMPACTS

4.1 Site Description

The 49.2-acre Project Area encompasses the SFRIS in Greene County, Tennessee, on mostly pasture lands with some forested areas immediately south of Snapps Ferry Road and Gass Drive, about 0.2 mile north of U.S. Highway 321, in the City of Greeneville, Tennessee (Attachment 1, Figure 1-A).

The Project Area is situated within a mixed agricultural (e.g., hay fields), industrial/commercial, and light residential area of Greeneville, Tennessee, and is located in zone M-2 (Heavy Industrial). Site access is from Thornwood Drive, Snapps Ferry Road, or Gass Drive, with Gass Drive connecting to the proposed gravel marketing road. Land use surrounding the Project Area includes a church and commercial areas to the west, industrial and commercial areas to the north, commercial, undeveloped areas, and apartments to the east, and Greene County government buildings, a church, apartments, forested areas, and commercial areas to the south. Permanent utilities located adjacent to the Project Area include a 12-inch water line, an 8-inch sewer line, overhead electric distribution lines, and a 4-inch natural gas line.

The Project Area ranges from approximately 1,537 to 1,620 feet above msl (Attachment 1, Figure 1-B). In the past, the Project Area has been used for farming with a dairy operation, hay, tobacco, and alfalfa crops (S&ME 2022a), but now consists of undeveloped pasture with some forest. A house and farm outbuildings were removed in May and June 2023. There appears to have been some expansion of trees in the western and southern portions of the Project Area based on aerial photography dating to 1956 (S&ME 2022a).

4.2 Impacts Evaluated

As stated previously, a Phase I ESA was conducted in the Project Area. The Phase I ESA did not identify any RECs except that numerous 55-gallon drums, used oil containers, and old vehicle fuel tanks were observed (S&ME 2022a). The Phase I ESA indicated these containers “represent a likelihood of a past or material threat of a future release to the environment.” Based on the Phase I ESA, there is no evidence that historical use of pesticides/herbicides at the Project Area was conducted outside of standard practices. Therefore, the possible long-term use of agricultural-grade pesticides or herbicides that may persist in the soils at the subject Property does not represent a REC. No demolition or construction waste activities are associated with the Action Alternative. According to the Greene County Attorney, the Greene County Solid Waste Department and Sheriff’s Department facilitated the removal of this debris, nothing of significance was found, and there was no evidence of any soil contamination in the Project Area (Greene County 2024).

The Federal Emergency Management Agency (FEMA) flood insurance rate maps for Greene County, Tennessee (Attachment 1, Figure 1-C), (panel numbers 47059C0241D, effective 07/03/2006) indicate the Project Area would encompass a small area (0.4 acre) of Federal Emergency Management Area (FEMA) floodplain in the western-most portion of the SFRIS. Based on Greene County, Tennessee Flood Insurance Rate Map Panel number 47059C0241D, effective 7/3/2006, the proposed ground disturbance for the tree clearing and dirt building pad is located outside the identified 100-year and 500-year floodplains. Therefore, the project would not directly or indirectly impact floodplains or flood elevations and is consistent with Executive Order

(EO) 11988. The lowest limit of ground disturbance would be higher than the estimated 500-year flood elevation of Holley Creek; therefore, the project would also be consistent with EO 13690, Establishing a Federal Flood Risk Management Standard.

Stantec developed a preliminary map of water and wetland features based on the United States Fish and Wildlife Service (USFWS)' Wetland Inventory and Water Inventory as provided in Attachment 1, Figure 1-D. Stantec then conducted a survey for aquatic resources (i.e., waterbodies) and wetlands in the Project Area on February 8, 2024, and identified two wetlands, four streams, and four wet weather conveyances (Stantec 2024a; Attachment 1, Figure 1-E). Therefore, the Proposed Action under the Action Alternative could result in impacts to surface waters and wetlands. Because the Proposed Action could affect a perennial surface waterbody, there could be effects on aquatic zoology resources.

The Proposed Action would change the Project Area from a mostly open hay field with some trees to a developed lot designed to attract industrial development. The SFRIS is currently zoned as M-2 (Heavy Industrial) and is located within an area surrounded by industrial, commercial, and residential development. The Proposed Action would not cause a change in land use.

The Proposed Action under the Action Alternative would result in clearing of forested land and development of a gravel marketing road, detention basins, and a dirt building pad designed for industrial use. The Proposed Action would result in conversion of 3.25 acres of prime farmland (Attachment 1; Figure 1-F). However, coordination with Natural Resources Conservation Service (NRCS) determined the Project Area is located within a designated Urban Land by the US Census within the City limits of Greeneville, Tennessee, as such it is considered Exempt from the Farmland Protection Policy Act (Attachment 3). Given the urban setting and existing zoning type, the Proposed Action under the Action Alternative would not have negative impacts on prime farmland.

Stantec performed a survey for archaeological resources in the Project Area in January 2024 and identified no new archaeology sites and no further work is recommended (Stantec 2024b). Therefore, the Proposed Action under the Action Alternative would not result in impacts to archaeological resources.

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

A review of the TVA Regional Natural Heritage database, accessed in February 2024, identified two managed and natural areas within 3 miles of the Project Area: Tusculum College and Arboretum (113.1 acres located 1.4 miles away) and the Andrew Johnson Historic Site (16.5 acres located 2.1 miles away). However, given their distance from the Project Area and the nature of the Proposed Action, no significant impacts to these areas are expected.

Given that there are no known historic structures within the project footprint and that the proposed project does not involve the construction of above-ground resources, no historic architectural resources would be impacted by the project, directly or visually. Therefore, a Phase I historic structures survey was not required and impacts to historic structures and sites are not anticipated to be impacted.

Based on a review of Google Earth aerial imagery and data, a number of parks or outdoor recreation areas are located near the Project Area. Dogwood Park, which hosts art events and music, is located adjacent to the Project Area at the southeastern corner of the SFRIS. Pioneer Park, Pioneer Field, Nichols Tennis Complex, Tusculum Athletics Practice Fields/Edmonds Field, and Tusculum Trail are located approximately 2 miles southeast. Lion's Field is located 1.2 miles southwest of the Project Area. Greeneville High School and associated playing fields are located about 2 miles southwest of the Project Area. No tree clearing or ground disturbance is planned in the southeastern portion of the Project Area adjacent to Dogwood Park. Given the distances between the other outdoor recreation areas and the Project Area, and the fact that the Project Area is zoned as Heavy Industrial and is located in a primarily industrial and commercial area, implementation of the Action Alternative would not result in significant impacts to recreational opportunities near the Project Area.

TVA has determined that the Proposed Action, subsequent to TVA's selection of the Action Alternative, would have no impact on solid and hazardous wastes, floodplains, land use, historic structures and sites, prime farmland, managed and natural areas, and recreation as discussed above. Therefore, potential impacts to these resources are not described in further detail in this EA.

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

4.2.1 Air Quality and Climate Change

Federal and state regulations protect ambient air quality. With authority granted by the Clean Air Act (CAA) 42 United States Code (USC) 7401 et seq. as amended in 1977 and 1990, the United States 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, particulate matter (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 reflects 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 Greene County, Tennessee is designated as being in attainment with respect to the criteria pollutants (USEPA 2024).

Other pollutants, such as hazardous air pollutants (HAPs) and greenhouse gases (GHGs) 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.

GHGs are gases that trap heat in the atmosphere and 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 GHGs under the CAA. GHGs occur in the atmosphere both naturally and resulting from human activities, such as the burning of fossil fuels. GHG emissions due to human activity are the main cause of increased atmospheric concentration of GHGs since the industrial age and are the primary contributor to climate change. The principal GHGs are carbon dioxide (CO_2), methane, and nitrous oxide.

Air quality impacts associated with activities under the Action Alternative include emissions from fossil fuel-fired equipment and fugitive dust from ground disturbances. Fossil fuel-fired equipment is a source of combustion emissions, including nitrogen oxides (NO_X), CO, volatile organic compounds (VOCs), SO_2, PM_{10}, $PM_{2.5}$, GHGs, and small amounts of HAPs. Gasoline and diesel engines used as a result of the Action Alternative are 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 anticipated onsite. 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 GCP, or its contractors, would be expected to comply with Tennessee Erosion and Sediment Control (TDEC) Air Pollution Control Rule 1200-3-8, which requires reasonable precautions to prevent PM from becoming airborne. Such reasonable precautions include grading of roads, clearing of land, 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 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.

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 as a part of the Proposed Action and since the Project Area is mostly pasture

lands, it contributes as a carbon sink. However, on a national or global scale, the Proposed Action of clearing 4.11 acres of trees would have little contribution to climate change.

Under the No Action Alternative, if the GCP were able to secure funding for the proposed TVA-funded actions described in this EA from outside sources, similar emissions associated from equipment and ground disturbances would occur, resulting in similar air quality and climate change impacts as those described above for the Action Alternative. If the GCP were not able to secure funding for the Proposed Actions described in this EA, emissions associated from equipment and ground disturbances would not occur and there would be no impacts to air quality and climate change from the No Action Alternative.

4.2.2 Groundwater

The Project Area is located within the Tennessee Section of the Valley and Ridge Province [National Park Service (NPS) 2023 and U.S. Geological Survey (USGS) 2023]. The Tennessee Section of the Valley and Ridge Province 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 1995).

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

S&ME conducted a geophysical survey in 2023 across the Project Area and produced a report “Report for Geophysical Services – Change to Agreement No. 1, Snapps Ferry Road Property” in which eight electrical resistivity profiles were surveyed across the Project Area to identify features potentially associated with karst terrain. The report summarized that the subsurface consists of two layers, the uppermost layer is comprised of sandy clays and the underlying layer consists of bedrock. The survey encountered various anomalies located within the subsurface and characterized them as areas that are more conductive within interpreted bedrock (breaches/discontinuities related to solutioning and/or clay-filled fractures), low resistivity values overlying interpreted top of bedrock, and high resistivity values that extend from land surface to the interpreted top of bedrock (potentially areas of soil raveling). The report does not make any recommendations or conclusions for the subsurface materials as it relates to site development.

Implementation of the Action Alternative would result in ground disturbance during construction activities. Tree clearing, tree and stump burning would result in minor ground disturbance at shallow depths. Site grading and compaction for development of a 350,000 SF dirt building pad, a gravel

marketing road connecting Gass Drive to the dirt building pad, three detention basins, removal of near-surface rock with blasting as the preferred method, and site stabilization 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. The "Report of Preliminary Geotechnical Exploration – Snapps Ferry Road" conducted by S&ME indicates the overburden within the Project Area consists mostly of clay, sandy clay, and silty sand from depths ranging 21.6 feet to 31.4 feet below land surface (maximum depth of conducted borings) (S&ME 2022b). Groundwater was not encountered during any of the geotechnical borings. These minor impacts would be temporary and would not significantly affect groundwater resources.

Under the Action Alternative, shallow aquifers could sustain minor impacts from changes in overland water flow and recharge caused by grading and construction of a gravel marketing road within the Project Area. Water infiltration, which is normally enhanced by vegetation, would be reduced until vegetation is re-established. In addition, near-surface soil compaction caused by heavy construction vehicles could reduce the ability of soil to absorb water. These minor impacts would be temporary and would not significantly affect groundwater resources.

A Phase 1 ESA was completed onsite by S&ME in September 2022 and their findings were provided in the report "Phase I Environmental Site Assessment Snapps Ferry Road Property – Portion of Tax Parcel 087 142.00, Greeneville, Tennessee," which indicates that the Project Area consists of cultivated farmland with undeveloped forested areas. The report states that numerous 55-gallon drums, used oil containers and old vehicle fuel tanks were discovered onsite. As noted in Section 4.2 above, the drums and containers were properly disposed and no evidence of contamination was observed (Greene County 2024).

Under the No Action Alternative, if the GCP were able to secure funding for the proposed TVA-funded actions described in this EA from outside sources, similar ground disturbance would occur, resulting in similar impacts to groundwater resources as those described above for the Action Alternative. If the GCP were not able to secure funding for the actions described in this EA, ground disturbance associated with clearing, grading, and construction of a gravel marketing road would not occur and there would be no impacts to groundwater resources.

4.2.3 Soils

The Project Area is located in the Tennessee Section of the Valley and Ridge Province (NPS 2023, USGS 2023). Rainfall in the vicinity (Greene County, TN, UsClimateData.com 2024) of the Project Area averages about 42.8 inches of precipitation annually. The average monthly air temperature ranges from an average high of 88 degrees Fahrenheit in July to an average low of 24 degrees Fahrenheit in January (USClimateData.com 2024).

