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**ECONOMIC DEVELOPMENT GRANT PROPOSAL FOR THE
ATHENS MCMINN INNOVATION PARK
ENVIRONMENTAL ASSESSMENT**

McMinn County, Tennessee (Athens)

EAXX-455-00-000-1737714574

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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 or improved sites and facilities within the TVA service area, and positions communities to compete successfully for new jobs and capital investment. TVA proposes to provide an economic development grant through InvestPrep funds to the McMinn County Economic Development Authority (MCEDA) to assist with the development of a portion of the Athens McMinn Innovation Park (AMIP) in McMinn County, Tennessee. The area of TVA's Proposed Action (herein referred to as the Project Area) encompasses 78.3 acres of open grassy land and disjunct forested areas located adjacent to Interstate 75 (I-75), Denso Road, Lee Irwin Road (County Road 171), and Private Brand Way, in Athens, Tennessee (Figure 1 below and Attachment 1, Figure 1-A). TVA funds would be matched with non-TVA funds and used for tree clearing, grubbing, and grading, followed by paving of an industrial access road. Following the site improvements, the disturbed areas would be stabilized. These activities, herein referred to as the Proposed Action and/or Action Alternative, are further detailed in Section 3.2 below.

The proposed grant to the MCEDA would assist with the above-mentioned site improvements to allow prospects to better access and 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. There are numerous industrial or commercial sites in the immediate vicinity of the Project Area, including Denso Manufacturing and Creative Foam Corporation to the southwest, as well as Morgan Tool and Automation, Midlab, and Vulcan Materials to the south. Target industries include food and beverage, transportation and mobility, and automotive. Pursuant to the National Environmental Policy Act (NEPA) and TVA's implementing regulations 18 CFR 1318, this Environmental Assessment (EA) evaluates the environmental impacts that would potentially result from TVA's Proposed Action. TVA's decision is whether to provide the requested funding to the MCEDA.

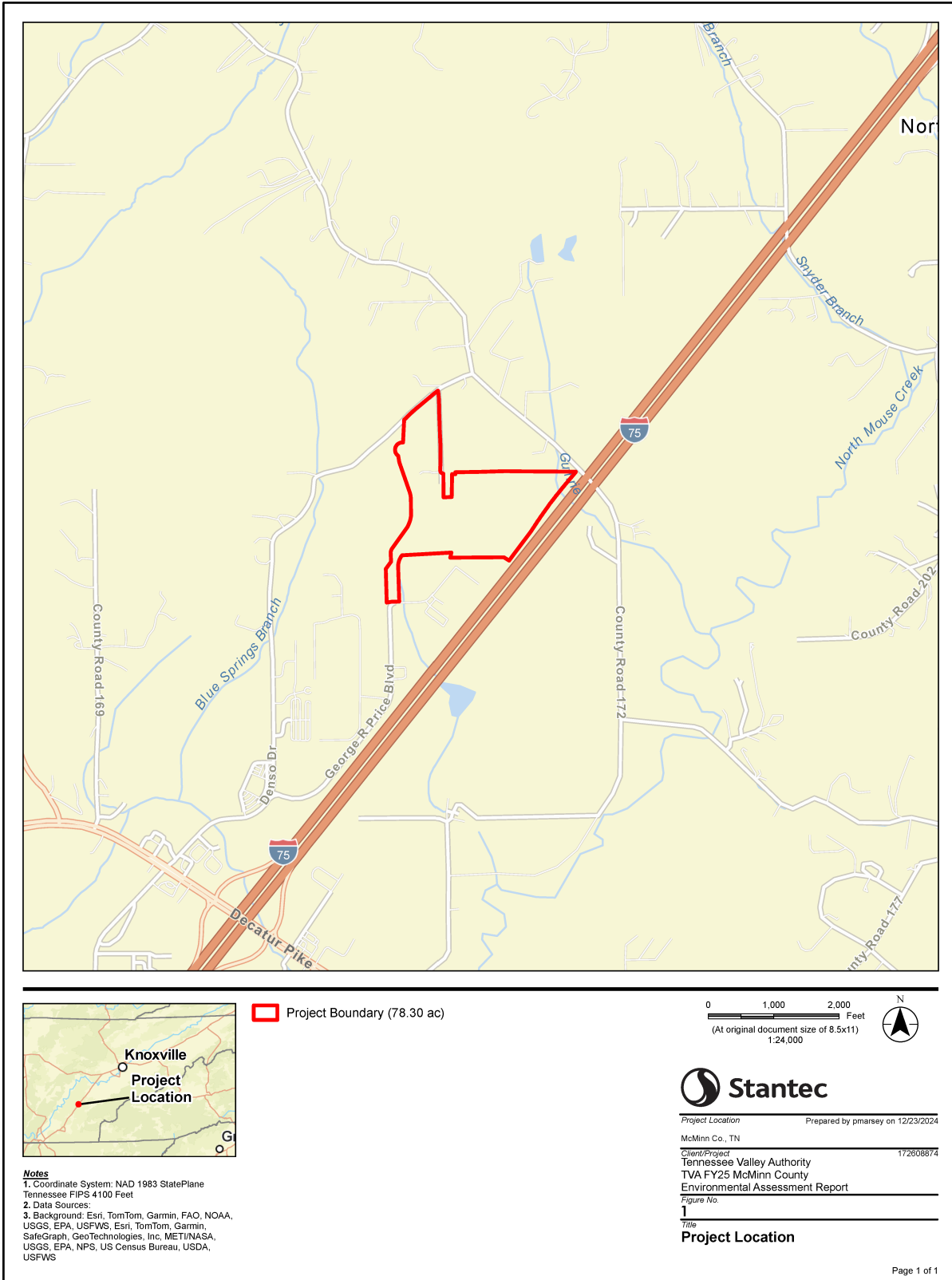


Figure 1. Project Location Map

2.0 OTHER ENVIRONMENTAL REVIEWS AND DOCUMENTATION

In preparation for site development, other studies have been performed by the MCEDA at the AMIP, including the 78.3-acre Project Area. The various studies were performed at different times and sometimes included areas beyond the Project Area.

- A Phase I Environmental Site Assessment (Phase I ESA) of the Project Area was performed consistent with the procedures specified by Advancing Standards Transforming Markets International. The Phase I ESA was conducted by S&ME, Inc. (S&ME) in November 2018 (S&ME 2018) on approximately 130 acres of the AMIP, including the Project Area. The purpose of the Phase I ESA was to identify the presence of recognized environmental conditions (REC), including controlled and historical RECs, or other environmental liabilities within the Project Area.
- S&ME completed a report for limited geotechnical exploration within the eastern portion of the AMIP in January 2019 (S&ME 2019a). The survey area included the Project Area.
- A potential surface water features map was prepared by S&ME in April 2019, showing the preliminary location of waterbodies and wetlands (S&ME 2019b). The map was prepared for informational purposes only and does not reflect a civil survey of features.
- Stantec Consulting Services, Inc. (Stantec) performed a field delineation for surface waters and wetlands for the Project Area in January 2025 supplemented by a follow-up visit in July 2025 and prepared the associated report (Stantec 2025a) and supplemental information.
- The U.S. Fish and Wildlife Service (USFWS) provided a letter in September 2013 regarding the AMIP's potential certification under the Select Tennessee Certified Sites Program (STCSP) and provided comments regarding threatened and endangered species potentially present (USFWS 2013).
- The USFWS also provided information regarding the AMIP via email in February 2019 regarding the potential presence of threatened and endangered species (USFWS 2019).
- The Tennessee Department of Environment and Conservation (TDEC) issued a letter in January 2019 concerning the STCSP and provided comments regarding the potential for rare species to occur at the AMIP (TDEC 2019).
- TVA staff biologists performed field surveys for terrestrial zoology in October 2024, and these surveys also included assessments for the presence of federally or state-listed animal species and their habitats.
- Stantec botanists completed field surveys for vegetation found in the Project Area in January 2025, including an assessment for the presence of federally or state-listed plant species and their habitats, and prepared the associated report (Stantec 2025b).
- Tennessee Valley Archaeological Research (TVAR) completed a Phase 1 survey for belowground cultural resources for the AMIP, including portions of the Project Area, in April 2015 (TVAR 2015).

- Stantec archaeologists completed field surveys and prepared an associated report in January 2025 (Stantec 2025c) for cultural resources for the portions of the Project Area not covered by the 2015 TVAR study.
- TVA prepared an EA in July 2015, as part of considering financial assistance to the MCEDA to promote economic development, for clearing approximately 26 acres of vegetation within a portion of the AMIP with some overlap with the Project Area (TVA 2015) and developed a Finding of No Significant Impact (FONSI) for the project.

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 MCEDA. TVA would not be furthering its mission of promoting economic development by assisting the local community to compete successfully for new jobs and capital investment through the Proposed Action. If the MCEDA is able 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 Proposed Action is postponed, any environmental effects would be delayed for the duration of the postponement. If the project is 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 MCEDA for site improvements to the Project Area. TVA funds would be matched with non-TVA funds and used for clearing 12.6 acres of trees located in multiple places in the Project Area. Felled trees would be cut and burned on site. Stumps would be removed and burned on site. A new industrial access road, extending approximately 2,500 feet, would be constructed beginning at the cul-de-sac on Private Brand Way at the southern-most point of the Project Area and ending at a new cul-de-sac in the Project Area. The road would be paved with two lanes and have graveled shoulders. No borrow material from off-site sources would be needed. Following the site improvements, the disturbed areas would be stabilized with seed and mulch. Activities required for the Action Alternative would occur over approximately nine months and would require a small workforce that would most likely be assigned from a local contractor. Work activities would not be anticipated at night or on weekends. For ease of discussion in this EA, the Proposed Action is described as clearing, grading, and/or industrial access road construction.

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

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

4.0 AFFECTED ENVIRONMENT AND ANTICIPATED IMPACTS

4.1 Site Description

The 78.3-acre Project Area encompasses the AMIP in McMinn County, Tennessee, with grassy pastures and disjunct forested lands located north of Private Brand Way, south of Denso Drive, and west of I-75 and Lee Irwin Road (County Road 171), in the city of Athens, Tennessee (Attachment 1, Figure 1-A).

