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ECONOMIC DEVELOPMENT GRANT PROPOSAL FOR THE REEVES SITE

ENVIRONMENTAL ASSESSMENT

Henderson County, Tennessee (Lexington)

Prepared by:

TENNESSEE VALLEY AUTHORITY
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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 City of Lexington Industrial Development Board (Lexington – IDB) to assist with the purchase and development of a portion of the Reeves site in Henderson County, Tennessee. The area of TVA's Proposed Action (herein referred to as the Project Area) encompasses approximately 54 acres of a combination of both forested and open grassy lands located immediately adjacent to and east of Highway 22 North, about four miles south of Interstate 40 (I-40), and about five miles north of the City of Lexington, Tennessee (see Figure 1 below and Attachment 1, Figure 1-A). TVA funds for the approximately 54-acre Project Area would be used to assist with purchase of 11 acres providing site access; tree clearing of approximately 22.17 acres with stumps and trees burned on-site; geotechnical borings; construction of a 24-foot-wide gravel access road connecting Highway 22 to the Reeves site; grading to expand the dirt building pad (no borrow needed); relocation of existing water and sewer lines to better align with the proposed access road; and site stabilization after grading is completed (Attachment 1, Figure 1-B). These activities, herein referred to as the Proposed Action, are further detailed in Section 3.2 below.

The proposed grant to the Lexington – IDB would assist with access, grading, and utilities 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 one mile south and southwest of the Project Area, including French Trucking, Lexington Truck and Trailer Repair, Welch Packaging / Cooper Container, Industrial Process Services, Cornerstone Building Brands, Coca-Cola, Falcon Plastics, and Jones Brothers Asphalt Plant. Target industries include advanced manufacturers, plastics, food processing, automotive suppliers, and logistics and distribution. Pursuant to the National Environmental Policy Act (NEPA) and its implementing regulations 40CFR 1500 – 1508 and TVA's implementing regulations 18 Code of Federal Regulations (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 Lexington – IDB.

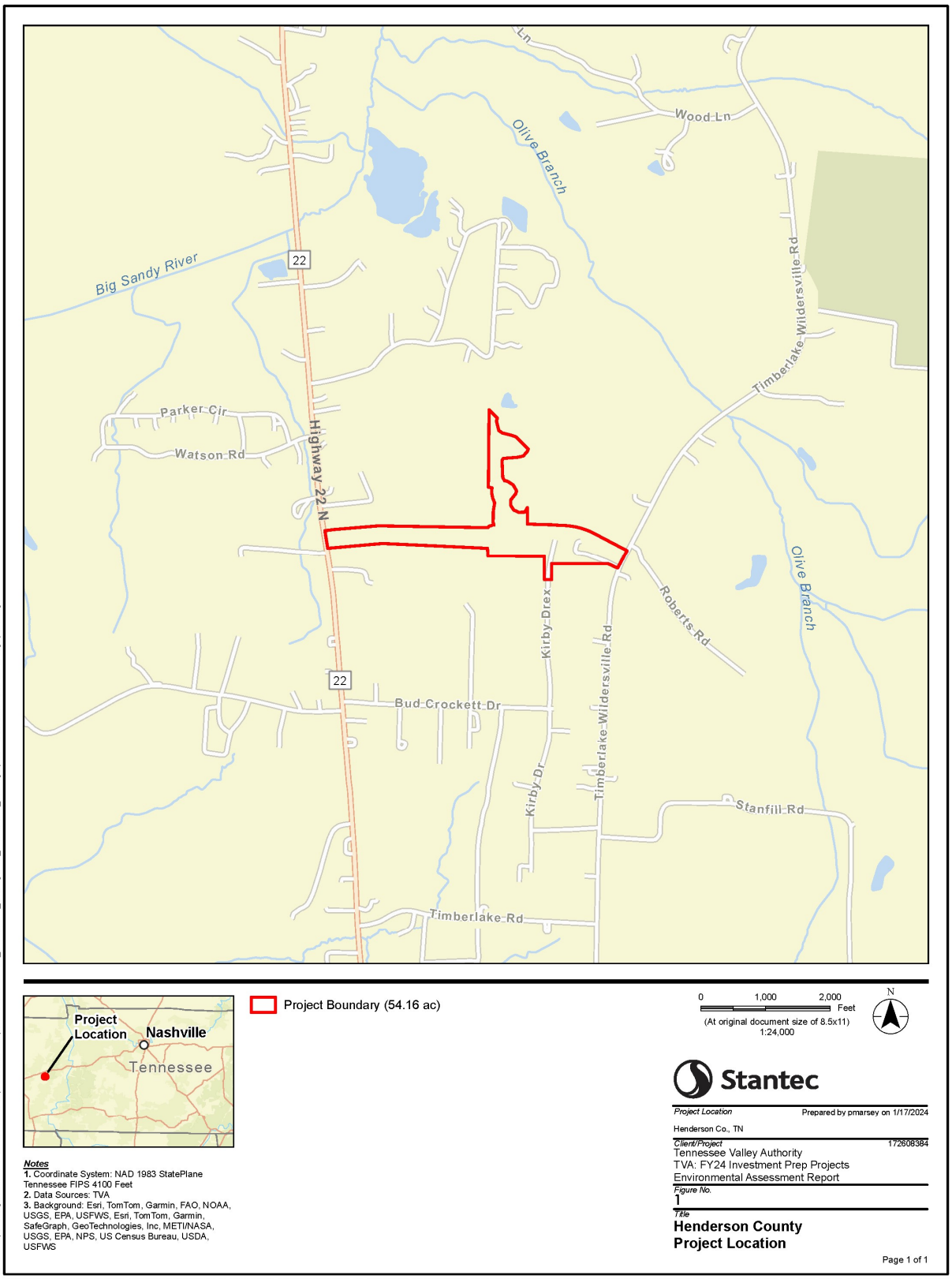

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Figure 1. Project Location Map

2.0 OTHER ENVIRONMENTAL REVIEWS AND DOCUMENTATION

In preparation for site development, multiple prior studies have been performed by the Lexington – IDB at the broader Reeves site. These studies had differing geographic scopes that overlapped to varying degrees with portions of the Project Area. The various studies were performed at different times. For ease of reference in geographic relation to the Project Area, the prior studies described below as having a 48-acre study area included parts of the Project Area, particularly in the east, middle, and northern portions. The studies described below as having a 74-acre study area included parts of the Project Area particularly in the middle and northern portions.

Two Phase I Environmental Site Assessments (Phase I ESA) of the Project Area were performed consistent with the procedures included in ASTM 1527-13 (Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process). The first Phase I ESA was conducted by Earth Science Engineering, LLC (2018) in September 2018 on the 74-acre study area. The Tennessee Department of Environment and Conservation (TDEC)–Division of Remediation issued a letter in November 2018 agreeing with the findings of the 2018 Phase I ESA (TDEC–Division of Remediation 2018). The second Phase I ESA was conducted by Civil and Environmental Consultants, Inc. (2020) in September 2020 on the 48-acre study area. The purpose of the Phase I ESAs was to identify the presence of recognized environmental conditions (REC) or other environmental liabilities within the Project Area. The TDEC–Division of Remediation issued a letter in September 2020 agreeing with the findings of the 2020 Phase I ESA, but also noted that any containers containing oils or fuels should be managed in accordance with all applicable laws and regulations (TDEC–Division of Remediation 2020). Neither Phase I ESA identified RECs or other significant environmental concerns.

A geotechnical report for the broader Reeves site, including a portion of the Project Area, was completed in December 2018 (Construction Materials Laboratory, Inc. 2018). At least two (B-2 and B-3) of the eight soil borings were located in the Project Area. The report concluded that typical industrial and commercial buildings could be supported based on the subsoil profiles.

Four evaluations of wetlands and waterbodies have been performed at the broader Reeves site. The TDEC (2018) issued a letter regarding a hydrologic determination for 74 acres of the broader Reeves site in October 2018. Two ponds, four wet-weather conveyances, and one intermittent stream were identified. The USACE (2020) issued an approved jurisdictional determination for the broader Reeves site in an October 2020 study of approximately 48 acres. One jurisdictional stream was identified. The TDEC (2022) concurred with a 2022 study of approximately 21 acres of the Reeves site. The geographic scope of that study included portions of the Project Area, particularly in a west to east orientation. One stream feature and two wet-weather conveyances were identified in the broader Reeves site. Lastly, Stantec performed an evaluation of aquatic resources and wetlands of the Project Area in January 2024 (Stantec 2024a). The results were two presumed jurisdictional streams and three presumed jurisdictional wetlands, along with several non-jurisdictional features, which are discussed further below.

Three evaluations of cultural resources have been performed at the broader Reeves site. The TDEC–Division of Archaeology (2018) issued a letter in November 2018 approving a cultural resources evaluation for the 74-acre study area. No significant cultural resources were determined to be disturbed. The TDEC–Division of Archaeology (2020) issued a concurrence letter in October 2020 regarding a study of the 48-acre study area. No significant cultural resources were determined to be disturbed. The Tennessee Historical Commission (THC) also

issued a letter in October 2020 for the 54-acre study area indicating that no effects on the National Register listed or eligible historic properties were anticipated (THC 2020). Stantec performed an evaluation of archaeology resources of the Project Area in late January and early February 2024 (Stantec 2024b). One new archaeological site was found within the Area of Potential Effect (APE), but the site was recommended as not eligible for listing in the National Register of Historic Places (NRHP) and no additional survey was recommended.

The TDEC–Division of Natural Areas twice provided information regarding the potential for rare species for the broader Reeves site. The TDEC–Division of Natural Areas issued a letter in October 2018 regarding rare species potentially present at the Reeves site for the 74-acre study area. No rare or protected species were identified (TDEC–Division of Natural Areas 2018). The TDEC–Division of Natural Areas also issued a letter in October 2020 regarding rare species potentially present at the Reeves site for the 48-acre study area. Two state rare species, neither federally listed, were identified (TDEC–Division of Natural Areas 2020).

TVA terrestrial zoologists and botanists performed field surveys of the Project Area in November 2023. Field surveys were conducted to document plant and animal communities, infestations of invasive plants, document habitats present, and to search for possible threatened and endangered species in areas where work would occur.

The TVA issued an EA for providing funds to the Lexington – IBD for tree clearing, grading, and excavation of a stormwater detention pond at the Reeves site in May 2022 (TVA 2022). The TVA concluded that the 2022 Proposed Action would not be a major federal action significantly affecting the environment.

The U.S. Department of Housing and Urban Development (HUD) also prepared an environmental review record checklist / Categorically Excluded Assessment for the Reeves site for infrastructure expansion for a meat processing facility in March 2021 (HUD 2021). The project was approved as categorically excluded on March 25, 2021.

The Phase I ESAs and associated TDEC–Division of Remediation letters, geotechnical report, four aquatic resource/wetlands reports, USACE and TDEC letters, TDEC–Division of Archaeology and THC letters, TDEC–Division of Natural Areas letters, TVA and HUD assessments, TVA staff field surveys, and Stantec's 2024 surveys 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 Lexington – IDB. 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 Lexington – IDB 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 Alterative. In the event the project is postponed, any environmental effects would be delayed for the duration of the postponement. If the project were canceled, no direct environmental effects are anticipated, as environmental conditions on the site would remain essentially unchanged from the current conditions for the foreseeable future.

3.2 The Action Alternative

Under the Action Alternative, TVA would provide InvestPrep funds to the Lexington – IDB for site improvements to the Project Area. TVA funds would be used for purchase of 11 acres providing site access, construction of a two-lane, 24-foot-wide gravel access road with 4-foot-wide shoulders connecting Highway 22 to the Reeves site, tree clearing of approximately 22.17 acres with stumps and trees burned on-site, geotechnical borings for the access road and dirt building pad extension, grading to expand the dirt building pad (no borrow needed) beyond the work that was done in 2021, relocation of existing water and sewer lines to better align with the proposed access road, and site stabilization including seeding and mulching after grading is completed (Attachment 1, Figure 1-B). Activities required for the Action Alternative would occur over approximately 18 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 funds for purchase of the parcel, clearing, geotechnical survey, grading, utilities relocation, stabilization, and/or construction.