Soil types and descriptions were obtained from the NRCS Web Soil Survey (NRCS 2024) (see Attachment 1, Figure 1-F). Soil types found within the Project Area include Dandridge shaly silt loam (eroded hilly phase), Groseclose silty clay loam (eroded rolling phase), Stony hilly land, Dunmore soil material (Barfield-Rock outcrop), Dewey-Collegedale complex (6 to 15 percent slopes, severely eroded), Dewey-Collegedale complex (15 to 25 percent slopes, severely eroded), Urban land, Urban land-Udorthents complex and Whitesburg silt loam.

A geotechnical investigation was conducted on the Project Area in 2022 (S&ME 2022). The 2022 investigation involved 10 soil borings within the Project Area; the borings ranged from 21.6 feet to 35.0 feet below land surface. The soil borings encountered clays, sand clays, and sandy silt across the Project Area. The report recommends that initially the Project Area should be cleared of vegetation, topsoil, and all surficial paving materials, utilities, old structures, cisterns, foundations, and septic tanks be removed. Once the topsoil has been removed, the report recommends that the exposed subgrade be analyzed for stability in areas expected to receive fill by a geotechnical engineer. The report also states that the exposed subgrade should be proof-rolled to establish areas that may need additional overburden removal as determined by the project geotechnical engineer (S&ME 2022a).

Under the Action Alternative, soils in the Project Area would be disturbed by tree clearing, tree and stump burning, widespread grading of a 350,000 SF dirt building pad, construction of a gravel marketing road connecting Gass Drive to the dirt building pad, construction of three detention basins, removal of near-surface rock with blasting as the preferred method, and site stabilization. The Proposed Action includes the stabilization of disturbed soils following grading as described in Section 3.2. Further, BMPs would be required as part of the National Pollutant and Discharge Elimination System (NPDES) General Permit for Discharges Associated with Construction Activities (TNR100000). This permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP would identify specific BMPs to address construction-related activities that would be adopted to minimize erosion-related impacts. BMPs, as described in the Tennessee Erosion and Sediment Control Handbook (TDEC 2012), would be used during site development to avoid contamination of surface water in the Project Area. These factors would effectively avoid or minimize impacts on soils or from soil erosion.

Under the No Action Alternative, if the GCP were able to secure funding for the proposed TVA-funded actions described in this EA from outside sources, similar site activities would occur, resulting in similar impacts on soils as those described above for the Action Alternative. If the GCP were not able to secure funding for the actions described in this EA, disturbance associated with the Proposed Action would not occur and there would be no impacts on soils or from soil erosion.

4.2.4 Surface Water

The Project Area is located within Nolichucky River watershed 8-digit hydrologic unit code (HUC) 06010108 and in the Sinking Creek-Nolichucky River watershed 12-digit HUC 060101080703. Precipitation for Greene County, Tennessee averages 42.8 inches annually as noted above (USClimateData.com 2024).

Stantec performed field surveys of the entire Project Area on February 8, 2024, to document waterbodies. A map of features based on the USFWS' Wetland Inventory and Water Inventory is provided in Attachment 1, Figure 1-D. Four streams potentially subject to USACE or the State of Tennessee jurisdiction were identified. Additionally, four presumed non-jurisdictional ephemeral/wet weather conveyance features were documented (Stantec 2024a; Attachment 1, Figure 1-E). No ponds were identified in the Project Area.

S001 is a presumed jurisdictional intermittent stream located in the eastern portion of the Project Area. Water was actively flowing from east to west at an average depth of 6 inches. The channel substrate consisted of silt and clay with dispersed pebbles and cobble.

S002 is a presumed jurisdictional intermittent stream located in the northwestern portion of the Project Area. S002 enters the Project Area from a culvert that passes under Snapps Ferry Road. Water was actively flowing from northeast to southeast at an average depth of 3 inches. S002 passes through another culvert system on the southern end of the watercourse, then confluences with stream S003. Channel substrate consisted of silt, clay, sand, and cobble.

S003 is a presumed jurisdictional perennial steam (named Holley Creek on the USGS topographic map) located in the northwestern portion of the Project Area flowing parallel to Snapps Ferry Road. Holley Creek enters the Project Area through a 120-inch culvert under Snapps Ferry Road from the north. Water was actively flowing from northeast to southwest at an average depth of 4 inches. Channel substrate consisted of sand, cobble, and gravel.

S004 is a presumed jurisdictional intermittent stream that is located in the western portion of the Project Area. This stream receives water from wetland W002 and a springhouse that directly feeds into S004. Water was actively flowing from northeast to southwest at an average depth of 3 inches. Channel substrate consisted of sand, cobble, and gravel with wetland hydrophytic vegetation throughout.

E001 is a presumed non-jurisdictional ephemeral channel/wet weather conveyance located in the northeast portion of the Project Area. This channel is a roadside ditch flowing southwest to northern from a culvert to a culvert that passes under Gass Drive. There was no water present in the channel. Riprap was observed in-channel and at the base of the outlet culvert.

E002 is a presumed non-jurisdictional ephemeral channel/wet weather conveyance located in the northern portion of the Project Area. This channel is a roadside ditch flowing northeast to southwest to a culvert that passes under Snapps Ferry Drive. There was no water present in the channel. A small amount of riprap was observed in-channel and at the base of the inlet culvert.

E003 is a presumed non-jurisdictional ephemeral channel/wet weather conveyance located on the northwest portion of the Project Area. This channel is a roadside ditch flowing northeast to southwest. E003 confluences with S002. There was no water present in the channel. Channel substrate consists of sand, silt, and clay.

E004 is a presumed non-jurisdictional ephemeral channel/wet weather conveyance located on the southwest portion of the Project Area. This channel is an erosional feature likely caused by channelization from gravel/dirt road construction and/or excavation. There was no water present in the channel.

Under the Action Alternative, the presumed jurisdictional and presumed non-jurisdictional stream features could be disturbed by grading to create a 350,000 SF dirt building pad, a gravel marketing road, three detention basins, and site stabilization. However, all of the identified surface waterbodies were located along the north/northwestern and eastern/southeastern Project Area boundaries (Attachment 1, Figure 1E). It is possible that the GCP may be able to avoid these features during site development given their locations. If potential impacts to presumed jurisdictional features cannot be avoided, consultation with the USACE and Tennessee Department of Environment and Conservation (TDEC) would be required. GCP, or its contractors, would ensure compliance with required permits authorizing disturbance to presumed jurisdictional features, including provision of compensatory mitigation, as may be necessary. As discussed in Section 4.2.3, BMPs would be required as part of the NPDES General Permit for Discharges Associated with Construction Activities (TNR100000) including a SWPPP. The BMPs used during

site development would act to avoid contamination of surface water in the Project Area. Given these factors, impacts on surface water would not be significant and the Proposed Action would be consistent with the Clean Water Act Sections 401 and 404.

Under the No Action Alternative, if the GCP were able to secure funding for the proposed TVA-funded actions described in this EA from outside sources, similar site activities would occur, resulting in similar impacts on surface waters as those described above for the Action Alternative. If the GCP were not able to secure funding for the actions described in this EA, disturbance associated with the Proposed Action would not occur and there would be no impacts on surface waters.

4.2.5 Wetlands

As noted above for surface waters, Stantec also performed field surveys of the entire Project Area on February 8, 2024 to document wetlands (Stantec 2024a). A map of features based on the USFWS' National Wetland Inventory and Waterbody Inventory is provided in Attachment, Figure 1-D. Two wetlands that are potentially regulated by the USACE or TDEC were identified during the field survey. No presumed non-jurisdictional wetlands were identified (Attachment 1, Figure 1-E).

W001, 0.6 acre in size, is a presumed jurisdictional palustrine emergent wetland located in the eastern portion of the Project Area. Water in the wetland is received by roadway stormwater drainage, groundwater, and runoff from the surrounding hillslope. A Tennessee Rapid Assessment Method (TRAM) score of 55 was given to this wetland, which determines this wetland of "moderate resource value" (TDEC 2017).

W002, 0.1 acre in size, is a presumed jurisdictional palustrine emergent wetland located in the southwestern portion of the Project Area. This wetland is within the 100-year floodplain of Holley Creek. This wetland is heavily impacted by recent roadway construction, a spring house, and geomorphic alteration due to berm construction. Water in the wetland is collected from runoff from the surrounding hillslope and from groundwater recharge. A TRAM score of 48 was given to this wetland, which determines this wetland of "moderate resource value" (TDEC 2017).

Under the Action Alternative, the presumed jurisdictional features could be disturbed by grading to create a 350,000 SF dirt building pad, a gravel marketing road, three detention basins, and site stabilization. However, the identified wetlands were located along the southwestern and eastern Project Area boundaries (Attachment 1, Figure 1E). It is possible that the GCP may be able to avoid these wetlands during site development given their locations. If potential impacts to presumed jurisdictional wetland features cannot be avoided, consultation with the USACE and TDEC would be required. The GCP, or its contractors, would ensure compliance with required permits authorizing disturbance to presumed jurisdictional features, including the provision of compensatory mitigation, as may be necessary. Given these factors, impacts on wetlands would not be significant. Implementation of the Proposed Action would be consistent with EO 11990 and the Clean Water Act Sections 401 and 404.

Under the No Action Alternative, if the GCP were able to secure funding for the proposed TVA-funded actions described in this EA from outside sources, similar site activities would occur, resulting in similar impacts on wetlands as those described above for the Action Alternative. If the GCP were not able to secure funding for the actions described in this EA, disturbance associated with the Proposed Action would not occur and there would be no impacts on wetlands.

4.2.6 Aquatic Zoology

As noted in Section 4.2.5, one perennial stream, three intermittent streams, and four ephemeral/wet weather conveyances were delineated in the Project Area (Stantec 2024a; Attachment 1, Figure 1E). No fish, crayfish, or bivalves/mussels were observed in the intermittent streams and wet weather conveyances. They do not provide suitable habitat to support viable populations of aquatic species on a permanent basis due to their lack of consistent flow. No ponds were documented in the Project Area.

Presumed jurisdictional perennial stream S003 (Holley Creek) does provide suitable habitat for aquatic species. Stone fly (*Genus Pteronarcys*) and caddisfly (Order Trichoptera) larvae were observed in S003 along with one fish species, creek chub (*Semotilis atromaculatus*). Generalist fish species such as mosquitofish (*Gambusia affinis*) and sunfish (*Lepomis* spp.) could also potentially occur in S003. Water was actively flowing with an average depth of 4 inches. Channel substrate consisted of sand, cobble, and gravel.

The Action Alternative could involve potential impacts on aquatic fauna if S003 were disturbed by the Proposed Action. However, S003 is located along the northwestern Project Area boundary (Attachment 1, Figure 1E) and it is possible that the GCP may be able to avoid this stream during site development given its location. If S003 cannot be avoided, stream habitat and aquatic fauna would be affected, but the species present are common in the area and impacts would not be significant. The species potentially present are widely distributed and abundant in adjacent streams and regionally.

Under the No Action Alternative, if the GCP were able to secure funding for the proposed TVA-funded actions described in this EA from outside sources, similar site activities would occur, resulting in similar impacts on aquatic fauna as those described above for the Action Alternative. If the GCP were not able to secure funding for the actions described in this EA, disturbance associated with the Proposed Action would not occur and there would be no impacts on aquatic fauna.

4.2.6.1 Threatened and Endangered Species (Aquatic Species)

TVA biologists queried the Natural Heritage Database for rare, threatened, and endangered aquatic species on October 16, 2023. Thirteen state-listed or state-ranked aquatic species were identified within the HUC boundary for the Project Area and/or within Greene County. Twelve federally listed aquatic species, many overlapping with state-designated species, were also identified within the same geographic areas. The species, their status, and habitats are described in Table 4-1.

As noted above, perennial stream S003 was actively flowing with an average depth of 4 inches during the field survey. Channel substrate consisted of sand, cobble, and gravel. As noted above, S003 is located along the northwestern Project Area boundary (Attachment 1, Figure 1E) and it is possible that the GCP may be able to avoid this stream during site development given its location. Further, given the habitat requirements documented in Table 4-1, it is unlikely that any state-listed, state-ranked, or federally listed aquatic species would be found in S003. S003 flows parallel to and receives runoff from Snapps Ferry Road, a major four-lane highway, and the Project Area is surrounded on all four sides by extensive commercial, industrial, and residential development and roads. Under the Action Alternative, given the habitat available and the highly developed setting of the Project Area's vicinity and its effects on water quality, suitable habitat for listed species is lacking and there would be no impacts on listed species or their habitats.

