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**ECONOMIC DEVELOPMENT GRANT PROPOSAL FOR THE
FLORENCE-LAUDERDALE INDUSTRIAL PARK (LOT D)
ENVIRONMENTAL ASSESSMENT
Lauderdale County, Alabama (Florence)**

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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 Shoals Economic Development Authority (SEDA) to assist with the development of a portion of the Florence-Lauderdale Industrial Park, Lot D in Lauderdale County, Alabama. The area of TVA's Proposed Action (herein referred to as the Project Area) encompasses approximately 33.5 acres of mostly forested land located approximately 1 mile east of U.S. Highway 17 and about 4 miles north of the City of Florence, Alabama (see Figure 1 below and Attachment 1, Figure 1-A). TVA funds would be used for clearing, grubbing, grading, and stormwater management associated with development of a gravel access road and a 300,000 square foot (SF) dirt building pad (including parking and truck courts). Site stabilization would be conducted after construction is complete. These activities, herein referred to as the Proposed Action, are further detailed in Section 3.2 below.

The proposed grant to the SEDA would assist with site preparation and access to allow prospects to better envision the development potential of the site. The proposed improvements would lead to an increased probability of achieving TVA's core mission of job creation and capital investment. Multiple industrial or commercial sites exist within 1 mile, particularly to the west and south, including TASUS, Kith Kitchens, Thacker Casket, MS Metal Solutions, Southeastern Extrusion Tool and Die, East Coast Metal Distributors, Delta Steel and Tubing, Tristate Metals, Southwire, Applied Chemical Technology, and ALMAG Aluminum. Target industries include advanced manufacturers, suppliers to automotive and aluminum markets, agricultural technology, and food and beverage manufacturers. 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 SEDA.

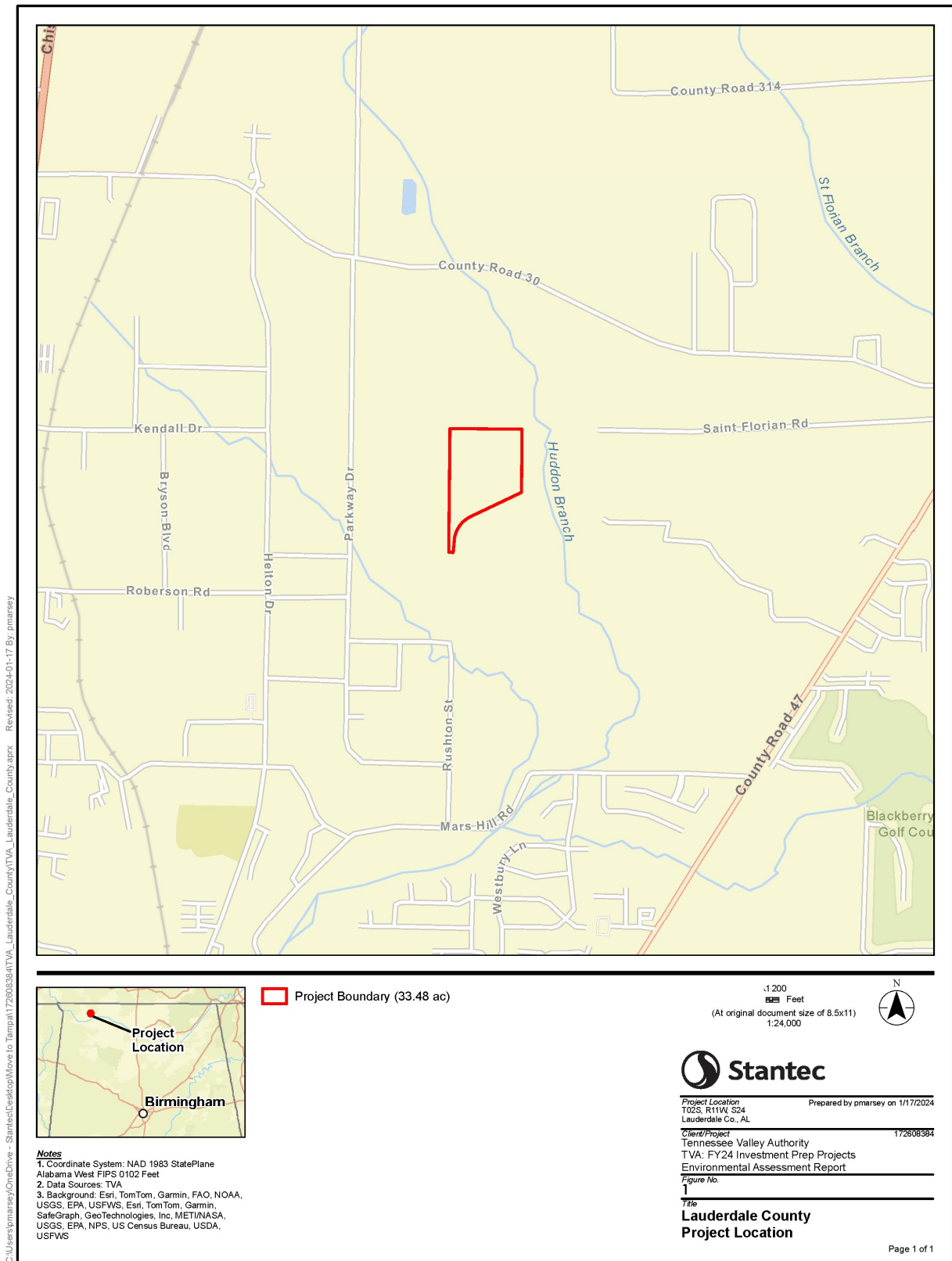


Figure 1. Project Location Map

2.0 OTHER ENVIRONMENTAL REVIEWS AND DOCUMENTATION

In preparation for site development, other studies have been performed by the SEDA at the 33.5-acre Project Area. The various studies were performed at different times.

An archaeological file review was performed by the University of Alabama (Museums) – Office of Archaeological Research in March 2008 (University of Alabama (Museums) – Office of Archaeological Research, 2008). No sites were recorded in the Project Area, but the site was noted as having “the potential for archaeological sites.” The Alabama Historical Commission – State Historic Preservation Office (SHPO) concurred with the application for the site to become an “AdvantageSite” in a letter dated August 20, 2008. Stantec staff performed an assessment of archaeology resources in January 2024. No archaeological sites were identified during Stantec’s survey (Stantec 2024a).

A Phase I Environmental Site Assessment (Phase I ESA) of most (portions of the southern and eastern portions of the Project Area appear to extend just outside the area covered by the Phase I ESA) of the Project Area were performed consistent with the procedures included in ASTM E 1527-05 (Standard Practice for Environmental Site Assessments). The purpose of the Phase I ESA was to identify the presence of recognized environmental conditions (REC) within the Project Area. No known, suspected, or historical RECs or environmental concerns were identified (S&ME 2012).

A preliminary geotechnical exploration was performed by Qore Property Sciences (2008a); however, the geographic scope of the exploration’s boring locations was almost completely located outside of the Project Area. The results of the exploration are useful only as background information for adjacent areas to the west and south of the Project Area.

Qore Property Sciences (2008b) performed a preliminary wetlands assessment of the broader industrial park site including the Project Area in May 2008. Although the mapping provided in the report is not definitive, it appears that the two identified waterbodies and one identified wetland occur outside of the Project Area to the west and southwest. The U.S. Army Corps of Engineers – Nashville District (USACE) issued a letter in March 2009 indicating that it determined that Craven Branch, an unnamed tributary to Craven Branch, and two wetlands (one wetland associated with each stream) were waters of the U.S. and subject to USACE regulatory jurisdiction. However, all four features appear to be located outside of the Project Area to the west and southwest (USACE 2009). Stantec staff performed an assessment of aquatic features and wetlands in January 2024. No waterbodies or wetlands were identified within the Project Area during this field survey (Stantec 2024b).

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

Qore Property Sciences (2008c) performed a threatened and endangered species survey of the broader industrial park site including the Project Area in September 2008. The results of the survey indicated that no threatened or endangered species, or their habitats, were observed.

TVA staff performed a Categorical Exclusion Checklist (CEC) in 2019 for proposed development within the broader industrial park, but essentially outside of the Project Area in adjacent areas to the south and southwest. The results of the CEC are useful only as background information for the site vicinity.

The archaeology file review and subsequent Stantec field survey, Phase I ESA, preliminary geotechnical exploration, preliminary wetlands assessment and subsequent Stantec field survey, USACE letter, threatened and endangered species survey, TVA staff field surveys, and CEC 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 SEDA. TVA would not further its mission of promoting economic development by assisting the local community to compete successfully for new jobs and capital investment through the Proposed Action. If the SEDA were to secure alternate funding and proceed with its current plans, the overall environmental consequences would be similar to those expected from implementing the Action Alternative. In the event the Project is postponed, any environmental effects would be delayed for the duration of the postponement. If the Project were cancelled, no direct environmental effects would be anticipated, as environmental conditions on the site would remain essentially unchanged from the current conditions for the foreseeable future.

3.2 The Action Alternative

Under the Action Alternative, TVA would provide InvestPrep funds to the SEDA for site improvements to the Project Area. These improvements would include tree clearing of approximately 33 acres with associated removal and burning of trees and stumps on site, grading of the entire 33.5-acre Project Area to create a 300,000 SF dirt building pad with associated parking and truck court areas, a temporary sediment basin, construction of a gravel access road from the intersection of Gerrard Drive and Rushton Street to the proposed dirt building pad, and site stabilization after grading is completed. No off-site borrow would be needed for the grading.

Activities required for the Action Alternative would occur over approximately 7 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 clearing, grading and/or construction.

The SEDA, 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, but are not limited to, the installation of sediment and erosion controls (silt fences, sediment traps, etc.) management of fugitive dust, and daytime work hours.

TVA's preferred alternative is the Action Alternative. The Action Alternative does not include the assessment of activities that may be directly or indirectly associated with adjacent lots already developed or under construction or the eventual build-out, occupation, and future use of the Project Area. The future use of the site has not been 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 33.5-acre Project Area encompasses a portion (Lot D) of the Florence-Lauderdale Industrial Park in Lauderdale County, Alabama, on mostly forested uplands about 1.3 miles east of Highway 17, two miles north of Highway 133, and two miles north of Florence, Alabama, and the Tennessee River (Attachment 1, Figure 1-A).

The Project Area is situated within a mixed agricultural, industrial/commercial, and light residential area of Lauderdale County, Alabama, and is zoned as Light Industrial. Industrial and/or commercial neighbors are described in Section 1.0 and occur south and west of the Project Area. Agricultural and residential areas occur to the southeast, east, and north with patchy forested areas. The Project Area is almost entirely forested with no structures present. Utilities located adjacent to the Project Area include an 8-inch water line, 12-inch sewer line, overhead electric distribution lines, and 3-inch and 6-inch natural gas lines.

The Project Area ranges from approximately 625 to 725 feet above mean sea level (Attachment 1, Figure 1-B). In the past, the Project Area was largely wooded based on historical aerial imagery dating back to 1949 (S&ME 2012).