The Project Area is situated within a broader land use area of mixed agriculture (e.g., hay fields), disjunct forest, some light residential, and some industrial facilities, and is zoned as Heavy Industrial (I-2). Site access is from Private Brand Way, Denso Drive, and Lee Irwin Road (County Road 171). Access to I-75 is available less than two miles away to both the north and south. Permanent utilities located adjacent to the Project Area include 8-inch and 12-inch water lines, an 8-inch sewer line, overhead electric distribution lines, and 2-inch, 4-inch, 6-inch, and 8-inch natural gas lines.

The Project Area ranges from approximately 869 to 955 feet above mean sea level (msl) (Attachment 1, Figure 1-B). In the past, the Project Area has been used mostly for agriculture and hay production.

4.2 Impacts Evaluated

As stated previously, a Phase I ESA was conducted in the Project Area. The results of the Phase I ESA indicated no evidence of RECs (S&ME 2018). Based on the Phase I ESA, there is no evidence that historical use of pesticides/herbicides at the Project Area was conducted outside of standard practices. Therefore, the possible long-term use of agricultural-grade pesticides or herbicides that may persist in the soils at the subject Property does not represent a REC. No demolition or construction waste activities would be associated with the Action Alternative.

A preliminary map of water and wetland features based on the United States Geological Survey (USGS) National Hydrography Dataset (NHD) and United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) is provided in Attachment 1, Figure 1-D. As noted above, Stantec performed a delineation of wetlands and surface waters at the Project Area in January and July 2025 (Stantec 2025a). Stantec identified two perennial streams, five intermittent streams, three ephemeral/wet weather conveyance features, and five wetlands (see Attachment 1, Figure 1-E). Because the Proposed Action would potentially affect perennial flowing surface waterbodies, there could be effects on aquatic zoology resources.

The Project Area would be outside of mapped floodplains; however, two perennial streams were identified in the aquatics field survey (Stantec 2025a). The State of Tennessee regulates floodplains of unmapped streams; therefore, floodplain regulations would apply. The Proposed Action would change the Project Area from open hay fields with some forested and scrub-shrub areas to a developed lot designed to attract industrial development. The AMIP is located within

an area currently zoned as Heavy Industrial, designated as an industrial park, and with existing industry located to the southwest, south, and southeast. Given these conditions, the Proposed Action would not cause a change in land use.

The Proposed Action under the Action Alternative would result in the clearing of 12.6 acres of forested land. Vegetation associated with pasture would also be affected.

The Proposed Action would result in the conversion of 16.4 acres of prime farmland (Attachment 1; Figure 1-F). However, the Project Area is located within designated industrial zoning, and as such, it is considered exempt from the Farmland Protection Policy Act. Given the existing zoning type, the Proposed Action under the Action Alternative would not have negative impacts on prime farmland.

As noted above, TVAR completed a Phase 1 survey for cultural resources for the AMIP, including portions of the Project Area, in April 2015 (TVAR 2015). Stantec archaeologists completed field surveys and prepared an associated report in January 2025 (Stantec 2025c) for cultural resources within the remaining portions of the Project Area not covered by the TVAR study.

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

Based on a review of Google Earth aerial imagery and data, a number of parks or outdoor recreation areas are located near the Project Area. These areas within three miles of the Project Area include: Baker Elementary School (ball fields 1.5 miles to the north), Blue Moon RV Park (1.9 miles to the northeast), Willow Trace Golf Course (2.1 miles to the east), Denso Eco Park (125 feet to the south), and Athens Regional Park (1.5 miles to the south). Denso Eco Park would be screened by trees along Private Brand Way and is located between industrial facilities to the east (Midlab) and to the west (Denso Manufacturing, Inc.). Given the distances between most of the outdoor recreation areas and the Project Area, the existing industrial setting bordering Denso Eco Park, and the fact that the Project Area is zoned as Heavy Industrial (I-2), implementation of the Action Alternative would not result in significant impacts on recreational opportunities near the Project Area.

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

Resources that could potentially be impacted (negatively or positively) by implementing the Action Alternative include air quality and climate change, groundwater, soils, surface water, floodplains, wetlands, aquatic zoology, terrestrial zoology, and botany. Implementation of the Action Alternative could create potential impacts on the human environment, including cultural resources, visual effects, noise, socioeconomics, and transportation issues. Potential impacts to resources and the human environment resulting from the 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 reflects the relationship between pollutant concentrations and health and welfare effects. Primary standards protect human health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards are designed to protect public welfare, including visibility, animals, crops, vegetation, and buildings. These standards reflect the latest scientific knowledge and have an adequate margin of safety intended to address uncertainties and provide a reasonable degree of protection. The air quality in McMinn County, Tennessee, is designated as being in attainment with respect to the criteria pollutants (USEPA 2025).

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

GHGs are gases that trap heat in the atmosphere and are non-toxic and non-hazardous at normal ambient concentrations. At this time, there are no applicable ambient air quality standards or emission limits for GHGs under the CAA. GHGs occur in the atmosphere both naturally and resulting from human activities, such as the burning of fossil fuels. GHG emissions due to human activity are the main cause of increased atmospheric concentration of GHGs since the industrial age and are the primary contributor to climate change. The principal GHGs are carbon dioxide (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 is a source of combustion emissions, including nitrogen oxides (NO_x), CO, volatile organic compounds (VOCs), SO₂, PM₁₀, PM_{2.5}, GHGs, and small amounts of HAPs. Gasoline and diesel engines used as a result of the Action Alternative would be expected to be in compliance with the USEPA mobile source regulations in 40 CFR Part 85 for on-road engines and 40 CFR Part 89 for non-road engines. These regulations are designed to minimize emissions and require a maximum sulfur content in diesel fuel of 15 parts per million (ppm). Trees would also be cleared and burned as part of the Proposed Action under the Action Alternative, and the burning of stumps is also 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, 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 MCEDA,

or its contractors, would be expected to comply with Tennessee Erosion and Sediment Control (TDEC) Air Pollution Control Rule 1200-3-8, which requires reasonable precautions to prevent PM from becoming airborne. Such reasonable precautions include grading of roads, clearing of land, and the use of water or chemicals for control of dust in construction operations on dirt roads and stockpiles, as needed.

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

Concerning climate change, trees, like other green plants, are carbon sinks that use photosynthesis to convert 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 part of the Proposed Action, and since the Project Area is mostly pasture land, it contributes as a carbon sink. However, on a national or global scale, the Proposed Action of clearing 12.6 acres of trees would have little contribution to climate change.

Under the No Action Alternative, if the MCEDA is 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. In the event the Project is postponed, any effects would be delayed for the duration of the postponement. If the MCEDA is not able to secure the funding for the Proposed Actions described in this EA, emissions associated from equipment and ground disturbances would not occur, and there would be no impacts to air quality and climate change from the No Action Alternative.

4.2.2 Groundwater

The Project Area is located within the Tennessee Section of the Valley and Ridge Province (USGS 2023). The Tennessee Section extends from central Alabama and includes parts of western Georgia, eastern Tennessee, and western Virginia. The Tennessee Section in the vicinity of the Project Area is characterized by unconsolidated to semi-consolidated sediments, silts, and clay (USGS 1995).

In the eastern part of Tennessee, the principal aquifers in the Tennessee Section of the Valley and Ridge Province consist of carbonate rocks that are primarily Cambrian and Ordovician in age, with minor Silurian, Devonian, and Mississippian rocks also present (USGS 1995). Locally, this system is referred to as the East Tennessee aquifer system and consists of soluble carbonate rocks and some easily eroded shales underlie the valleys, while more erosion-resistant siltstone, sandstone, and some cherty dolomite underlie ridges (USGS 1986). Underlying the Project Area, several linear rock formations exist that run from the northeast to the southwest and include the Cambrian-aged Conasauga Group that consists of the Nolichucky Shale, the Maryville, Rogersville, and Rutledge formations. Additionally, the primarily Ordovician-aged unnamed upper portion of the Knox Group is present and consists of Newala Formation, Mascot Dolomite, Kingsport Formation, Longview Dolomite, Chepultepec Dolomite, and the Cambrian-aged Copper Ridge Dolomite (Hardeman et al. 1966 and USGS 1995.)

Water quality in the carbonate aquifers of the Valley and Ridge Province is characterized as hard, with dissolved solids concentrations of 170 milligrams per liter or less. Due to the complex network of fractures, bedding planes, and solution openings in the carbonate rocks in areas with thin residuum overlying the substrate, water recharges rapidly, and water quality in these aquifers is susceptible to contamination by human activities (USGS 1995). Recharge occurs primarily along the flanks of the ridges, and groundwater flow is generally from the ridges (higher groundwater levels) toward major streams and center of the valleys where groundwater levels are lower (USGS 1995).

Implementation of the Action Alternative would result in ground disturbance during construction activities. Tree clearing and subsequent tree and stump burning would result in minor ground disturbance at shallow depths. Grading for the construction of an industrial access road and site stabilization would result in greater ground disturbance at moderate depths. Ground disturbances would be temporary and would not be at depths that would intersect public groundwater supplies (typically 50 to 250 feet beneath the land surface [USGS 2016]) or result in significant impacts to groundwater resources. The geotechnical borings conducted on site in the 2019 report (Report of Limited Geotechnical Exploration – Athens/McMinn Interstate Industrial Park) conducted by S&ME indicate the overburden at the project site consists mostly of clay, sandy clay, silty clay, silt and weathered shale to depths ranging approximately 10 feet to 35 feet below land surface at the six borings collected (S&ME 2019a). The geotechnical report recommends that vegetation be cleared, along with topsoil and deleterious materials, 10 feet outside of any building and pad limits, in addition to cuts or fills. Once the materials are removed, the report also states that the exposed subgrade should be proof rolled to note for any rut, pump, or deflection that may occur due to the applied loading under the supervision of a geotechnical engineer. Shallow aquifers could sustain minor impacts from changes in overland water flow and recharge caused by grading within the Project Area. Water infiltration, which is normally enhanced by vegetation, would be reduced until vegetation is re-established. In addition, near-surface soil compaction caused by heavy construction vehicles could reduce the ability of soil to absorb water. These minor impacts would be temporary and would not significantly affect groundwater resources. A Phase I ESA was completed in November 2018 by S&ME, which indicated there was no discovery of adverse environmental conditions on the Project Area. Historical land use of the Project Area was primarily agricultural cultivation since approximately 1976 (S&ME 2018). As such, it is not anticipated that construction activities would encounter hazardous substances during the aforementioned site improvements.