The Lexington – IDB, 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. as discussed above) 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 fully 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 54.2-acre Project Area encompasses a portion of the Reeves site in Henderson County, Tennessee, on forested and agricultural uplands immediately east of Highway 22 North, about 4 miles south of I-40, and about 5 miles north of the City of Lexington, Tennessee (Attachment 1, Figure 1-A).

The Project Area is situated within a mixed agricultural, industrial/commercial, and light residential area of Henderson County, Tennessee, and is located in zone M-2 (Heavy Industrial). Site access is from Kirby Drive Extension which enters the Project Area from the south. The land use surrounding the Project Area includes roads, forested areas, agricultural lands, and light residential to the west; industrial and commercial areas, agricultural lands, patchy forest, and scattered residences to the south; agricultural areas and patchy forest to the east, and agricultural areas, patchy forest, and light residential areas to the north. Permanent structures or utilities located within or adjacent to the Project Area include a 12-inch water line, 8-inch sewer line, overhead electric lines including distribution lines and a TVA 161 kV transmission line, and a 6-inch natural gas line.

The Project Area ranges from approximately 540 to 590 feet above mean sea level (Attachment 1, Figure 1-C). In the past, the Project Area has been used for farming with crops, pasture, and some forested patches based on aerial imagery dating to 1981 and as agricultural lands dating back to the 1930s based on archival information (Civil and Environmental Consultants, Inc. 2020).

4.2 Impacts Evaluated

As stated previously, two Phase I ESAs were conducted in the Project Area. Neither Phase I ESA identified any RECs or current or historical chemical, petroleum, or hazardous substance operations or storage areas or locations within the Project Area that would indicate the presence of solid or hazardous wastes (Earth Science Engineering, LLC 2018; Civil and Environmental Consultants, Inc. 2020). Based on the Phase I ESAs, 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. Therefore, the Proposed Action is not expected to result in significant impacts from the creation or disposal of solid and hazardous wastes.

The Federal Emergency Management Agency (FEMA) flood insurance rate maps for Henderson County, Tennessee (Attachment 1, Figure 1-D), (panel numbers 47077C0135D and 47077C0155D, effective 04/16/2008) indicate the Project Area would not be located within an identified (mapped) 100-year floodplain. The State of Tennessee has floodplain regulations for unmapped perennial streams. Based on information in the January 2024 aquatic resources survey, one perennial stream was identified in the south-central part of the Project Area (Stantec 2024a). Therefore, the Proposed Action would be consistent with Executive Order (EO) 11988 and would have no impact on floodplains or their natural and beneficial values.

At least three prior surveys of waterbodies and wetlands have been conducted at the broader Reeves site since 2018 as described in Section 2.0. However, these surveys are either out of date or did not fully encompass the Project Area or both. Additionally, site conditions have

changed since the 2020 and 2024 site surveys. These changes include select tree clearing and addition of a gravel access road and cul-de-sac in 2020 and new utilities and clearing and grading for a dirt building pad and stormwater detention pond in 2021. Stantec conducted a survey for aquatic resources and wetlands in January 2024 and identified three wetlands, two streams, ten wet-weather conveyances, and one pond (Stantec 2024a; Attachment 1, Figure 1-E). Therefore, the Proposed Action could result in impacts to surface waters and wetlands. Because the Proposed Action would affect surface waters, there could be effects on aquatic zoology resources.

The Proposed Action would result in clearing of forested land and development of an access road and expansion of the dirt building pad designed for industrial use. These activities would have potential impacts on botanical resources, and terrestrial wildlife and their habitats. The TVA Bat Strategy Project Screening Form is provided in Attachment 2.

The Proposed Action would result in conversion of 18.64 acres of Prime Farmland (Attachment 1; Figure 1-F). However, coordination with the Natural Resources Conservation Service (NRCS) indicated that because the Project Area was zoned as M-2 Heavy Industrial, it is exempt from the Farmland Policy Protection Act and there would be no impacts to Prime Farmland (Attachment 3). Similarly, the Proposed Action would not cause alteration or change in land use since the Project Area is zoned as M-2 Heavy Industrial, resulting in no impacts on designated land use.

TVA, through consultation with the State Historic Preservation Officer (SHPO), has determined that the APE is restricted to the project footprint. Given that there are no known historic structures within the project footprint and that the Proposed Action does not involve the construction of aboveground resources, no historic architectural resources would be impacted by the Proposed Action, directly or visually. As such, no additional Phase I historic structures surveys were required. No effects to historic sites or structures would occur from the Proposed Action.

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

A review of the TVA Regional Natural Heritage database identified three managed and natural areas within three miles of the Project Area: Natchez Trace State Forest (36,890 acres located approximately 0.5 mile away to the northeast and east), Natchez Trace State Resort Park (8,245 acres located 2.5 miles away to the northeast and east), and the Natchez Trace State Wildlife Management Area (38,195 acres located 0.5 mile away to the northeast and east) are managed for forestry, wildlife, and recreation. These areas are managed by the Tennessee Division of Forestry and Tennessee Wildlife Resources Agency. None of these resources overlap with the Project Area. Given the distance of the Project Area from natural areas, no impacts to natural areas are expected.

There are no developed parks or outdoor recreation areas in the immediate vicinity of the Project Area. The closest recreation area is Beech Lake Family Camping Resort located approximately 2.8 miles to the southwest of the Project Area. Given the distances between the Project Area and

the resort, and the fact that the Project Area is zoned for Heavy Industrial and is located near an existing 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, prime farmland, land use, historic structures and sites, natural areas, or 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 waters, 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 reflect the relationship between pollutant concentrations and health and welfare effects. Primary standards protect human health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards are designed to protect public welfare, including visibility, animals, crops, vegetation, and buildings. These standards reflect the latest scientific knowledge and have an adequate margin of safety intended to address uncertainties and provide a reasonable degree of protection. The air quality in Henderson 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, 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 are a source of combustion emissions, including nitrogen oxides (NO_X), CO, 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 be cleared as part of the Proposed Action, and burning of woody debris is anticipated on-site. Burning of woody debris would produce 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 Lexington – IDB, or its contractors, would be expected to comply with 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 persons nearby.

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 partially wooded land, it contributes as a carbon sink. However, on a national or global scale, the Proposed Action of clearing 22.17 acres of trees would have little contribution to climate change.

Implementation of the Action Alternative would result in some emissions as described above, but 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 or impact regional air quality.

Under the No Action Alternative, if the Lexington – IDB were able to secure the 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 Lexington – IDB were not able to secure the funding for the 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 East Gulf Coastal Plain Section of the Coastal Plain Province (National Park Service [NPS] 2018 and USGS 2023). The East Gulf Coastal Plain Section extends from Eastern Louisiana and includes parts of Mississippi, Alabama, western Tennessee, western Georgia and the Florida panhandle. The East Gulf Coastal Plain Section in the vicinity of the project site is characterized by unconsolidated to semi-consolidated sediments, silts and clay. (USGS 1995).

In western Tennessee, the principal aquifer system in the East Gulf Coastal Plain Section is the Mississippi embayment aquifer system and consists of sediments that include sand, silt, lignite and clay that are primarily Late Cretaceous through late Eocene (USGS 1995). The Mississippi embayment aquifer system is comprised of several named aquifers. However, there is only a single local aquifer system underlying the project site: McNairy-Nacatoch aquifer which is comprised of the McNairy and Nacatoch sand beds (USGS 1995). The McNairy-Nacatoch aquifer consists of a single thick sand bed or two or more sand beds separated by thinner marl or clay layers (USGS 1995).

The water quality in the Mississippi embayment aquifer system is considered soft to moderately hard with a calcium bicarbonate type near outcrop areas of the aquifer and transitions to a sodium bicarbonate type as it flows deeper into the aquifers. The dissolved solids concentrations for the Mississippi embayment aquifer system are typically less than 250 milligrams per liter (mg/L) in the vicinity of the project site. The principal aquifers used for water supply in the implementation of the Action Alternative would result in ground disturbance during construction activities. Tree clearing would result in minor ground disturbance at shallow depths. Site grading and compaction for expansion of an existing dirt building pad, construction of an access road, and relocation of existing water and sewer lines may result in greater ground disturbance at moderate depths. Geotechnical borings were conducted on the Project Area in 2018. The Reeves Property Site Certification Geotechnical Report – Timberlake-Wildersville Road conducted by Construction Materials Laboratory, Inc. indicates the overburden at the project site consists mostly of clay, sandy clay, clayey sand, silty sand, poorly graded sand and clean sand from depths ranging 0 feet to 50 feet below land surface (maximum depth of conducted borings). Ground disturbances are not anticipated to result in significant impacts to groundwater resources as the underlying McNairy-Nacatoch aquifer is approximately 200 to 300 feet thick near the Project Area (USGS 1995).

Shallow aquifers could sustain minor impacts from changes in overland water flow and recharge caused by clearing, grading and construction of temporary sediment basins 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.

Phase I ESAs indicated that the Project Area was cultivated farmland with forested areas and there was no discovery of adverse environmental conditions on the Project Area. Historical land use of the Project Area was primarily farmland with some patch forest. As such, it is not anticipated that construction activities would encounter hazardous substances during the aforementioned site improvements. Furthermore, it is expected that the Lexington – IDB, or its contractors, would

conduct operations involving chemical or fuel storage or resupply and equipment and vehicle servicing with care to avoid leakage, spillage, and subsequent groundwater contamination.

Under the Action Alternative, ground disturbance would occur, which would result in minor and temporary impacts to groundwater resources from widespread grading for the dirt building pad expansion, 24-foot-wide- gravel access with 4-foot-wide shoulders and site stabilization.

Under the No Action Alternative, if the Lexington – IDB were able to secure the 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 Lexington – IDB were not able to secure the funding for the actions described in this EA, ground disturbance associated with clearing, grading, and construction of an access road would not occur and there would be no impacts to groundwater resources.

4.2.3 Soils

The Project Area is in Henderson County, Tennessee within the East Gulf Coastal Plain Section of the Coastal Plain Province (NPS 2018). The Project Area contains two perennial channels approximately 1,100 feet and 350 feet in length that connects to Olive Branch, a tributary of Big Sandy River, within the Headwater Big Sandy River watershed (Hydrologic Unit Code [HUC]-12 060400050501).

Precipitation in the vicinity of the Project Area averages about 51 inches per year. The average monthly air temperature ranges from a high of 90 degrees Fahrenheit in July to a low of 27 degrees Fahrenheit in January (UsClimateData.com 2024).

Soil types and descriptions were obtained from the Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2024) (see Attachment 1, Figure 1-F). Soil types found within the Project Area include moderately gullied land Lexington-Ruston complex, Hymon fine sandy loam, Hymon silt loam, Lexington silt loam, Lexington silty clay loam, Lexington-Ruston soils (severely eroded sloping phase), Lexington-Ruston (severely eroded, strongly sloping phases complex), Providence silt loam, and Providence silt loam (5 to 8 percent slopes).

A geotechnical investigation was conducted on the Project Area in 2018 (Construction Materials Laboratory, Inc. 2018). The 2018 investigation found clay, sandy clay, clayey sand, silty sand, poorly graded sand and clean sand from 0 to 50 feet below land surface across the Project Area (borings across the site ranged from 35 to 50 feet below land surface). The report recommends that initially the Project Area should be cleared of all grass, weak materials and topsoil. Once the topsoil has been removed, the report recommends that the Project Area should be proof rolled using a loaded dump truck to check for weak or yielding areas under direction of a project geotechnical engineer (Construction Materials Laboratory, Inc. 2018).