4.2 Impacts Evaluated

As stated previously, a Phase I ESA was conducted in the Project Area. The Phase I ESA did not identify any RECs or environmental conditions within the Project Area that would indicate the presence of solid or hazardous wastes (S&ME 2012). Based on the 2012 Phase I ESA, there is no evidence that historical use of pesticides/herbicides at the Project Area was conducted outside of standard practices. Therefore, the possible long-term use of agricultural grade pesticides or herbicides that may persist in the soils at the subject Property does not represent a REC. No demolition or construction waste activities are associated with the Action Alternative. 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 Lauderdale County, Alabama (Attachment 1, Figure 1-C), (panel number 01077C0482D, effective September 11, 2009) indicate the Project Area would not be located within an identified 100-year floodplain. No perennial streams appear to occur in the Project Area based on prior studies (Qore Property Sciences 2008b, USACE 2009). 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.

The U.S. Fish and Wildlife Service National Wetlands Inventory and Water Resources Inventory map is provided as Attachment 1, Figure 1D. The results of Stantec's field survey for aquatic resources indicated that there were no surface waters identified on site (Stantec 2024b). Additionally, there are no wetlands located in the Project Area; therefore, the Proposed Action would not result in impacts to surface waters or wetlands and would be consistent with EO 11990. Because the Proposed Action would have no effect on surface waters, there would be no effects on aquatic zoology.

The Proposed Action would result in clearing of forested land and development of a 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 Project Area includes 12.47 acres of prime farmland and 16.24 acres of Farmland of State Importance (Attachment 1, Figure 1-E). However, additional coordination with Natural Resources Conservation Service (NRCS) determined the Project Area is located less than one mile from designated Urban Land by the U.S. Census and would be considered urban sprawl and therefore Exempt from the Farmland Protection Policy Act (Attachment 3). The Project Area is located within a property zoned as Light Industrial and would not result in a change to the zoned land use.

Natural areas include ecologically significant sites; federal, state, or local park lands; national or state forests; wilderness areas; scenic areas; wildlife management areas (WMA); recreational areas; greenways; trails; Nationwide Rivers Inventory (NRI) streams; and wild and scenic rivers. Managed areas include lands held in public ownership that are managed by an entity (e.g., TVA, United States Department of Agriculture, United States Forest Service, State of Alabama) to protect and maintain certain ecological and/or recreational features. 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. NRI streams are free-flowing segments of rivers recognized by the United States National Park Service (NPS) as possessing remarkable natural or cultural values.

A review of data from the TVA Regional Natural Heritage database indicated that there are two managed/natural areas within three miles of the Project Area: Billingsley-McClure Shoal Creek Preserve (303.3 acres) located about 2.9 miles to the northeast and Cox Creek Park (26.1 acres) located about 2.4 miles to the southwest. None of these resources overlap with the Project Area. Given the distance and nature of these resources relative to the Project Area, no impacts on natural areas are anticipated from the Proposed Action.

The Blackberry Trail Golf Course is located approximately 1.2 miles to the southeast of the Project Area. There are no other developed parks or outdoor recreation areas in the immediate vicinity of the Project Area. Given the distances between the Project Area and the golf course, and the fact that the Project Area is zoned as Light Industrial and is located adjacent to a commercial and industrialized area, implementation of the Action Alternative would not result in significant impacts on recreational opportunities near the Project Area.

TVA, through consultation with the SHPO, has determined that the Area of Potential Effect (APE) is restricted to the Project footprint. Given that there are no known historic structures within the Project footprint and that the proposed Project does not involve the construction of above ground resources, no historic architectural resources would be impacted by the Project, directly or visually. As such, a Phase I historic structures survey was not required and there would be no impacts on historic structures.

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, surface waters, wetlands, aquatic zoology, land use, prime farmland, natural areas, recreation, or historic structures as discussed above. Therefore, potential impacts on 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, terrestrial zoology, botany, and archaeology. Implementation of the Action Alternative could create potential impacts on the human environment, including visual effects, noise, socioeconomics and environmental justice, and transportation issues. Potential impacts on resources and impacts on 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 (NO₂), carbon monoxide (CO), ozone, sulfur dioxide (SO₂), lead, particulate matter (PM) with an aerodynamic diameter equal to or less than 10 microns (PM₁₀), and PM with an aerodynamic diameter equal to or less than 2.5 microns (PM_{2.5}). The NAAQS reflect the relationship between pollutant concentrations and health and welfare effects. Primary standards protect human health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards are designed to protect public welfare, including visibility, animals, crops, vegetation, and buildings. These standards reflect the latest scientific knowledge and have an adequate margin of safety intended to address uncertainties and provide a reasonable degree of protection. Green Book lists Lauderdale County (part); TVA Colbert Plant, AL as in Maintenance status since 1993 for Sulfur Dioxide (1971) (USEPA 2024). Overall, the air quality in Lauderdale County, Alabama 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 (CO₂), 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, volatile organic compounds (VOCs), SO₂, PM₁₀, PM_{2.5}, GHGs, and small amounts of HAPs. Gasoline and diesel engines used as a result of the Action Alternative 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 produces smoke containing CO, CO₂, PM, NO₂, and VOCs (ORCAA 2024). Smoke inhalation can cause irritation, breathing issues, and respiratory diseases.

Fugitive dust is a source of respirable airborne PM, including PM₁₀ and PM_{2.5}, which could result from ground disturbances such as land clearing, grading, excavation, and travel on unpaved roads. The amount of dust generated is a function of the activity, silt and moisture content of the soil, wind speed, frequency of precipitation, vehicle traffic, vehicle types, and roadway characteristics. The SEDA, or its contractors, would be expected to comply with Alabama Department of Environmental Management regulations, 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.

Concerning climate change, trees, like other green plants, are carbon sinks that use photosynthesis to convert CO₂ into sugar, cellulose, and other carbon-containing carbohydrates that they use for food and growth. Carbon sequestration is the process by which carbon sinks remove CO₂ from the atmosphere. Although forests do release some CO₂ from natural processes such as decay and respiration, a healthy forest typically stores carbon at a greater rate than it releases carbon. Trees would be cleared as a part of the Proposed Action and since the Project Area is largely wooded land, it contributes as a carbon sink. However, on a national or global scale, the Proposed Action of clearing 33.1 acres of trees would have little contribution to climate change.

Methane is emitted as a result of animal waste from livestock and through agricultural practices. It is a very potent greenhouse gas, being far better at absorbing long-wave radiation than carbon dioxide, which contributes to the acceleration of human-caused 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 SEDA 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 SEDA 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 on air quality and climate change from the No Action Alternative.

4.2.2 Groundwater

The Project Area is located within the Highland Rim Section of the Interior Low Plateaus Province (NPS 2017, USGS 2023). The Low Plateaus Province extends south to Alabama and north to Kentucky, southern Indiana and southern Illinois. The Highland Rim Section in Alabama of Interior Low Plateaus Province is characterized by Mississippian age limestone underlying weathered regolith and residuum (USGS 1995), (Qore Science Property Sciences 2008a).

In northwest Alabama, the principal aquifer system in the Highland Rim Section is the Mississippian aged Tuscumbia Limestone and the underlying Fort Payne Chert formation. The Tuscumbia Limestone consists of light-gray limestone that is partly oolitic near the top of the formation and commonly found thin to thick bedded, fine to coarse grained, bioclastic limestone (GSA 1988). The underlying Fort Payne Chert consists of thin to thick bedded, fine to coarse grained, very light to light-olive gray bioclastic limestone with light to dark-gray chert lenses and beds (GSA 1988).

The groundwater quality in the Tuscumbia Limestone and Fort Payne Chert is considered to be calcium bicarbonate type near the top of the formations and transitions to a calcium sulfate type near the bottom of the Fort Payne Chert formation (USGS 1999). The specific conductance concentrations for the Tuscumbia Limestone range from 53 microsiemens per centimeter ($\mu\text{S}/\text{cm}$) to 642 $\mu\text{S}/\text{cm}$ (USGS 1999). The specific conductance concentrations of the underlying Fort Payne Chert formation range from 31 $\mu\text{S}/\text{cm}$ to 1,500 $\mu\text{S}/\text{cm}$ (USGS 1999). The principal aquifer used for water supply near the Project Area is the Tuscumbia Limestone. The Tuscumbia Limestone receives recharge via precipitation percolating into the overlying regolith down into the limestone (USGS 1999).

Implementation of the Action Alternative would result in ground disturbance during construction activities. Tree clearing, removal and burning would result in minor ground disturbance at shallow depths. Site grading and compaction for a 300,000 SF dirt building pad with associated parking and truck court areas, a temporary sediment basin, and construction of a gravel access road may result in greater ground disturbance at moderate depths. Geotechnical borings were conducted near the Project Area in 2008, adjacent to the west and south. The "Report of Preliminary Geotechnical Exploration – Florence Industrial Park Expansion" conducted by Qore Property Sciences indicates the overburden at the Project site consists mostly of residuum (clay made from weathered rock materials) from depths ranging 5 feet to 50.5 feet below land surface (maximum depth of conducted borings). Ground disturbances are not anticipated to result in significant impacts on groundwater resources as the underlying Tuscumbia Limestone is approximately 150 to 200 feet thick near the Project Area and contains a residuum overburden that may extend to a depth of 50 feet below land surface in parts of the Project Area (GSA 1972 and Qore Property Sciences 2008a). These minor impacts would be temporary and would not significantly affect groundwater resources. Shallow aquifers could sustain minor impacts from changes in overland water flow and recharge caused by grading and construction of an access road within the Project Area. Water infiltration, which is normally enhanced by vegetation, would be reduced until vegetation is re-established. In addition, near-surface soil compaction caused by heavy construction vehicles could reduce the ability of soil to absorb water. These minor impacts would be temporary and would not significantly affect groundwater resources.

The Phase I ESA indicated that the Project Area was forested and there was no discovery of adverse environmental conditions on the Project Area. Historical land use of the Project Area was primarily forested. As such, it is not anticipated that construction activities would encounter hazardous substances during the aforementioned site improvements. Furthermore, it is expected that the SEDA, 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.

Implementation of the Action Alternative would result in potential impacts on groundwater resources as described above, but these impacts would be minimal, temporary, and localized.

Under the No Action Alternative, if the SEDA 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 on groundwater resources as those described above for the Action Alternative. If the SEDA 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 on groundwater resources.

4.2.3 Soils

The Project Area is in Lauderdale County, Alabama within the Highlands Rim Section of the Interior Low Plateaus Province (NPS 2017, USGS 2023). The Project Area does not contain any streams or reaches.

Precipitation in the vicinity of the Project Area averages about 54 inches per year. The average monthly air temperature ranges from a high of 91.6 degrees Fahrenheit in July to a low of 33.5 degrees Fahrenheit in January (National Weather Service [NWS] 2024).