Under the No Action Alternative, if the MCEDA is able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, similar ground disturbance would occur, resulting in similar impacts to groundwater resources as those described above for the Action Alternative. In the event the Project is postponed, any effects would be delayed for the duration of the postponement. If the MCEDA is not able to secure the funding for the actions described in this EA, ground disturbance associated with clearing, grading, and construction of an industrial access road would not occur, and there would be no impacts to groundwater resources.

4.2.3 Soils

The Project Area is located within the Tennessee Section of the Valley and Ridge Province (USGS 2023). Precipitation in the vicinity of the Project Area averages about 55.6 inches per year. The average monthly air temperature ranges from a high of 88 degrees Fahrenheit (F) in July and August to a low of 26 degrees F in January (U.S. Climate Data 2025).

Soil types and descriptions were obtained from the Natural Resources Conservation Service (NRCS) Web Soil Survey (see Attachment 1, Figure 1-F). Soil types found within the Project Area include: Bloomingdale silty clay loam (occasionally flooded), Coile silt loam (5 to 12 percent slopes, eroded), Corryton-Townley complex (2 to 5 percent slopes, eroded), Fullerton gravelly silt loam (5 to 12 percent slopes, eroded), Hamblen silt loam (clayey substratum, 0 to 3 percent slopes, occasionally flooded), Townley-Coile complex (2 to 5 percent slopes, eroded), Udorthents-Urban land complex (2 to 12 percent slopes), and Wolftever silt loam (1 to 5 percent slopes, severely eroded).

A geotechnical investigation was conducted on the Project Area (S&ME 2019a). The 2019 investigation included four soil borings within the Project Area and “re-issued” data associated with two borings conducted within the Project Area in 2013. Borings were planned to be conducted to a depth of 30 feet; however, due to auger refusal (a designation used to denote the inability of the power auger to penetrate underlying materials), the borings were conducted to depths ranging from 10 to 30 feet below land surface. The soil borings encountered clay, sandy clay, silty clay, silt, and weathered shale within the Project Area. The geotechnical report’s recommendations are summarized above in Section 4.2.2. The report also recommends if any issues are observed, then the material would be undercut to firm bearing soils and replaced with well-compacted soils or repaired in place, breaking up the soil, drying, and then recompacting (S&ME 2019a).

Under the Action Alternative, soils in the Project Area would be disturbed by tree clearing, tree and stump burning, and grading for the construction of a paved two-lane industrial access road. The Proposed Action also includes the stabilization of disturbed soils following grading as described in Section 3.2. Further, BMPs would be required as part of the National Pollutant and Discharge Elimination System (NPDES) General Permit for Discharges Associated with Construction Activities (TNR100000). This permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP would identify specific BMPs to address construction-related activities that would be adopted to minimize erosion-related impacts. BMPs, as described in the Tennessee Erosion and Sediment Control Handbook (TDEC 2012) would be used during site development to avoid contamination of surface water in the Project Area. These factors would effectively avoid or minimize impacts on soils and from soil erosion.

Under the No Action Alternative, if the MCEDA is able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, similar ground disturbance would occur, resulting in similar impacts to soils as those described above for the Action Alternative. In the event the Project is postponed, any effects would be delayed for the duration of the postponement. If the MCEDA is not able to secure the funding for the actions described in this EA, ground disturbance associated with tree clearing, site grading, and compaction for development of a new two-lane industrial access road would not occur, and there would be no impacts to soils or from soil erosion.

4.2.4 Floodplains

The Project Area is located within the North Mouse Creek watershed, within the footprint of the 2007 McMinn County, Tennessee, FEMA flood insurance rate map (FIRM) panel 47107C0182D, effective 9/28/2007. The Project Area would be outside of mapped floodplains (see Attachment 1, Figure 1-C); however, two perennial streams were identified in the aquatics field survey: Guthrie Branch (S001) and a stream draining to Webb Lake (S006) (Stantec 2025a). The State of Tennessee regulates floodplains of unmapped streams; therefore, floodplain regulations would

apply to S001 and S006. As stated in Section 4.2.4 Surface Water, S001 would be avoided, which would be consistent with EO 11988. The aquatics report noted that the bank widths of S001 and S006 are 12 feet and 6 feet, respectively. A buffer width of at least 24 feet on either side of S001 would protect its unmapped floodplain. A new road would be constructed within the floodplain of S006. Consistent with EO 11988, roads are considered repetitive actions in the 100-year floodplain that should result in only minor impacts (TVA 1981). To minimize adverse impacts, the road would be constructed such that upstream flood elevations would not be increased by more than 1.0 foot. Therefore, there would be minor direct impacts on floodplains and their natural and beneficial values. Both direct and indirect impacts would be minimized by using standard BMPs during construction. With implementation of the above mitigation measures, the Project would therefore be consistent with Executive Order (EO) 11988, Floodplain Management.

4.2.5 Surface Water

The Project Area is located within the 06020002 watershed 8-digit hydrologic unit code (HUC). Precipitation for McMinn County, Tennessee averages 55.6 inches in the city of Athens, Tennessee annually (U.S. Climate Data 2025).

Stantec performed field surveys on January 14, 17, and 23, and July 10, 2025. Seven streams (two perennial and five intermittent) were identified in the Project Area (Stantec 2025a). The delineation also identified three ephemeral/wet weather conveyance features. The seven streams are described below in Table 4-1.

Table 4-1. Streams Identified in the Project Area During the Stantec Field Surveys

Identification Number	Flow Regime	Description	Project Effects
S001	Perennial	S001 is a named first order stream, Guthrie Branch. This stream is mapped in NWI and NHD (Appendix 1, Figure 1D). S001 is located in the northeastern corner of the Project Area, and it originates north of the Project Area and eventually confluences with North Mouse Creek to the south. Recent alteration to the channel is present in the form of roadway construction and culverts that are located outside of the Project Area. Water was flowing from north to south at an average depth of six inches, and riffles and pools were easily observed during the survey.	avoided
S002	Intermittent	S002 is a second order stream that continues outside of the Project Area flowing towards S001 (Guthrie Branch). Alterations to the vegetation and hydrology have occurred within the past five years, according to aerial imagery (Google Earth 2025). S002 is located in the north central portion of the Project Area and directly drains W004, a palustrine scrub shrub (PSS) wetland. Water was actively flowing from southwest to northeast at the time of survey. The channel substrate consisted of sand and cobble.	potentially impacted
S003	Intermittent	S003 is a first order channel that is located in the north-central portion of the Project Area. Water was actively flowing at the time of survey. The channel begins outside of the Project Area to the north and flows south into S002, which eventually flows into Guthrie Branch outside of the Project Area to the northeast. The channel substrate consists of silt, sand, cobble, and bedrock.	potentially impacted

Identification Number	Flow Regime	Description	Project Effects
S004	Intermittent	S004 is a first order channel that is located in the north-central portion of the Project Area and directly drains W003, a PSS wetland. The channel flows from west to east and converges with S002. An ephemeral channel (E001) also flows into S004. While water was primarily observed standing in pools, some flowing water was noted during the survey. Sorting of bed material is not apparent in the upstream section, and the bed material is mainly composed of silt. Further downstream near the confluence with S004, sorting becomes more apparent, and bed material consists of silt, sand, and cobble.	potentially impacted
S005	Intermittent	S005 is a first order stream located in the southwest portion of the Study Area and directly drains W002b, a PFO wetland. This stream is mapped in NWI and NHD (Appendix A, Figure 4). The channel begins as a poorly formed drainage pattern within the wetland and has not yet cut down through the soil profile. As the channel flows south/southwest, the channel becomes more incised as it flows outside of the Study Area and confluences with S006. Flowing water was present at the time of survey. Bed material is mainly silt, and very little coarse-textured bottom sediments were present.	potentially impacted
S006	Perennial	S006 is a first order stream located in the southwest portion of the Study Area. The channel begins outside of the Project Area but flows north to south and through a culvert beneath the road before its confluence with S005. Several bars and benches were observed throughout the reach, and bed material consisted of silt, sand, and cobble. The average depth of water is approximately four to six inches.	potentially impacted
S007	Intermittent	S007 is a first order stream located in the southwest portion of the Study Area. The channel begins outside of the Project Area and flows south/southeast. S007 flows through W001a, a forested wetland, and drains W001a through a culvert on the southern boundary of the Project Area. The channel has visible flow throughout, with some riffles and runs and coarse, textured bottom sediments that are relatively sorted. The average depth of water was one inch.	potentially impacted

Under the Action Alternative, stream S001 would be avoided. Streams S002, S003, S004, S005, S006, and S007 could be disturbed by tree clearing, grading, and paving of an industrial access road, and site stabilization as indicated in Table 4-1. If potential impacts to streams deemed jurisdictional by the regulating agencies cannot be avoided, coordination and permitting with the USACE and/or TDEC would be required. The MCEDA would ensure compliance with required permits authorizing disturbance to jurisdictional features, including provision of compensatory mitigation, as may be necessary. As discussed in Section 4.2.3, BMPs would be required as part of the NPDES General Permit for Discharges Associated with Construction Activities (TNR100000), including a SWPPP. The BMPs used during site development would act to avoid runoff and potential contamination of surface water adjacent to the Project Area. Given these factors, impacts on surface water would not be significant, and the Proposed Action would be consistent with the Clean Water Act Sections 401 and 404.