Table 4-1. State- and Federally Listed Aquatic Species within the HUC Boundary of the Project Area and within Greene County, Tennessee

Scientific Name	Common Name	Element Occurrence Rank[1]	State Rank[2]	State Status[3]	Federal Status[3]	Habitat
Carpiodes velifer	Highfin Carpsucker	H? - Possibly historical	S2S3	D		Gravel substrate in relatively clear, medium to large rivers.
Cumberlandia monodonta	Spectaclecase	H - Historical	S2S3	E	E	Gravel, sand, and mud substrates in medium and large rivers.
Cycleptus elongatus	Blue Sucker	E - Verified extant (viability not assessed)	S2	T		Swift waters over firm substrates in large rivers.
Epioblasma brevidens	Cumberlandian Combshell	AB - Excellent or good estimated viability	S1	E	E, XN	Medium and large clear rivers with rocky substrates.
Epioblasma capsaeformis	Oyster Mussel	AB - Excellent or good estimated viability	S1	E	E, XN	Shallow riffles in fast water with a gravel and sand substrate.
Epioblasma torulosa gubernaculum	Green Blossom Pearlymussel	X - Extirpated	SX	E	E, PDL	Was found in riffles with swift currents, with coarse sand or gravel.
Io fluvialis	Spiny Riversnail	H - Historical	S2		UR	Large rivers.
Lampsilis abrupta	Pink Mucket	AC - Excellent, good, or fair estimated viability	S2	E	E	Rivers with a rocky bottom and swift current.
Lemiox rimosus	Birdwing Pearlymussel	AC - Excellent, good, or fair estimated viability	S1	E	E, XN	Small to medium-sized rivers with sand and gravel substrates in moderate to fast currents.
Noturus crypticus	Chucky Madtom	E - Verified extant (viability not assessed)			E	Inhabits slow rocky riffles and runs of clear creeks. Only known from two creeks, Dunn Creek in Sevier County, TN and Little Chucky Creek in Greene County, TN.
Percina aurantiaca	Tangerine Darter	E - Verified extant (viability not assessed)	S3	D		Clear portions of large to moderate sized headwater tributaries of the Tennessee River. Frequents deeper riffles with boulders, large rubble, and bedrock.
Pleurobema oviforme	Tennessee Clubshell	H - Historical			UR	Small, shallow (less than 2 feet deep) streams and rivers with good current and gravel and sand.

Scientific Name	Common Name	Element Occurrence Rank[1]	State Rank[2]	State Status[3]	Federal Status[3]	Habitat
Pleuronaia dolabelloides	Slabside Pearlymussel	H - Historical	S2	E	E	Shoals in small to medium-sized streams and rivers with strong current with sand, gravel, and cobbles.
Ptychobranchus subtentum	Fluted Kidneyshell	AB - Excellent or good estimated viability	S2	E	E	Streams and small rivers with sand or gravel substrate in riffles with fast current.
Quadrula cylindrica strigillata	Rough Rabbitsfoot	H - Historical			E	Small to medium-sized rivers in clear shallow water with sand and gravel substrate.
Venustaconcha trabalis	Tennessee Bean	H - Historical			E	Small headwater streams to medium-sized rivers with moderate to fast riffles with sand, gravel, or cobble substrates.
Villosa fabalis	Rayed Bean	H - Historical	S1	E	E	Riffles with aquatic weeds and their roots in sand and gravel substrates.

Source: TVA Regional Natural Heritage database; USFWS Information for Planning and Consultation (IPaC) resource list (IPaC: Home (fws.gov)) -If Relevant

[1] EO = Element Occurrence; Common ranks: A= Excellent est. viability/ecol. Integrity; B= Good est. viability/ecol. Integrity; C= Fair est. viability/ecol. Integrity; E = Verified extant (viability/ecological integrity not assessed); H= Historical; X= Extirpated; NR= Not ranked. See Heritage Data Viewer Handbook for more ranks.

[2] State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S4 = Apparently Secure; S5 = Secure; SX = Presumed Extirpated. See Heritage Data Viewer Handbook for more ranks.

[3] Status Codes: D= Deemed in Need of Management; DM= Delisted, still being monitored; E= Endangered; LE= Listed Endangered; LT= Listed Threatened; C=Candidate; PS= Partial Status; T= Threatened; E-P= Endangered/Possibly Extirp.; E-PT= Endangered/Proposed Threatened; RARE= Rare; SLNS= State listed, no status; S= Special Concern; S-P= Special Concern/Possibly Extirp.; S-CE= Special Concern/Commerc. Exploited; T-CE= Threatened/Commerc. Exploited; XN=non-essential experimental population in portion of range; Habitat information obtained from Florida Museum - Icthyology 2024, NatureServe Explorer 2024, FWGNA.org 2024, Parmalee and Bogan 1998 and Etnier and Starnes 1993.

Under the No Action Alternative, if the GCP were able to secure funding for the proposed TVA-funded actions described in this EA from outside sources, similar site activities would occur, also resulting in no impacts on rare, threatened, and endangered aquatic fauna. If the GCP were not able to secure funding for the actions described in this EA, disturbance associated with the Proposed Action would not occur and there would be no impacts on rare, threatened, and endangered aquatic fauna.

4.2.7 Terrestrial Zoology

4.2.7.1 Wildlife

The Project Area consists of 49.2 acres of land. The northern, central portion of the Project Area consists of a hay field that transitions into mixed hardwood stands. The western edge of the Project Area is a mix of old residential and immature plots of trees that are not slated for removal. Tree removal would occur along a small immature forest area on the southern edge and a tree line bordering Snapps Ferry Road along the northern edge of the Project Area. These areas are a mix of cedar, pine, and Osage orange. Features surrounding the Project Area consist of a variety of croplands (i.e., pasture and agricultural), and developed or otherwise disturbed areas.

Approximately 35 acres of the Project Area is a hay field in the early stages of succession, and the majority of it is still grassland. Common inhabitants of early successional habitat include brown-headed cowbird, brown thrasher, common yellowthroat, dickcissel, eastern bluebird, eastern kingbird, eastern meadowlark, field sparrow, and grasshopper sparrow (National Geographic 2002). Bobcat, coyote, eastern cottontail, hispid cotton rat, red fox, and white-tailed deer are mammals typical of fields and cultivated land (Kays and Wilson 2002). Amphibians such as Fowler's toad and reptiles including the common garter snake, DeKay's brownsnake, and southern black racer are also known to occur in this habitat type (Dorcas and Gibbons 2005, Niemiller et al. 2013, Powell et al. 2016).

Approximately 11 acres of the Project Area is comprised of woodlots or scattered trees. Birds typical of this habitat include blue-gray gnatcatcher, common yellowthroat, downy woodpecker, eastern whip-poor-will, pileated woodpecker, red-bellied woodpecker, red-eyed vireo, red-tailed hawk, scarlet tanager, wild turkey, wood thrush, and yellow-rumped warbler (National Geographic 2002). This area also provides foraging and roosting habitat for several species of bat, particularly in areas where the forest understory is partially open. Bat species likely found within this habitat include big brown bat, eastern red bat, and evening bat. Eastern chipmunk, eastern woodrat, and white-tailed deer are other mammals likely to occur within this habitat (Kays and Wilson 2002). Broad-headed skink, eastern black kingsnake, eastern box turtle, five-lined skink, gray ratsnake, and smooth earthsnake are common reptiles of eastern deciduous forests (Dorcas and Gibbons 2005; Niemiller et al. 2013; Powell et al. 2016).

Review of the TVA Regional Natural Heritage database on October 19, 2023, indicated four known caves have been documented within 3 miles of the Project Area; the closest known record is 2.6 miles from the Project Area. This same review did not identify any known records of heronries or aggregations of migratory birds within 3 miles of the Project Area. Review of the USFWS's Information for Planning and Consultation (IPaC) project planning tool on October 19, 2023, identified two migratory birds of conservation concern that could occur in the Project Area: chimney swift and wood thrush. Chimney swift and wood thrush are common summer residents in Tennessee. Chimney swifts roost in chimneys or large hollow trees (Nicholson 1997). No chimneys or large hollow trees suitable for roosting chimney swifts were

observed in the Project Area by TVA Terrestrial Zoologists during field surveys on November 22, 2023. Wood thrush can be found in large and small woodlots of deciduous and mixed hard and softwood forests. They commonly prefer forests with shaded understories and open forest floors. Nests are most often built in moist woodlands, often near water, in the forks of deciduous tree branches and saplings (Nicholson 1997). This habitat was observed in small portions of forest where proposed tree removal would occur, albeit of poor quality for this species.

Under the Action Alternative, TVA would provide funds to assist with the grading, tree removal, and site stabilization of the Project Area. These funds would be utilized in the construction of a 350,000 SF dirt building pad, gravel marketing road, and detention basins. This would result in the displacement of any wildlife (primarily common, habituated species) currently using the area. Direct effects to some individuals may occur if those individuals are immobile during the time of habitat removal. This could be the case if activities took place during breeding/nesting/hibernation seasons. Habitat removal would likely disperse mobile wildlife into surrounding areas in an attempt to find new food sources and shelter, and to reestablish territories. However, the actions are not likely to affect populations of species common to the area as similar herbaceous habitats and forested fragments exist in the surrounding landscape.

One migratory bird of conservation concern identified by the USFWS could be impacted by the Proposed Action. Wood thrush may forage and nest in the wooded portion of the Project Area from late April through early September. If the Proposed Action occurs outside of the nesting season, individuals onsite would be expected to flush if disturbed. Tree removal is currently proposed for Fall 2024. Should vegetation removal and grading occur during nesting season (between May and August), this species could be directly impacted. However, this species often nests twice per season (Nicholson 1997). In addition, similarly suitable habitat is abundant throughout the adjacent landscape. Due to the relative abundance of similarly suitable habitat nearby, the size of the Project Area, and the non-breeding timeframe of proposed tree removal, the Proposed Action under the Action Alternative is not expected to impact populations of wood thrush.

Under the No Action Alternative, if the GCP were able to secure funding for the Proposed Action described in this EA from outside sources, similar site activities would occur, resulting in similar impacts on terrestrial wildlife or their habitats as those described above for the Action Alternative. If the GCP were not able to secure funding for the actions described in this EA, disturbance associated with the Proposed Action would not occur and there would be no direct, indirect, or cumulative impacts on terrestrial animals or their habitats.

4.2.7.2 Threatened and Endangered Species (Wildlife)

A review of terrestrial animal species in the TVA Regional Natural Heritage database on October 19, 2023, returned no federally listed species within 3 miles of the Project Area. Three federally listed species (gray bat, northern long-eared bat, and rusty-patched bumblebee (RPBB)), one federally protected species (bald eagle), and one proposed endangered species (tricolored bat) are known from Greene County, Tennessee. The USFWS has also determined that the monarch butterfly, a candidate for federal listing, has the potential to occur within the Project Area. Habitat suitability and potential impacts to these species will be addressed (Table 4-2).

Table 4-2. Federally Listed Terrestrial Animal Species Reported from Greene County, Tennessee and Other Species of Conservation Concern Documented within Three Miles of the Project Area

Common Name	Scientific Name	Status[1]	
		Federal	State (Rank[2])
Birds			
Bald eagle[3]	Haliaeetus leucocephalus	DL	D(S3)
Invertebrates			
Monarch butterfly[4]	*Danaus plexippus*	C	-(S4)
Rusty-patched bumblebee[3]	*Bombus affinis*	E	X(S1)
Mammals			
Gray bat[3]	*Myotis grisescens*	E	E(S2)
Northern long-eared bat[3]	*Myotis septentrionalis*	E	T(S1S2)
Tricolored bat[3]	*Perimyotis subflavus*	PE	T(S2S3)

Source: TVA Regional Natural Heritage database, extracted 10/19/2023; USFWS Information for Planning and Consultation (IPaC) resource list (IPaC: Home (fws.gov), accessed 10/19/2023.

[1] Status Codes: C = Candidate species; D or DL = Delisted, Recovered, Being Monitored E = Endangered; X = Presumed Extirpated; PE = Proposed Endangered; T = Threatened.

[2] State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S4 = Apparently Secure.

[3] Federally listed/protected species records from Greene County, Tennessee, not within 3 miles of the Project Area.

[4] Candidate for federal listing that has not historically been tracked by state or federal heritage programs.