Under the Action Alternative, soils in the Project Area would be disturbed by widespread grading for the dirt building pad expansion, 24-foot-wide gravel access road with 4-foot-wide shoulders 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 and from soil erosion.

Under the No Action Alternative, if the Lexington – IDB were able to secure the 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 Lexington – IDB were not able to secure the 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 the 8-digit HUC TN Western Valley (Kentucky Lake) watershed (HUC 06040005) and in the 12-digit HUC watershed Big Sandy River Headwaters (HUC 060400050501). Precipitation for Henderson County, Tennessee averages 51.1 inches annually (UsClimateData.com 2024).

Stantec performed field surveys of the entire Project Area January 10 and 11, 2024, to document waterbodies (Stantec 2024a). A map of features based on the USFWS Wetland Inventory and Water Inventory is provided in Attachment 1, Figure 1-D. Two streams presumed to be subject to USACE or the State of Tennessee jurisdiction were identified. Additionally, eleven non-jurisdictional features were documented including ten wet-weather conveyances and one pond (Attachment 1, Figure 1-E).

S001 is a presumed jurisdictional, perennial stream channel that is located on the boundary of the center of the Project Area and is approximately 592 linear feet. Water was actively flowing from south to north at an average depth of 4 inches. Channel substrate consisted of sand and gravel that transitioned to silt along its banks.

S002 is a presumed jurisdictional, intermittent stream that is located in a centralized portion of the Project Area running parallel to S001 and is approximately 683 linear feet. This stream has a well-developed bed and banks. Substrate of this channel consists of sand and cobble.

P001 is a presumed non-jurisdictional pond that is located in the western portion of the Project Area and is approximately 0.06 acre. Although this pond is documented in NWI as PUBh, this pond was surrounded by upland plants and trees. No outfalls from the pond were identified and the pond does not receive hydrology from any other hydrologic features. In addition, Pond 001 does not have an observed connection to groundwater as a source. Due to the lack of a jurisdictional stream entering or exiting the pond, and due to the lack of an observable groundwater source, the pond is presumed non-jurisdictional per guidance from TDEC-Division of Water Resources (2020).

E001 is a presumed non-jurisdictional channel that is located on the far east side of the Project Area. This channel is a roadside ditch flowing south to north from a culvert along Timberlake Wilders Road. The channel substrate consists of silt and clay and is the same as the surrounding soil texture. There is standing water present in pools but no flow was observed.

E002 is a presumed non-jurisdictional channel that is located in a centralized portion of the Project Area. This channel has been severely altered recently by road construction and channelization is starting to recover in the upper section of the reach. Water was observed in puddles along the reach. Channel substrate consists of sand, silt and clay.

E003 is a presumed non-jurisdictional channel that is located in a centralized portion of the Project Area. This channel has been altered by a culvert/road that was constructed for access to a water quality station. This channel is an overflow channel from E003.

E004 is a presumed non-jurisdictional channel that is located in a centralized portion of the Project Area. This channel is an overflow channel for S002 that drains into S001. Channel substrate consists of silt and clay.

E005 is a presumed non-jurisdictional channel that is located in the northern section of the Project Area. Although geomorphic development shows consistent water flow, hydrologic and biological factors are nearly missing from this channel. This channel flows downhill until it dissipates into the landscape.

E006 is a presumed non-jurisdictional channel that is located in the north section of the Project Area. This channel is located in a valley of a forested area and transports the water downhill until it dissipates into the landscape.

E007 is a presumed non-jurisdictional channel that is located in the northern section of the Project Area. The channel was caused by sheet flow by the nearby farm field runoff. This channel flows downhill until it dissipates into the landscape.

E008 is a presumed non-jurisdictional channel that is located in the western portion of the Project Area. This channel is lined with concrete, which acts as grade control, and confluences with E010 where the bed material becomes soil. It is likely that this channel transports incoming sheet flow from the nearby shrub/scrub habitat to the northwest.

E009 is a presumed non-jurisdictional channel that is located in a centralized portion of the Project Area. This channel is a tributary to S001. Standing water was present in the downstream portion of the channel but no flow was observed. Channel substrate consisted of sand, silt, and clay. This channel had leaf litter throughout overlying a channel bed with minimal sorting, and no evidence of scour.

E010 is a presumed non-jurisdictional channel located in the western portion of the Project Area and is a tributary to S002. This stream is an intermittent channel that flows from west to east with moderately developed bed and banks. Channel has heavy leaf litter throughout and the right bank shows signs of erosion. Channel substrate consists of sand, silt, cobble, and bedrock. This channel has overflow channels. No water was observed in the channel.

Under the Action Alternative, the presumed non-jurisdictional channels could be disturbed by widespread grading for the dirt building pad expansion, 24-foot-wide gravel access road with 4-foot-wide shoulders and site stabilization. The presumed jurisdictional streams S001 and S002 would be avoided during construction based on confirmation from the Lexington–IBD. Erosion control measures would be implemented, in accordance with a project specific construction general permit/stormwater pollution prevention plan and BMPs, to sufficiently reduce off-site sedimentation.

Under the No Action Alternative, if the Lexington – IDB were able to secure the 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 Lexington – IDB were not able to secure the 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 January 10 and 11, 2024 to document wetlands (Stantec 2024a). A map of features based on the USFWS National Wetland Inventory and Waterbody Inventory is provided in Attachment 1, Figure 1-D. Three wetlands that are presumed subject to the USACE or the State of Tennessee jurisdiction were identified. No presumed non-jurisdictional wetlands were identified (Attachment 1, Figure 1-E).

W001, 0.02 acre in size, is a presumed jurisdictional palustrine emergent wetland (PEM) that is located centrally in the Project Area. It is located along the access road that branches off Kirby Drive to the west. Due to recent construction in the area, there was significant disturbance observed within the wetland boundary. A Tennessee Rapid Assessment Method (TRAM) score of 22 was given to this wetland, which determines this wetland of “low resource value.”

W002, 0.43 acre in size, is a presumed jurisdictional palustrine forested wetland that is located centrally in the Project Area along S001. Water stored in this wetland drains to and is recharged by S001. A TRAM score of 71 was given to this wetland, which determines this wetland of “moderate resource value.” The wetland extends outside of the Project Area and is adjacent to portions of S001.

W003, 0.01 acre in size, is a presumed jurisdictional PEM that is located centrally in the Project Area. It is likely that this wetland was recently disturbed and cleared due to the nearby construction. A TRAM score of 42 was given to this wetland, which determines this wetland of “low resource value.” The wetland is adjacent to S001.

Under the Action Alternative, one presumed jurisdictional wetland, W001, would be impacted by construction and would be disturbed by widespread grading for the dirt building pad expansion, 24-foot-wide gravel access road with 4-foot-wide shoulders and/or site stabilization. Based on further coordination with the Lexington – IBD, presumed jurisdictional wetlands W002 and W003 would be avoided. Erosion control measures would be implemented, in accordance with a project specific construction general permit/stormwater pollution prevention plan and BMPs, to sufficiently reduce sedimentation to resources both on and off site. Direct impacts to W001 would be coordinated with TDEC and USACE and permit approval and any associated compensatory mitigation would ensure impacts are insignificant. This would ensure that this TVA-funded Proposed Action would be compliant with the Clean Water Act (CWA) Sections 401 and 404 and EO 11990.

Under the No Action Alternative, if the Lexington – IDB were able to secure the 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 Lexington – IDB were not able to secure the 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 intermittent stream (S002), 10 wet-weather conveyances (E001 – E010), one pond (P001), and one perennial stream (S001) were delineated in the Project Area (Stantec 2024a; Attachment 1, Figure 1E). The intermittent stream and wet-weather conveyances do not provide habitat suitable to support aquatic life due to their lack of consistent flow. Further, no aquatic life such as fish or crayfish were observed in those features during the field delineation.

Pond P001 was less than 0.1 acre in size and did not have an inflow or outflow feature. Generalist fish species such as mosquitofish (*Gambusia affinis*) and sunfish (*Lepomis spp.*) could potentially occur in the pond if water remains year-round.

Perennial stream S001 was approximately 4 inches deep on average with a substrate of sand and gravel. No fish, crayfish, bivalves/mussels, amphibians, macrobenthos, or other lotic organisms were observed during the field delineation at stream S001 during a thorough assessment (Stantec 2024a). Stream S001 may occur as a result of groundwater discharge and has been previously altered. Stream S001 is unlikely to support a diverse assemblage of aquatic life given the characteristics and findings described above. Generalist species such as mosquitofish (*Gambusia affinis*) and sunfish (*Lepomis spp.*) could potentially occur in S001.

The Action Alternative could involve potential impacts on aquatic fauna if P001 or S001 were disturbed but given the habitat present and species likely to occur, impacts would not be significant. The species potentially present are widely distributed and abundant in adjacent streams.

Under the No Action Alternative, if the Lexington – IDB were able to secure the 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 Lexington – IDB were not able to secure the 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. No state- or federally listed aquatic species were identified within the HUC boundary for the Project Area, nor were any state- or federally listed aquatic species identified for Henderson County, Tennessee.

The Action Alternative would not result in impacts on rare, threatened, and endangered aquatic species due to their absence from the Project Area.

Under the No Action Alternative, if the Lexington – IDB were able to secure the 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 Lexington – IDB were not able to secure the 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

Habitat assessments for terrestrial animal species were conducted in the field in 2023 for the Project Area. The Project Area consists of approximately 54.2 acres of land. The eastern portion of the Project Area consists of early successional grasslands and an agricultural field that transitions into mixed hardwood and pine stands. Forested acreage within the Project Area primarily consists of pine, oak, and maple. Features surrounding the Project Area consist of a variety of croplands (i.e., pasture and agricultural), and previously disturbed areas.

Approximately 26 acres of the Project Area is occupied by a field that is currently utilized for agriculture. This habitat provides limited utility to common wildlife species throughout the year. Early successional grasslands constitute a small portion near the western edge of the Project Area. 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 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).

The Project Area is comprised of approximately 28.2 acres 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 gray squirrel, eastern woodrat, and woodchuck are other common 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 24, 2023, did not return any records of caves within three miles of the Project Area. This same query did not find any records of heronries or other aggregations of migratory birds within three miles of the Project Area. Review of the USFWS' Information for Planning and Consultation (IPaC) website on October 19, 2023, identified the following seven migratory bird species of conservation concern having the potential to occur within the Project Area: American kestrel, bald eagle, black-throated green warbler, cerulean warbler, prothonotary warbler, red-headed woodpecker, and rusty blackbird. Habitat is not present within the project footprint for prothonotary warbler or rusty blackbird. Foraging habitat is present for black-throated green warbler during spring and fall migration. Nesting and foraging habitat are present within the Project Area for American kestrel, Cerulean warbler, and red-headed woodpecker from early April through late September.

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 their massive nests, which can weigh several hundred pounds and are typically built near larger waterways where they 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 on November 20, 2023. Suitable foraging habitat for bald eagle is not present within the Project Area as there are no large bodies of water.

Under the Action Alternative, TVA would provide funds to assist with the purchase of 11 acres, tree removal, geotechnical work, construction of a two-lane access road, grading, and eventual soil stabilization of the Project Area. 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 likely would disperse mobile wildlife into surrounding areas in an attempt to find new food sources, shelter, and to reestablish territories. However, the actions are not likely to affect populations of species common to the area, as similar herbaceous and forested habitats exist in the surrounding landscape.