Under the No Action Alternative, if the MCEDA is able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, similar site activities would occur, resulting in similar impacts on surface waters as those described above for the Action Alternative. In the event the Project is postponed, any effects would be delayed for the duration of the postponement. If the MCEDA is not able to secure the funding for the actions described in this EA, disturbance associated with the Proposed Action would not occur, and there would be no impacts on surface waters.

4.2.6 Wetlands

As noted above for surface waters, Stantec also performed field surveys of the entire Project Area on January 14, 17, and 23, and July 10, 2025, to document wetlands (Stantec 2025a). A map of features based on the USGS NHD and USFWS NWI is provided in Attachment 1, Figure 1-D. Five wetlands were identified during the field survey (Table 4-2; Attachment 1, Figure 1-E).

Table 4-2. Wetlands Identified in the Project Area During the Stantec Field Surveys

Identification Number	Size (acres)	Wetland Classification	Description	Tennessee Rapid Assessment (TRAM) Score	Project Effects
W001a/b	0.49	Palustrine Forested (PFO)	W001a/b is not present in NWI or NHD layers; however, W001a and W001b share surface water connections with S007 and S006, respectively.	39.5 (low resource value)	potentially impacted
W002a/b	0.64	Palustrine Scrub Shrub (PSS) and PFO	W002a/b, 0.64 acre in size, includes both PSS and PFO wetland classifications (0.11 acre and 0.53 acre, respectively). S005 serves as W002's connection into the greater watershed.	38 (low resource value)	potentially impacted
W003	0.06	PSS	S004 serves as W003's connection into the greater watershed.	36 (low resource value)	avoided
W004	0.49	PSS	W004 is a PSS wetland. S002 serves as W004's connection into the greater watershed.	23 (low resource value)	potentially impacted
W005	0.11	Palustrine Emergent (PEM)	W005's connection to a greater watershed was not observed, and the wetland was identified as an isolated feature. Water is received by sheet flow from adjacent fields and runoff from the surrounding hillslope.	19 (low resource value)	potentially impacted

Under the Action Alternative, wetland W003 would be avoided. Wetlands W001a/b, W002a/b, W004, and W005 could be disturbed by grading, fill placement for the industrial access road, and site stabilization as indicated in Table 4-2 above. If potential impacts to wetland features deemed jurisdictional by the USACE and TDEC cannot be avoided, coordination and permitting with those agencies would be required. The MCEDA would ensure compliance with required permits authorizing disturbance to state or federally regulated features, including provision of impact minimization measures and compensatory mitigation, as may be necessary. Given these factors, impacts on wetlands would not be significant. Implementation of the Proposed Action would be consistent with EO 11990 and the Clean Water Act Sections 401 and 404.

Under the No Action Alternative, if the MCEDA is able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, similar site activities would occur, resulting in similar impacts on wetlands as those described above for the Action Alternative. In the event the Project is postponed, any effects would be delayed for the duration of the postponement. If the MCEDA is not able to secure the funding for the actions described in this EA, disturbance associated with the Proposed Action would not occur, and there would be no impacts on wetlands.

4.2.7 Aquatic Zoology

As noted in Section 4.2.4, two perennial streams, five intermittent streams, and three ephemeral/wet weather conveyance features were delineated in the Project Area (Stantec 2025a; Attachment 1, Figure 1-E). No fish, crayfish, aquatic insects, or bivalves/mussels were observed in the intermittent streams and wet weather conveyances. These water features do not provide suitable habitat to support viable populations of aquatic species on a permanent basis due to their lack of consistent flow. No ponds were documented in the Project Area.

S001 was determined to be a perennial stream located in the northeastern corner of the Project Area. The average depth was six inches with riffles and pools. The substrate consisted of silt, sand, gravel, and cobble. Field delineators observed a strong presence of macrobenthos, including hellgrammites, mayflies, amphipods, and caddisflies. No fish, crayfish, or bivalves were observed. No aquatic vegetation was located in the channel bed.

S006 was determined to be a perennial stream located in the southwest portion of the Project Area. The average depth was four to six inches. The substrate consisted of silt, sand, and cobble. Field delineators observed a moderate presence of amphipods, caddisfly, and snails. No fish, crayfish, or bivalves were observed. No aquatic vegetation was located in the channel bed.

Perennial streams S001 and S006 do provide suitable habitat for aquatic macroinvertebrate species. Generalist fish species such as mosquitofish (*Gambusia affinis*) and sunfish (*Lepomis* spp.), although not observed, could also potentially occur in S001 and S006.

The Action Alternative could involve potential impacts on aquatic fauna if S001 or S006 were disturbed by the Proposed Action. Stream S001 is located along the northeastern corner of the Project Area boundary (Attachment 1, Figure 1-E), and S006 is located in the southwestern corner of the Project Area. It is possible that the MCEDA may be able to avoid or span these streams during site development, given their locations. If impacts to S001 and/or S006 cannot be avoided, stream habitat and aquatic fauna would be affected, but the species present are common in the area, and population-level impacts would not be significant. The species potentially present are widely distributed and abundant in adjacent streams and regionally.

Under the No Action Alternative, if the MCEDA is able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, similar site activities would occur, resulting in similar impacts on aquatic fauna as those described above for the Action Alternative. In the event the Project is postponed, any effects would be delayed for the duration of the postponement. If the MCEDA is not able to secure the funding for the actions described in this EA, disturbance associated with the Proposed Action would not occur, and there would be no impacts on aquatic fauna.

4.2.7.1 Threatened and Endangered Species (Aquatic Species)

TVA biologists queried the TVA's Regional Natural Heritage Database for rare, threatened, and endangered aquatic species on September 24, 2024. One state-ranked aquatic species, flame chub (*Hemitrema flammea*), identified as vulnerable / deemed fish in need of management in Tennessee, was identified within the HUC boundary for the Project Area and/or within McMinn County. No federally listed aquatic species were identified within the Project Area by utilizing the USFWS's Information for Planning and Consultation tool (USFWS 2025).

The flame chub typically occurs in spring-fed streams with extensive aquatic vegetation (Etnier and Starnes 1993). Given that no aquatic vegetation was located in the channel beds of S001 and S006, no suitable habitat occurs for the flame chub in the Project Area.

Under the Action Alternative, given the habitat available and the highly developed setting of the Project Area's vicinity and its effects on water quality, suitable habitat for the flame chub is lacking, and there would be no impacts on listed or ranked species or their habitats.

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

4.2.8 Terrestrial Zoology

4.2.8.1 Wildlife

The AMIP is approximately 90 acres, 78.3 of which would be altered using InvestPrep funding. The Project Area is primarily composed of agricultural fields and forested habitat. The landscape surrounding the industrial park is agricultural fields and residential homes in the valleys with forested blocks remaining along the ridges. I-75, multiple manufacturing factories, and a mining operation also exist in the immediate vicinity of the Project Area. A field survey of the Project Area was conducted on October 16, 2024, by TVA terrestrial zoologists.

The majority of the project footprint consists of agricultural habitat. Common inhabitants of previously disturbed fields and early-successional habitats include brown-headed cowbird, brown thrasher, common grackle, dickcissel, eastern bluebird, eastern kingbird, eastern meadowlark, field sparrow, grasshopper sparrow, and red-tailed hawk (National Geographic 2002). Early-successional areas provide habitat for species such as eastern cotton tail, striped skunk, and white-tailed deer (Whitaker 1996). Common amphibian and reptile species in this habitat include Fowler's toad, northern black racer, and upland chorus frog, among others (Powell et al. 2016). Where this habitat is bordered by forested areas, a more diverse array of common wildlife species can be found using edge habitat.

Many of the forested parcels on the property are secondary growth deciduous forest. Birds typical of this habitat include blue-gray gnatcatcher, common yellowthroat, downy woodpecker, red-bellied woodpecker, red-eyed vireo, red-tailed hawk, wild turkey, wood thrush, and yellow-rumped warbler (National Geographic 2002). Common amphibian and reptile inhabitants include gray rat snake, little brown skink, and spotted salamander (Powell et al. 2016). Many above-mentioned mammalian species will utilize deciduous habitat in addition to herbaceous habitat and regenerating pine. Some additional species include southern flying squirrel, woodland vole, and numerous bat species, such as the eastern red bat (Whitaker 1996).

The remainder of the forested area is regenerating pine with an extremely thick understory. Common amphibian and reptile species in this habitat include Cope's gray treefrog, corn snake, and eastern copperhead, among others (Powell et al. 2016). Common avian species that utilize this habitat include pine warbler, summer tanager, and chipping sparrow (National Geographic 2002). Mammalian species that are known to utilize this habitat include coyote, gray fox, and common raccoon (Whitaker 1996).

A review of the TVA Regional Heritage Database on September 24, 2024, resulted in one cave record approximately 2.5 miles from the Project Area boundary. No caves were observed during the October 2024 field survey conducted by TVA terrestrial zoologists. No other unique or important terrestrial habitat exists in the Project Area. The same review did not note any records of heronries or other aggregations of migratory birds within three miles of the Project Area. Due to the distance from known caves and small scope of the project, the Proposed Action would not impact caves or other habitats unique or important to terrestrial animals. A review of the USFWS Information for Planning and Consultation (IPaC) tool in September 2024 identified four migratory bird species of conservation concern as potentially occurring in the Project Area: chimney swift, prairie warbler, red-headed woodpecker, and wood thrush (USFWS 2025).

Chimney swifts are summer residents in Tennessee and use chimneys in urban areas as nesting sites and communal roosts and large hollow trees (e.g., mature bald cypress) in more natural areas. Chimney swifts forage for insects in a variety of habitats, including forests, open country, waterways, and suburban and urban areas (Steeves et al. 2020). Suitable nesting habitat for chimney swift is not present in the Project Area.

Prairie warblers are summer residents in Tennessee. They are forage gleaners that typically breed in early-successional shrubby habitats (Nolan et al. 2020). Breeding habitat for prairie warbler exists in the Project Area within the regenerating pine forest.