Bald eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d). This species is associated with large mature trees capable of supporting massive nests, which can weigh several hundred pounds and are typically built near larger waterways where eagles forage, primarily for fish (USFWS 2007). The nearest bald eagle nest occurs approximately 17 miles from the Project Area. No additional nests were observed during field surveys by TVA terrestrial zoologists. No suitable habitat for bald eagle exists within the Project Area as no large bodies of water are present. The nearest large waterbody, Nolichucky River, occurs approximately 4 miles southeast of the Project Area. Additionally, bald eagles typically breed in large pines, which are not present within the Project Area. As such, foraging habitat for bald eagle is absent and nesting is unlikely.

Gray bats roost in caves year-round and migrate between summer and winter roosts during spring and fall (USFWS 1982). Bats disperse over bodies of water at dusk where they forage for insects emerging from the surface of the water. The closest gray bat record is from a winter hibernaculum approximately 12.2 miles away from the Project Area. Four documented cave records are known within 3 miles of the Project Area, the closest of which is located approximately 2.6 miles from the Project Area.

Monarch butterfly are a highly migratory species, with eastern United States (U.S.) populations overwintering in Mexico. Monarch populations typically return to the eastern U.S. in April (Davis and Howard 2005). Summer breeding habitat requires milkweed plant species on which adults exclusively lay eggs for larvae to develop and feed on. Adults will drink nectar from other blooming wildflowers when milkweeds are not in bloom. While this species has not been historically tracked by state or federal heritage programs, the USFWS IPaC project planning tool

determined this species has the potential to occur within the Project Area. The central portion of the Project Area has potential to contain wildflower and other flowering plant species that could provide suitable foraging habitat for monarch butterflies. However, due to prolonged agricultural use of the site, it is unlikely that any quantity of flowering plants is present within the seedbank or likely to occur onsite. In addition, no milkweed was observed in the Project Area during field surveys. As a Candidate species, monarch butterfly is not currently subject to Section 7 consultation under the Endangered Species Act.

Northern long-eared bat predominantly overwinters in large hibernacula such as caves, abandoned mines, and cave-like structures. During fall and spring, they utilize entrances of caves and surrounding forested areas for swarming and staging. In summer, northern long-eared bats roost individually or in colonies beneath exfoliating bark or in crevices of both live and dead trees. This species also roosts in abandoned buildings and under bridges. Northern long-eared bats emerge at dusk to forage below the canopy of mature forests on hillsides and roads, and occasionally over forest clearings and along riparian areas (USFWS 2024). The closest known northern long-eared bat record was documented approximately 6.1 miles from the Project Area.

RPBB inhabits grasslands, prairies, woodlands, marshes, agricultural landscapes, and residential parks and gardens. They require both diverse, abundant flowers from April to September and undisturbed nesting sites nearby in order to have sufficient food and overwintering sites for queens. They often build nests in abandoned, underground rodent cavities of large clumps of grass (USFWS 2018). One known record of RPBB is present in Greene County, approximately 12 miles from the Project Area. This record is listed as possibly historic due to the age of the record (1972). This species is thought to be potentially extirpated from the Project Area. Though the Project Area contains a large field, it is routinely disturbed by agriculture activities, which limit the variety of flowering species. USFWS categorizes the current distribution of the RPBB as zones of low and high potential for the species to occur. Under Section 7 of the Endangered Species Act, presence of the species should be presumed only in zones of high potential. There are no high potential zones in Tennessee, and Greene County occurs within the historical range of RPBB, as such, Section 7 consultation is not required for this federal species (USFWS 2018).

Tricolored bats hibernate in caves or manufactured structures such as culverts or bridges (Fujita and Kunz 1984, Newman et al. 2021). During summer, tricolored bats roost in clumps of tree foliage, often in oak and hickory trees (Veilleux et al. 2003, Schaefer 2017). Published foraging studies of tricolored bats are lacking, but it is believed they typically forage near documented roost trees in forested areas and riparian corridors. The closest known tricolored bat record is from a winter cave record approximately 12 miles from the Project Area.

As previously mentioned, four cave records are located within 3 miles of the Project Area, the nearest of these occurs 2.6 miles from the Project Area. No additional caves were observed within the Project Area during field surveys on November 22, 2023. Approximately 0.45 acre of suitable summer roosting habitat for northern long-eared bat, and one tree offering suitable roosting habitat for tricolored bat, are present throughout the wooded sections in the Project Area. Suitable habitat within the Project Area primarily presents as snags offering cracks and crevices for roosting habitat. One shagbark hickory was observed at the northern end of the woodlot. The majority of wooded habitat in the Project Area were full of immature trees and the understory was heavily cluttered. Foraging habitat exists over fields, within woodlots, and along and over streams and wetlands in and adjacent to the Project Area.

Under the Action Alternative, TVA would provide funds to assist with the grading, tree removal, and site stabilization of the Project Area. These funds would be utilized in the construction of a 350,000 SF dirt building pad, gravel marketing road, and detention basins. Impacts were assessed for six terrestrial animal species having the potential to occur in the Project Area.

Due to the distance from known records to the Project Area and lack of available foraging and nesting habitat, the Proposed Action under the Action Alternative would have no effect on bald eagles. The Proposed Action is in compliance with the National Bald Eagle Management Guidelines.

Based on guidance provided by the USFWS, the Proposed Action under the Action Alternative is within the historical range of the RPBB, outside of the High Potential Zone, and Section 7 consultation is not required. The Proposed Action under the Action Alternative would have no effect on RPBB.

Monarch butterfly foraging habitat may exist within narrow strips along field edge that may not have been aggressively impacted by agricultural crop production. Grading could impact monarch butterfly foraging habitat should it occur in the Project Area. However, any impacts are expected to be minor due to the small quantity of habitat potentially present. This species is currently listed under the Endangered Species Act (ESA) as a candidate species and is not subject to Section 7 consultation under the Endangered Species Act. The Proposed Action under the Action Alternative would not jeopardize the continued existence of monarch butterfly.

No caves or other hibernacula for gray bat, northern long-eared bat, or tricolored bat exist in the Project Area or would be impacted by the Proposed Action under the Action Alternative. Approximately 4 acres of trees are proposed for removal as a part of the Proposed Action under the Action Alternative. Following the 2023 Range-Wide Indiana Bat and Northern Long-eared Bat Survey Guidelines (USFWS 2023), TVA determined that 0.45 acre of suitable summer roosting habitat for northern long-eared bat and 0.09 acre for tricolored bat is being removed as part of the Proposed Action under the Action Alternative. Removal of suitable northern long-eared and tricolored bat habitat has the potential to adversely affect listed bat species, primarily if tree removal occurs when these bats are birthing and rearing pups (May 15 – July 31). However, tree removal is proposed to occur during swarming season (October 15 – November 14) or during winter (November 15 – March 31). Given the lack of cave habitat within the Project Area, swarming habitat has been deemed absent from the Project Area, based on proximity to known caves.

Activities associated with this approval were addressed in TVA's programmatic consultation with the USFWS on routine actions and federally listed bats in accordance with ESA Section 7(a)(2) completed in April 2018 and updated in May 2023. For those activities with potential to affect bats, TVA committed to implementing specific conservation measures. These activities and associated conservation measures are identified in the TVA Bat Strategy Project Screening Form (attached) and must be reviewed/implemented as part of the project. With the use of these identified conservation measures, the Proposed Action would not significantly impact gray bat or northern long-eared bat. In addition, the Proposed Action would not jeopardize the continued existence of tricolored bat.

Under the No Action Alternative, if the GCP were able to secure funding for the proposed TVA-funded actions described in this EA from outside sources, similar site activities would occur, resulting in similar impacts on threatened and endangered terrestrial animals or their habitats as those described above for the Action Alternative. If the GCP were not able to secure funding for the

actions described in this EA, disturbance associated with the Proposed Action would not occur and there would be no direct, indirect, or cumulative impacts on rare, threatened, and endangered terrestrial animals or their habitats.

4.2.8 Botany

4.2.8.1 Vegetation

A field survey was conducted in November 2023 by TVA staff biologists to document plant communities, infestations of invasive plants, and to search for possible threatened and endangered plant species, and rare plant communities. All plant communities present on the parcel were visited during the survey. Using the National Vegetation Classification System (Grossman et al. 1998), vegetation types observed during field surveys can be classified as a combination of evergreen and herbaceous vegetation. No forested areas in the Project Area had structural characteristics indicative of old-growth forest stands (Leverett 1996). All forested areas encountered were fragmented, occurring in isolated islands; the largest continuous forested area was located on the southern border.

Herbaceous vegetation is characterized by greater than 75 percent cover of forbs and grasses and less than 25 percent cover of other types of vegetation. Young uncut fields and old uncut fields with thickets account for the vast majority of vegetation in the Project Area. Most of these areas are dominated by plants indicative of early successional habitats and are comprised of mainly native vegetation. Common herbaceous species include American selfheal (*Prunella vulgaris* ssp. *lanceolata*), annual ragweed (*Ambrosia artemisiifolia*), broomsedge bluestem (*Andropogon virginicus*), Carolina horsenettle (*Solanum carolinense* var. *carolinense*), Chicory (*Cichorium intybus*), common rush (*Juncus effusus*), Dallis grass (*Paspalum dilatatum* ssp. *dilatatum*), frostweed (*Symphyotrichum pilosum*), Jimsonweed (*Datura stramonium*), late goldenrod (*Solidago altissima*), marsh bristlegrass (*Setaria parviflora*), New York Ironweed (*Vernonia noveboracensis*), purpletop tridens (*Tridens flavus*), Queen Anne's Lace (*Daucus carota*), rough cocklebur (*Xanthium strumarium*), sericea lespedeza (*Lespedeza cuneata*), small beaked panic grass (*Coleataenia anceps*), spiny amaranth (*Amaranthus spinosa*), tall fescue (*Lolium arundinaceum*), and yellow foxtail (*Setaria pumila* ssp. *pumila*). Scattered woody plants found include black raspberry (*Rubus occidentalis*), Japanese honeysuckle (*Lonicera japonica*), multiflora rose (*Rosa multiflora*), and sawtooth blackberry (*Rubus argutus*).

Evergreen forest, which occurs throughout the Project Area, is the most common forest type in the Project Area. This forest has low species diversity and is dominated by young eastern red cedar (*Juniperus virginiana*) less than 40 feet tall with black locust (*Robinia pseudoacacia*), northern hackberry (*Celtis occidentalis*), silver maple (*Acer saccharinum*), sugarberry (*Celtis laevigata*), and very large specimens (2- to 3.5-foot diameter at breast height [dbh]) of black walnut (*Juglans nigra*), northern hackberry, and oak (*Quercus* sp.). The understory is comprised of eastern red cedar saplings, Amur honeysuckle (*Lonicera maackii*), and Chinese privet (*Ligustrum sinense*). Herbaceous species include giant ironweed (*Vernonia gigantea*), nimblewill (*Muhlenbergia schreberi*), white snakeroot (*Ageratina altissima* var. *altissima*), and yellow crownsbeard (*Verbesina occidentalis*). Copious amounts of the woody vine winter creeper (*Euonymus fortunei*) are also prevalent in the understory. Most evergreen forests in the Project Area have trees that average between 2 and 12 inches dbh.

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 et al. 2015). No federal-noxious weeds were observed, but many non-native invasive plant species were observed throughout the Project Area. Invasive species present across significant portions of the landscape include Amur honeysuckle, Chinese privet, Japanese honeysuckle, multifloral rose, sericea lespedeza, tall fescue, and winter creeper. During field surveys, invasive plants were prevalent in sections of both herbaceous vegetation and evergreen forest types.

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

Adoption of the Action Alternative would not negatively impact vegetation directly, indirectly, or cumulatively. Adoption of this alternative would result in wholesale disturbance across most of the site. The area would be graded and 4.11 acres of trees along with other grassy vegetation would be removed. Impacts to vegetation may be permanent, but the vegetation found onsite is comprised of native and non-native plants that have little to no conservation value.

Similar to the Action Alternative, under the No Action Alternative, if the GCP were able to secure funding for the proposed TVA-funded actions described in this EA from outside sources, there would be similar direct, indirect, or cumulative impacts to vegetation and plant species as with the Proposed Action. If the GCP were not able to secure funding for the actions described in this EA, the proposed disturbances would not occur and existing site conditions would likely be unchanged, resulting in no impacts to vegetation and plant species.