Soil types and descriptions were obtained from the Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2024) (see Attachment 1, Figure 1-E). Soil types found within the Project Area include: Bodine gravelly silt loam (12 to 30 percent slopes), Dewey silt loam (2 to 6 percent slopes), Dewey silt loam (6 to 10 percent slopes), Dewey silty clay loam (6 to 10 percent slopes), Dickson silt loam (2 to 5 percent slopes), Fullerton gravelly silt loam (2 to 6 percent slopes), and Fullerton gravelly silt loam (6 to 15 percent slopes).

A geotechnical investigation was conducted near the Project Area in 2008 (Qore Property Sciences 2008). Although the test bores were located adjacent to the Project Area to the west and south, the results are useful as background information for the immediate vicinity. The 2008 investigation found disturbed and alluvial soil 0 to 5 feet below land surface and residuum (clay made from weathered rock materials) from 5 feet to a refusal depth of 50.5 feet. The remainder of the borings were comprised of the same disturbed soil, alluvial soil and residuum described above. The report recommends that the southwest portion of the Project Area may require subgrade stabilization or undercutting and replacement with compacted soil fill for construction to occur in this area. This is a result of the topography of the Project Area that indicates storm runoff appears to drain to this area. (Qore Property Sciences 2008).

Under the Action Alternative, soils in the Project Area would be disturbed by widespread grading of a 300,000 SF dirt building pad with associated parking and truck court areas, a temporary sediment basin, construction of a gravel access road 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 (ALR100000). This permit requires the development and implementation of a Construction Best Management Practices Plan (CBMPP). The CBMPP would identify specific BMPs to address construction-related activities that would be adopted to minimize erosion-related impacts. BMPs, as described in the Alabama Department of Environmental Management (ADEM) NPDES General Permit Part IIIA – Stormwater Pollution Prevention Requirements: Erosion Controls and Sediment Controls would be used during site development

to avoid contamination of surface water in the Project Area. These factors would effectively avoid or minimize impacts on soils or from soil erosion.

Under the No Action Alternative, if the SEDA 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 SEDA 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 Terrestrial Zoology

4.2.4.1 Wildlife

The Project proposes to utilize InvestPrep funds matched with non-TVA funds to assist with costs associated with developing a 300,000 SF dirt building pad and a gravel marketing road on Lot D — including clearing, grubbing, grading, and stormwater management. The Project Area is composed of a mixed oak-hickory forest with mature trees. Landscape features surrounding the Project Area consist of additional forested areas, a variety of early successional habitat and cropland (i.e., pasture and agricultural), and an industrial park.

Approximately 98.9% (33.1 acres) of the Project Area is mixed deciduous oak-hickory forest. The remaining area 1.1% (0.38 acre) contains mixed grasses (broomsedge, thistle, Johnson grass). The forested acreage is made up of a mixed mesic hardwood forest with mature oaks (blackjack oak, pin oak, southern red oak, and white oak), hickories (pignut and shagbark hickory), tulip poplar, and beech. This is a mid to late-successional forest with a closed canopy (75% closure or greater). The understory consists of American hornbeam, American pokeweed, Christmas fern, coralberry, green briar, green hawthorn, sassafras, summer grape, and winged elm. Most deciduous forests in the Project Area have trees that average between 6- and 18-inches diameter. Mesic hardwood forests are characterized by blowdowns, tip-up mounds, dead standing snags, and canopy gaps resulting in a patchy understory. Rotting stumps and root holes provide important microhabitat structure for various amphibians and reptiles (Mitchell 2006). Snags and live trees with cavities or hollows provide areas that are used as nests, nurseries, storage areas, foraging, roosting, and perching spots for birds and small mammals (NWF 2023).

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). Common mammal inhabitants of hardwood forests include bobcat, coyote, eastern gray squirrel, raccoon, red fox, Virginia opossum, and white-tailed deer (Whitaker 1997). During a field survey on October 31, 2023, Terrestrial Zoologists observed squirrel nests, white-tailed deer rubbings, and nine-banded armadillo dens. Armadillos are a very adaptable species with an expanding range throughout the southeastern U.S. (Cook 2023). Reptiles and amphibians including American toad, gray tree frog, wood frog, spotted salamander, eastern box turtle, five-lined skink, brown snake, copperhead, king snake, rat snake, ring-necked snake, and timber rattlesnake are also known to occur in this habitat type (Mitchell 2006). No wetlands were noted during a field survey.

Review of the TVA Regional Natural Heritage database on October 16, 2023, did not result in records for any caves, heronries, or aggregations of migratory birds within three miles of the Project Area. Review of the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) project planning tool on October 16, 2023, identified eleven migratory birds of conservation concern (bald eagle, brown-headed nuthatch, cerulean warbler, chimney swift, field sparrow, Kentucky warbler, prairie warbler, prothonotary warbler, red-headed woodpecker, rusty blackbird, and wood thrush) having the potential to occur within the Project Area.

See full bald eagle analysis below in Section 4.2.4.2.

Brown-headed nuthatches nest in pine forests year-round in the southeastern U.S. They utilize cavities in dead and decaying trees (National Geographic 2002.) No pines were observed during a field survey; as such, habitat for this species does not exist within the Project Area.

Cerulean warblers are a migratory species that breed in large tracts of older deciduous forests with mature trees often on north and east-facing slopes. They often nest in openings in the canopy (Buehler 2020). It is not likely that this species would be found in the Project Area as they are rarely encountered in Alabama during breeding season (Carpenter 2005).

Chimney swifts use chimneys in urban areas as nesting sites and communal roosts (Steeves 2020). No chimney-like structures exist within the Project Area.

Field sparrows are residents year-round in Alabama. They are found in old field habitats and field edges (Carey 2020). Habitat for this species does not exist in the Project Area as there are no fields present.

Kentucky warblers are a migratory species that prefers to use lowland hardwood forests with a dense understory for nesting (McDonald 2020). Habitat for this species is found throughout the Project Area.

Prairie warblers are found in dry secondary growth forests with abundant shrubs and an open canopy (Nolan 2020). Suitable habitat for this species does not exist within the Project Area as habitat here consists of a closed canopy with no fields present.

Prothonotary warblers are a migratory species that nest in wooded swamps, flooded bottomland forests, and forests near lakes and streams. They avoid forests smaller than 250 acres (Petit 2020). Habitat for this species does not exist within the Project Area as no wetlands or waterbodies are present.

Red-headed woodpeckers use a variety of treed habitat but show preference for forested areas exhibiting more openness and a high number of available tree snags (Frei et al. 2020). Suitable nesting and foraging habitat for red-headed woodpecker is present throughout the Project Area and an individual was spotted during the field survey.

Rusty blackbirds are a migratory species that breeds in the boreal forest and winters in the eastern U.S. (Avery 2020). Nesting habitat for this species is not present within the Project Area as this species does not breed at this location.

Wood thrush is a migratory species that nests in the lower branches of saplings or shrubs in mature deciduous and mixed forests throughout eastern North America (Evans et al. 2020). Ample suitable habitat for this species exists throughout the Project Area.

Under the Action Alternative, TVA would provide funds to assist with developing the Project Area. Proposed Activities under the Action Alternative includes approximately 33.1 acres of tree removal. Trees and stumps would be burned on site. Approximately 33.5 acres would be graded to create a 300,000 SF dirt building pad and temporary sediment basin. Additionally, a gravel access road would be added. These actions 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 take place during breeding/nesting seasons. Habitat removal likely would disperse mobile wildlife into surrounding areas in an attempt to find new food sources, shelter sources, and to reestablish territories. Due to the availability of similarly suitable habitat in areas immediately adjacent to the Project Area, populations of common wildlife species are not likely to be adversely impacted by the Proposed Action.

Based on the lack of documented caves and aggregations of migratory birds, the Action Alternative is not expected to affect populations of migratory birds and unique or important karst habitat.

Under the No Action Alternative, if the SEDA were able to secure funding for the proposed TVA-funded actions described in this EA from outside sources, similar site activities would occur, resulting in similar impacts on terrestrial wildlife as those described above for the Action Alternative. If the SEDA 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 terrestrial wildlife.

4.2.4.2 Threatened and Endangered Species (Wildlife)

A review of terrestrial animal species in the TVA Regional Heritage Database performed on October 16, 2023, returned no state or federally listed species within three miles of the Project Area. Two federally listed species (gray bat and Indiana bat), one federally protected species (bald eagle), and two species proposed for federal listing (alligator snapping turtle and tricolored bat) are known from Lauderdale County, Alabama. The USFWS has also determined that two additional federally listed species (northern long-eared bat and whooping crane) and a candidate for federal listing (monarch butterfly) have the potential to occur within the Project Area. Thus, habitat suitability and potential impacts on these species will also be addressed (Table 4-1).

Table 4-1. Federally Listed Terrestrial Animal Species Reported from Lauderdale County, Alabama and Other Species of Conservation Concern Documented within 3 Miles of Florence-Lauderdale Industrial Park (Lot D).

Common Name	Scientific Name	Status ¹	
		Federal	State (Rank) ²
Birds			
Bald eagle ⁴	<i>Haliaeetus leucocephalus</i>	DL	SP(S4B)
Whooping crane ⁵	<i>Grus americana</i>	EXPN	-(S1N)
Insects			
Monarch butterfly ³	<i>Danus plexippus</i>	C	-

Common Name	Scientific Name	Status ¹	
		Federal	State (Rank) ²
Mammals			
Gray bat ⁴	<i>Myotis grisescens</i>	E	SP(S2)
Indiana bat ⁴	<i>Myotis sodalis</i>	E	SP(S2)
Northern long-eared bat ⁵	<i>Myotis septentrionalis</i>	E	SP(S2)
Tricolored bat ⁴	<i>Perimyotis subflavus</i>	PE	-(S3)
Reptiles			
Alligator snapping turtle ⁴	<i>Macrochelys temminckii</i>	PT	SP(S1)

Source: TVA Regional Natural Heritage Database; USFWS Ecological Conservation Online System (<http://ecos.fws.gov/ecos/home.action>) extracted 11/08/2023.

¹ Status Codes: C = Candidate Species; DL = Delisted; E = Endangered; EXPN= Experimental Population, Non-essential; PE = Proposed Endangered; PT = Proposed Threatened; SP = State Protected.

² State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S4 = Apparently Secure; S#B = Breeding; S#N = Nonbreeding.

³ Historically this species has not been tracked by state or federal heritage programs; USFWS has determined that this species could occur within the Project footprint.

⁴ Federally listed or protected species known from Lauderdale County, AL but not within three miles of the Project footprint.

⁵ Species has not been documented in Lauderdale County, AL although USFWS has determined it could occur in the Project Area.

The monarch butterfly is a highly migratory species, with eastern U.S. populations overwintering in Mexico. Monarch butterfly populations typically return to the eastern U.S. in April (Davis and Howard 2005). Summer breeding habitat requires milkweed plant species, on which adults exclusively lay eggs for larvae to develop and feed on. Adults will drink nectar from other blooming wildflowers when milkweeds are not in bloom (NatureServe 2023). Edges of the forested acreage within the Project Area have potential to contain some wildflower and other flowering plant species that could provide suitable foraging habitat for monarch butterflies. However, due to historic clearing and grading activities on the adjacent properties, no significant quantities of flowering plants are likely to occur on site. Though 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. Monarch butterfly is not currently subject to Section 7 consultation under the Endangered Species Act.