Four migratory bird species of conservation concern identified by the USFWS could occur within the Project Area during various times of the year. Migratory black-throated green warbler could be disturbed if individuals are actively foraging in the Project Area while vegetation removal and ground disturbing activities occur. However, these individuals would be mobile and expected to flush in response to such disturbance. No effects to black-throated green warbler are anticipated. Should vegetation removal and grading occur during spring and summer, proposed activities could impact reproductively active American kestrel, cerulean warbler, and red-headed woodpecker. If proposed actions occur outside of the nesting season, when young are fledged, individuals on-site would be expected to flush to adjacent areas if disturbed. Tree removal is currently proposed for May 2024 and may affect individual nesting birds. However, similarly suitable habitat is abundant throughout the adjacent landscape. Due to the availability of similarly suitable habitat nearby, the size of the Project Area, and the proposed scope, populations of migratory birds are not expected to be impacted by the project.

No bald eagle nests were observed by TVA Terrestrial Zoologists during field surveys on November 20, 2023. Based on the lack of nests, as well as the proximity of the site to water, the project would have no effect on bald eagles. Project activities are in compliance with the National Bald Eagle Management Guidelines.

Based on the absence of documented caves within three miles of the Project Area and lack of observed caves during field surveys, the Proposed Action Alternative would have no effect on unique or important karst habitat.

Under the No Action Alternative, TVA would not provide funds to assist with the purchase, grading, geotechnical work, utility relocation, tree clearing, or soil stabilization of the Project Area. Soil and vegetation would remain in their current state. Terrestrial animals and their habitats would not be affected under the No Action Alternative.

4.2.7.2 Threatened and Endangered Species (Wildlife)

A review of terrestrial animal species in the TVA Regional Natural Heritage database on October 24, 2023, returned two state-listed species (northern pine snake and osprey) within three miles of the Project Area. No known federally listed species have been documented from Henderson County, Tennessee. The USFWS has also determined that two federally listed species (northern long-eared bat and whooping crane), two species proposed for listing (alligator snapping turtle and

tricolored bat), and a candidate for listing (monarch butterfly) have the potential to occur in the Project Area. Thus, habitat suitability and potential impacts to these species will be addressed (Table 4-1).

Table 4-1. Federally Listed Terrestrial Animal Species Reported from Henderson 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			
Osprey	*Pandion haliaetus*	–	-(S3B)
Whooping crane	*Grus americana*	EXPN	-(SX)
Invertebrates			
Monarch butterfly[3,4]	*Danaus plexippus*	C	-(S4)
Mammals			
Northern long-eared bat[3]	*Myotis septentrionalis*	E	T(S1S2)
Tricolored bat[3]	*Perimyotis subflavus*	PE	T(S2S3)
Reptiles			
Alligator snapping turtle[3]	*Macrochelys temminckii*	PT	T(S2S3)
Northern Pine Snake	*Pituophis melanoleucus melanoleucus*	–	T(S3)

Source: TVA Regional Natural Heritage database, extracted 10/24/2023; USFWS Information for Planning and Consultation (IPaC) resource list (IPaC: Home (fws.gov)), accessed 10/24/2023, updated January 4, 2024.

1 Status Codes: C = Candidate Species; E = Endangered; EXPN = Experimental Population Non-essential; PE = Proposed Endangered; PT = Proposed Threatened; T = Threatened.

2 State Ranks: S#B = Rank of Breed Population; SX = Believed to be extirpated from the state; S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S4 = Apparently Secure.

3 Species included from IPaC report. No record of this species has been documented from Henderson County, Tennessee.

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

Osprey occupy riparian habitat alongside bodies of water, such as rivers, lakes, and reservoirs. They build stick nests on a variety of man-made structures (e.g., transmission line structures, lighting towers) near water (Nicholson 1997). The closest known record of osprey was documented approximately three miles from the Project Area. No additional nests were observed by TVA Terrestrial Zoologists during field surveys on November 20, 2023. Suitable habitat for osprey does not exist within the Project Area. Whooping crane is a large bird that once occurred throughout North America but has declined to three populations that breed in Canada and winter in coastal Texas. In the Eastern United States (U.S.), a small captive-raised population breeds in Wisconsin and overwinters in Florida. Since 2007, a small group of atypical individuals have come to winter in Tennessee, in a rural area on the Cumberland River. The whooping crane has also been observed in Tennessee during migration (Whooping Crane 2024). The whooping crane is listed as Endangered in the Southwest (USFWS Region 2). Outside of this region, the whooping crane is categorized as a non-essential experimental population. For the purposes of consultation, non-essential experimental populations are treated as threatened species on National Wildlife Refuge and National Park land (require consultation under 7(a)(2) of the Endangered Species Act (ESA)) and as a proposed species on private land (no Section 7(a)(2) requirements), but federal agencies must not jeopardize their existence (Section 7(a)(4))) (USFWS 2023c). Neither migration nor overwinter habitat exists within the Project Area.

Northern long-eared bats predominantly overwinter 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. Northern long-eared bats are thought to be opportunistic with regard to roost site selection. In addition to tree roosts, this species also roosts in abandoned buildings and under bridges. Northern long-eared bats emerge at dusk to forage below the canopy of mature forests on hillsides and roads, and occasionally over forest clearings and along riparian areas (USFWS 2014, USFWS 2023a, USFWS 2023b). Although the USFWS has determined that the species could occur in the area, there are no known records of northern long-eared bat from Henderson County, Tennessee.

Tricolored bats hibernate in caves and mines, or man-made structures such as culverts, tree cavities, and abandoned water wells (Newman et al. 2021). During summer, tricolored bats roost among live and dead leaf clusters of live or recently dead deciduous hardwood trees. Tricolored bats have also been observed roosting among pine needles, eastern red cedar, and within artificial roosts like barns, beneath porch roofs, bridges, concrete bunkers, and culverts, but rarely within caves during summer months (Veilleux et al. 2003, Schaefer 2017). This species emerges early in the evening to forage at treetop level or above but may also forage closer to the ground later in the evening. They are known to forage most commonly over waterways and forest edges (USFWS 2024). Although the USFWS has determined that the species could occur within the Project Area, there are no known records of tricolored bat within Henderson County, Tennessee.

No known cave records have been documented within three miles of the Project Area. No caves were observed within the Project Area during field surveys on November 20, 2023. The Project Area contains approximately four acres of suitable summer roosting habitat for northern long-eared bat and 13 acres of suitable habitat for tricolored bat. Suitable habitat is mostly present in the form of snags offering cracks and crevices for roosting habitat. One shagbark hickory was present at the northern end of the woodlot. The majority of wooded areas in the Project Area were full of immature trees and the understory was heavily cluttered. Foraging habitat for tricolored and northern long-eared bats exists both over the fields and within woodlots in and adjacent to the Project Area.

Monarch butterfly is a highly migratory species, with eastern U.S. populations overwintering in Mexico. Monarch populations typically return to the eastern U.S. in April (Davis and Howard 2005). Summer breeding habitat requires milkweed plant species, on which adults exclusively lay eggs for larvae to develop and feed on. Adults will drink nectar from other blooming wildflowers when milkweeds are not in bloom. The central portion of the Project Area has the potential to contain wildflowers and other flowering plant species, which could provide suitable foraging for monarch butterflies. However, due to the intense agricultural use of the site for an undetermined amount of time, no significant quantity of flowering plants are likely to occur on-site. In addition, no milkweed was observed in the Project Area during field reviews. While this species has not been historically tracked by state or federal heritage programs, the USFWS' IPaC tool determined that this species could occur within the Project Area.

Alligator snapping turtles are a proposed threatened, highly aquatic reptile that emerges from water only for nesting and rarely for basking (USFWS 2021). This species is restricted to river and stream drainages which flow into the Gulf of Mexico. These turtles are found in floodplain swamps and oxbow lakes associated with large rivers but do not occur in isolated wetlands and ponds. Most nesting occurs from May to July (USFWS 2021). There are no large wetland

complexes or bodies of water present in the Project Area. Suitable habitat for this species does not exist within the Project Area.

Northern pine snakes are found in flat, sandy, pine barrens, sandhills, and dry mountain ridges, most often in or near pine woods. They can also use scrub habitat and agricultural fields. Northern pine snakes are considered secretive because of the amount of time they spend underground in burrows (Powell et al. 2016). The closest known record of a northern pine snake was documented approximately two miles from the project footprint. No suitable habitat for northern pine snake was observed within the Project Area due to lack of sandy soils in forest fragments and recent clearing and grading of agricultural fields.

Under the Action Alternative, TVA would provide funds to assist with the purchase of 11 acres, tree removal, geotechnical work, construction of a two-lane access road, grading, and eventual soil stabilization of the Project Area. Due to the distance from known records to the Project Area and the lack of additional nests observed during site visits, no osprey nests would be impacted by the project actions. The Action Alternative would have no effect on osprey. Based on the lack of available migration and overwinter habitat in the Project Area, TVA has determined that the project activities would not jeopardize the continued existence of whooping crane. Due to the lack of available suitable aquatic habitat for alligator snapping turtle and the absence of sandy substrate pine forests for northern pine snake, TVA has determined that the project activities would have no effect on alligator snapping turtle or northern pine snake.

Monarch butterfly foraging habitat may exist in small, narrow strips along field edges that have not been impacted by agricultural crop production. Grading would impact monarch butterfly foraging habitat should it occur within the Project Area. However, these impacts are expected to be minor due to the small quantity of suitable habitat potentially present. This species is currently listed under the ESA as a candidate species and is not subject to Section 7 consultation. Project activities would not jeopardize the continued existence of monarch butterfly.

No caves or other hibernacula for northern long-eared bat or tricolored bat exist in the Project Area or would be impacted by the Proposed Action. Approximately 22.17 acres of trees are proposed for removal as part of project scope. Trees are proposed to be cut and burned on-site in May 2024. Approximately 4.28 acres of suitable summer roosting habitat for northern long-eared bat and 12.7 acres for tricolored bat would be removed as part of proposed activities. To avoid direct, adverse impacts to tricolored bat while they are birthing and rearing pups, tree removal must occur outside of pup season (May 15 – July 31) when these species would be mobile and able to fly if disturbed.

A number of activities associated with the project 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 implementation of the outlined conservation measures, the Action Alternative would not significantly impact northern long-eared bat. In addition, proposed actions would not jeopardize the continued existence of tricolored bat population.

Under the No Action Alternative, TVA would not provide funds to assist with the purchase, grading, geotechnical work, utility relocation, tree clearing, or soil stabilization of the Project Area. Soil and vegetation would remain in their current state. Terrestrial animals and their habitats would not be affected under the No Action Alternative.

4.2.8 Botany

4.2.8.1 Vegetation

The project would occur in the Southeastern Plains and Hills level IV ecoregions (Griffith et al. 1998). The Southeastern Plains and Hills level IV ecoregion is characterized as having bands of alternating clay and sand formations that extend north to south from Kentucky into Tennessee. Some of the larger hills characteristic of this ecoregion reach upward of 650 feet and offer more relief than the western Loess Plains ecoregion. The characteristic land vegetation type for this ecoregion is oak-hickory forest that grades into oak-hickory-pine forest as you move south. Land cover is a mixture of cropland, mixed forest, pasture, and some pine plantations and land use is rural residential, urban, and industrial.

Field surveys were conducted in November 2023 to document plant communities, infestations of invasive plants, and to search for possible threatened and endangered plant species in areas where work would occur. The entire Project Area was visited during the surveys. Using the National Vegetation Classification System (Grossman et al. 1998), vegetation types observed during field surveys can be classified as a combination of deciduous forest and herbaceous vegetation. No forested areas in the Project Area had structural characteristics indicative of old growth forest stands (Leverett 1996). The plant communities observed on-site are common and well represented throughout the region.

Deciduous forest, where deciduous trees account for more than 75 percent of total canopy cover, occupies 46 percent of the Project Area. This habitat type is found between large swaths of agricultural fields and urban development and is dominated by American beech, black cherry, dog wood, post oak, Southern red oak, shagbark hickory, shortleaf pine, sweet gum, sycamore, and white oak. The understory consisted of blueberry, Christmas fern, ebony spleenwort, green briar, Japanese honey suckle, mayapple, privet, sassafras, sensitive fern, Southern lady-fern, summer grape, and winged elm. Most deciduous forests in the Project Area have trees that average between 6 and 18 inches diameter at breast height.