4.2.8.2 Threatened and Endangered Species (Vegetation)

The TVA Regional Natural Heritage database and USFWS IPaC list were reviewed in November 2023 and January 2024, respectively, to identify federal and state-protected plant species that could potentially occur in the Project Area. No federal and state-listed plant species have been previously reported within a 5-mile vicinity of the Project Area. No federally listed plant species has been previously reported from Greene County, Tennessee where the Project Area is located. No designated critical habitat for plants occurs in the Project Area.

A field survey completed in November 2023 indicates that no habitat for state- or federally-listed plant species occurs onsite. The entirety of the Project Area is highly disturbed and is populated primarily with weedy native species.

Previous clearing activities on the Project Area have resulted in significant disturbance that makes the parcel incapable of supporting threatened or endangered plant species. Adoption of the Proposed Action under the Action Alternative would result in some additional disturbance on the site but would not affect federal- or state-listed plants because those species are not present.

Similar to the Action Alternative, under the No Action Alternative, if the GCP were able to secure funding for the proposed TVA-funded actions described in this EA from outside sources, there would be no direct, indirect, and cumulative impacts to state- and federally listed threatened and endangered plant species. If the GCP were not able to secure funding for the actions described in this EA, the proposed disturbances would not occur and existing site conditions would likely be unchanged, also resulting in no impacts to state- and federally listed threatened and endangered plant species.

4.2.9 Archaeology and Historic Structures and Sites

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

TVA determined that the Proposed Action Alternative is an "undertaking" as defined by the regulations under NHPA. Once an action is determined to be an undertaking, the regulations require agencies to consider whether the proposed activity has the potential to impact historic properties. If the undertaking is such an activity, then the agency must follow the following steps: (1) involve the appropriate consulting parties; (2) define the APE; (3) identify historic properties in the APE; (4) evaluate possible effects of the undertaking on historic properties in the APE; and (5) resolve adverse effects (36 CFR § 800.4 through 800.13). An APE is defined as the "geographic area or areas within which the undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist" (36 CFR § 800.16). TVA recommends that the APE be considered as the total area within which the proposed grading would take place (49.2 acres), where physical effects could occur as well as areas within a half-mile radius of the project within which the project would be visible where visual effects on historic structures could occur.

TVA contracted with Stantec to carry out an archaeological survey for the project APE, which was conducted in February 2024, and to write a report titled Phase I Cultural Resources Survey for the SFRIS, Greene County, Tennessee. TVA determined that the survey and the report are consistent with the *Secretary of Interior's Standards and Guidelines for Identification* (NPS 1983).

As noted in Section 4.2, TVA, through consultation with the SHPO, has determined that the APE is restricted to the Project Area. Given that there are no known historic structures within the Project Area and that the Proposed Action under the Action Alternative does not involve the construction of aboveground resources, no historic architectural resources would be impacted by the Proposed Action under the Action Alternative, directly or visually. As such, no additional Phase I historic structures surveys were required. We conclude that no effects to historic sites or structures would occur with the Proposed Action under the Action Alternative.

Stantec's background research did not identify any previously known archaeological sites within the APE. Stantec performed systematic shovel testing at 30-meter intervals spaced on transects 30 meters apart. There were 232 potential shovel test sites; 191 were excavated and negative for cultural material. Forty-one shovel test sites could not be excavated due to extreme slope or other disturbances including utilities, inundation, and prior structure foundations. The Phase I archaeological survey completed of the APE did not identify any archaeological sites. Stantec recommended no further archaeological work within the APE. TVA received concurrence from the

Tennessee Historical Commission (THC) in correspondence dated March 25, 2024, with the report's findings (Attachment 3). TVA received no objections to the proposed undertaking or report findings from the affiliated federally recognized Tribal Nations.

Implementation of the Action Alternative would not result in any impacts on archaeological resources because none are present within the APE. Under the No Action Alternative, if the GCP were able to secure funding for the proposed TVA-funded actions described in this EA from outside sources, similar site activities would occur, also resulting in no impacts on archaeological resources as described above for the Action Alternative. If the GCP were not able to secure funding for the actions described in this EA, disturbance associated with the Proposed Action would not occur and there would be no impacts on archaeological resources.

4.2.10 Visual Resources

The Project Area is 49.2 acres consisting mainly of agricultural land with some forested areas. The Project Area is bordered by Snapps Ferry Road to the north and Gass Road to the east. There is industrial/commercial development to the north, east, and west, and forested area and industrial/commercial developments to the south. The visual landscape setting adjacent to the Project Area consists of urban, mostly flat areas with primarily industrial/commercial development adjacent to the Project Area. Some forest and residential areas are also located south of the Project Area.

There are sparse trees and little visual screening between Snapps Ferry Road, Gass Road, and the Project Area. Apartment buildings located about 700 feet south of the Project Area are screened by a moderately extensive forested area.

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 rough grading. Drivers along Snapps Ferry Road and Gass Road would have direct views of the Project Area; however, there are other industrial/commercial areas along the roadway immediately adjacent to the Project Area, and any changes to the views would be similar to other areas along the road. The land along the two roads is dominated by industrial areas. While motorists using the roads may notice a change in the viewshed, this change would be minor given the brief period that drivers would be in the area. The residential apartments' view during or after the Action Alternative would not change given the intervening forested buffer. Construction activities may be visible to The Sanctuary Church, located 275 feet south of the Project Area, and to visitors to Dogwood Park, especially those in the northern part of the Park. Implementation of the Action Alternative would result in a minor decrease in visual quality for residents in the viewshed.

Under the No Action Alternative, if the GCP were able to secure funding for the proposed TVA-funded actions described in this EA from outside sources, the proposed work would occur, resulting in similar direct and indirect visual quality impacts as described above for the Action Alternative. If the GCP were not able to secure funding for the actions described in this EA, the proposed work would not occur, and existing site conditions would likely be maintained resulting in no visual quality impacts.

4.2.11 Noise

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

Noise impacts associated with construction activities under the Action Alternative would be primarily from heavy equipment and blasting to remove near-surface rock. Construction activities would involve operation of an excavator, bulldozer, dump truck, or similar vehicles, blasting charges, 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 14 months, during which construction-related noise may be generated. The duration and volume of blasting activities are unknown at this time and would be dependent upon conditions encountered during construction. In addition, construction-related sound levels experienced by a noise sensitive receptor in the vicinity of construction activity would be a function of distance, other noise sources, and the presence and extent of vegetation, structures, and intervening topography between the noise source and receptor.

Primary sensitive noise receptors in the area include the businesses directly north adjacent to the Project Area (Sopakco Distribution, Imerys Fused Minerals Greeneville Inc., Coile Substation, Landar Logistics), businesses directly east adjacent (BoomCo Equipment Rental, TEG Lease – Portable Storage), Dogwood Park located southeast of the Project Area, as well as The Sanctuary Church, Greeneville Terrace Apartments, Greene County Election Commission, Greene County Skills, and local grocery Sav-Mor Foods located south and southwest of the Project Area. The noise would be localized and temporary, and no receptor would be exposed to significant noise levels for an extended period of time. Further, construction activities including blasting would be conducted during daylight hours, when ambient noise levels are often higher, and most individuals are less sensitive to noise. Industrial and commercial facilities adjacent to busy roads and highways are accustomed to noise. The Sanctuary Church, located 275 feet south of the Project Area, could be subjected to construction noise. The Greeneville Terrace Apartments located about 700 feet south of the Project Area would be screened from noise by a moderately extensive forested area, thereby reducing potential noise impacts. Visitors to Dogwood Park, especially those in the northern part of the park, may be subjected to construction noise during certain periods. Overall, noise-related impacts resulting from implementation of the Action Alternative are anticipated to be temporary and minor.

If the GCP were able to secure funding for the proposed TVA-funded actions described in this EA from outside sources, there would be impacts to noise receptors similar to those described above for the Action Alternative. If the GCP were not able to secure funding for the actions described in this EA, the proposed disturbances would not occur and existing site conditions would likely be unchanged, resulting in no impacts to noise receptors.

4.2.12 Socioeconomics and Environmental Justice

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 a disproportionate and adverse impact on minority and low-income populations.

This analysis focuses on the state, county, and locality within which the Action Alternative would occur. Publicly available statistics generated by the United States Census Bureau and the United States Bureau of Labor Statistics were used to characterize socioeconomic conditions in the host state (Tennessee), county (Greene), and locality (City of Greeneville, Tennessee) (Table 4-3). Details of the Action Alternative were then used to evaluate likely effects on existing socioeconomic resources. The demographics and income of the host county and locality were considered, relative to the demographics and wealth levels at the state level, to identify the potential for a disproportionate and adverse impact on minority and low-income populations, which is commonly referred to as an evaluation of Environmental Justice.

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

	Tennessee	Greene County	City of Greeneville, Tennessee
Population [1]			
July 2022 Population	7,048,976	71,405	15,614
April 2020 Population	6,910,840	70,152	15,479
Population, Percent Change	2.0%	1.8%	0.8%
Population per Square Mile	167.6	112.8	910.7
Demographics [1]			
White Alone, not Hispanic or Latino	72.9%	92.0%	85.9%
Black or African American Alone	16.7%	2.4%	2.9%
American Indian and Alaska Native Alone	0.5%	0.4%	0.7%
Asian Alone	2.1%	0.4%	0.6%
Native Hawaiian and Other Pacific Islander Alone	0.1%	0.1%	0.2%
Two or More Races	2.2%	1.6%	6.5%
Hispanic or Latino (of any race)	6.4%	3.5%	5.0%
Income [1]			
Median Household Income	$64,035	$51,975	$46,473
Per Capita Income	$36,040	$28,237	$28,314
Percent with Income Below the Poverty Level	13.3%	17.1%	17.0%
Employment (Not Seasonally Adjusted): April 2022 [2]			
Labor Force	3,392,133	28,385	N/A
Employed	3,289,618	27,280	N/A
Unemployed	102,515	1,105	N/A
Unemployment Rate (%)	3.0%	3.9%	N/A

N/A = Not available
[1] Source: United States Census Bureau (2024)
[2] Source: United States Bureau of Labor Statistics (2024)

The evaluation of Environmental Justice determined the following:

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

There are several residential subdivisions within 0.5 mile of the Project Area. EPA's EJScreen Tool identified the following demographic characteristics for this area. Relative to the state, these neighborhoods in aggregate have a lower percentile population of color, a higher level of low-income population, a lower rate of linguistic isolation, and a higher level of population with less than high school education.

As described in Section 1.0 (Proposed Action and Need), the Action Alternative would include tree clearing, rough grading of a 350,000 SF dirt building pad, construction of a gravel marketing road, and three detention basins. Erosion prevention, sediment control, and stabilization measures would be implemented after grading is complete.

This effort is expected to take place over a 14-month period and would require a small workforce, likely drawn from a local contractor. Implementation of the Action Alternative is not anticipated to materially impact the local economy or the local workforce. In addition, no negative socioeconomic impacts are anticipated from the Proposed Action; therefore, no disproportionate negative impacts are anticipated for minority or economically-disadvantaged 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 a disproportionate and adverse impact 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 49.2-acre Project Area.

Under the No Action Alternative, if GCP was able to secure funding for the proposed TVA-funded actions described in this EA from outside sources, similar activities would occur resulting in socioeconomic impacts similar to those described in the preceding paragraphs. If GCP was not able to secure funding for the actions described in this EA, economic activity and socioeconomic changes would not occur.

4.2.13 Transportation

The Project Area would be accessed during construction activities from Gass Drive. The site entrances would be located on the northeastern side of the Project Area. Gass Drive provides access to Snapps Ferry Road to the north, Emory Road, Fairground Circuit to the southeast of the Project Area, and transitions into Jeff Wood Memorial Drive, which terminates at N Rufe Taylor Road southeast of the Project Area.

Gass Drive is a local road that provides access to multiple industrial properties and one municipal development east and south of the Project Area. Gass Drive is paved along its length, is sufficiently wide for a single lane of traffic in each direction, with a dedicated turning lane. Based on a preliminary review of Google Street View images (recorded November 2023), the road is in good condition, curbed with storm drains and sidewalks. General road conditions were considered acceptable based on observations during Stantec's field surveys. Gass Drive is defined as a Major Collector by the Functional Classification System for Greeneville (Mosheim and Tusculum) (Tennessee Department of Transportation [TDOT] 2018). The site entrance location and configuration should consider safe sight distances and other safety concerns for the traffic that would enter Gass 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 condition with other precautions, such as a flagger or traffic control to be considered if required. Gass Drive terminates to the north at Snapps Ferry Road and transitions into Jeff Wood Memorial Drive, which terminates at N Rufe Taylor Road to the southeast.