Red-headed woodpeckers are summer residents in Tennessee. They utilize a variety of forested habitat, typically with the presence of snags and dead limbs, which are utilized for nesting (Frei et al. 2020). Breeding habitat for red-headed woodpecker exists in the Project Area.

Rusty blackbirds are winter residents in Tennessee. They utilize wet woods, pond edges, and other wet habitat during the winter (Avery 2020). Winter habitat for rusty blackbird was not identified within the Project Area.

Wood thrushes are summer residents in Tennessee associated with larger tracts of mature mixed-deciduous forests with open forest floors. They tend to nest in the lower forked branches of saplings or shrubs (Evans et al. 2020). Breeding habitat for wood thrush exists in the Project Area.

Under the Action Alternative, the Proposed Action would result in the displacement of wildlife (primarily common, habituated species) currently using the Project Area. Direct effects on 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/hibernation seasons. Habitat removal likely would disperse mobile wildlife into surrounding areas, potentially in search of new food sources, shelter, or to reestablish territories. However, the Proposed Action would not be likely to affect populations of species common to the area, as the amount of habitat to be removed is relatively small, of lower quality, and similar herbaceous habitats and forested fragments are present in the surrounding landscape.

Prairie warbler, red-headed woodpecker, and wood thrush may be impacted by Proposed Actions due to proposed timing of tree removal and the presence of suitable habitat. Prairie warbler nests in regenerating forest and other early-successional habitats. A large portion of the tree removal area is thick regenerating pine stands. Red-headed woodpecker and wood thrush utilize wooded habitat, in which red-headed woodpeckers prefer tree cavities and wood thrush prefer branch forks. Both of these characteristics exist in the proposed tree removal area. If nesting activity is ongoing at the time of proposed tree removal, activities may destroy nests, eggs, or juveniles. Tree removal may occur during the nesting season (mid- to late summer or fall) for these species. Non-nesting individuals present on the landscape would be expected to flush from the Project Area to nearby suitable habitat during disturbance events. Due to the relatively small size of the proposed tree removal area and availability of similarly suitable habitat in adjacent areas, the Proposed Action would not be expected to impact populations of migratory birds.

Under the No Action Alternative, if the MCEA is 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 impacts to terrestrial species as described above for the Action Alternative. In the event the Project is postponed, any effects would be delayed for the duration of the postponement. If the Proposed Action does not proceed, the MCEA would not utilize InvestPrep funding matched with non-TVA funding to assist with tree clearing, grading, construction of an industrial access road, and site stabilization; therefore, wildlife habitats would remain in their current state and no direct or indirect impacts on wildlife or wildlife habitat would occur under the No Action Alternative.

4.2.8.2 Threatened and Endangered Species (Wildlife)

A review of terrestrial animal species in the TVA Regional Natural Heritage Database on September 24, 2024, did not result in records for any species of state or federal conservation concern identified within three miles of the Project Area. One federally listed species (rusty-patched bumblebee) has been recorded in McMinn County, Tennessee, but is noted as possibly extirpated. The USFWS' IPaC tool determined two other federally listed species (gray bat and whooping crane), and two species proposed for federal listing (monarch butterfly and tricolored bat) have the potential to occur in the Project Area (Table 4-3). Habitat suitability and potential impacts to these species are addressed below.

Table 4-3. Federally Listed Terrestrial Animal Species Reported from McMinn County, Tennessee, and Other Species of Conservation Concern Documented Within Three Miles of the Project Area¹

Common Name	Scientific Name	Status ²	
		Federal	State (Rank ³)
Birds			
Whooping crane ⁴	<i>Grus americana</i>	EXPN	-(SX)
Invertebrates			
Monarch butterfly ⁴	<i>Danaus plexippus</i>	PT	-(S4)
Rusty-patched bumblebee ⁵	<i>Bombus affinis</i>	E	-(S1)
Mammals			
Gray bat ⁴	<i>Myotis grisescens</i>	E	E(S2)
Tricolored bat ⁴	<i>Perimyotis subflavus</i>	PE	T(S2S3)

¹ Source: TVA Regional Natural Heritage Database and USFWS Ecological Conservation Online System ([IPaC: Home](#)) extracted September 24, 2024, and March 18, 2025.

² Status Codes: D = Deemed in Need of Management; DL = Delisted; E = Listed Endangered; EXPN = Experimental Population, Nonessential; PE = Proposed Endangered; PT = Proposed Threatened, T = Listed Threatened.

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

⁴ Species has not been documented within three miles of the project area or from McMinn County, Tennessee; USFWS has determined this species has the ability to occur in the county.

⁵ Species that has not been documented within three miles of the project area but has been documented within McMinn County, Tennessee.

Gray bats roost in caves year-round and migrate between summer and winter roosts during spring and fall (Brady et al. 1982, Tuttle 1976a,b). Gray bats have also been documented roosting in manmade structures, such as on bridges and in abandoned buildings. Summer caves are typically located close to rivers or lakes. Bats disperse over bodies of water at dusk, where they forage for insects emerging from the surface of the water (Harvey et al. 2011). There are no known gray bat records from McMinn County, Tennessee, although the USFWS has determined that this species has the potential to occur within the Project Area. The closest known cave record occurs approximately 2.5 miles from the Project Area. No caves are known within the Project Area or were observed during field surveys in October 2024. Aquatic foraging habitat is not present within the Project Area.

Monarch butterfly is a highly migratory species, with eastern United States (U.S.) populations overwintering in Mexico. Monarch populations typically return to the eastern U.S. in April (Davis and Howard 2005). Summer breeding habitat requires milkweed species, on which adults exclusively lay eggs, and where larvae develop and feed. Adults will drink nectar from other blooming wildflowers when milkweeds are not in bloom (NatureServe 2023). Though this species has not been historically tracked by state or federal heritage programs, the USFWS IPaC tool determined that this species has potential to occur within the Project Area. The field within the Project Area has been used for agriculture in the past, and the plants present are not species typically used for monarch foraging. Some flowering plants may occur in the field edges, but significant breeding or foraging habitat is not present within the Project Area. Monarchs were not observed during field survey of the Project Area in October 2024.

Rusty-patched bumble bee inhabits grasslands, prairies, woodlands, marshes, agricultural landscapes, and residential parks and gardens. This species requires both diverse, abundant flowers from April to September and undisturbed nesting sites nearby in order to have sufficient food and overwintering sites for queens. They often build nests in abandoned, underground rodent cavities of large clumps of grass (USFWS 2017). One record of rusty-patched bumblebee is present in McMinn County, approximately 3.9 miles from the Project Area. This record is listed as possibly historical due to the age of the record (1966), and this species is presumed extirpated from the Project Area. According to the USFWS, the Project Area is not included in the current range of this species. Though the Project Area contains a large percentage of early-successional habitat, it is routinely disturbed from mowing and appears to have been used for agriculture, limiting the variety of flowering species present.

Tricolored bats 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 or tree cavities. Caves, mines, culverts, and rock crevices may be used as night roosts and winter hibernacula (McCoshum et al. 2023). This species has not been recorded in McMinn County, however, the USFWS has determined that tricolored bat may be present in the Project Area. The closest cave record occurs approximately 2.5 miles from the Project Area. No other winter roosting habitat was observed near the project footprint by TVA terrestrial zoologists during field surveys in October 2024. The wooded areas where tree removal is proposed were assessed for potential summer roosting and foraging habitat for tricolored bat following the 2024 Range-Wide Indiana Bat and Northern Long-eared Bat Survey Guidelines (USFWS 2024). Suitable summer roosting areas were comprised of mixed-deciduous hardwood patches dominated by a mixture of red and white oak, black walnut, and red maple. Areas with low suitability were comprised of very dense, young saplings unsuitable for roosting or foraging. Within the proposed Project Area, approximately 2.5 acres of suitable roosting trees would be removed.

Whooping cranes migrate through Tennessee twice per year in small flocks of three to five birds. During this migration, they stop to feed and rest in wetland complexes, marshes, ponds, lakes, rivers, and agricultural fields (USFWS 2024). Since 2007, a small group of atypical individuals have come to winter in Tennessee, in a rural area on the Cumberland River. The whooping crane is listed as Endangered in the Southwest (USFWS Region 2). Outside of this region, the whooping crane is categorized as a non-essential experimental population. For the purposes of consultation, non-essential experimental populations are treated as threatened species on National Wildlife Refuge and National Park land (require consultation under 7(a)(2) of the ESA) and as a proposed species on private land (no section 7(a)(2) requirements, but Federal agencies must not jeopardize their existence (section 7(a)(4))) (USFWS 2023a). Migratory stopover habitat does not exist within the Project Area and no records are known from the Project Area.

Under the Action Alternative, TVA would provide InvestPrep funding matched with non-TVA funding to assist with tree clearing, grubbing, grading and paving of an industrial access road at the AMIP. The Proposed Action's potential impacts on individual listed species are discussed below.

Due to the lack of available migration or overwintering habitat in the Project Area, TVA has determined that the Proposed Action would not jeopardize the continued existence of whooping crane.

Monarch butterfly foraging habitat may exist in small, narrow strips along early-successional habitats (i.e., old agricultural fields). Grading could impact monarch butterfly foraging habitat should it occur in the Project Area. However, these impacts would be expected to be minor due to the small quantity of suitable habitat potentially present. This species is currently identified under the Endangered Species Act as a proposed threatened species. The Proposed Action would not jeopardize the continued existence of monarch butterfly.

Based on a review of IPaC, McMinn County, Tennessee, is no longer within the rusty-patched bumblebee's range. The Project Action would have no effect on this species as it is not believed to exist in the Project Area.