Herbaceous vegetation is characterized by greater than 75 percent cover of forbs and grasses and less than 25 percent cover of other types of vegetation and occurs on about 54 percent of the Project Area. Most of this habitat type occurs along roadsides, cropland, hayfields, recent clear-cuts, and heavily manipulated pastures also support herbaceous vegetation. Most of these sites are dominated by plants indicative of early successional habitats including many non-native species. Early successional areas with naturalized vegetation contain herbaceous species like American pokeweed, annual ragweed, blackberry, broom sedge, bushy aster, three-lobed beggarticks, common elephant’s-foot, dog fennel, field thistle, giant plume grass, giant ragweed, Indian grass, Johnson grass, kudzu, late goldenrod, meadow-grass, purple-top grass, silver plume grass, split bluestem, stinging nettle, switch grass, Venus’s looking-glass, and yellow foxtail grass.

Executive Order (EO) 13112 directed TVA and other federal agencies to prevent the introduction of invasive species (both plants and animals), to control their populations, to restore invaded ecosystems and to 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. 2010). 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 Chinese privet, Japanese honeysuckle, Japanese stiltgrass, Johnson grass, sericea lespedeza, and tall fescue. During field surveys, invasive plants were prevalent in sections of herbaceous vegetation types.

Adoption of the Action Alternative would not significantly affect the terrestrial ecology of the region. Clearing and converting forested land for the construction of the proposed Project Area would be long-term in duration, but insignificant. Adoption of this alternative would require clearing of approximately 22 acres of mostly deciduous forest. The majority of forest in the Project Area has been previously cleared and the plant communities found there are common and well represented throughout the region. Cumulatively, project-related effects to forest resources would be negligible when compared to the total amount of forested land found in the region. Also, project-related work would temporarily affect herbaceous plant communities, but these areas would likely recover to their pre-project condition in less than 1 year.

Nearly the entire Project Area currently has a substantial component of invasive terrestrial plants. Adoption of the Action Alternative would not significantly affect the extent or abundance of these species at the county, regional, or state level.

Under the No Action Alternative, areas within the project and access roads would remain in their current condition. Thus, adoption of the No Action Alternative would not affect plant life because no project-related work would occur. Changes to local plant communities resulting from natural ecological processes and human-related disturbance would continue to occur, but the changes would not result from the project. Therefore, there would be no direct, indirect, or cumulative impacts to plant life under the No Action Alternative.

4.2.8.2 Threatened and Endangered Species

Review of the TVA Regional Natural Heritage database indicated there are no federally listed plant species previously reported within a five-mile vicinity of the Project Area; however, there has been one state-listed plant species, the hairy umbrella-sedge (*Fuirena squarrosa*). No federally listed plant species are known from Henderson County. No federally or state-listed plants were observed in the Project Area during field surveys. No designated critical habitat for plants occurs in the Project Area.

Adoption of the Action Alternative would have no effect on federally listed plant species because no federally listed plant species occur in the Project Area. Also, no populations of state-listed species were observed during field surveys of the Project Area. Therefore, no direct, indirect, or cumulative impacts on endangered and threatened species and their critical habitats are anticipated as a result of implementing the Action Alternative.

Adoption of the No Action Alternative would not impact federally listed plants, designated critical habitat, or state-listed plants species because no project-related work would occur. Under the No Action Alternative, the Project Area tree clearing would not occur. No federally listed plants or designated critical habitat occurs within the Project Area. Changes to local plant communities resulting from natural ecological processes and human-related disturbance would continue to occur. These changes may benefit or negatively affect plants present in the Project Area, but the changes would be unrelated to the project.

4.2.9 Archaeology

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 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 (43.4 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 January and February 2024, and to write a report titled, *Phase I Cultural Resources Survey for the Reeves Site, Lexington, Henderson County, Tennessee*. TVA determined that the survey and the report are consistent with the *Secretary of Interior's Standards and Guidelines for Identification* (National Park Service [NPS] 1983).

Stantec prepared a Phase I Archaeological Survey of the Project Area with the field surveying performed in January and February 2024 (Stantec 2024b). Stantec's background research did not identify any previously known archaeological sites within the APE. However, there were two previously completed surveys that overlapped with the current survey. A total of 217 shovel tests were excavated in the APE. A total of 48 shovel tests were not excavated but visually inspected due to adequate surface visibility, obvious surface disturbances, steep slope, or because they were inundated with water. One new archaeological site, 40HE147, was identified as a historic scatter from the 19th century to present. Most of the artifacts were recovered from the surface with only a few artifacts recovered from below surface.

Due to the low density of artifacts at the site, 40HE147 was recommended not eligible for the NRHP. Stantec recommended no additional work for the Adamson Farm APE.

TVA received concurrence from the SHPO on April 2, 2024, agreeing with the report's findings. Under the Action Alternative, there would be no impacts given the lack of archaeology resources eligible for the NRHP identified during the field survey. Under the Action Alternative, there would be no impacts on archaeological resources because no sites eligible for the NRHP are present.

Under the No Action Alternative, if the Lexington – IDB were able to secure the 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 Lexington – IDB were not able to secure the 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 approximately 54 acres consisting of both forested and open grassy lands. The Project Area is bordered by Highway 22 North to the west, forested areas and agricultural lands to the north, industrial areas to the south, and scattered forest, agriculture, and undeveloped land, Timberlake-Wildersville Road, and rural residences to the east. The visual landscape consists of rural, relatively flat areas with a combination of agricultural land and industrial development adjacent to the Project Area. Olive Branch, a perennial stream, is approximately 0.5 mile northeast of the Project Area.

Residences occur sporadically adjacent to the Project Area to the west, north, east, and southeast of the Project Area. West of the Project Area, there is no direct visual screening between Highway 22 North at its intersection with the Project Area, although trees may provide some indirect or angled visual screening. Residences located north of the Project Area would have partial visual screening. Residences, as well as Timberlake-Wildersville Road, to the east and southeast of the Project Area would have limited or partial visual screening due to intervening open fields. Three residences immediately east of Timberlake-Wildersville Road would have a direct line of sight to the Project Area. Construction vehicles and equipment visible during construction activities would have a minor visual impact over the temporary 18-month construction period as well as a minor permanent impact due to rough grading. Drivers along Highway 22 North would have direct views of the Project Area; however, there are other industrial areas along the roadway within 0.5 mile, and any changes to the views would be similar to other areas along the road. While motorists using Timberlake-Wildersville Road may notice a change in the viewshed, this change would be minor given the brief period that drivers would be in the area.

Implementation of the Action Alternative would result in a minor, temporary decrease in visual quality for residents in the viewshed considered in the context of existing industrial and commercial development located south of the Project Area.

Under the No Action Alternative, if the Lexington – IDB were able to secure the 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 Lexington – IDB were not able to secure the 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 the heavy equipment used. Construction activities would involve operation of an excavator, bulldozer, dump truck, or similar vehicles and heavy machinery over the temporary duration of construction. Heavy equipment noise levels would fluctuate depending on the number and type of vehicles and equipment in use at any given time. 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 rural residential homes as described above in Section 4.2.11, Beacon Building Products, and Pine Grove Baptist Church.

Under the Action Alternative, 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 would be conducted during daylight hours when ambient noise levels are often higher, and most individuals are less sensitive to noise. Thus, noise-related impacts resulting from implementation of the Action Alternative are anticipated to be temporary and minor.

If the Lexington – IDB were able to secure the 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 Lexington – IDB were not able to secure the 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 (Henderson), and locality (City of Lexington, Tennessee) (Table 4-2). 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 4-2. Population, Demographics, Income, and Employment in the Host State, County and Locality

	Tennessee	Henderson County	City of Lexington, Tennessee
July 2022 Population	7,048,976	27,929	7,952
April 2020 Population	6,910,840	27,842	7,956
Population, Percent Change	2.0%	0.3%	-0.1%
2020 Population per Square Mile	167.6	53.4	680.0
Demographics [1]			
White Alone, not Hispanic or Latino	72.9%	86.1%	80.3%
Black or African American Alone	16.7%	7.8%	16.9%
American Indian and Alaska Native Alone	0.5%	0.5%	0.0%
Asian Alone	2.1%	0.5%	0.4%
Native Hawaiian and Other Pacific Islander Alone	0.1%	NA	0.3%
Two or More Races	2.2%	2.6%	0.9%
Hispanic or Latino (of any race)	6.4%	3.0%	1.2%
Income [1]			
Median Household Income in 2022	$64,035	$51,576	$45,877
Per Capita Income in Past 12 Months in 2022	$36,040	$25,873	$22,907
Percent with Income Below the Poverty Level	13.3%	16.9%	20.6%
Employment (Not Seasonally Adjusted): April 2022 [2]			
Labor Force	3,392,133	11,714	NA
Employed	3,289,618	11,276	NA
Unemployed	102,515	438	NA
Unemployment Rate (%)	3.0%	3.7%	NA

Notes: NA=not applicable
[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 Henderson County live at a lower population density and lower population growth. Relative to the average Tennessee resident, the residents of the City of Lexington, Tennessee live at a higher population density and lower population growth.
- Relative to the average Tennessee resident, the residents of Henderson County are less likely to self-identify as a minority race or ethnicity. Relative to the average Tennessee resident, the residents of City of Lexington, Tennessee are less likely to self-identify as a minority race or ethnicity.
- Per capita income and median household income are both lower in Henderson County and the City of Lexington, Tennessee than in Tennessee. Residents of Henderson County and the City of Lexington, Tennessee are more likely to live below the poverty level than residents of Tennessee as a whole.

- The unemployment rate in Henderson 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 lower level of low-income population, a higher rate of linguistic isolation and a lower level of population with less than high school education.

As described in Section 1.0 (Proposed Action and Need), the Action Alternative would include purchase of 11 acres providing site access, tree clearing of approximately 22.17 acres with stumps and trees burned on-site, geotechnical borings, construction of a 24-foot-wide gravel access road connecting Highway 22 to the Reeves site, grading to expand the dirt building pad (no borrow needed), relocation of existing water and sewer lines to better align with the proposed access road, and site stabilization after grading is completed. Erosion prevention, sediment control, and stabilization measures such as seeding, straw mulch, and turf reinforcement mats would be implemented after grading is complete,

This effort is expected to take place over an 18-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 nor the local workforce. In addition, no negative socioeconomic impacts are anticipated from the Proposed Action; therefore, no disproportionate negative impacts are anticipated to 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 approximate 54-acre Project Area.

Under the No Action Alternative, if Lexington – IDB was able to secure the funding for the 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 Lexington – IDB was not able to secure the funding for the action, the economic activity and socioeconomic changes would not occur.

4.2.13 Transportation

The Project Area could be accessed during construction activities from Kirby Drive Extension or Timberlake-Wildersville Road. The site entrances would be located on the southeastern and eastern side of the Project Area. Kirby Drive Extension runs approximately north to south and provides access to Bud Crockett Drive. Bud Crockett Drive runs approximately east to west and intersects North Broad Steet (Tennessee Highway 22). Timberlake-Wildersville Road runs approximately north to south and provides access to Natchez Trace Road (Tennessee Highway 114) to the south and Wildersville to the north.

Kirby Drive Extension is a local road that provides access to one industrial site and rural properties south of the Project Area. Kirby Drive Extension is an unmarked gravel road and sufficiently wide

for a single lane of traffic in each direction. Based on preliminary review of Google Street View images (recorded September 2023), the road is in good condition with narrow grassy verges. General road conditions were considered acceptable based on observations during Stantec's field surveys. Kirby Drive Extension is not listed on the Functional Classification System for Lexington (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 Kirby Drive Extension from the property. Necessary precautions would be taken during mobilization and de-mobilization such as reduced speed in areas of poor visibility or poor road condition, with other precautions such as a flagman or traffic control to be considered if required. Kirby Drive Extension terminates to the south at the intersection of Bud Crockett Drive and Kirby Drive.