Emory Road is a local road that provides access to multiple industrial and commercial properties. Emory Road is paved along its length, is sufficiently wide for a single lane of traffic in each direction. Based on a preliminary review of Google Street View images (recorded July 2023), the road is in good condition, curbed with storm drains. General road conditions were considered acceptable based on observations during Stantec's field surveys. Fairground Circuit Road provides access to multiple commercial and residential properties. Based on a review of Google Street View images (recorded March 2019) the road is in good condition, has narrow vegetated verges, and is sufficiently wide for two lanes of traffic in each direction. General road conditions were considered acceptable based on observations during Stantec's field surveys. Fairground Circuit Road is defined as a Major Collector and Emory Road is not defined by the Functional Classification System for Greeneville (Mosheim and Tusculum) (TDOT 2018). Emory Road and Fairground Circuit Road terminate to the south at U.S. Numbered Highway 11/State Highway 34 (Hwy. 34).

Snapps Ferry Road provides access to multiple commercial and residential properties to the north and south of the Project Area. Based on a review of Google Street View images (recorded November 2023 and March 2019) the road is in good condition with a curbed and vegetated median. General road conditions were considered acceptable based on observations during Stantec's field surveys. Snapps Ferry Road has wide vegetated verges north bound, narrow verges southbound, and is sufficiently wide for two lanes of traffic in each direction. Snapps Ferry Road is defined as a Minor Arterial by the Functional Classification System for Greeneville

(Mosheim and Tusculum) (TDOT 2018). Normal care would be taken by workers entering Snapps Ferry Road with regards to traffic safety. Snapps Ferry Road provides access to Hwy. 34 to the south of the Project Area.

Hwy. 34 provides access to multiple commercial and residential properties to the east and west. Based on a review of Google Street View images (recorded November 2023) the road is in good condition, has narrow paved verges, is sufficiently wide for two lanes of traffic in each direction, and provides a dedicated turning lane for access to roads to the north and south. General road conditions were considered acceptable based on observations during Stantec's field surveys. Hwy. 34 is defined as a Principal Arterial and part of the National Highway System by the Functional Classification System for Greeneville (Mosheim and Tusculum) (TDOT 2018). Normal care would be taken by workers entering Hwy. 34 with regards to traffic safety.

Based on a review of TDOT historical traffic data (TDOT 2024), the nearest traffic count stations are located on Grass Drive and Snapps Ferry Road. The 2023 annual average daily traffic count (AADT) for the relevant stations is presented in Table 4-4 below.

Table 4-4 Tennessee Department of Transportation Traffic Count Data for the Project Area

Route Description	Location ID	Distance from Project Area (Miles)	Year	AADT
Gass Drive	30000209	0.5	2023	2,260
Snapps Ferry Road	30000133	0.7	2023	6,142
Highway 34	30000100	1.7	2023	28,626

Source: Tennessee Department of Transportation (Annual Average Daily Traffic (AADT) (tn.gov)), extracted 3/13/2024.

Under the Action Alternative, the anticipated traffic generated by the Proposed Action would be minor compared to the existing AADT road volumes. It is anticipated that existing traffic volumes for these roads would be minor as they provide access to multiple other sites. Because of the anticipated limited volume of workers on the site required for tree clearing activities, grading, and the short timeframe of the proposed work, direct or indirect impacts to local traffic are anticipated to be temporary and minor.

Under the No Action Alternative, if the GCP were able to secure funding for the proposed TVA-funded actions described in this EA from outside sources, the grading and construction activities would also result in temporary and negligible impact on overall traffic volumes and level of service. In the event the project is postponed, any effects would be delayed for the duration of the postponement. If GCP were not able to secure funding for the actions described in this EA, there would be no impact to overall traffic volumes and level of service.

5.0 PERMITS, LICENSES, AND APPROVALS

The Action Alternative would result in greater than 1 acre of earth disturbing activities; therefore, it would be necessary for the GCP, or its contractors, to obtain local, state, or federal permits, licenses, and approvals necessary for the project for coverage under the applicable NPDES General Permit for Discharges Associated with Construction Activity (TNR100000). Coverage would require submittal of a Notice of Intent (NOI) and development of a site-specific SWPPP.

6.0 BEST MANAGEMENT PRACTICES AND MITIGATION MEASURES

To minimize or reduce the environmental effects of site activities associated with the Action Alternative, the GCP, or its contractors, would ensure all grading activities conducted are 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. Earthen berms or other effective means would be installed to protect nearby stream channels from direct surface runoff. Servicing of equipment and vehicles is expected to be done with care to avoid leakage, spillage, and subsequent surface or groundwater contamination. Oil waste, filters, and other litter would be collected and disposed of properly.

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

7.0 LIST OF PREPARERS

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

Table 7-1. Environmental Assessment Project Team

Name/Education	Experience	Project Role
TVA		
Brittany Kunkle *B.S. Environmental and Soil Science*	5 years in Project Management, Managing and Performing NEPA Analyses	Economic Development Grant Project NEPA Compliance Manager
David Nestor M.S. *Botany* B.S. *Aquaculture, Fisheries, and Wildlife Biology*	21 years in Floristic Surveys, Plant Ecology, and Invasive Plant Species and 19 years in ESA and NEPA compliance	Threatened and Endangered Plants, Plant Ecology, Invasive Plant Species
Britta Lees *M.S. Botany* *B.S. Biology*	25 years in water/wetland assessment and compliance	Surface Water
Derek Reaux *Ph.D. Anthropology* *M.A. Anthropology* *B.A. Anthropology*	12 years of experience in archaeological research, cultural resource management, and Section 106 compliance.	Cultural resources, NHPA Section 106 compliance
Matt Reed *M.S. Wildlife and Fisheries Science; QHP*	13 years working with threatened and endangered aquatic species in the Southeastern United States; 7 years in ESA, NEPA, and CWA compliance and stream assessments	Aquatic Ecology, Aquatic T&E Species
Carrie Williamson, P.E., CFM *B.S. and M.S. Civil Engineering*	11 years in Floodplain and Flood Risk; 11 years in Compliance Monitoring; 3 years in River Forecasting	Floodplains QA/QC

Name/Education	Experience	Project Role
Rob Stinson *B.S. Wildlife and Fisheries Science, University of Tennessee*	11 years in biological field studies, 3 years in biological compliance, NEPA compliance, and ESA consultation for T&E species.	Terrestrial Zoology, Threatened and Endangered Species
Sara McLaughlin-Johnson *B.S. Wildlife and Fisheries Science, University of Tennessee*	18 years in biological field studies. 11 years in biological compliance, NEPA compliance, and ESA consultation for T&E species.	Terrestrial Zoology, Threatened and Endangered Species
Fallon Parker Hutcheon *M.S. Environmental Studies* *B.S. Biology*	5 years in wetland delineation, wetland impact analysis, and NEPA/CWA compliance	Wetlands
Stantec		
Douglas Mooneyhan *M.S. Biology, Tennessee Technological University* *B.S. Wildlife and Fisheries Science, University of Tennessee*	31 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.	EA Program Manager QA/QC
Jaclyn Martin *M.S. Environmental Sciences, Swedish University of Agricultural Sciences, Uppsala, Sweden* *M.S. Environmental Sciences, University of Natural Resources and Life Sciences, Vienna, Austria* *B.S. Biology, Winthrop University, South Carolina*	8 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.	Air Quality and Climate Change, Visual
Duane Simpson *M.A. Anthropology, University of Arkansas* *B.A. Anthropology, Ohio University*	27 years in archaeological consulting including management of projects across the southeast and Mid-Atlantic regions. Principal Investigator for over 15 years.	Archaeology
Rachel Kennedy *M.H.P. Historic Preservation, University of Kentucky* *B.A. Political Science and History, University of Kentucky*	21 years of experience working in non-profit, governmental, and private sectors with all aspects of preservation planning, from interpretation of the Secretary of the Interior's Standards for the Treatment of Historic Properties to cultural landscape examinations to identifying, evaluating, and listing properties to the National Register of Historic Places. Meets the Secretary of the Interior's Professional Qualifications Standards for History and Architectural History, per 36 Code of Federal Regulations (CFR), Part 61.	Historic Structures and Sites

Name/Education	Experience	Project Role
Josh Yates, P.G. *M.S. Geology, University of South Florida* *B.S. Natural Resources Management and Engineering, University of Connecticut*	16 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 (MFL) impact analysis, monitoring well network design, aquifer performance tests, and GIS analysis.	Groundwater
Ellen Mullins *M.S. Forestry, Mississippi State University, Starkville, Mississippi, 2015* *B.S. Forestry, University of Kentucky, Lexington, Kentucky, 2011*	Ms. Ellen Mullins is a project manager with 14 years of experience in environmental consulting and government. Ellen currently provides support and leadership for environmental planning and the NEPA permitting process. She prepares application packages and manages agency coordination efforts related to Threatened and Endangered Species, Clean Water Act (CWA) Section 404/401, and Section 106 Cultural Resources. She serves as a technical expert for natural resource projects for documents that are used in regulatory submissions.	Prime Farmland, Air Quality and Climate Change, Noise
Chris Knable, TN-QHP *B.S. Natural Resources and Environmental Science, University of Kentucky*	Mr. Knabel is a biologist with 6 years of experience conducting wetland delineations, hydrologic determinations, threatened and endangered species surveys, and various other ecological and biological field surveys. He has personally conducted numerous Hydrologic Determinations throughout Tennessee and conducted thousands of acres of wetland delineations throughout Tennessee and Kentucky. Additionally, he has extensive knowledge of USACE Section 404 permitting and Section 7 protected species consultation.	Aquatics, Wetlands

Name/Education	Experience	Project Role
Shane Kelley, TN-QHP *B.S. Natural Resources & Environmental Science, University of Kentucky*	Mr. Kelley is a biologist with 10 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. He is a Qualified Hydrologic Professional and has personally conducted numerous Hydrological Determinations throughout Tennessee and North Carolina and completed thousands of acres of wetland delineations throughout Kentucky, Tennessee, and Mississippi. Mr. Kelley has conducted various endangered plant species surveys throughout Kentucky, Tennessee, and North Carolina including Short's goldenrod (*Solidago shortii*), Virginia spiraea (*Spiraea virginiana*), and small whorled pogonia (*Isotria medeoloidies*). Additionally, he is a federally permitted bat biologist for all listed bat species throughout the TVA service area.	Aquatics, Wetlands
Iris Eschen *Heald Business College, San Francisco, CA*	As Document Production Manager, Ms. Eschen has more than 35 years of experience coordinating the production of large, complex documents for engineering and environmental consulting firms in California. She has overseen the technical editing, quality assurance, quality check, and production, submission, and distribution of countless reports and written products, including environmental impact statements/reports (EISs/EIRs), license applications, pre-application documents (PADs), wetland delineations, initial studies, mitigated negative declarations (MNDs), biological opinions (BOs), environmental assessments (EAs), and habitat conservation plans (HCPs).	Editor, Document Production
Brenton Jenkins, P.E. *B.S. Environmental Engineering, Louisiana State University*	9 years in environmental consulting for various private and public sector clients, including engineering design, permitting, and assessments, primarily in the oil and gas sector.	Transportation

8.0 AGENCIES AND OTHERS CONSULTED

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

- Natural Resources Conservation Service
- Tennessee Historical Commission / State Historic Preservation Office

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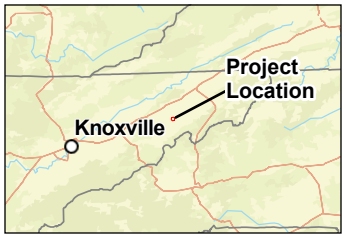
Attachment 1

Project Figures



Project Boundary (49.15 ac)

N

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(At original document size of 8.5x11)
1:5,000

Notes

1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet

2. Data Sources: TVA

3. Background: Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS, NC CGIA, Maxar, Esri Community Maps Contributors, State of North Carolina DOT, Tennessee STS GIS, © OpenStreetMap,