Alligator snapping turtles are a proposed threatened aquatic reptile that emerges from water only for nesting, 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 between May and July. The nearest known record of this species occurs approximately 7.64 miles from the Project Area. There are no large wetlands or waterbodies present in the Project Area. Suitable habitat for this species does not exist within the Project Area.

Bald eagles are protected under the Bald and Golden Eagle Protection Act. This species is associated with large mature trees capable of supporting their massive nests. These are usually found near large waterways where the eagles forage (USFWS 2007). The nearest bald eagle record occurs approximately 7.53 miles from the proposed activities. TVA terrestrial zoologists

did not observe any bald eagle nests during a site visit on October 31, 2023. No aquatic features are present within the Project Area and the nearest large waterbody, Wilson Reservoir, occurs approximately 6.3 miles from the Project Area. Additionally, bald eagles typically breed in large pines, which were not present within the Project Area. As such, foraging habitat for bald eagle is absent and nesting is unlikely.

The 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 U.S., a small captive-raised population breeds in Wisconsin and overwinters in Florida. Whooping crane is listed as Endangered in the Southwest (USFWS Region 2). Outside of this region (including Alabama), 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) 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 2023a). Migratory habitat for whooping crane does not exist within the Project Area.

Gray bats are a federally listed species associated year-round with caves, roosting in different caves throughout the year (Brady et al. 1982, Tuttle 1976). Bats disperse from colonies at dusk to forage along waterways (Harvey et al. 2011). The nearest gray bat record is from a cave approximately 4.73 miles away. There are no known caves within three miles of the Project Area. No other roosting habitat was observed in or near the Project footprint by TVA terrestrial zoologists during a site visit on October 31, 2023. No aquatic foraging habitat was observed on site during field review.

Indiana bat hibernates in caves during winter and inhabits forested areas around these caves for swarming (mating) in the fall and staging in the spring, prior to migration to summer habitat. During summer, Indiana bats roost under exfoliating bark and in cracks and crevices of trees. These trees are typically located in mature forests with an open understory and a nearby source of water. Indiana bats are known to change roost trees frequently throughout the season, yet still maintain site fidelity, returning to the same summer roosting areas in subsequent years (Pruitt and TeWinkel 2007; Kurta et al. 2002). The nearest documented record is from a cave approximately 27 miles from the Project Area. No aquatic foraging habitat was observed on site during field surveys.

Northern long-eared bat predominantly overwinters in large hibernacula such as caves, abandoned mines, and cave-like structures. During fall and spring, they utilize entrances of caves and surrounding forested areas for swarming and staging. In summer, northern long-eared bats roost individually or in colonies beneath exfoliating bark or in crevices of both live and dead trees. Roost selection by northern long-eared bat is similar to that of Indiana bat; however, it is thought that northern long-eared bats are more opportunistic in roost site selection. This species also roosts in abandoned buildings and under bridges. Northern long-eared bats emerge at dusk to forage below the canopy of mature forests on hillsides and roads, and occasionally over forest clearings and along riparian areas (USFWS 2022). No northern long-eared bat records are known from Lauderdale County, AL, however, the USFWS has determined they may occur there. No aquatic foraging habitat was observed on site during field review.

Tricolored bats are proposed for federal listing and are generally solitary or found in small groups. They are associated with forested landscapes where they forage near trees and along waterways, especially riparian areas. Maternity and other summer roosts are typically in clumps of dead or live tree foliage. Caves, mines, culverts, and rock crevices may be used as night roosts and winter hibernacula. (USFWS 2021; USFWS 2023c) The nearest tricolored bat record is from a cave approximately 4.73 miles from the Project Area. No known caves have been documented within three miles of the Project Area. No other winter roosting habitat was observed near the Project footprint by TVA terrestrial zoologists during a site visit on October 31, 2023. No aquatic foraging habitat was observed on site during field surveys.

No caves or other suitable winter roosting structures for gray bat, Indiana bat, northern long-eared bat, or tricolored bat were observed within the Project Area. No known caves have been documented within three miles of the Project Area. Forested acreage was assessed for potential summer roosting and foraging sites for Indiana bat, northern long-eared bat, and tricolored bat following the Range Wide Indiana Bat and Northern Long-eared Bat Survey Guidelines (USFWS 2023c). Suitable summer roosting habitat and forested foraging habitat for these species is present throughout the entire forested acreage of Project Area. No waterbodies or wetlands are available for aquatic foraging habitat.

Under the Action Alternative, TVA would provide funds to assist with developing the Project Area. Impacts were assessed for eight terrestrial animal species with the potential to occur in the Action area. No suitable habitat exists in the Project Area for alligator snapping turtle, bald eagle, gray bat, monarch butterfly, or whooping crane. The Proposed Action under the Action Alternative would not jeopardize the continued existence of alligator snapping turtle, Monarch butterfly, and whooping crane; Would not significantly impact bald eagles; Would have no effect on gray bat. Proposed Actions are in compliance with the National Bald Eagle Management Guidelines. Suitable habitat exists within the Project Area for Indiana bat, northern long-eared bat, and tricolored bat. Approximately 33.1 acres of suitable summer roosting habitat for northern long-eared bat, Indiana bat, and tricolored bat would be removed. No suitable habitat exists in the Project Area for alligator snapping turtle, bald eagle, gray bat, monarch butterfly, or whooping crane. The Proposed Action under the Action Alternative would not jeopardize the continued existence of alligator snapping turtle, Monarch butterfly, and whooping crane; Would not significantly impact bald eagles; Would have no effect on gray bat. Proposed Actions are in compliance with the National Bald Eagle Management Guidelines.

Activities associated with this approval were addressed in TVA's programmatic consultation with the U.S. Fish and Wildlife Service on routine actions and federally listed bats in accordance with Endangered Species Act Section 7(a)(2), completed in April 2018, and updated in May 2023. TVA has determined that the Action Alternative may affect federally listed bats. For those activities with potential to affect bats, TVA committed to implement specific conservation measures when impacts to federally listed bat species are anticipated. Relevant conservation measures to this Project are identified in the bat strategy form (Attachment 2) and must be reviewed and implemented as part of the approved Project. With the use of identified conservation measures and BMPs, Proposed Actions under the Action Alternative would not significantly impact Indiana bats or northern long-eared bats. In addition, the Proposed Action under the Action Alternative would not jeopardize the continued existence of the tricolored bat.

Under the No Action Alternative, if the SEDA were able to secure funding for the proposed TVA-funded actions described in this EA from outside sources, similar site activities would occur, resulting in similar impacts on rare, threatened, and endangered terrestrial wildlife as those described above for the Action Alternative. If the SEDA 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 direct, indirect, or cumulative impacts on rare, threatened, and endangered terrestrial wildlife.

4.2.5 Botany

4.2.5.1 Vegetation

The proposed Project would occur in the Western Highland Rim level IV ecoregion (Griffith et al. 2001). The Western Highland Rim level IV ecoregion is characterized as dissected rolling terrain of limestone, chert, sandstone, siltstone, and shale composites that extend from Indiana to Northern Alabama. This terrain has less relief in northern Alabama and is more acidic compared to the northern extensions of the Western Highland Rim. The characteristic land vegetation type for this ecoregion is oak-hickory forest with some mixed mesophytic forest and areas of cedar glades. Land cover is a mixture of cropland, mixed forest, and pasture and land use is rural residential and agricultural although within the setting of an existing industrial park.

Field surveys were conducted in November 2023 by TVA staff botanists to document plant communities, infestations of invasive plants, and to search for possible threatened and endangered plant species in the Project Area. 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 98.9 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, blackjack oak, post oak, pin oak, southern red oak, shagbark hickory, tulip poplar, white oak, and willow oak. The understory consisted of American hornbeam, American pokeweed, Christmas fern, coralberry, green briar, green hawthorn, highbush blueberry, Northern sea-oats, sassafras, summer grape, and winged elm. Most deciduous forests in the proposed 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 1.1 percent of the proposed 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, broomsedge, bristle thistle, bearded beggarticks, common elephant's-foot, coralberry, dog fennel, giant ragweed, Johnson grass, meadow-grass, stinging nettle, and white clover.

EO 13112 directed TVA and other federal agencies to prevent the introduction of invasive species (both plants and animals), control their populations, restore invaded ecosystems and take other related actions. EO 13751 amends EO 13112 and directs actions by federal agencies to continue coordinated federal prevention and control efforts related to invasive species. This order incorporates considerations of human and environmental health, climate change, technological innovation, and other emerging priorities into federal efforts to address invasive species; and strengthens coordinated, cost efficient federal action. Some invasive plants have been introduced accidentally, but most were brought here as ornamentals or for livestock forage. Because these robust plants arrived without their natural predators (insects and diseases) their populations spread quickly across the landscape displacing native species and degrading ecological communities or ecosystem processes (Miller 2010). 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, multiflora rose, 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 site improvements would be long-term or permanent in duration, but insignificant. Adoption of this alternative would require clearing of approximately 33 acres of mostly deciduous forest. Virtually all forest in the proposed 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 proposed 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, if the SEDA 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 botanical resources and vegetation as those described above for the Action Alternative. If the SEDA 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 botanical resources and vegetation.

4.2.5.2 Threatened and Endangered Species

Review of the TVA Regional Natural Heritage database indicated there are no federally listed plant species previously reported within a 5-mile vicinity of the proposed Project Area; however, seven state-listed plant species were reported (Table 4-2). One federally listed plant species, white fringeless orchid, has been previously reported from Lauderdale County. No federally or state-listed plants were observed in the proposed Project Area during field surveys. No designated critical habitat for plants occurs in the Project Area.

Table 4-2. Plant Species of Conservation Concern Previously Reported from within 5 Miles of the Florence-Lauderdale Industrial Park (Lot D) Project Area

Common Name	Scientific Name	Federal Status	State Status	State Rank
Plants				
Allegheny-spurge	<i>Pachysandra procumbens</i>	-	SLNS	S2S3
American Spikenard	<i>Aralia racemosa</i>	-	SLNS	S1
Goldenseal	<i>Hydrastis canadensis</i>	-	SLNS	S2
Nodding Trillium	<i>Trillium flexipes</i>	-	SLNS	S2S3
Purple Fringeless Orchid	<i>Platanthera peramoena</i>	-	SLNS	S1
Puttyroot	<i>Aplectrum hyemale</i>	-	SLNS	S2
Springs Clearweed	<i>Pilea fontana</i>	-	SLNS	S1
White Fringeless Orchid	<i>Platanthera integrilabia</i>	T	SLNS	S2

¹ Source: TVA Regional Natural Heritage database and Alabama Natural Heritage database, queried January 2024

² Status Codes: E = Listed Endangered; T = Listed Threatened; SLNS = State Listed, No Status

³ State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S#S# = Denotes a range of ranks because the exact rarity of the element is uncertain (e.g., S1S2)

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 proposed 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 proposed tree removal within the proposed Project Area would not occur. No federally listed plants or designated critical habitat occurs within the proposed 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 proposed Project Area, but the changes would be unrelated to the proposed Project.