Bud Crockett Drive provides access to multiple commercial and three residential properties. Based on a review of Google Street View images (recorded September 2023), the road is paved along its length, unmarked, in good condition, curbed, and is sufficiently wide for a single lane of traffic in each direction. General road conditions were considered acceptable based on observations during Stantec's field surveys. Bud Crockett Drive is not listed on the Functional Classification System for Lexington (TDOT 2018). Normal care would be taken by workers entering Bud Crockett Drive with regards to traffic safety.

Tennessee Highway 22 (TN Hwy 22) is a 4-lane paved highway with a dedicated turning lane. Based on preliminary review of Google Street View images (recorded September 2023), the road is in good condition with paved shoulders. General road conditions were considered acceptable based on observations during Stantec's field surveys. TN Hwy 22 is listed as a principal arterial near the intersection of Bud Crockett Drive and to the minor arterial to the north on the Functional Classification System for Lexington (TDOT 2018). Normal care would be taken by workers entering TN Hwy 22 with regards to traffic safety.

Timberlake-Wildersville Road is a local road that provides access to multiple residential and rural properties north and south of the Project Area, is paved along its length and sufficiently wide for traffic in each direction. The site entrance would require installation of an improved entrance from Timberlake-Wildersville Road. Based on preliminary review of Google Street View images (recorded September 2023), the road is in good condition with narrow grassy verges. General road conditions were considered acceptable based on observations during Stantec's field surveys. Timberlake-Wildersville Road listed as a minor collector near the north on the Functional Classification System for Lexington (TDOT 2018). Necessary precautions would be taken during mobilization and de-mobilization such as reduced speed in areas of poor visibility or poor road condition, with other precautions such as a flagman or traffic control to be considered if required.

Tennessee Highway 114 (TN Hwy 114) is paved along its length and sufficiently wide for traffic in each direction. Based on preliminary review of Google Street View images (recorded September 2023), the road is in good condition with wide grassy verges. General road conditions were considered acceptable based on observations during Stantec's field surveys. TN Hwy 114 is listed as a major collector on the Functional Classification System for Lexington (TDOT 2018). Normal care would be taken by workers entering TN Hwy 114 with regards to traffic safety.

There are no traffic count stations located on Kirby Drive Extension or Timberlake-Wildersville Road. It is anticipated that existing traffic volumes for Kirby Drive Extension would be negligible as it provides access to a limited number of other sites and minor for Timberlake-Wildersville

Road as it provides access to multiple residential and rural properties. Because of the anticipated limited volume of workers on the site required for tree clearing activities, grading, and the timeframe of the proposed work, direct or indirect impacts to local traffic are anticipated to be temporary and minor.

Based on a review of TDOT historical traffic data (TDOT 2024) the nearest traffic count stations are located on TN Hwy 114 and TN Hwy 22. The 2023 annual average daily traffic count (AADT) for the relevant stations are presented in Table 4-3 below.

Table 4-3. Tennessee Department of Transportation Traffic Count Data for the Project Area

Route Description	Location ID	Distance from Project Area (Miles)	Year	AADT
TN Hwy 114 (2 way count)	39000011	2.5	2023	2,552
TN Hwy 22 (2 way count)	39000020	4.5	2023	10,749

Source: Tennessee Department of Transportation (Annual Average Daily Traffic (AADT) (tn.gov)), extracted 2/19/2024.

Under the Action Alternative and in the context of the existing AADT road volumes of these highways, the anticipated traffic generated by the Proposed Action would be minor. It is anticipated that implementation of the Action Alternative would generate minor traffic associated with construction activities and have a temporary and negligible impact on overall traffic volumes and level of service for TN Hwy 114 or TN Hwy 22.

Under the No Action Alternative, if the Lexington – IDB were to secure alternate funding and proceed with its current plans, 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 Lexington – IDB were not able to secure any 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 one acre of earth disturbing activities; therefore, it would be necessary for the Lexington – IDB, 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.

Direct impacts to presumed jurisdictional wetland W001 would be coordinated with TDEC and USACE and permit approval and any associated compensatory mitigation would ensure impacts are insignificant. This would ensure that this TVA-funded Proposed Action would be compliant with the CWA Sections 401 and 404 and EO 11990.

6.0 BEST MANAGEMENT PRACTICES AND MITIGATION MEASURES

To minimize or reduce the environmental effects of site activities associated with the Action Alternative, the Lexington – IDB, 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 would 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 the Indiana bat and northern long-eared 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
John Shelton-Sarabia *M.S. Environmental Science, University of Tennessee at Chattanooga* *B.S. Biology, Austin Peay State University*	4 years in Biological Compliance, NEPA compliance, and ESA consultation for T&E Plants 9 years in Botany	Botany, Threatened and Endangered Species QA/QC
Derek Reaux *Ph.D. Anthropology, University of Nevada, Reno* *M.A. Anthropology, University of Nevada, Reno* *B.A. Anthropology, University of Kentucky*	12 years of experience in archaeological research, cultural resource management, and Section 106 compliance	Cultural resources, NHPA Section 106 compliance
Craig Phillips *M.S. and B.S. Wildlife and Fisheries Science*	15 years Sampling and Hydrologic Determinations for Streams and Wet-Weather Conveyances; 10 years in Environmental Reviews	Aquatic Ecology
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
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 terrestrial animals	Terrestrial Zoology, Threatened and Endangered Species
Sara McLaughlin-Johnson *B.S. Wildlife and Fisheries Science, University of Tennessee*	11 years in Biological Compliance, NEPA compliance, and ESA consultation for T&E terrestrial animals, 18 years in biological field studies	Terrestrial Zoology, Threatened and Endangered Species

Name/Education	Experience	Project Role
Fallon Parker Hutcheon *M.S. Environmental Studies* *B.S. Biology*	5 years in wetland delineation, wetland impact analysis, and NEPA and CWA compliance	Wetlands
Stantec		
Douglas Mooneyhan *M.S. Biology, Tennessee Technological University* *B.S. Wildlife and Fisheries Science, University of Tennessee*	34 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*	10 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*	29 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*	23 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 NRHP. 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
Josh Yates, P.G. *M.S. Geology, University of South Florida* *B.S. Natural Resources Management and Engineering, University of Connecticut*	18 years of hydrogeologic assessments and water resources permitting experience. This experience includes water supply planning, hydrogeologic investigations, groundwater modeling, water use permitting, well construction oversight, EIS and EA preparation, minimum flow and level (MFL) impact analysis, monitoring well network design, aquifer performance tests, and GIS analysis.	Groundwater

Name/Education	Experience	Project Role
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, 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 with6 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
Shane Kelley, TN-QHP *B.S. Natural Resources and Environmental Science, University of Kentucky*	Mr. Kelley is a biologist with10years 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

Name/Education	Experience	Project Role
Iris Eschen *Heald Business College, San Francisco, California*	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*	11 years in environmental consulting for various private and public sector clients, including engineering design, permitting, and assessments, primarily in the oil and gas sector.	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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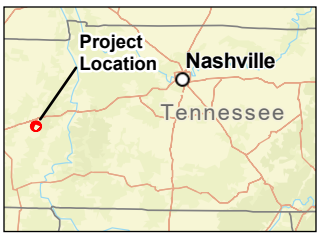
Attachment 1

Project Figures



Project Boundary (54.16 ac)

0 250 500 Feet
(At original document size of 8.5x11)
1:10,000

N

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, Esri Community Maps Contributors, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, Maxar

Stantec

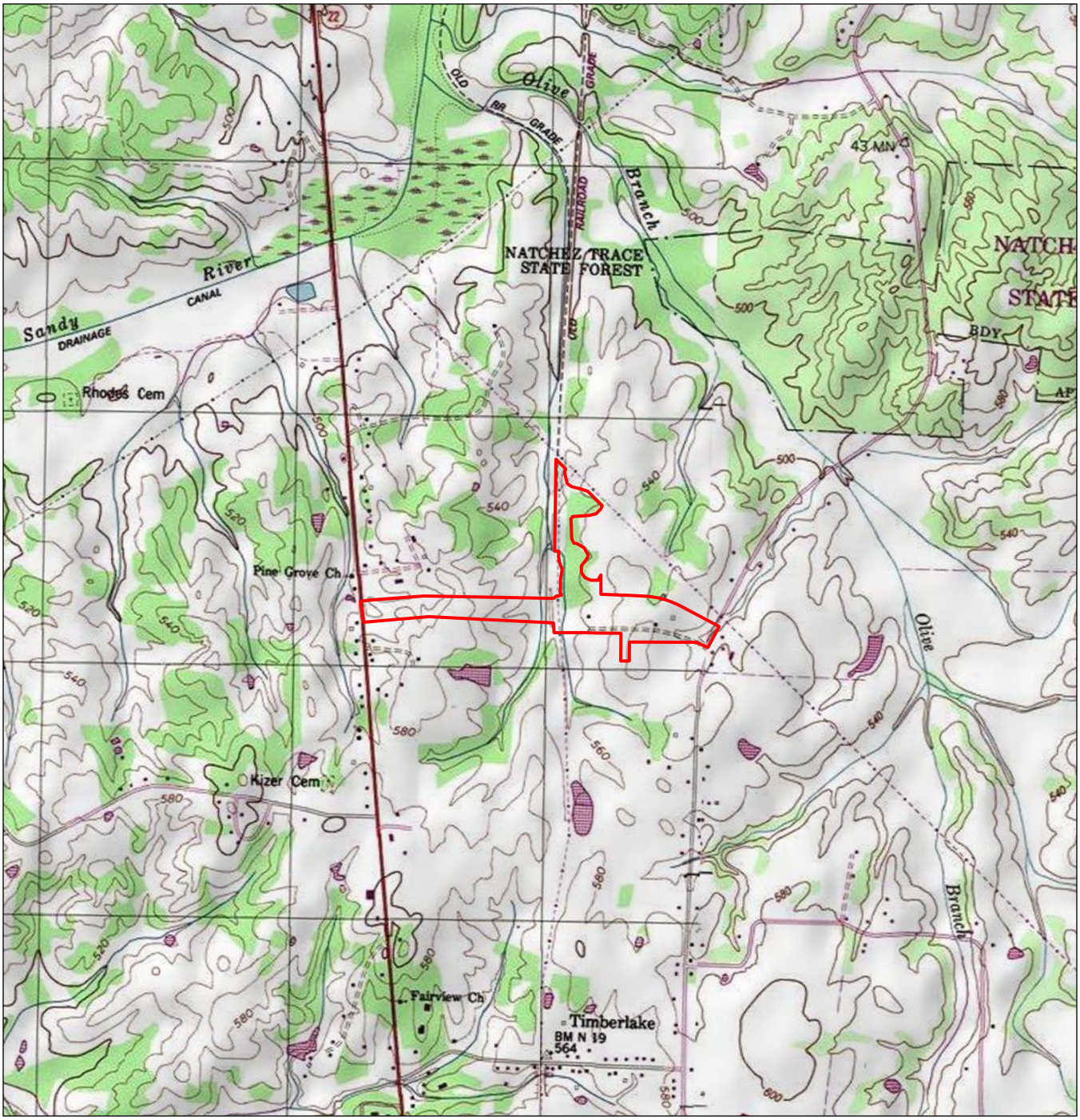
Project Location
Henderson Co., TN

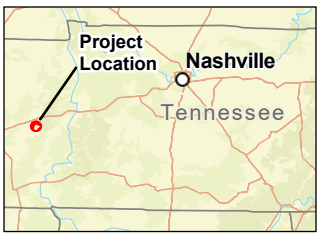
Prepared by pmarsey on 1/17/2024

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

Figure No.
1A

Title
Henderson County Project Aerial





Project Boundary (54.16 ac)