Stantec

Project Location
Greene Co., TN

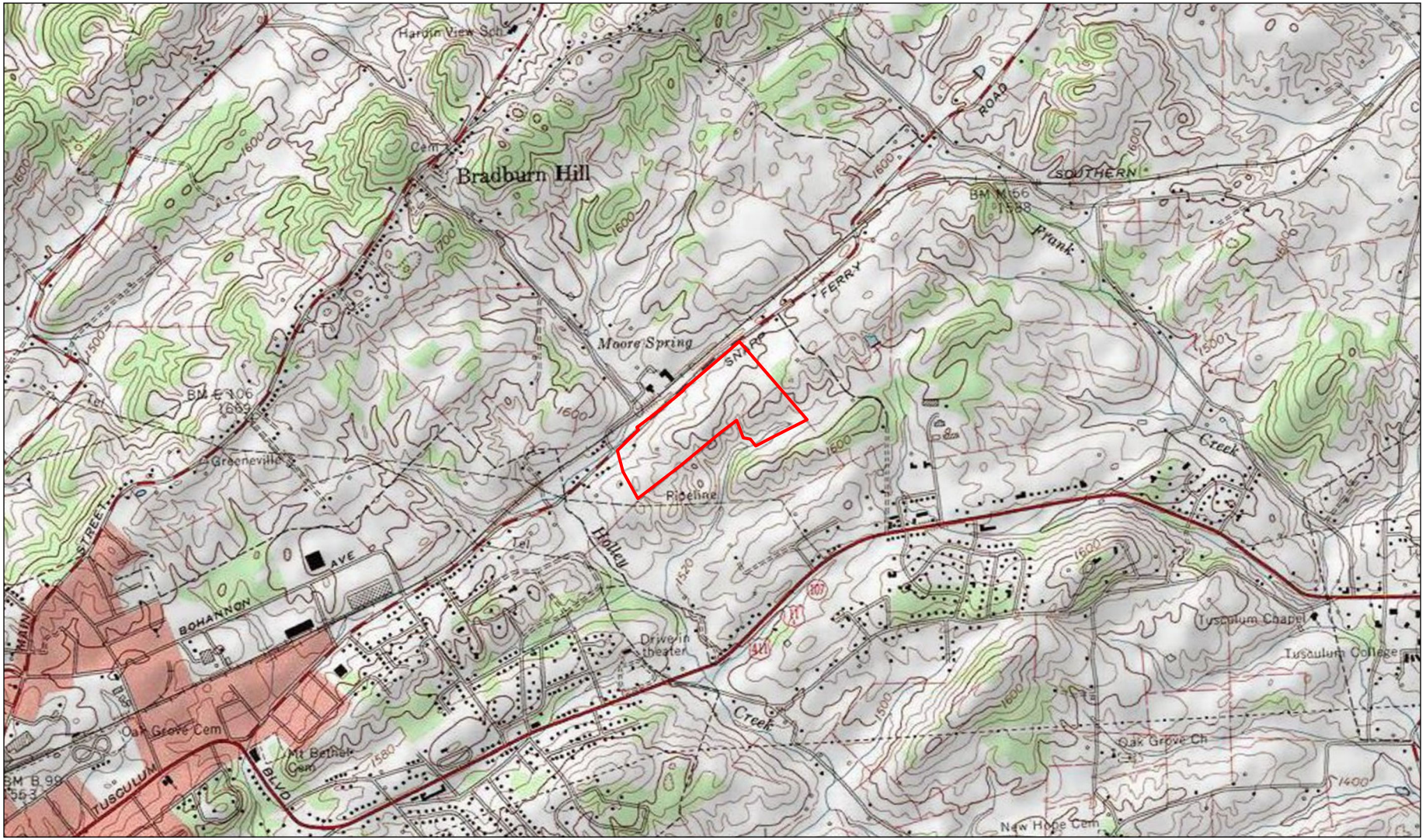
Prepared by pmarsey on 1/29/2024

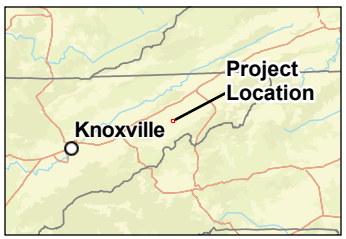
Client/Project
Tennessee Valley Authority
TVA: FY24 Investment Prep Projects
Environmental Assessment Report

172608384

Figure No.
1A

Title
Greene County Project Aerial





Project Boundary (49.15 ac)

N

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

Notes

1. Coordinate System: NAD 1983 StatePlane Tennessee FIPS 4100 Feet
2. Data Sources: TVA
3. Background: Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS, Copyright:© 2013 National Geographic Society, i-cubed

Stantec

Project Location
Greene Co., TN

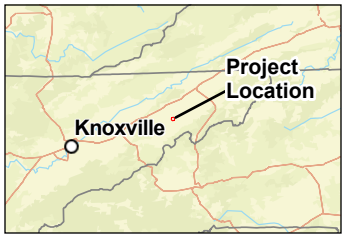
Prepared by pmarsey on 2/20/2024

Client/Project
Tennessee Valley Authority
TVA: FY24 Investment Prep Projects
Environmental Assessment Report

172608384

Figure No.
1B

Title
Greene County
USGS Quadrangle



Project Boundary (49.15 ac)
FEMA Floodplain (0.44 ac)

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(At original document size of 8.5x11)
1:5,000

Notes
1. Coordinate System: NAD 1983 StatePlane Tennessee FIPS 4100 Feet
2. Data Sources: TVA, FEMA
3. Background: Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS, NC CGIA, Maxar

Stantec

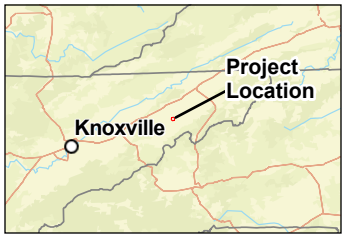
Project Location
Greene Co., TN

Prepared by pmarsey on 3/20/2024

Client/Project 172608384
Tennessee Valley Authority
TVA: FY24 Investment Prep Projects
Environmental Assessment Report

Figure No.
1C

Title
Greene County
FEMA Floodplain



Project Boundary (49.15 ac)

NHDFlowline

NWI Wetlands

Freshwater Pond

N

0 200 400 Feet

(At original document size of 8.5x11)
1:4,989

Notes

1. Coordinate System: NAD 1983 StatePlane Tennessee FIPS 4100 Feet

2. Data Sources: TVA, USGS; USFWS

3. Background: Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS, NC CGIA, Maxar, Esri Community Maps Contributors, State of North Carolina DOT, Tennessee STS GIS, © OpenStreetMap,

Stantec

Project Location
Greene Co., TN

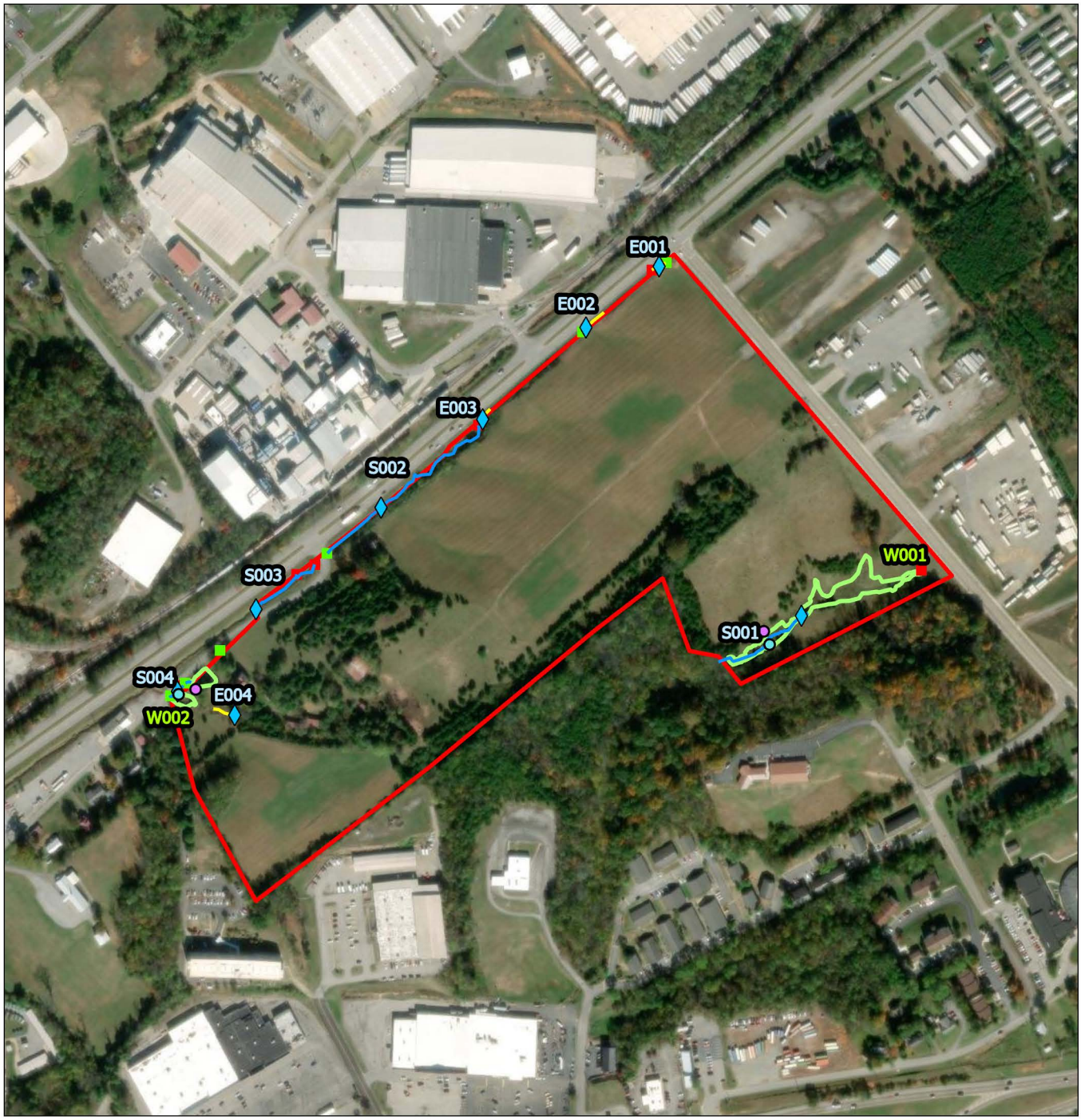
Prepared by pmarsey on 2/20/2024

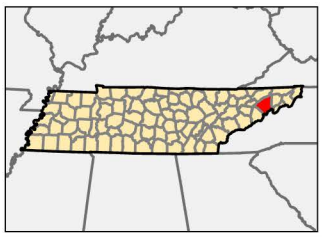
Client/Project
Tennessee Valley Authority
TVA: FY24 Investment Prep Projects
Environmental Assessment Report

172608384

Figure No.
1D

Title
Greene County
USFWS NWI Wetland and Water Inventory





Notes
1. Coordinate System: NAD 1983 StatePlane Tennessee FIPS 4100 Feet
2. Data Sources: TVA, Stantec
3. Background: Esri Aerial Imagery Basemap

Legend
- Project Boundary
- Stream Points
- Streams
- Wet Weather Conveyances
- Delineated Wetlands