4.2.6 Archaeology and Historic Structures and Sites

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

TVA determined that the Proposed Action Alternative is an “undertaking” as defined by the regulations under NHPA. Once an Action is determined to be an undertaking, the regulations require agencies to consider whether the proposed activity has the potential to impact historic properties. If the undertaking is such an activity, then the agency must follow the following steps: (1) involve the appropriate consulting parties; (2) define the APE; (3) identify historic properties in the APE; (4) evaluate possible effects of the undertaking on historic properties in the APE; and (5) resolve adverse effects (36 CFR § 800.4 through 800.13). An APE is defined as the

“geographic area or areas within which the undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist” (36 CFR § 800.16). TVA recommends that the APE be considered as the total area within which the proposed grading would take place (33.5 acres), where physical effects could occur.

TVA, through consultation with the 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 Project does not involve the construction of above ground resources, no historic architectural resources would be impacted by the Project, directly or visually. As such, a Phase I historic structures survey was not required.

TVA contracted with Stantec to carry out an archaeological survey for the Project APE, which was conducted in January 2024, and to write a report titled, Phase I Cultural Resources Survey for the Florence-Lauderdale Industrial Park (Lot D), Florence, Lauderdale County, Alabama (Stantec 2024a). TVA determined that the survey and the report are consistent with the *Secretary of Interior's Standards and Guidelines for Identification* (NPS 1983).

4.2.6.1 Archaeology

Stantec's background research did not identify any previously known archaeological sites within the APE. Stantec excavated 168 shovel tests within the APE from January 31 through February 2, 2024. The shovel testing indicated 160 negative for cultural material and eight disturbed by pre-existing construction. The Phase I archaeological survey completed of the APE did not identify any archaeological sites. Stantec recommended no further archaeological work within the APE. TVA received concurrence from the Alabama Historical Commission (AHC) and Alabama State Historic Preservation Office (SHPO) on April 2, 2024, with the report's findings. Under the Action Alternative, there would be no impacts given the lack of archaeology resources identified during the field survey.

Under the No Action Alternative, if the SEDA 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 (i.e., none) on archaeological resources as those described above for the Action Alternative. If the SEDA 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 also would be no impacts on archaeological resources.

4.2.7 Visual Resources

The Project Area is approximately 33.5 acres consisting mainly of forested land. The Project Area is bordered by forest and Tasus Corporation to the southwest, forest to the west, forest and some open land to the north and east, and forest and open lands to the south. The visual landscape consists of rural, flat areas with primarily agricultural land, as well as industrial and commercial development adjacent to the Project Area to the west and south.

Further to the west of the Project Area is Highway 315 (Parkway Drive). There are trees and some visual screening between Highway 315 and the Project Area from the Tasus Corporation. Scattered residences in the vicinity (0.2 mile and farther) to the northeast and east would largely be screened from the Project Area by forested areas. Construction vehicles and equipment visible during construction activities would have a minor visual impact over the temporary construction period as well as a minor permanent impact due to rough grading. Drivers along adjacent roads such as Gerrard Drive and Rushton Street located south of the Project Area would have direct

views of the Project Area; however, there are other industrial areas along the roadways within 0.5 mile, and any changes to the views would be similar to other areas along the road. Current views from those areas would change from forested land to prepared industrial land available for development, but with other industrial facilities already located in the immediate vicinity. Implementation of the Action Alternative would result in a minor decrease in visual quality for residents in the viewshed.

Under the No Action Alternative, if the SEDA 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 minor direct and indirect visual quality impacts as described above for the Action Alternative. If the SEDA 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.

4.2.8 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 industrial businesses, closest being TASUS Alabama Corporation, and scattered rural residential homes. 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.

Under the No Action Alternative, if the SEDA were able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, there would be impacts on noise receptors similar to those described above for the Action Alternative. If the SEDA 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 on noise receptors.

4.2.9 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 (Alabama), county (Lauderdale), and locality (City of Florence, Alabama) (USBL 2024) (Table 4-3). Details of the Action Alternative were then used to evaluate likely effects on existing socioeconomic resources. The demographics and income of the host county and locality were considered, relative to the demographics and wealth levels at the state level, to identify the potential for a disproportionate and adverse impact on minority and low-income populations, which is commonly referred to as an evaluation of Environmental Justice.

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

	Alabama	Lauderdale County	City of Florence
July 2022 Population	5,073,903	95,878	41,690
April 2020 Population	5,024,279	93,564	40,184
Population, Percent Change	5.8%	3.3%	3.8%
2020 Population per Square Mile	99.2	140.1	1,512.4
Demographics¹			
White Alone, not Hispanic or Latino	64.7%	83.6%	70.9%
Black or African American Alone	26.8%	10.2%	18.7%
American Indian and Alaska Native Alone	0.7%	0.5%	0.6%
Asian Alone	1.6%	1.1%	1.0%
Native Hawaiian and Other Pacific Islander Alone	0.1%	0.1%	0.1%
Two or More Races	2.0%	2.0%	5.6%
Hispanic or Latino (of any race)	4.9%	3.2%	4.9%
Income¹			
Median Household Income in 2022	\$59,609	\$56,081	\$47,048
Per Capita Income in Past 12 Months in 2022	\$33,344	\$32,678	\$28,399
Percent with Income Below the Poverty Level	16.2%	13.3%	19.9%
Employment (Not Seasonally Adjusted): November 2023²			
Labor Force	2,340,781	43,289	NA
Employed	2,282,758	42,221	NA
Unemployed	58,023	1,068	NA
Unemployment Rate (%)	2.5%	2.5%	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 Alabama resident, the residents of Lauderdale County live at a higher population density, but at a lower population growth. Relative to the average Alabama resident, the residents of the City of Florence, Alabama, live at a higher population density and lower population growth.
- Relative to the average Alabama resident, the residents of Lauderdale County are less likely to self-identify as a minority race or ethnicity. Relative to the average Alabama resident, the residents of City of Florence, Alabama, are less likely to self-identify as a minority race or ethnicity.
- Per capita income in the past 12 months and median household income in 2022 are both lower in Lauderdale County and the City of Florence than in Alabama. Residents of Lauderdale County are less likely to live below the poverty level than residents of Alabama as a whole. Residents of the City of Florence, Alabama, are more likely to live below the poverty level than residents of Alabama as a whole.
- The unemployment rate in Lauderdale County is equal to the unemployment rate in Alabama.

There are some residences 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 lower 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 clearing, grubbing, grading, and stormwater management associated with development of a gravel access road and a 300,000 SF dirt building pad (including parking and truck courts). 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 a 7-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 33.5-acre Project Area.

Under the No Action Alternative, if the SEDA were able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, similar activities would occur resulting in socioeconomic impacts similar to those described in the preceding paragraphs. If the

SEDA were not able to secure the funding for the actions described in this EA, the economic activity and socioeconomic changes would not occur.

4.2.10 Transportation

The Project Area can be accessed from the intersection of Gerrard Road and Rushton Street. The site entrance would be located on the southwestern corner of the Project Area. Gerrard Road runs approximately east to west and terminates at Helton Drive. Helton Drive runs approximately north to south and provides access to Cox Creek Parkway (Highway 133) and Highway 157 in the south, and Church Road to the north. Church Road provides access to Highway 17.

Gerrard Road is a local road which provides access to commercial and industrial properties to the west and south of the Project Area. Gerrard Road is paved along its length, and sufficiently wide for a single lane of traffic in each direction. Based on preliminary review of Google aerial and Street View images (recorded May 2019), the road is in good condition with narrow grassy verges. General road conditions were considered acceptable based on observations during Stantec's field surveys. Gerrard Road is not listed on the Functional Classification System for Muscle Shoals Metropolitan Region (Alabama Department of Transportation [ALDOT] 2009). The lack of dedicated turning lanes may result in safety concerns during mobilization and de-mobilization of the tree clearing equipment to the Project site. Necessary precautions would be taken for Gerrard Road 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.

Cox Creek Parkway and Highway 157 are both four-lane paved highways with dedicated turning lanes. Based on preliminary review of Google Street View images (recorded July 2023), the roads are in good condition with paved shoulders and dedicated turning lanes. General road conditions were considered acceptable based on observations during Stantec's field surveys. Cox Creek Parkway and Highway 157 are listed as Principal Arterial on the Functional Classification System for Muscle Shoals Metropolitan Region (ALDOT 2009).

Church Road is a local road which provides access to commercial and residential properties. Church Road is a paved two-lane road with a dedicated turning lane. Based on preliminary review of Google aerial and Street View images (recorded October 2022), the road is in good condition with narrow grassy verges. General road conditions were considered acceptable based on observations during Stantec's field surveys. Church Road is listed as Minor Arterial on the Functional Classification System for Muscle Shoals Metropolitan Region (ALDOT 2009).

Highway 17 is a paved two-lane highway. Based on preliminary review of Google aerial and Street View images (recorded March 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. Highway 17 is listed as Principal Arterial on the Functional Classification System for Muscle Shoals Metropolitan Region (ALDOT 2009).

Based on a review of ALDOT historical traffic data (ALDOT 2024), there are no traffic count stations located on Gerrard Road. Historical traffic data indicates the nearest traffic count stations are located on Helton Drive and near the intersection of Helton Drive, Cox Creek Parkway, and Highway 157. The annual average daily traffic count (AADT) for the relevant stations are presented in Table 4-4 below.

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

Route Description	Station ID	Distance from Project Area (Miles)	Year	AADT
Helton Drive	Lauderdale 467	0.8	2022	10,234
Helton Drive	Lauderdale 3082	1.2	2022	3,836
Cox Creek Parkway	Lauderdale 149	2.3	2022	22,151
Cox Creek Parkway	Lauderdale 150	2.3	2022	24,280
Highway 157	Lauderdale 465	2.3	2022	15,807

Source: Alabama Department of Transportation ([TDM Public \(state.al.us\)](https://tmdm.al.us)), extracted 2/7/2024.

Under the Action Alternative, in the context of the existing AADT road volumes of these roadways, the anticipated traffic generated by the proposed activities would be minor. It is anticipated that implementation of the Action Alternative would generate minor traffic associated with construction activities for Gerrard Road and have a temporary (7 months) and negligible impact on overall traffic volumes and level of service on Helton Drive, Cox Creek Parkway and Highway 157.

Under the No Action Alternative, if the SEDA were able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, the grading and construction activities would also result in temporary and negligible impact on overall traffic volumes and level of service. In the event the Project is postponed, any effects would be delayed for the duration of the postponement. If the SEDA were not able to secure the funding for the actions described in this EA, there would be no impact on 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 SEDA, 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 (ALR100000). Coverage would require submittal of a Notice of Intent (NOI) and development of a site-specific Stormwater Pollution Prevention Plan.