0 1,000 2,000 Feet

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

N

Stantec

Project Location
Henderson Co., TN

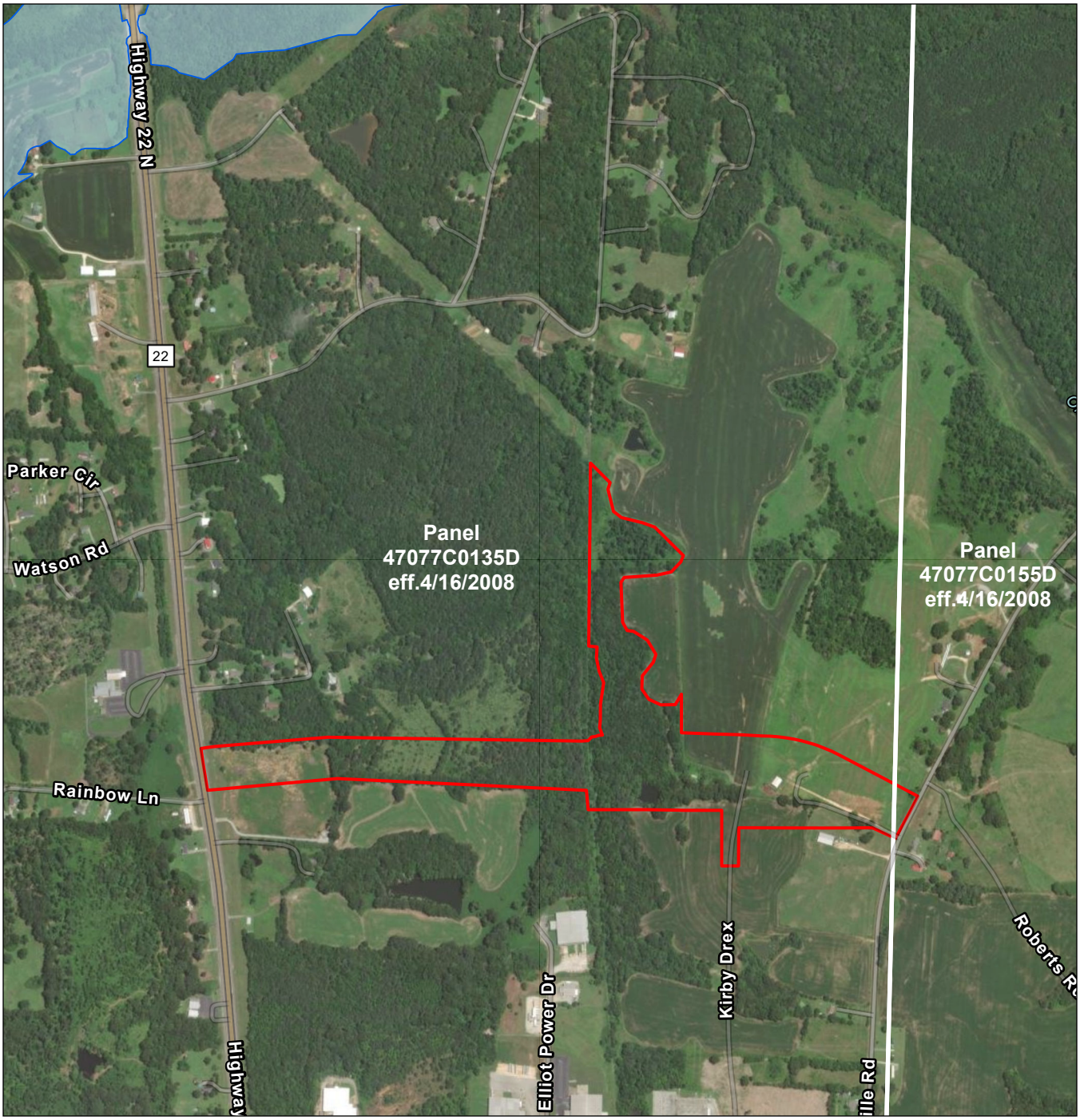
Prepared by pmarsey on 2/20/2024

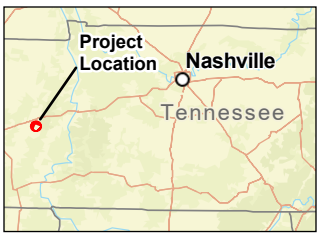
Client/Project
Tennessee Valley Authority
TVA: FY24 Investment Prep Projects
Environmental Assessment Report

Figure No.
1B

Title
Henderson County
USGS Quadrangle

Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky South FIPS 1602 Feet
2. Data Sources: TVA
3. Background: Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS, Copyright:© 2013 National Geographic Society, i-cubed





Project Boundary (54.16 ac)
FEMA Floodplain

0 500 1,000 Feet
(At original document size of 8.5x11)
1:12,000

N

Stantec

Project Location
Henderson Co., TN

Prepared by pmarsey on 3/20/2024

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

Figure No.
1C

Title
Henderson County
FEMA Floodplain

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, Esri Community Maps Contributors, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, Maxar

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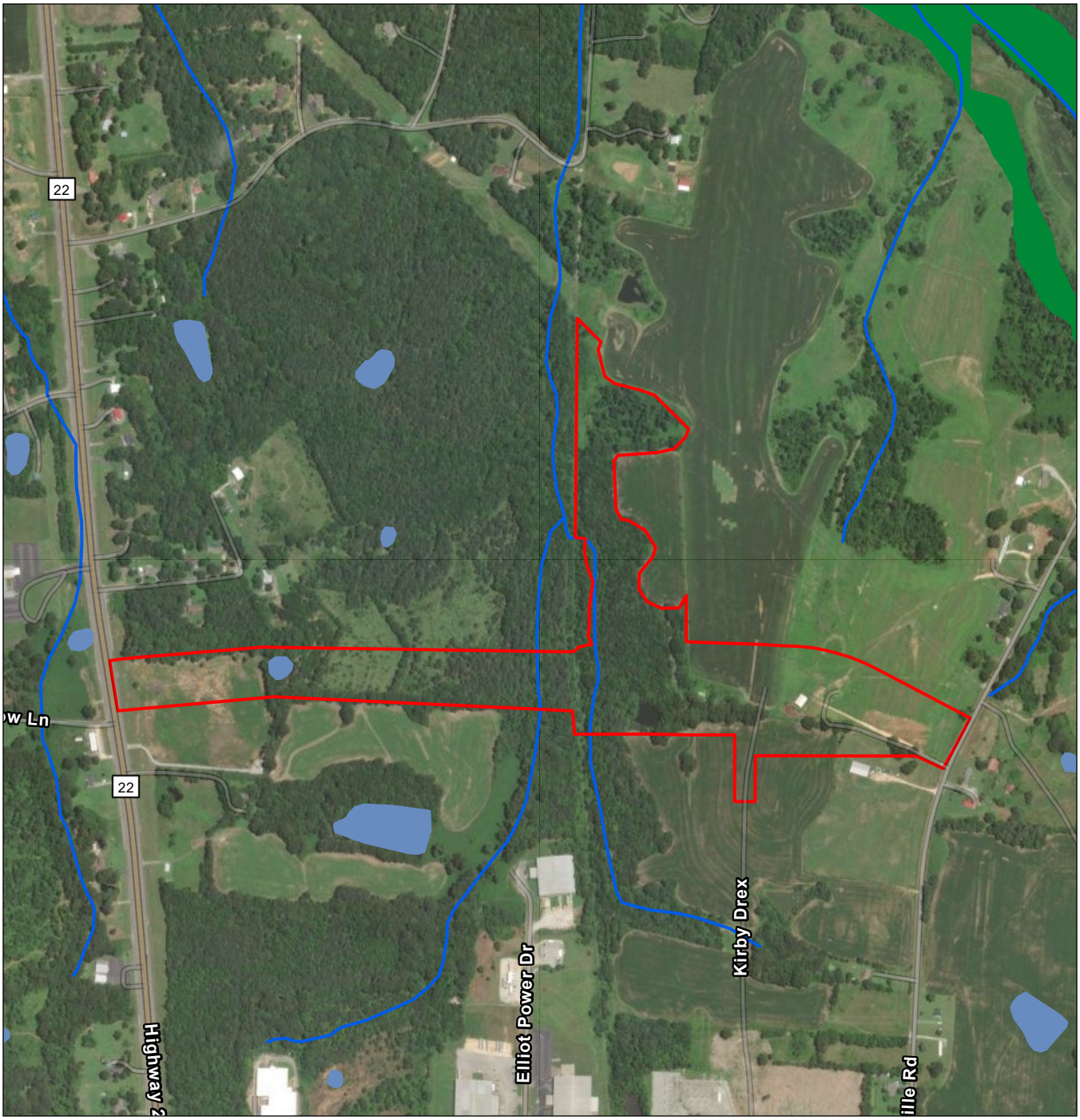

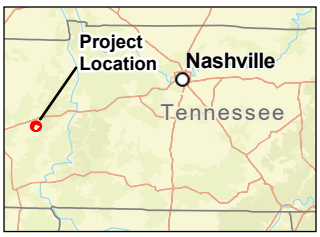

Project Boundary (54.16 ac)

NHD Flowline

NWI Wetlands

Freshwater Forested/Shrub Wetland

Freshwater Pond

0 200 400 Feet

(At original document size of 8.5x11)
1:10,000

N

Notes

1. Coordinate System: NAD 1983 StatePlane Tennessee FIPS 4100 Feet
2. Data Sources: TVA, USFWS
3. Background: Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS, Esri Community Maps Contributors, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, Maxar