Soil Data Points
- Upland
- Wetland

Culverts
- Inlet
- Outlet

0 250 500 Feet
(At original document size of 8.5x11)
1 inch = 500 feet

N

Stantec

Project Location
Greene County,
Tennessee

Prepared by MNA on 2024-02-28
TR by CK on 2024-02-29
IR by SPK on 2024-02-29

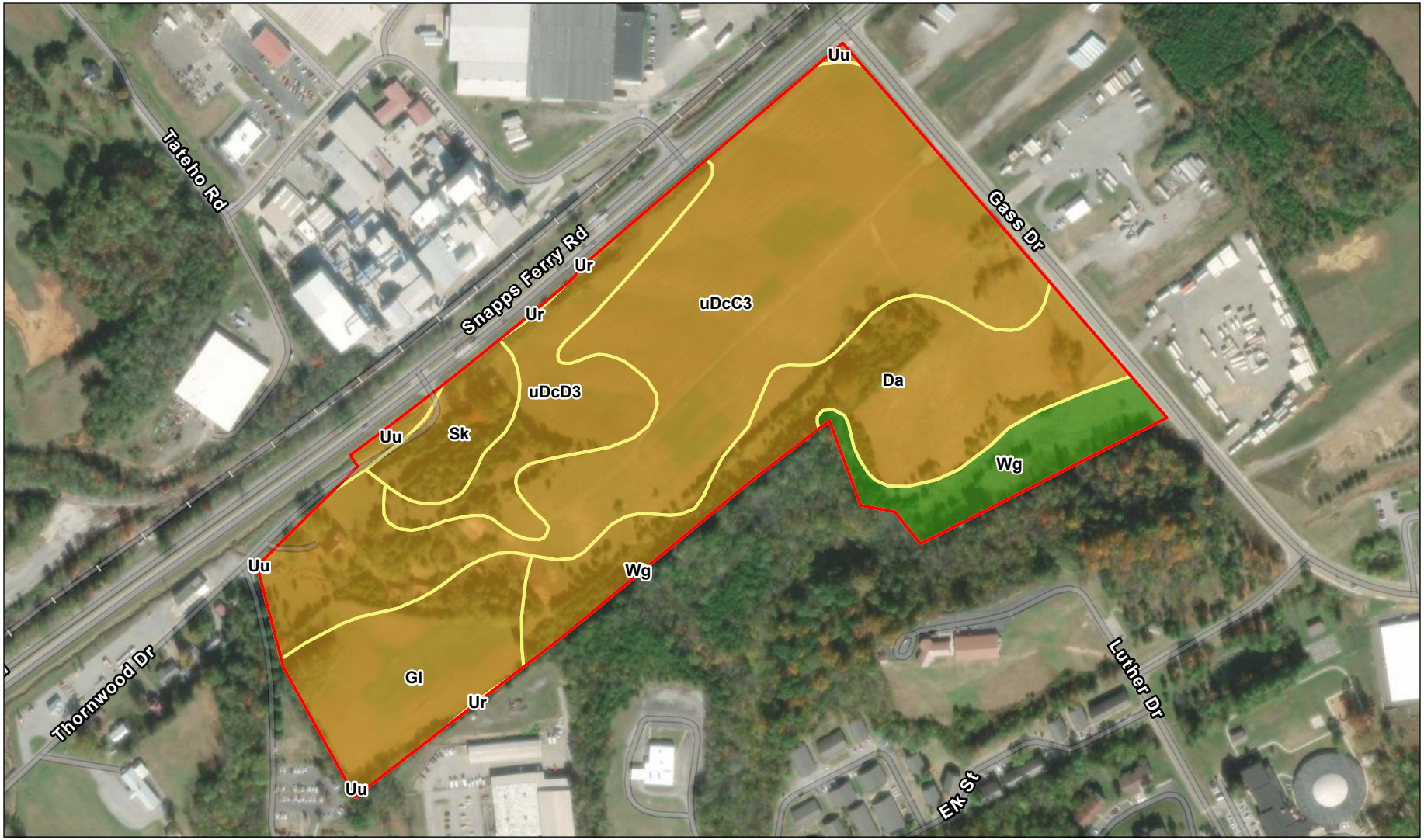
Client/Project
Tennessee Valley Authority
TVA FY24 InvestPrep Projects
Wetland and Aquatics Report

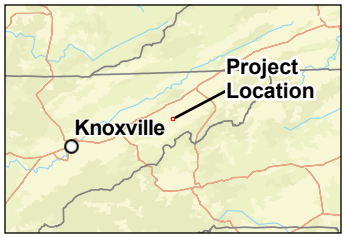
172608384

Figure No.
1E

Title
Wetland and Waterbody Delineation Map

C:\Users\mangel\Documents\ArcGIS\Projects_2024\TVA_InvestPrep_FY24_Projects\7.Greene_County_TN_Shapefiles\GreeneCo_TN_Maps\GreeneCo_TN_Maps.aprx Revised: 2024-02-28 By: mangel





- Project Boundary (49.15 ac)
- Da - Dandridge shaly silt loam, eroded hilly phase (9.78 ac)
- Gl - Groseclose silty clay loam, eroded rolling phase (5.69 ac)
- Sk - Stony hilly land, Dunmore soil material (Barfield-Rock outcrop) (2.18 ac)
- uDcC3 - Dewey-Collegedale complex, 6 to 15 percent slopes, severely eroded (22.70 ac)
- uDcD3 - Dewey-Collegedale complex, 15 to 25 percent slopes, severely eroded (5.06 ac)
- Ur - Urban land (0.04 ac)
- Uu - Urban land-Udorthents complex (0.45 ac)
- Wg - Whitesburg silt loam (3.25 ac)
- All areas are prime farmland (3.25 ac)
- Not prime farmland (45.90 ac)

N

0 200 400 Feet

(At original document size of 8.5x11)
1:5,000

Notes

1. Coordinate System: NAD 1983 StatePlane Tennessee FIPS 4100 Feet

2. Data Sources: TVA, USDA-NRCS

3. Background: Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS, NC CGIA, Maxar, Esri Community Maps Contributors, State of North Carolina DOT, Tennessee STS GIS, © OpenStreetMap,

Stantec

Project Location
Greene Co., TN

Prepared by pmarsey on 2/20/2024

Client/Project
Tennessee Valley Authority
TVA: FY24 Investment Prep Projects
Environmental Assessment Report

172608384

Figure No.
1F

Title
Greene County
NRCS Soils

Attachment 2

TVA Bat Strategy Project Screening Form

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

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

Project Name: FY24 InvestPrep - Greene County, TN **Date:** 1/18/2024

Contact(s): Brittany Kunkle **CEC#:** 43545 **Project ID:** 2024-5

Project Location (City, County, State): Greeneville, Greene County, TN

Project Description:

Utilize TVA InvestPrep funds matched with Non-TVA funds to assist with costs associated with developing a 350,000 SF dirt building pad and a gravel marketing road on the Snapps Ferry Road Industrial Site, including clearing, grubbing, grading, and stormwater management.

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
- ☐ 2 Protect Cultural Resources on TVA-Retained Land
- ☐ 3 Manage Land Use and Disposal of TVA-Retained Land
- ☐ 4 Manage Permitting under Section 26a of the TVA Act
- ☐ 5 Operate, Maintain, Retire, Expand, Construct Power Plants
- ☐ 6 Maintain Existing Electric Transmission Assets
- ☐ 7 Convey Property associated with Electric Transmission
- ☐ 8 Expand or Construct New Electric Transmission Assets
- ■ 9 Promote Economic Development
- ☐ 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 13)**

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

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

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

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

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

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

e) If **tree removal (activity 33 or 34)**, estimated amount: [4.11] (•)**ac** ( )**trees** ( )**N/A**

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

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

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

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

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

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

Info below completed by:

[ ] **Heritage Reviewer**	(name)		Date	
[ ] **OSAR Reviewer**	(name)		Date	
[■] **Terrestrial Zoologist**	(name)	Rob Stinson	Date	Oct 19, 2023

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

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

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

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

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

Bat Habitat Inspection Sheet completed? (•) **NO** ( ) **YES**

Amount of SUITABLE habitat to be removed/burned (may differ from STEP 4e): [0.45] (•)**ac** ( )**trees)*** ( )**N/A**

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

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

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

STEP 7) Project will involve:

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

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

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

STEP 10) Project ◉ **WILL** ○ **WILL NOT** require use of Incidental Take in the amount of 0.45 ◉ **acres or** ○ **trees** proposed to be used during the ■ **WINTER** ○ **VOLANT SEASON** ○ **NON-VOLANT SEASON** ○ **N/A**

STEP 11) Available Incidental Take (prior to accounting for this project) as of Dec 29, 2023

TVA Action	Total 20-year	Winter	Volant Season	Non-Volant Season
9 Promote Economic Development	7,402.52	6,732.54	669.98	0

STEP 12) Amount contributed to TVA's Bat Conservation Fund upon activity completion: $ 0 OR ○ **N/A**

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

SECTION 3: REQUIRED CONSERVATION MEASURES

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

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

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

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

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

Manual Override

Name: Rob Stinson

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.
☑	33, 34	**TR4*** - Removal of suitable summer roosting habitat within potential habitat for Indiana bat or northern long-eared bat will be tracked, documented, and included in annual reporting. Project will therefore communicate completion of tree removal to appropriate TVA staff.
☑	16, 17, 18, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 48, 50, 51, 52, 53, 54, 55, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 70, 71, 73, 76, 77, 78, 80, 81, 82, 83, 86, 87, 88, 89, 90	**SSPC2** - Operations involving chemical/fuel storage or resupply and vehicle servicing will be handled outside of riparian zones (streamside management zones) in a manner to prevent these items from reaching a watercourse. Earthen berms or other effective means are installed to protect stream channel from direct surface runoff. Servicing will be done with care to avoid leakage, spillage, and subsequent stream, wetland, or ground water contamination. Oil waste, filters, other litter will be collected and disposed of properly. Equipment servicing and chemical/fuel storage will be limited to locations greater than 300-ft from sinkholes, fissures, or areas draining into known sinkholes, fissures, or other karst features.
☑	17, 18, 21, 22, 24, 25, 26, 30, 31, 33, 34, 35, 36, 40, 46, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 66, 67, 68, 69, 70, 72, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 87, 88, 91, 93, 95, 96	**SSPC5** (**26a, Solar, Economic Development only**) - Section 26a permits and contracts associated with solar projects, economic development projects or land use projects include standards and conditions that include standard BMPs for sediment and contaminants as well as measures to avoid or minimize impacts to sensitive species or other resources consistent with applicable laws and Executive Orders.
☑	16, 26, 36, 37, 38, 39, 48, 50, 52, 59, 60, 62, 66, 67, 69, 72, 75, 77, 78, 79, 86	**L1** - Direct temporary lighting away from suitable habitat during the active season.
☑	16, 26, 36, 37, 38, 39, 48, 50, 52, 59, 60, 62, 66, 67, 69, 72, 75, 77, 78, 79, 86	**L2** - Evaluate the use of outdoor lighting during the active season and seek to minimize light pollution when installing new or replacing existing permanent lights by angling lights downward or via other light minimization measures (e.g., dimming, directed lighting, motion-sensitive lighting).

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

Hide All Unchecked Conservation Measures

- (•) HIDE
- ( ) UNHIDE

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

- ○ HIDE
- ◉ UNHIDE

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

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

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

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

For Use by Terrestrial Zoologist Only

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

☒ For projects that require use of Take and/or contribution to TVA's Bat Conservation Fund, Terrestrial Zoologist acknowledges that Project Lead/Contact has been informed that project will result in use of Incidental Take 0.45 ◉ ac ○ trees and that use of Take will require $ 0 contribution to TVA's Conservation Fund upon completion of activity (amount entered should be $0 if cleared in winter).

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

Attachment 3

Agency Correspondence

United States Department of Agriculture

Ellen Mullins
Stantec
3052 Beaumont Centre Circle
Lexington KY 40513-1703

February 15, 2024

Dear Jennifer,

The Natural Resources Conservation Service (NRCS) in Tennessee has received your Farmland Protection Policy Act (FPPA) request (AD-1006, Farmland Conversion Impact Rating) regarding the Snaps Ferry Road Economic Development Project in Greene County, Tennessee. The intent of the FPPA is to minimize the impact Federal programs have on the unnecessary and irreversible conversion of important farmland to nonagricultural uses.

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

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

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

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

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

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

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

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

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

Questions regarding your inquiry and this response can be directed to the Tennessee State Soil Scientist at (615) 277-2550 or emailed to the FPPA intake box at tnhawc@usda.gov.

Sincerely,

Natural Resources Conservation Service
801 Broadway, 675 U.S. Courthouse
Nashville, Tennessee 37203
Voice (615) 277-2531 Fax (855) 591-1284

Reaux, Derek

From: TN Help <tnhelp@service-now.com>
Sent: Monday, March 25, 2024 1:06 PM
To: Beliles, Emily
Cc: Reaux, Derek; Harle, Michaelyn S
Subject: Snapps Ferry Industrial Site, TVA Tracking Number- CRMS 82480211019 - Project # SHPO0004694

Follow Up Flag: Follow up
Flag Status: Flagged

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

03-25-2024 12:04:49 CDT

Michaelyn Harle
TVA

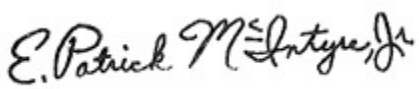
RE: Tennessee Valley Authority (TVA), Snapps Ferry Industrial Site, TVA Tracking Number- CRMS 82480211019, Project#: SHPO0004694, Greeneville, Greene County, TN

Dear Michaelyn Harle:

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

Considering the information provided, we concur with your agency that no historic properties eligible for listing in the National Register of Historic Places will be affected by this undertaking. If project plans are changed or archaeological remains are discovered during project construction, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act. Please provide your Project # when submitting any additional information regarding this undertaking. Questions or comments may be directed to Jennifer Barnett, who drafted this response, at Jennifer.Barnett@tn.gov, +16156874780.

Sincerely,



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

Ref:MSG13079076_6ey5NoEK3cMwRjWCmLe