6.0 BEST MANAGEMENT PRACTICES AND MITIGATION MEASURES

To minimize or reduce the environmental effects of site activities associated with the Action Alternative, the SEDA, 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 Indiana bat and northern long-eared bat (NLEB). 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 <i>B.S. Environmental and Soil Science</i>	5 years in Project Management, Managing and Performing NEPA Analyses	Economic Development Grant Project NEPA Compliance Manager
John Shelton-Sarabia <i>M.S. Environmental Science, University of Tennessee at Chattanooga</i> <i>B.S. Biology, Austin Peay State University</i>	4 years in Biological Compliance, NEPA compliance, and Endangered Species Act consultation for T&E Plants 9 years in Botany	Botany, Threatened and Endangered Species QA/QC
Derek Reaux <i>Ph.D. Anthropology</i> <i>M.A. Anthropology</i> <i>B.A. Anthropology</i>	12 years experience in academic, government, and cultural resource management archaeology roles.	Cultural resources, NHPA Section 106 compliance
Matt Reed <i>M.S. Wildlife and Fisheries Science</i>	13 years working with threatened and endangered aquatic species in the Southeastern United States; 7 years in Endangered Species Act, NEPA, and CWA compliance and stream assessments	Aquatic Ecology
Carrie Williamson, P.E., CFM <i>B.S. and M.S. Civil Engineering</i>	11 years in Floodplain and Flood Risk; 11 years in Compliance Monitoring; 3 years in River Forecasting	Floodplains QA/QC
Anne E. Hatfield, <i>B.S. Wildlife and Fisheries Science, University of Tennessee</i>	2 years in biological compliance, NEPA compliance, and Endangered Species Act consultation for T&E terrestrial animals. Four years in animal husbandry.	Terrestrial Zoology, Threatened and Endangered Species
Sara McLaughlin-Johnson <i>B.S. Wildlife and Fisheries Science, University of Tennessee</i>	11 years in Biological Compliance, NEPA compliance, and Endangered Species Act consultation for T&E terrestrial animals. 18 years in biological field studies.	Terrestrial Zoology, Threatened and Endangered Species
Fallon Parker Hutcheon <i>M.S. Environmental Studies</i> <i>B.S. Biology</i>	5 years in wetland delineation, wetland impact analysis, and CWA and NEPA compliance	Wetlands
Stantec		
Douglas Mooneyhan <i>M.S. Biology, Tennessee Technological University</i> <i>B.S. Wildlife and Fisheries Science, University of Tennessee</i>	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

Name/Education	Experience	Project Role
<p>Jaclyn Martin</p> <p><i>M.S. Environmental Sciences, Swedish University of Agricultural Sciences, Uppsala, Sweden</i></p> <p><i>M.S. Environmental Sciences, University of Natural Resources and Life Sciences, Vienna, Austria</i></p> <p><i>B.S. Biology, Winthrop University, South Carolina</i></p>	<p>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</p>	<p>Air Quality and Climate Change, Visual</p>
<p>Duane Simpson</p> <p><i>M.A. Anthropology, University of Arkansas</i></p> <p><i>B.A. Anthropology, Ohio University</i></p>	<p>29 years in archaeological consulting including management of projects across the southeast and Mid-Atlantic regions. Principal Investigator for over 15 years.</p>	<p>Archaeology</p>
<p>Rachel Kennedy</p> <p><i>M.H.P. Historic Preservation, University of Kentucky</i></p> <p><i>B.A. Political Science and History, University of Kentucky</i></p>	<p>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.</p>	<p>Historic Structures and Sites</p>
<p>Josh Yates, P.G.</p> <p><i>M.S. Geology, University of South Florida</i></p> <p><i>B.S. Natural Resources Management and Engineering, University of Connecticut</i></p>	<p>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.</p>	<p>Groundwater</p>
<p>Ellen Mullins</p> <p><i>M.S. Forestry, Mississippi State University, Starkville, Mississippi, 2015</i></p> <p><i>B.S. Forestry, University of Kentucky, Lexington, Kentucky, 2011</i></p>	<p>Ms. Ellen Mullins is a project manager with 14 years of experience in environmental consulting and government. Ellen currently provides support and leadership for environmental planning and the NEPA permitting process. She prepares application packages and manages agency coordination efforts related to Threatened and Endangered Species, Clean Water Act (CWA) Section 404/401, and Section 106 Cultural Resources. She serves as a technical expert for natural resource projects for documents that are used in regulatory submissions.</p>	<p>Prime Farmland, Air Quality and Climate Change, Noise</p>
<p>Ellen Mullins</p> <p><i>M.S. Forestry, Mississippi State University, Starkville, Mississippi, 2015</i></p> <p><i>B.S. Forestry, University of Kentucky, Lexington, Kentucky, 2011</i></p>	<p>Ms. Ellen Mullins is a project manager with 14 years of experience in environmental consulting and government. Ellen currently provides support and leadership for environmental planning and the NEPA permitting process. She prepares application packages and manages agency coordination efforts related to Threatened and Endangered Species, Clean Water Act (CWA) Section 404/401, and Section 106 Cultural Resources. She serves as a technical expert for natural resource projects for documents that are used in regulatory submissions.</p>	<p>Prime Farmland, Air Quality and Climate Change, Noise</p>

Name/Education	Experience	Project Role
<p>Chris Knable, TN-QHP <i>B.S. Natural Resources and Environmental Science, University of Kentucky</i></p>	<p>Mr. Knabel is a biologist with 6 years of experience conducting wetland delineations, hydrologic determinations, threatened and endangered species surveys, and various other ecological and biological field surveys. He has personally conducted numerous Hydrologic Determinations throughout Tennessee and conducted thousands of acres of wetland delineations throughout Tennessee and Kentucky. Additionally, he has extensive knowledge of USACE Section 404 permitting and Section 7 protected species consultation.</p>	<p>Aquatics, Wetlands</p>
<p>Shane Kelley, TN-QHP <i>B.S. Natural Resources & Environmental Science, University of Kentucky</i></p>	<p>Mr. Kelley is a biologist with 10 years of experience in multiple areas of the environmental field with a particular focus on USACE Section 404 permitting, Section 7 protected species consultation, and various ecological and biological field surveys. He is a Qualified Hydrologic Professional and has personally conducted numerous Hydrological Determinations throughout Tennessee and North Carolina and completed thousands of acres of wetland delineations throughout Kentucky, Tennessee, and Mississippi. Mr. Kelley has conducted various endangered plant species surveys throughout Kentucky, Tennessee, and North Carolina including Short's goldenrod (<i>Solidago shortii</i>), Virginia spiraea (<i>Spiraea virginiana</i>), and small whorled pogonia (<i>Isotria medeoloidies</i>). Additionally, he is a federally permitted bat biologist for all listed bat species throughout the TVA service area.</p>	<p>Aquatics, Wetlands</p>
<p>Iris Eschen <i>Heald Business College, San Francisco, California</i></p>	<p>As Document Production Manager, Ms. Eschen has more than 30 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).</p>	<p>Editor, Document Production</p>
<p>Brenton Jenkins, P.E. <i>B.S. Environmental Engineering, Louisiana State University</i></p>	<p>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.</p>	<p>Transportation</p>

8.0 AGENCIES AND OTHERS CONSULTED

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

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

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Attachment 1

Project Figures



 Project Boundary (33.48 ac)

0 100 200 Feet
(At original document size of 8.5x11)
1:3,600



Project Location
T02S, R11W, S24
Lauderdale Co., AL

Prepared by pmarsey on 1/17/2024

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

172608384

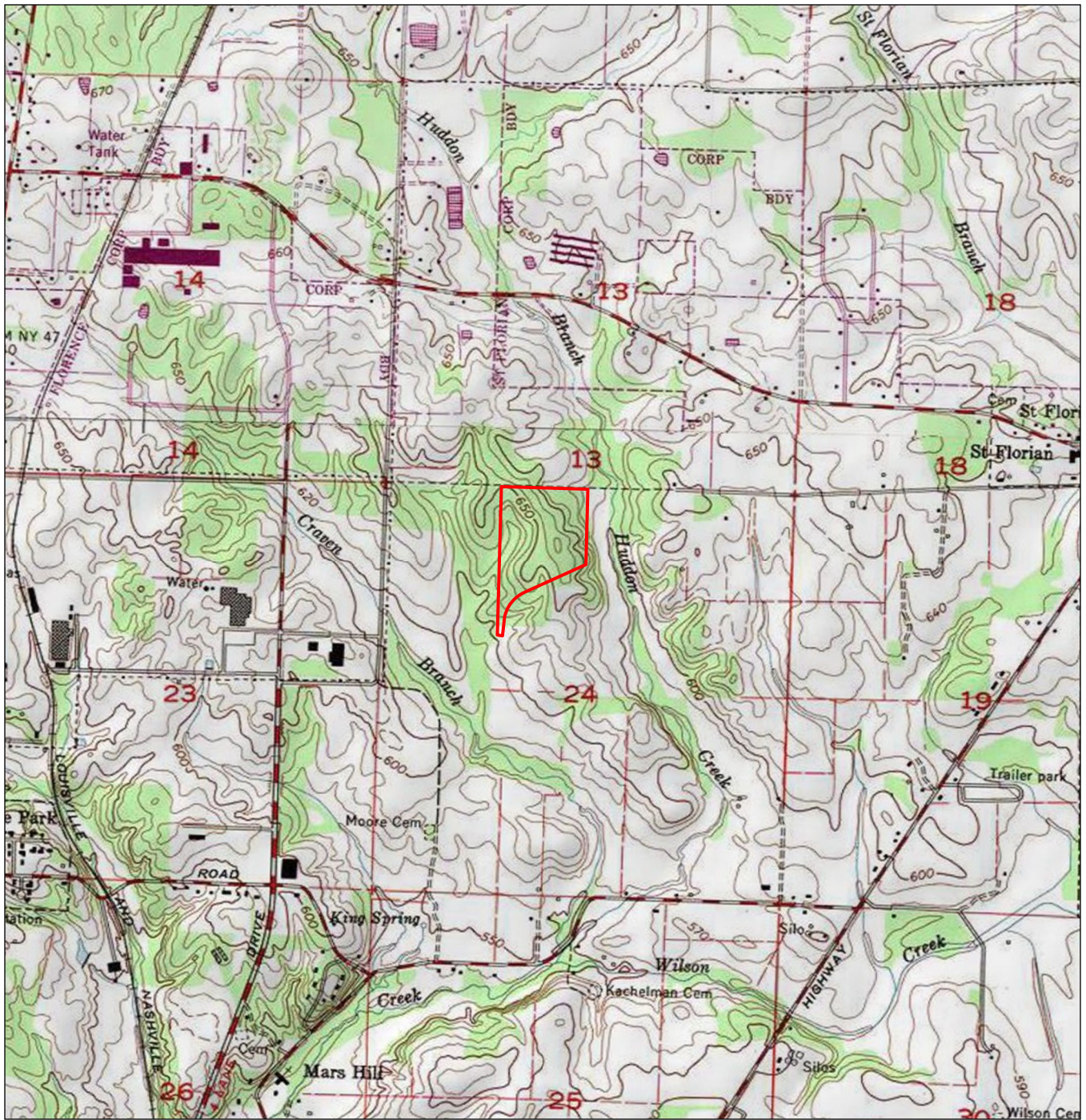
Figure No.
1A


Title
**Lauderdale County
Project Aerial**

Page 1 of 1

Notes

1. Coordinate System: NAD 1983 StatePlane Alabama West FIPS 0102 Feet
2. Data Sources: TVA
3. Background: Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS, Esri Community Maps Contributors, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, MET/NASA, USGS, EPA, NPS, US Census



 Project Boundary (33.48 ac)

0 1,000 2,000 Feet
(At original document size of 8.5x11)
1:24,000



Project Location
T02S, R11W, S24
Lauderdale Co., AL

Prepared by pmarsey on 2/20/2024

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

172608384

Figure No.