Stantec

Project Location
Henderson Co., TN

Prepared by pmarsey on 2/20/2024

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

Figure No.
1D

Title
Henderson County
USFWS NWI and Water Inventory

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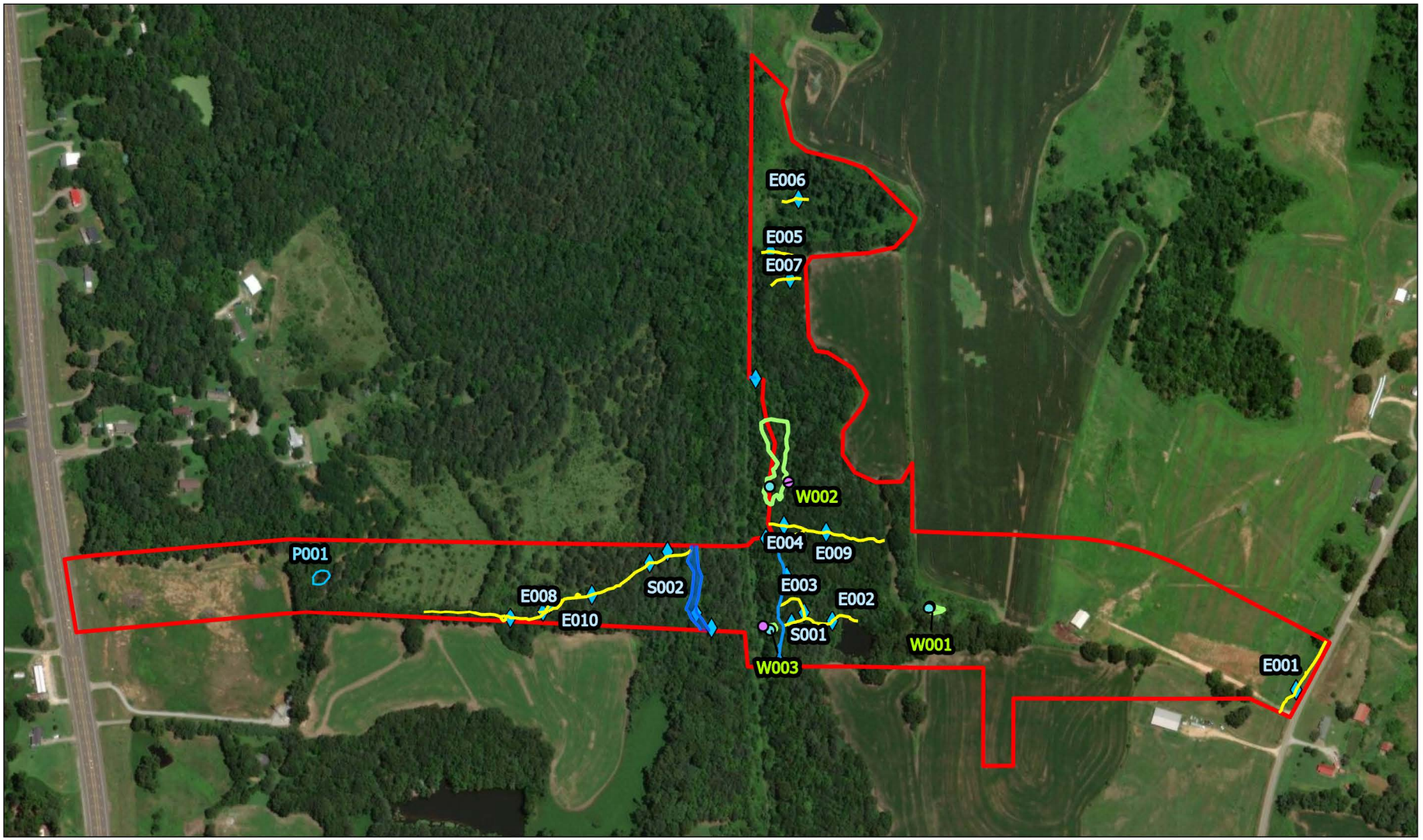

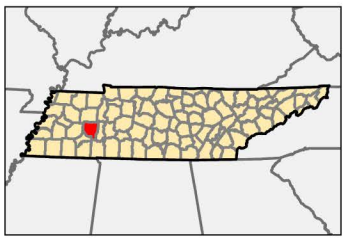

Project Boundary
Streams
Wet Weather Conveyances
Delineated Open Water
Delineated Wetlands
Stream Points
WAS Points
Upland
Wetland

N

0 275 550 Feet
(At original document size of 8.5x11)
1 inch = 550 feet

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

Stantec

Project Location
Henderson County,
Tennessee

Prepared by MNA on 2024-02-26
TR by SPK on 2024-02-27
IR by JM on 2024-02-27

Client/Project
Tennessee Valley Authority
TVA FY24 InvestPrep Projects
Environmental Assessment Report
172608384

Figure No.
1-E

Title
Wetland and Waterbody Delineation Map

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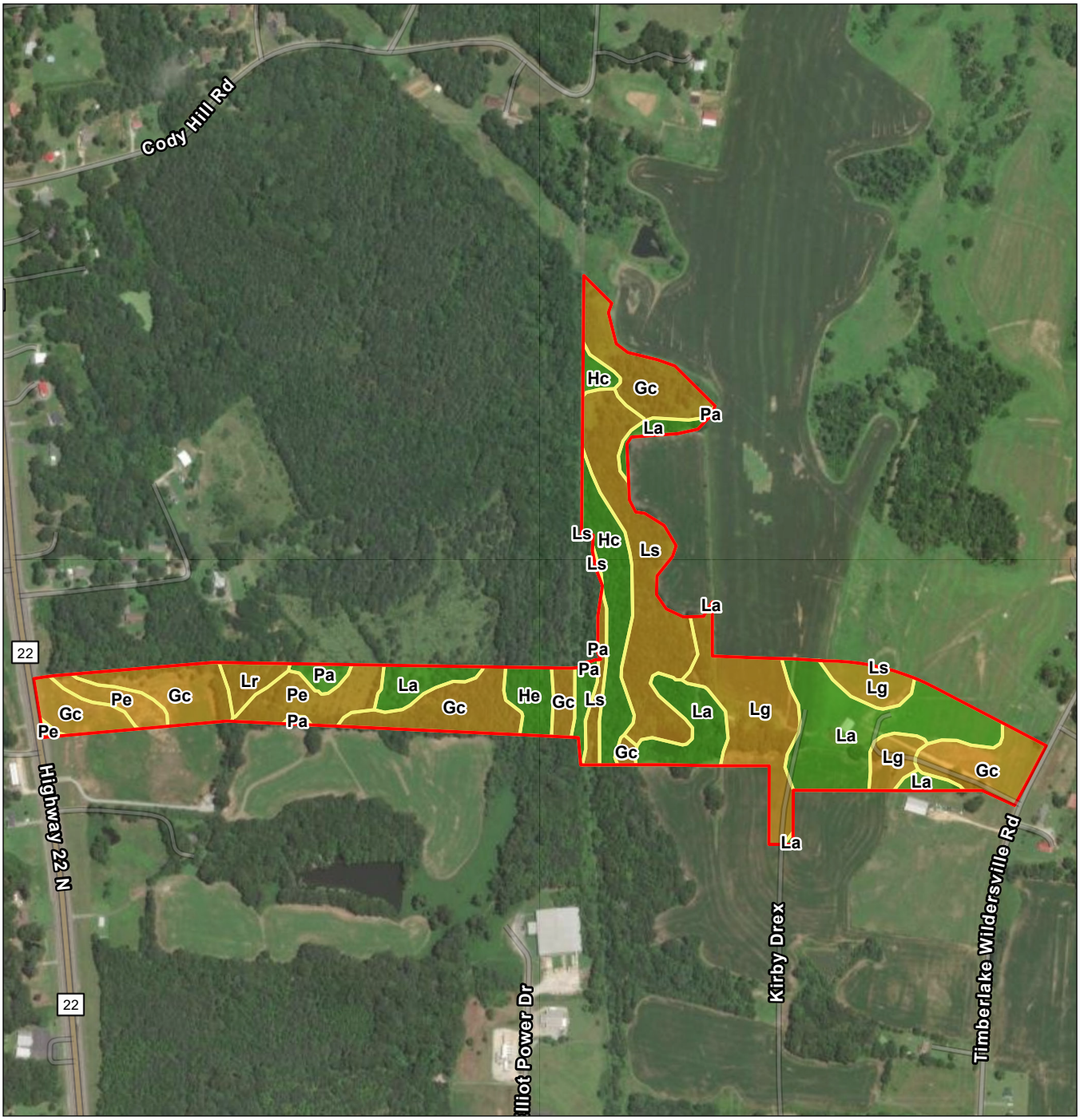
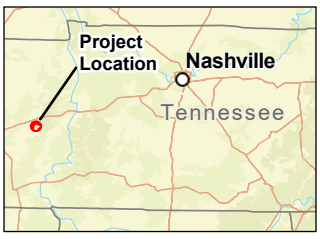




Notes

1. Coordinate System: NAD 1983 StatePlane Tennessee FIPS 4100 Feet
2. Data Sources: TVA, NRCS
3. Background: Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS, Esri Community Maps Contributors, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census

- Project Boundary (54.16 ac)
- Gc - Moderately gullied land Lexington-Ruston materials complex (Lexington-Smithdale) (14.41 ac)
- Hc - Hymon fine sandy loam, local alluvium phase (Iuka) (4.20 ac)
- He - Hymon silt loam, local alluvium phase (Collins) (1.35 ac)
- La - Lexington silt loam, eroded gently sloping phase (11.71 ac)
- Lg - Lexington silty clay loam, severely eroded sloping phase (7.90 ac)
- Lr - Lexington-Ruston soils, severely eroded strongly sloping phases complex (Lexington-Smithdale) (0.96 ac)
- Ls - Lexington-Ruston soils, moderately steep phases complex (Lexington-Smithdale) (8.34 ac)
- Pa - Providence silt loam, eroded gently sloping phase (1.37 ac)
- Pe - Providence silt loam, 5 to 8 percent slopes, severely eroded (3.91 ac)
- All areas are prime farmland (18.64 ac)
- Not prime farmland (35.52 ac)

0 200 400 Feet
(At original document size of 8.5x11)
1:8,500

N

Stantec

Project Location
Henderson Co., TN

Prepared by pmarsey on 2/27/2024

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

172608384

Figure No.
1F

Title
Henderson 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 - Henderson County, TN **Date:** Sep 28, 2023

Contact(s): Brittany Kunkle **CEC#:** **Project ID:** 2024-3

Project Location (City, County, State): Lexington, Henderson County, TN

Project Description:

Utilize TVA InvestPrep funds matched with Non-TVA funds to assist with the purchase of 11 acres, clearing and grubbing, construction of an access road, and additional grading on a previously graded dirt building pad.

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: 22.17 (•)**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 24, 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): 4.28 **(**(•)**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 4.28 ◉ **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 Nov 21, 2023

TVA Action	Total 20-year	Winter	Volant Season	Non-Volant Season
9 Promote Economic Development	7,435.62	6,732.54	703.08	0

STEP 12) Amount contributed to TVA's Bat Conservation Fund upon activity completion: $ 2,140 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.
■	17, 23, 34	**SHF4** - If burns need to be conducted during April and May, when there is some potential for bats to present on the landscape and more likely to enter torpor due to colder temperatures, burns will only be conducted if the air temperature is 55° or greater, and preferably 60° or greater.
■	33, 34	**TR1*** - Removal of potentially suitable summer roosting habitat during time of potential occupancy has been quantified and minimized programmatically. TVA will track and document alignment of activities that include tree removal (i.e., hazard trees, mechanical vegetation removal) with the programmatic quantitative cumulative estimate of seasonal removal of potential summer roost trees for Indiana bat and northern long-eared bat. Project will therefore communicate completion of tree removal to appropriate TVA staff.
■	33, 34	**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.
■	33, 34	**TR9** - If removal of suitable summer roosting habitat occurs when bats are present on the landscape, a funding contribution (based on amount of habitat removed) towards future conservation and recovery efforts for federally listed bats would be carried out. Project can consider seasonal bat presence/absence surveys (mist netting or emergence counts) that allow for positive detections without resulting in increased constraints in cost and project schedule. This will enable TVA to contribute to increased knowledge of bat presence on the landscape while carrying out TVA's broad mission and responsibilities.
■	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 4.28 ◉ ac ○ trees and that use of Take will require $ 2,140 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

March 15, 2024

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

Dear Ellen,

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 Reeves Site Economic Development Project in Henderson County, TN. The intent of the FPPA is to minimize the impact Federal programs have on the unnecessary and irreversible conversion of important farmland to nonagricultural uses.

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

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

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

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

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

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

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

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

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

Questions regarding your inquiry and this response can be 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: Tuesday, April 2, 2024 8:08 PM
To: Beliles, Emily
Cc: Reaux, Derek; Harle, Michaelyn S
Subject: Economic Development, Reeves Site; CRMS 82386931711 - Project # SHPO0004706

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

04-02-2024 19:06:45 CDT

Micahelyn Harle
TVA

RE: Tennessee Valley Authority (TVA), Economic Development, Reeves Site; CRMS 82386931711, Project#: SHPO0004706, Lexington, Henderson County, TN

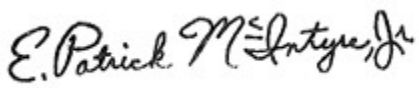
Dear Micahelyn Harle:

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 find that no historic properties eligible for listing in the National Register of Historic Places will be affected by this undertaking. If project plans are changed or archaeological remains are discovered during project construction, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act. Please provide your Project # when submitting any additional information

regarding this undertaking. Questions or comments may be directed to 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:MSG13207288_5Y9P61nbtUHfmZPZIUm