No caves or other hibernacula for gray bat or tricolored bat exist in the Project Area or would be impacted by the Proposed Action. No aquatic foraging habitat is present within the Project Area. Approximately 2.5 acres of suitable summer roosting habitat for tricolored bat would be removed under the Proposed Action. The MCEDA's preferred schedule for tree removal is May or June. May 15 – July 31 is considered tricolored bat pup season (USFWS 2024). Direct effects to tricolored bats could occur to individuals if they are roosting in trees in the Project Area during the non-winter season (April 1 – May 14; August 1 – September 30). Individuals roosting during this time, however, would be expected to be mobile and able to flush to nearby suitable habitat if disturbed. Removal of suitable habitat in winter (November 16 – March 31) when these bat species would not be present on the landscape would avoid direct impacts to tricolored bat. TVA recommends removing suitable habitat outside of pup season, when juvenile bats are unable to escape from trees in the event they are present in trees identified for removal. Based on the scale of the Proposed Action and amount of suitable available habitat, the Action Alternative would not jeopardize the continued existence of tricolored bat. . The Action Alternative would have no effect on gray bats.

Under the No Action Alternative, if the MCEDA is 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 threatened and endangered wildlife species as those described above for the Action Alternative. In the event the Project is postponed, any effects would be delayed for the duration of the postponement. If the MCEDA is not able to secure the funding for the actions described in this EA, disturbance associated with the Proposed Action would not occur and the Project Area would likely remain in its current condition, and there would be no direct or indirect or reasonably foreseeable impacts on threatened and endangered terrestrial animals and their habitat.

Neither the Action Alternative nor the No Action Alternative would result in significant impacts to any terrestrial species or their habitats.

4.2.9 Botany

4.2.9.1 Vegetation

The Proposed Action would occur in the Southern Limestone/Dolomite Valleys and Low Rolling Hills Level IV Ecoregion (Ecoregion 67f) which is characterized by steep ridges, springs and caves, and is dominated by bottomland oak forests, sycamore-elm riparian forests, grassland barrens, and glades adjacent to the Tennessee River (Griffith et al. 1997). Land cover is a mixture of cropland, mixed forest, and pasture, and land use is rural-residential and industrial.

Stantec botanists conducted field surveys in January 2025 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. Vegetation in the Project Area is characterized by eight main types: herbaceous (59 percent), deciduous forest (17 percent), deciduous shrubland (13 percent), mixed forest (6 percent), evergreen forest (2 percent), hydromorphic rooted vegetation (2 percent), deciduous woodland (1 percent), and sparsely vegetated/recently disturbed (<1 percent).

Herbaceous vegetation (Old Field) 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 approximately 59 percent of the Project Area. Most of this habitat type occurs along roadsides or as cropland, hayfields, recent clear-cuts, and heavily manipulated pastures. 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 such as meadow fescue, green foxtail, broomsedge, and purpletop.

Deciduous forest is characterized as forests with greater than 75 percent of total deciduous canopy cover and occupies 17 percent of the Project Area. This habitat type is found in areas more recently disturbed (early-successional <1 percent; secondary growth 10 percent) and in primarily undisturbed areas along a steep stream valley (mature growth seven percent). Early-successional deciduous forest is dominated by a tulip poplar overstory with average 4- to 6-inch diameter at breast height (dbh) trees and has an understory of sweetgum, red maple, tulip poplar, and Chinese privet. Secondary growth deciduous forest is dominated by 10- to 16-inch dbh white oak, sycamore, and sweetgum, has a midstory of black cherry, sweetgum, red maple and musclewood, and has an understory dominated by black cherry, sweetgum, eastern red cedar, hackberry, red maple, and musclewood seedlings and saplings. Herbaceous vegetation was lacking, likely due to time of year (i.e., January) of the botanical survey. Mature growth deciduous forest is dominated by 20- to 25-inch dbh trees with some reaching upwards of 30-inch dbh. This mature growth forest overstory is dominated by white oak, black oak, shellbark oak, American beech, northern red oak, post oak, and sugar maple. The mature forest midstory was dominated by sweetgum, red maple, black cherry, musclewood, sugar maple, and oak saplings, while the somewhat sparse understory was dominated by beech, oak saplings, sugar maple, eastern red cedar, black cherry, and Chinese privet.

Deciduous shrubland is characterized as scrub-shrub with small diameter, woody vegetation that typically has a height of less than 10 feet, and occupies 13 percent of the Project Area. This habitat is dominated by small-diameter sweetgum saplings, loblolly pine saplings, eastern red cedar saplings, Chinese privet, multiflora rose, and blackberry. Invasive vine species were also abundant and mainly dominated by Japanese honeysuckle.

Mixed forest is comprised of smaller diameter woody overstory vegetation, and there is shared dominance between deciduous and evergreen species. This forest type occupies six percent of the Project Area. This habitat type is found in areas with re-growth of vegetation after human disruption, such as clearing, logging, and selective cutting (early-successional five percent; secondary growth one percent). Early-successional mixed forest is dominated by a sparse overstory with 10- to 12-inch dbh loblolly pine and eastern red cedar. Its midstory was 4- to 10-inch dbh black cherry, eastern red cedar, red maple loblolly pine, and sweetgum, while the sparse

groundcover was dominated by Japanese honeysuckle. Secondary growth mixed forest was dominated by an overstory that averaged 10- to 15-inch dbh post oak, Virginia pine, red maple eastern red cedar, and tulip poplar species. The midstory was dominated by 6- to 10-inch dbh red maple, eastern red cedar, southern red oak, sweetgum, and boxelder. The understory contained invasive shrubs (bush honeysuckle, Chinese privet) and native saplings (boxelder, eastern red cedar, sweetgum), while groundcover was considered sparse and mainly dominated by Japanese stiltgrass, purpletop, and broomsedge.

Evergreen forest is characterized by having greater than 75 percent of total canopy cover comprised of evergreen species and occupies two percent of the Project Area. This habitat type is found in areas with re-growth of vegetation after human disruption, such as clearing, logging, and selective cutting (early-successional <1 percent; secondary growth one percent). Early-successional evergreen forest is dominated by a somewhat dense overstory with average 2- to 4-inch dbh loblolly pine, eastern red cedar, and Virginia pine. Due to time of year of survey, the understory included small (0 to 2-inch dbh) eastern red cedar and loblolly pines, and lacked herbaceous cover. Secondary growth evergreen forest was dominated by eastern red cedar and loblolly pine (10- to 15-inch dbh overstory; 4- to 11-inch midstory). Its understory included seedlings and saplings of eastern red cedar, sweetgum, and Chinese privet, and herbaceous vegetation was lacking, also due to time of year of the survey.

Hydromorphic rooted vegetation (wetland) is characterized by large diameter woody vegetation, small diameter woody vegetation, and hydrophytic herbaceous vegetation associated with wetlands, and occupied two percent of the Project Area. Forested wetland areas are dominated by 10- to 20-inch dbh black willow and red maple, while the midstory was dominated by red maple, green ash, and black willow. The understory and shrubland was dominated by boxelder, sweetgum, black willow, red maple, and Chinese privet seedlings and saplings, and an herbaceous layer dominated by common rush, straw-colored flatsedge, and Japanese stiltgrass.

Deciduous woodland is characterized by a canopy cover of greater than 60 percent, where the crowns of the canopy trees generally do not overlap, allowing for a more established herbaceous community to exist and occupied one percent of the Project Area. The overstory was dominated by white oak ranging from 40- to 60-inch dbh. There was little clutter in the understory with some eastern red cedar and Chinese privet; the herbaceous layer was mowed in most places and contained graminoid species.

Sparsely vegetated/recently disturbed vegetative community was present due to recent disruption on the Project Area (i.e., tree clearing, addition of gravel, or other materials) and was characterized by 20 percent or less vegetation and occupies <1 percent of the Project Area. Due to recent and active tree clearing operations, no vegetation was recorded within this portion of the Project Area, and the woody vegetation has been removed and/or chipped.

EO 13112 directs TVA and other federal agencies to prevent the introduction of invasive species (both plants and animals), control their populations, restore invaded ecosystems, and take other related actions. EO 13751 amends EO 13112 and directs actions by federal agencies to continue coordinated federal prevention and control efforts related to invasive species. This order incorporates considerations of human and environmental health, climate change, technological innovation, and other emerging priorities into federal efforts to address invasive species and strengthens coordinated, cost-efficient federal action. Some invasive plants have been introduced accidentally, but most were brought here as ornamentals or for livestock forage. Because these robust plants

arrived without their natural predators (insects and diseases), their populations spread quickly across the landscape, displacing native species and degrading ecological communities or ecosystem processes (Miller et al. 2010). No federal-noxious weeds but many non-native invasive plant species were observed throughout the Project Area during the January 2025 field survey. Invasive species present across significant portions of the landscape included wintercreeper, Chinese privet, Japanese honeysuckle, amur bush honeysuckle, Japanese stiltgrass, and multiflora rose. During field surveys, invasive plants were prevalent in sections of deciduous forest (early-successional, secondary growth, and mature growth), along with deciduous shrubland, hydromorphic rooted vegetation (wetland), evergreen forest (secondary growth), mixed forest (early-successional and secondary growth), and deciduous woodland vegetation types.

Adoption of the Action Alternative would not significantly affect the terrestrial ecology of the region. Converting forest land for tree clearing and grading, and paving of an industrial access road, would be long-term in duration, but insignificant. The Action Alternative would require clearing of approximately 12.6 acres, most of which would be deciduous forest. Virtually all forest in the Project Area has been previously cleared, and the plant communities found there are common and well represented throughout the region. Also, the Proposed Action would temporarily affect herbaceous plant communities, but these areas would likely recover to their pre-project condition in less than one year.

Nearly the entire Project Area currently had a substantial component of invasive terrestrial plants and adoption of the Action Alternative would not significantly affect the extent or abundance of these species at the county, regional, or state level. The use of revegetation with noninvasive species would serve to minimize the potential introduction and spread of invasive species in the Project Area.

Under the No Action Alternative, areas within the Project Area would remain in their current condition. Thus, adoption of the No Action Alternative would not affect plant life because no project-related work would occur. In the event the Project is postponed, any effects would be delayed for the duration of the postponement. Changes to local plant communities resulting from natural ecological processes and human-related disturbance would continue to occur, but the changes would not result from the Proposed Action. Therefore, there would be no direct, indirect, or reasonably foreseeable impacts to plant life under the No Action Alternative.