1B

Title

**Lauderdale 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 (117.88 ac)
-  FEMA Floodplain

0 200 400 Feet
(At original document size of 8.5x11)
1:4,800



Project Location
T02S, R11W, S24
Lauderdale Co., AL

Prepared by pmarsey on 3/20/2024

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




172608384

Figure No.
1C

Title
**Lauderdale County
FEMA Floodplain**

Page 1 of 1



-  Project Boundary (33.48 ac)
-  NHD Flowline
- NWI Wetlands**
-  Freshwater Forested/Shrub Wetland

0 100 200 Feet
(At original document size of 8.5x11)
1:3,600



Project Location
T02S, R11W, S24
Lauderdale Co., AL

Prepared by pmarsey on 2/20/2024

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

172608384

Figure No.

1D

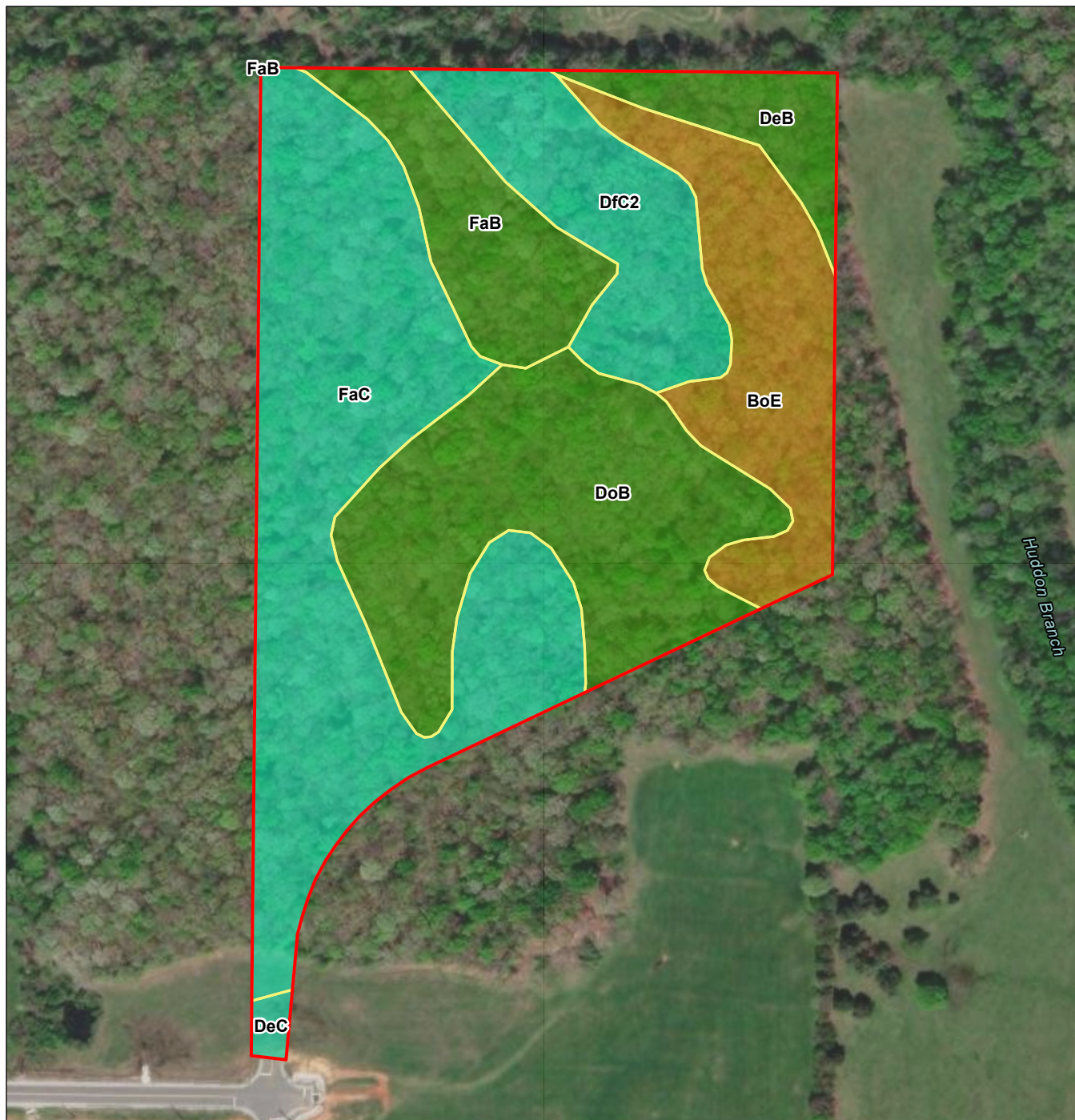
Title

**Lauderdale County
USFWS NWI and Water Inventory**

Page 1 of 1

Notes

1. Coordinate System: NAD 1983 StatePlane
Alabama West FIPS 0102 Feet
2. Data Sources: TVA, USFWS
3. Background: Esri, TomTom, Garmin, FAO, NOAA,
USGS, EPA, USFWS, Esri Community Maps
Contributors, © OpenStreetMap, Microsoft, Esri,
TomTom, Garmin, SafeGraph, GeoTechnologies,
Inc, MET/NASA, USGS, EPA, NPS, US Census



Notes
 1. Coordinate System: NAD 1983 StatePlane Alabama West FIPS 0102 Feet
 2. Data Sources: TVA, USDA-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 (33.48 ac)
- BoE - Bodine gravelly silt loam, 12 to 30 percent slopes (4.77 ac)
- DeB - Dewey silt loam, 2 to 6 percent slopes (1.60 ac)
- DeC - Dewey silt loam, 6 to 10 percent slopes (0.21 ac)
- DfC2 - Dewey silty clay loam, 6 to 10 percent slopes, eroded (3.86 ac)
- DoB - Dickson silt loam, 2 to 5 percent slopes (7.86 ac)
- FaB - Fullerton gravelly silt loam, 2 to 6 percent slopes (3.01 ac)
- FaC - Fullerton gravelly silt loam, 6 to 15 percent slopes (12.18 ac)
- All areas are prime farmland (12.47 ac)
- Farmland of statewide importance (16.24 ac)
- Not prime farmland (4.77 ac)

0 100 200 Feet
 (At original document size of 8.5x11)
 1:3,600



Project Location
 T02S, R11W, S24
 Lauderdale Co., AL

Prepared by pmarsey on 2/20/2024

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

172608384

Figure No.
 1E

Title
**Lauderdale 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 - Lauderdale County, AL (Florence) - Florence-Lauderdale Industri

Date:

Dec 7, 2023

Contact(s):

Brittany Kunkle

CEC#:

Project ID:

2024-2

Project Location (City, County, State):

Florence, Lauderdale County, AL

Project Description:

Utilize TVA InvestPrep funds matched with Non-TVA funds to assist with costs associated with developing a 300,000 SF dirt building pad and a gravel marketing road on Lot D—including clearing, grubbing, grading, and stormwater management.

SECTION 1: PROJECT INFORMATION - ACTION AND ACTIVITIES

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

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

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

TABLE 1. Activities with no effect to bats. Conservation measures & completion of bat strategy project review form NOT required.		
<input checked="" type="checkbox"/> 1. Loans and/or grant awards	<input type="checkbox"/> 8. Sale of TVA property	<input type="checkbox"/> 19. Site-specific enhancements in streams and reservoirs for aquatic animals
<input type="checkbox"/> 2. Purchase of property	<input type="checkbox"/> 9. Lease of TVA property	<input type="checkbox"/> 20. Nesting platforms
<input type="checkbox"/> 3. Purchase of equipment for industrial facilities	<input type="checkbox"/> 10. Deed modification associated with TVA rights or TVA property	<input type="checkbox"/> 41. Minor water-based structures (this does not include boat docks, boat slips or piers)
<input type="checkbox"/> 4. Environmental education	<input type="checkbox"/> 11. Abandonment of TVA retained rights	<input type="checkbox"/> 42. Internal renovation or internal expansion of an existing facility
<input type="checkbox"/> 5. Transfer of ROW easement and/or ROW equipment	<input type="checkbox"/> 12. Sufferance agreement	<input type="checkbox"/> 43. Replacement or removal of TL poles
<input type="checkbox"/> 6. Property and/or equipment transfer	<input checked="" type="checkbox"/> 13. Engineering or environmental planning or studies	<input type="checkbox"/> 44. Conductor and overhead ground wire installation and replacement
<input type="checkbox"/> 7. Easement on TVA property	<input type="checkbox"/> 14. Harbor limits delineation	<input type="checkbox"/> 49. Non-navigable houseboats

TABLE 2. Activities not likely to adversely affect bats with implementation of conservation measures. Conservation measures and completion of bat strategy project review form REQUIRED; review of bat records in proximity to project NOT required.

<input checked="" type="checkbox"/> 18. Erosion control, minor	<input type="checkbox"/> 57. Water intake - non-industrial	<input type="checkbox"/> 79. Swimming pools/associated equipment
<input type="checkbox"/> 24. Tree planting	<input type="checkbox"/> 58. Wastewater outfalls	<input type="checkbox"/> 81. Water intakes – industrial
<input type="checkbox"/> 30. Dredging and excavation; recessed harbor areas	<input type="checkbox"/> 59. Marine fueling facilities	<input type="checkbox"/> 84. On-site/off-site public utility relocation or construction or extension
<input type="checkbox"/> 39. Berm development	<input type="checkbox"/> 60. Commercial water-use facilities (e.g., marinas)	<input type="checkbox"/> 85. Playground equipment - land-based
<input type="checkbox"/> 40. Closed loop heat exchangers (heat pumps)	<input type="checkbox"/> 61. Septic fields	<input type="checkbox"/> 87. Aboveground storage tanks
<input type="checkbox"/> 45. Stream monitoring equipment - placement and use	<input type="checkbox"/> 66. Private, residential docks, piers, boathouses	<input type="checkbox"/> 88. Underground storage tanks
<input type="checkbox"/> 46. Floating boat slips within approved harbor limits	<input type="checkbox"/> 67. Siting of temporary office trailers	<input type="checkbox"/> 90. Pond closure
<input checked="" type="checkbox"/> 48. Laydown areas	<input type="checkbox"/> 68. Financing for speculative building construction	<input type="checkbox"/> 93. Standard License
<input type="checkbox"/> 50. Minor land based structures	<input type="checkbox"/> 72. Ferry landings/service operations	<input type="checkbox"/> 94. Special Use License
<input type="checkbox"/> 51. Signage installation	<input type="checkbox"/> 74. Recreational vehicle campsites	<input type="checkbox"/> 95. Recreation License
<input type="checkbox"/> 53. Mooring buoys or posts	<input type="checkbox"/> 75. Utility lines/light poles	<input type="checkbox"/> 96. Land Use Permit
<input type="checkbox"/> 56. Culverts	<input type="checkbox"/> 76. Concrete sidewalks	

Table 3: Activities that may adversely affect federally listed bats. Conservation measures AND completion of bat strategy project review form REQUIRED; review of bat records in proximity of project REQUIRED by OSAR/Heritage eMap reviewer or Terrestrial Zoologist.