4.2.9.2 Threatened and Endangered Species (Botany)

A review of the TVA Regional Natural Heritage Database indicated that no state and no federally listed plant species have been previously reported within a 5-mile vicinity of the Project Area. No federally listed plant species have been previously reported from McMinn County, Tennessee. The U.S. Fish and Wildlife Service's Information for Planning and Consultation (IPaC) identified one federally listed plant species, white fringeless orchid, with potential to occur in the Project Area. No state or federally listed plants were observed in the Project Area during the January 2025 field survey, and the Project Area lacked suitable habitat for the white fringeless orchid due to the significant amount of past human disturbance. No designated critical habitat for plants occurred in the Project Area.

Adoption of the Action Alternative would not impact federal or state-listed species. Adoption of the Action Alternative would have no effect on federal plant species because no federally listed plant species occur in the Project Area. Also, no populations of state-listed species were observed during field surveys of the Project Area. Therefore, no direct, indirect, or reasonably foreseeable

impacts on endangered and threatened plant species and their critical habitats would be 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 plant species because no project-related work would occur. Under the No Action Alternative, the proposed construction activities would not occur. No federally listed plants or designated critical habitat occurs within the Project Area. In the event the Project is postponed, any effects would be delayed for the duration of the postponement. 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 special-status plants present in the Project Area, but the changes would be unrelated to the Proposed Action.

4.2.10 Cultural Resources

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 Area of Potential Effect (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 could take place (78.3 acres), where physical effects could occur, as well as areas within a half-mile radius of the project, within which the project would be visible, where visual effects on historic structures could occur.

Given that there are no known historic structures within the Project Area and that the Proposed Actions would not involve the construction of above-ground resources, no historic architectural resources would be impacted by the project, directly or visually. Further, a historic architecture survey was completed for the AMIP in 2015 with no resources identified and no further surveys recommended (TVAR 2015). Therefore, a new Phase I historic structures survey was not required and impacts to historic structures and sites are not anticipated. Findings for historic properties were also coordinated with the THC-SHPO as noted below (Attachment 2) (THC 2025).

TVAR completed a Phase 1 survey for cultural resources, both archaeological and architectural components, for the AMIP, including portions of the Project Area in March and April 2015 (TVAR 2015). TVAR surveyed five areas totaling 55.1 acres, including a site reconnaissance and 234 completed shovel tests. TVAR did not identify any cultural resources and recommended no additional surveys. TVA contracted with Stantec to carry out an archaeological survey for the relevant remaining portion of the project APE, which was conducted in January 2025, and to write a report titled Phase I Cultural Resources Survey for the AMIP, McMinn County, Tennessee

(Stantec 2025c). TVA determined that the survey and the report are consistent with the *Secretary of Interior's Standards and Guidelines for Identification* (NPS 1983).

Stantec's background research did not identify any previously known archaeological sites within the APE, including the prior study conducted by TVAR (TVAR 2015). Stantec performed systematic shovel testing at 30-meter intervals spaced on transects 30 meters apart. There were 118 shovel test sites excavated, and all but one were negative for cultural material. Isolated Find 1 consisted of one Jack's Reef Pentagonal projectile point/knife (ppk). A total of 31 shovel test sites could not be excavated due to disturbances such as roads and graveled areas. The Phase I archaeological survey did not identify any archaeological sites in the APE, and there was no evidence of intact, buried deposits surrounding the single isolated find. Given that isolated finds are not eligible for listing in the NRHP, Stantec recommended no further archaeological work within the APE. TVA received concurrence from the Tennessee Historical Commission (THC) in correspondence dated February 12, 2025, with the report's findings (Attachment 2). No objections were received from the consulted Tribes.

Implementation of the Action Alternative would not result in any impacts on archaeological resources because no significant archaeological sites were present within the APE.

Under the No Action Alternative, if the MCEDA is able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, similar site activities would occur, also resulting in no impacts on archaeological resources as described above for the Action Alternative. In the event the Project was postponed, any effects would be delayed for the duration of the postponement. If the MCEDA is not able to secure the funding for the actions described in this EA, disturbance associated with the Proposed Action would not occur, and there would be no impacts on archaeological resources.

4.2.11 Visual Resources

The Project Area is 78.3 acres consisting mainly of agricultural land with some forested areas. The Project Area is bordered by I-75 to the south/southeast, Denso Drive to the north and Lee Erwin Road to the northeast. The visual landscape setting adjacent to the Project Area consists of industrial/commercial land to the southeast (Denso Manufacturing and Midlab), a public park to the south (Denso Eco Park), and residential homes to the north and northeast.

Under the Action Alternative, construction vehicles and equipment visible during construction activities would have a minor visual impact over the temporary construction period, as well as a minor permanent impact due to rough grading. Drivers along Denso Drive and Lee Erwin Road would view construction activity, although the activity would not be inconsistent with an industrial park and its development. Drivers along I-75 may have some direct views of the Project Area; however, there would be substantial screening by trees, and there are other industrial/commercial areas along the roadway immediately adjacent to the Project Area, and any changes to the views would be similar to other areas along the road. While motorists using the roads may notice a change in the viewshed, this change would be minor given the brief period that drivers would be in the area.

Under the No Action Alternative, if the MCEDA is able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, the proposed work would occur, resulting in similar direct and indirect visual quality impacts as described above for the Action Alternative. In the event the Project was postponed, any effects would be delayed for the duration of the postponement. If the MCEDA is 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.

4.2.12 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 likely involve the operation of an excavator, bulldozer, dump truck, or similar vehicles, and heavy machinery over the temporary duration of construction. Heavy equipment noise levels would fluctuate depending on the number and type of vehicles and equipment in use at any given time. The Action Alternative would be implemented over nine months, during which construction-related noise may be generated. In addition, construction-related sound levels experienced by a noise-sensitive receptor in the vicinity of construction activity would be a function of distance, other noise sources, and the presence and extent of vegetation, structures, and intervening topography between the noise source and receptor. It is anticipated that sound levels would not exceed 85 decibels at the Project Area boundary per Occupational Safety and Health Administration standards.

Under the Action Alternative, primary sensitive noise receptors in the area include four residential homes located between 30 and 150 feet north and northeast, and a public park (Denso Eco Park) located 125 feet south. 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 anticipated to be conducted during daylight hours when ambient noise levels would be often higher, and most individuals would be less sensitive to noise. Industrial and commercial facilities adjacent to busy roads and highways are accustomed to noise. Overall, noise-related impacts resulting from the implementation of the Action Alternative would be anticipated to be temporary and minor.

Under the No Action Alternative, if the MCEDA is able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, there would be impacts to noise receptors similar to those described above for the Action Alternative. In the event the Project was postponed, any effects would be delayed for the duration of the postponement. If the MCEDA is not able to secure the funding for the actions described in this EA, the proposed disturbances would not occur, and existing site conditions would likely be unchanged, resulting in no impacts to noise receptors.

4.2.13 Socioeconomics

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

This analysis focuses on the state, county, and locality within which the Action Alternative would occur. Publicly available statistics generated by the United States Census Bureau and the United States Bureau of Labor Statistics were used to characterize socioeconomic conditions in the host

state (Tennessee), county (McMinn), and locality (city of Athens, Tennessee) (Table 4-4). 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 impacts on minority and low-income populations.

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

	Tennessee	McMinn County	City of Athens, Tennessee
Population ¹			
July 2023 Population	6,986,082	54,135	14,250
April 2021 Population	6,859,497	53,065	13,961
Population, Percent Change	1.84%	2.02%	2.07%
Population per Square Mile ²	173	125.9	915.7
Demographics ¹			
White Alone, not Hispanic or Latino	4,994,428	46,935	11,456
Black or African American Alone	1,099,942	1,694	863
American Indian and Alaska Native Alone	6,914	32	9
Asian Alone	127,497	433	166
Native Hawaiian and Other Pacific Islander Alone	3,783	0	0
Some Other Race Alone	25,909	54	24
Two or More Races	231,152	2,618	793
Hispanic or Latino (of any race)	496,457	2,369	939
Income ¹			
Median Household Income	\$67,097	\$59,674	\$53,151
Per Capita Income	\$37,866	\$30,669	\$31,659
Percent with Income Below the Poverty Level	14.0%	14.9%	18.4%
Employment (Not Seasonally Adjusted): April 2023 ³			
Labor Force	3,407,350	21,116	NA
Employed	3,296,778	20,184	NA
Unemployed	110,572	932	NA
Unemployment Rate (%)	3.2	4.4	NA

¹ Source: United States Census Bureau (2025)

² Source: United States Census Reporter (2025)

³ Source: United States Bureau of Labor Statistics (2025)

The evaluation of demographics and low income, and minority populations in McMinn County determined the following:

- Relative to the average Tennessee resident, the residents of McMinn County live at a lower population density but experience a higher, positive population growth. Relative to the average Tennessee resident, the residents of the city of Athens, Tennessee, live at a higher population density and higher positive population growth.

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

There are no residential subdivisions within 0.5 mile of the Project Area; however, there are approximately 25 residential homes within a 0.5-mile radius. The U.S. Census Bureau identified the following demographic characteristics for this area. Relative to the state, these neighborhoods in aggregate have a higher percentile population of color, a higher level of low-income population, a higher rate of linguistic isolation, and a higher level of population with less than high school education.

As described in Section 1.0 (Proposed Action and Need), the Action Alternative would include tree clearing, tree and stump burning, grading, paving for an industrial access road, and site stabilization. Erosion prevention, sediment control, and stabilization measures would be implemented after grading is complete.

This effort is expected to take place over a 9-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 would be anticipated from the Proposed Action; therefore, no negative impacts would be anticipated to minority or low-income populations as a result of the Action Alternative. Minor positive indirect impacts may be noted through the increase in employment as a result of the Action Alternative.