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

STEP 3) Project includes one or more activities in Table 3?☒ **YES (Go to Step 4)**☐ **NO (Go to Step 13)**

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

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

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

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

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

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

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

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

SECTION 2: REVIEW OF BAT RECORDS (applies to projects with activities from Table 3 ONLY)**STEP 5) Review of bat/cave records conducted by Heritage/OSAR reviewer?**

- ☐ **YES** ☒ **NO** (Go to Step 13)

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

☐ **OSAR Reviewer** (name) Date

☒ **Terrestrial Zoologist** (name) Anne Hatfield Date Dec 7, 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): ((☒ **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):

No caves present. No wetlands. The whole stand of trees was overall suitable summer roosting suitable habitat.

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

STEP 7) Project will involve:

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

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

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

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

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

TVA Action	Total 20-year	Winter	Volant Season	Non-Volant Season
9 Promote Economic Development	7,870.26	6,732.54	669.98	467.74

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

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

SECTION 3: REQUIRED CONSERVATION MEASURES

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

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

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

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

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

Manual Override

Name: Anne Hatfield

Check if Applies to Project	Activities Subject To Conservation Measure	Conservation Measure Description
		<p>NV1 - Noise will be short-term, transient, and not significantly different from urban interface or natural events (i.e., thunderstorms) that bats are frequently exposed to when present on the landscape.</p>
		<p>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.</p>
		<p>SHF8 - Brush piles will be burned a minimum of 0.25 mile from documented, known, or obvious caves or cave entrances and otherwise in the center of newly established ROW when proximity to caves on private land is unknown.</p>
		<p>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.</p>
		<p>TR4* - Removal of suitable summer roosting habitat within potential habitat for Indiana bat or northern long-eared bat will be tracked, documented, and included in annual reporting. Project will therefore communicate completion of tree removal to appropriate TVA staff.</p>
		<p>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.</p>
		<p>SSPC2 - Operations involving chemical/fuel storage or resupply and vehicle servicing will be handled outside of riparian zones (streamside management zones) in a manner to prevent these items from reaching a watercourse. Earthen berms or other effective means are installed to protect stream channel from direct surface runoff. Servicing will be done with care to avoid leakage, spillage, and subsequent stream, wetland, or ground water contamination. Oil waste, filters, other litter will be collected and disposed of properly. Equipment servicing and chemical/fuel storage will be limited to locations greater than 300-ft from sinkholes, fissures, or areas draining into known sinkholes, fissures, or other karst features.</p>
		<p>SSPC5 (26a, Solar, Economic Development only) - Section 26a permits and contracts associated with solar projects, economic development projects or land use projects include standards and conditions that include standard BMPs for sediment and contaminants as well as measures to avoid or minimize impacts to sensitive species or other resources consistent with applicable laws and Executive Orders.</p>

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

	L1 - Direct temporary lighting away from suitable habitat during the active season.
	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).

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

Hide All Unchecked Conservation Measures

- ☒ HIDE
- ☐ UNHIDE

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

- ☒ HIDE
- ☐ UNHIDE

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

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 Knuckle

(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 Knuckle 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 33.1 ☒ ac ☐ trees and that use of Take will require \$ 16,550 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



ALABAMA HISTORICAL COMMISSION

468 South Perry Street
Montgomery, Alabama 36130-0900

Lisa D. Jones
Executive Director
State Historic Preservation Officer

Tel: 334-242-3184
Fax: 334-242-1083

April 1, 2024

Michaelyn Harle
TVA
400 West Summit Hill Drive
Knoxville, TN 35209

Re: AHC 24-0592
CRA
Tennessee Valley Authority, Economic Development, Florence-Lauderdale Industrial Park (Lot D), Florence
Lauderdale County

Dear Ms. Harle:

Upon review of the cultural resource assessment conducted for the above referenced project, we concur with the author's finding that project activities will have no effect on cultural resources eligible for or listed on the National Register of Historic Places. Therefore, we concur with the determination of No Effect to Historic Properties.

Consultation with the State Historic Preservation Office does not constitute consultation with Tribal Historic Preservation Offices, other Native American tribes, local governments, or the public. If archaeological materials are encountered during construction, the procedures codified at 36 CFR 800.13(b) will apply. Archaeological materials consist of any items, fifty years old or older, which were made or used by man. These items include but are not limited to, stone projectile points (arrowheads), ceramic sherds, bricks, worked wood, bone and stone, metal, and glass objects. The federal agency or the applicant receiving federal assistance should contact our office immediately. If human remains are encountered, the provisions of the Alabama Burial Act (*Code of Alabama* 1975, §13A-7-23.1, as amended; Alabama Historical Commission Administrative Code Chapter 460-X-10 Burials) should be followed. This stipulation shall be placed on the construction plans to ensure contractors are aware of it.

We appreciate your commitment to helping us preserve Alabama's historic archaeological and architectural resources. Should you have any questions, please contact Amanda McBride at 334.230.2692 or Amanda.McBride@ahc.alabama.gov. Have the AHC tracking number referenced above available and include it with any future correspondence.

Sincerely,

Lee Anne Hewett
Deputy State Historic Preservation Officer

LAH/amh

Mooneyhan, Douglas

From: Martin, Jaclyn
Sent: Monday, January 22, 2024 3:47 PM
To: Mooneyhan, Douglas
Subject: FW: [External Email]Lauderdale County - Prime Farmland question

We would be exempt per the email below.

From: Dyer, Renea - FPAC-NRCS, AL <renea.dyer@usda.gov>
Sent: Monday, January 22, 2024 3:33 PM
To: Martin, Jaclyn <jaclyn.martin@stantec.com>
Subject: FW: [External Email]Lauderdale County - Prime Farmland question

You don't often get email from renea.dyer@usda.gov. [Learn why this is important](#)

Please see the response below from Resource Soil Scientist, Eddie Davis.

Sincerely,

Renea Dyer
District Conservationist- Lauderdale County

 **Natural Resources Conservation Service**
U.S. DEPARTMENT OF AGRICULTURE
2431 Darby Drive, Suite B, Florence, AL 35630
p: (256) 764-5833 ext. 3 | c: (256) 262-2538
e: renea.dyer@usda.gov | w: www.al.nrcs.usda.gov

Stay Connected with USDA:



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From: Davis, Eddie - FPAC-NRCS, AL <eddie.davis@usda.gov>
Sent: Monday, January 22, 2024 2:29 PM
To: Dyer, Renea - FPAC-NRCS, AL <renea.dyer@usda.gov>
Subject: RE: [External Email]Lauderdale County - Prime Farmland question

Renea,

When looking at the project area it is technically outside of the Urban land boundary, but because it is less than 1 mile away and is considered urban sprawl, it *would* be exempt from the Farmland Protection Policy Act.

If you have any questions, please feel free to let me know.

Thanks,

Eddie E. Davis Jr.
USDA-NRCS
Area Resource Soil Scientist
1300 Meridian Street N. Suite 23F
Huntsville, AL 35801

Office (256) 947-5191
Cell (256) 300-5342
eddie.davis@usda.gov

From: Martin, Jaclyn <jaclyn.martin@stantec.com>
Sent: Monday, January 22, 2024 11:30 AM
To: Dyer, Renea - FPAC-NRCS, AL <renea.dyer@usda.gov>
Subject: RE: [External Email]Lauderdale County - Prime Farmland question

Hi Renea,

I've attached the project maps for your review.

-Jaclyn

From: Dyer, Renea - FPAC-NRCS, AL <renea.dyer@usda.gov>
Sent: Friday, January 19, 2024 10:34 AM
To: Martin, Jaclyn <jaclyn.martin@stantec.com>
Subject: FW: [External Email]Lauderdale County - Prime Farmland question

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Please see the response below to your question about Prime Farmland.

Sincerely,

Renea Dyer
District Conservationist- Lauderdale County

 **Natural Resources Conservation Service**
U.S. DEPARTMENT OF AGRICULTURE
2431 Darby Drive, Suite B, Florence, AL 35630
p: (256) 764-5833 ext. 3 | c: (256) 262-2538
e: renea.dyer@usda.gov | w: www.al.nrcs.usda.gov

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From: Davis, Eddie - FPAC-NRCS, AL <eddie.davis@usda.gov>
Sent: Friday, January 19, 2024 9:01 AM
To: Dyer, Renea - FPAC-NRCS, AL <renea.dyer@usda.gov>
Subject: RE: [External Email]Lauderdale County - Prime Farmland question

Renea,

Regarding Prime Farmland soils and its location, it has less to do with zoning and more to do with if the area is designated as Urban land by the US Census. However, there is a shapefile that we use to make this determination and whether or not an area is exempted from the Prime Farmland Protection Policy Act.

Nevertheless, if they could send us a map showing the project area, I'd be glad to look at it and let them know precisely if Prime Farmland is a concern.

Eddie E. Davis Jr.
USDA-NRCS
Area Resource Soil Scientist
1300 Meridian Street N. Suite 23F
Huntsville, AL 35801

Office (256) 947-5191
Cell (256) 300-5342
eddie.davis@usda.gov

From: Martin, Jaclyn <jaclyn.martin@stantec.com>
Sent: Thursday, January 18, 2024 12:47 PM
To: Dyer, Renea - FPAC-NRCS, AL <renea.dyer@usda.gov>
Cc: Mooneyhan, Douglas <douglas.mooneyhan@stantec.com>
Subject: [External Email]Lauderdale County - Prime Farmland question

You don't often get email from jaclyn.martin@stantec.com. [Learn why this is important](#)

[External Email]

If this message comes from an **unexpected sender** or references a **vague/unexpected topic**;
Use caution before clicking links or opening attachments.
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Hi Renea,

I hope you're doing well. I am doing some research in Lauderdale County and was curious if impacts to prime farmland would be considered if the parcel is located in a light industrial zone? Your insight on this matter would be much appreciated.

Regards,

Jaclyn Martin
Environmental Project Manager
Pronouns: she/her/hers
Charlotte, North Carolina

Mobile: (704) 577-4711
jaclyn.martin@stantec.com
Stantec



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