Under the Action Alternative, there is minimal potential that the Action Alternative would result in negative impacts on minority and low-income populations. This conclusion is based on two observations. First, the Action Alternative would have a minor positive effect on the local economy. Second, as described throughout this document, environmental effects associated with the Action Alternative would be minor, temporary, and would generally be constrained to the 78.3-acre Project Area.

Under the No Action Alternative, if MCEDA was 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. In the event the Project was postponed, any effects would be delayed for the duration of the postponement. If MCEDA was not able to secure the funding for the actions described in this EA, the economic activity and socioeconomic changes would not occur.

4.2.14 Transportation

The Project Area can be accessed during construction activities from the south via a gravel entrance on Private Brand Way. Private Brand Way terminates at Denso Drive which provides access to Tennessee Highway 30 (TN-30) then to I-75.

Private Brand Way is a local road that provides access to four industrial properties south of the Project Area. Private Brand Way is a paved, two-lane road sufficiently wide for a single lane of traffic in each direction. Based on preliminary review of Google Street View images (recorded March 2024) as well as incidental observations made during waters and wetlands delineations, the road is in good condition with gravel shoulders and narrow grassy swales on each side of the road. Private Brand Way is not defined by the Functional Classification System for Athens (Tennessee Department of Transportation [TDOT] 2025a). The site entrance location and configuration should consider safe sight distances and other safety concerns for the traffic that would enter Private Brand Way from the property. Necessary precautions would be taken during mobilization and demobilization, such as reduced speed in areas of poor visibility or poor road condition, with other precautions such as a flagman or traffic control to be considered if required.

Denso Drive is a two-lane paved highway that provides access to multiple commercial and industrial properties south of the Private Brand Way intersection. Based on preliminary review of Google Street View images (recorded March 2024) as well as incidental observations made during waters and wetlands delineations, the road is in good condition with narrow shoulders and wide vegetated swales. Denso Drive is listed as minor collector on the Functional Classification System for Athens (TDOT 2025a). Normal care would be taken by workers entering Denso Drive regarding traffic safety.

TN-30 is a four-lane paved highway with dedicated turning lanes at the intersection of Denso Drive. Based on preliminary review of Google Street View images (recorded March and September 2024) as well as incidental observations made during waters and wetlands delineations, the road is in good condition with a median, dedicated turning and merging lanes, and paved shoulders. TN-30 is listed as a part of the National Highway System and as part of the National Highway System and principal arterial on the Functional Classification System for Athens (TDOT 2025a). Normal care would be taken by workers entering or crossing Highway 51 regarding traffic safety.

I-75 is a four-lane paved highway at the intersection of TN-30. Based on preliminary review of Google Street View images (recorded October 2024 and January 2025) as well as incidental observations made during waters and wetlands delineations, the highway is in good condition with a vegetated median, dedicated ramps and merging lanes, and wide vegetated verges. I-75 is listed as an Interstate and part of the National Highway System on the Functional Classification System for Athens (TDOT 2025a). Normal care would be taken by workers entering or exiting I-75 regarding traffic safety.

Based on a review of TDOT historical traffic data (TDOT 2025b) there are no traffic count stations on Private Brand Way. The nearest traffic count stations are located on Denso Drive, TN-30 and I-75. The 2024 annual average daily traffic count (AADT) for the relevant stations are presented in Table 4-5 below.

Table 4-5 Tennessee Department of Transportation Traffic Count Data for the Project Area¹

Route Description	Location ID	Distance from Project Area (Miles)	Year	AADT
Denso Drive	54000179	1.1	2024	6,400
TN-30	54000167	1.4	2024	11,307
Interstate 75	54000011R	1.4	2024	4,795
Interstate 75	54000012R	1.4	2024	3,516
Interstate 75	54000009R	1.6	2024	3,386
Interstate 75	54000010R	1.6	2024	4,603

¹ Source: TDOT 2025b

Under the Action Alternative, and in the context of the existing AADT road volumes, the anticipated traffic generated by the proposed activities would be minor. It is anticipated that existing traffic volumes for Private Brand Way would be minor, as it provides access to limited other sites, and traffic volumes for Denso Drive would be minor. Because of the anticipated limited volume of workers on the site required for tree clearing activities, grading, and roadwork, the relatively short timeframe of the proposed work, direct or indirect impacts to local traffic would be anticipated to be temporary and minor.

Under the No Action Alternative, if the MCEDA is 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 MCEDA is not able to secure the funding for the actions described in this EA, there would be no impact to overall traffic volumes and level of service.

5.0 PERMITS, LICENSES, AND APPROVALS

The Action Alternative would result in greater than one acre of earth-disturbing activities; therefore, it would be necessary for the MCEDA, or its contractors, to obtain local, state, or federal permits, licenses, and approvals necessary for the project for coverage under the applicable NPDES General Permit for Discharges Associated with Construction Activity (TNR100000). Coverage would require the submittal of a Notice of Intent (NOI) and development of a site-specific SWPPP. If resources deemed to be regulated by the USACE and/or TDEC are proposed to be impacted, CWA 404/401 permits would be required to mitigate proposed impacts to waterbodies and wetlands.

6.0 BEST MANAGEMENT PRACTICES AND MITIGATION MEASURES

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

Operations involving chemical or fuel storage or resupply, and vehicle servicing would be handled outside of riparian areas and in such a manner as to prevent these items from reaching a

watercourse. Earthen berms or other effective means would be installed to protect nearby stream channels from direct surface runoff. Servicing of equipment and vehicles is expected to be done with care to avoid leakage, spillage, and subsequent surface or groundwater contamination. Oil waste, filters, and other litter would be collected and disposed of properly.

If resources deemed to be regulated by the USACE and/or TDEC are proposed to be impacted, CWA 404/401 permits would be required, and BMPs and compensatory mitigation could be required for effects to waterbodies and wetlands.

A buffer width of at least 24 feet on either side of S001 would be provided to protect floodplains.

To minimize adverse impacts to floodplains, the road would be constructed such that upstream flood elevations at stream S006 would not be increased by more than 1.0 foot.

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>	6 years in Project Management, Managing and Performing NEPA Analyses	Economic Development Grant Project NEPA Compliance Manager
David Mitchell <i>M.S. Soil and Water Science</i> <i>B.S. Horticulture</i>	18 years in ecological restoration and plant ecology, 6 years of environmental program management	Threatened and Endangered Plants, Plant Ecology, Invasive Plant Species
Zach Buecker <i>B.S. Biology</i>	15 years in water/wetland assessment and compliance	Surface Water
Derek Reaux <i>Ph.D. Anthropology, University of Nevada, Reno</i> <i>M.A. Anthropology, University of Nevada, Reno</i> <i>B.A. Anthropology, University of Kentucky</i>	12 years of experience in archaeological research, cultural resource management, and Section 106 compliance	Cultural resources, NHPA Section 106 compliance
Matt Reed <i>M.S. Wildlife and Fisheries Science; QHP</i>	14 years working with threatened and endangered aquatic species in the Southeastern United States; 8 years in ESA, NEPA, and CWA compliance and stream assessments	Aquatic Ecology, Aquatic T&E Species
Carrie Williamson, P.E. (TN), CFM <i>B.S. and M.S. Civil Engineering</i>	12 years in Floodplains and Flood Risk; 11 years in Compliance Monitoring; 3 years in River Forecasting	Floodplains QA/QC
<i>Emily Doub</i> <i>M.S. Biology, University of Georgia,</i> <i>B.S. Wildlife and Fisheries Science, University of Tennessee</i>	2 years in biological compliance, NEPA compliance, and ESA consultation for T&E. 7 years in biological field studies.	Terrestrial Zoology, Threatened and Endangered Species
Sara McLaughlin-Johnson <i>B.S. Wildlife and Fisheries Science</i>	12 years in biological compliance, NEPA compliance, and ESA consultation for T&E. 18 years in biological field studies.	Terrestrial Zoology, Threatened and Endangered Species

Name/Education	Experience	Project Role
Fallon Parker Hutcheon <i>M.S. Environmental Studies</i> <i>B.S. Biology</i>	6 years in wetland delineation, wetland impact analysis, and NEPA/CWA compliance	Wetlands
Stantec		
Douglas Mooneyhan <i>M.S. Biology, Tennessee Technological University</i> <i>B.S. Wildlife and Fisheries Science, University of Tennessee</i>	35 years in managing and performing environmental studies, Project Manager for a variety of different project types including NEPA, construction monitoring, natural resources, water resources, and fisheries biology.	EA Program Manager QA/QC
Jaclyn Martin <i>M.S. Environmental Sciences, Swedish University of Agricultural Sciences, Uppsala, Sweden</i> <i>M.S. Environmental Sciences, University of Natural Resources and Life Sciences, Vienna, Austria</i> <i>B.S. Biology, Winthrop University, South Carolina</i>	9 years in environmental consulting in the preparation and review of NEPA compliance reports, environmental assessments, and permitting for a variety of telecommunication, alternative energy, and FERC-regulated projects.	Air Quality and Climate Change, Visual, QA/QC
Duane Simpson <i>M.A. Anthropology, University of Arkansas</i> <i>B.A. Anthropology, Ohio University</i>	28 years in archaeological consulting, including management of projects across the Southeast and Mid-Atlantic regions. Principal Investigator for over 16 years.	Archaeology
Rachel Kennedy <i>M.H.P. Historic Preservation, University of Kentucky</i> <i>B.A. Political Science and History, University of Kentucky</i>	22 years of experience working in non-profit, governmental, and private sectors with all aspects of preservation planning, from interpretation of the Secretary of the Interior's Standards for the Treatment of Historic Properties to cultural landscape examinations to identifying, evaluating, and listing properties to the National Register of Historic Places. Meets the Secretary of the Interior's Professional Qualifications Standards for History and Architectural History, per 36 Code of Federal Regulations (CFR), Part 61.	Historic Structures and Sites
Josh Yates, P.G. <i>M.S. Geology, University of South Florida</i> <i>B.S. Natural Resources Management and Engineering, University of Connecticut</i>	17 years of hydrogeologic assessments and water resources permitting experience. This experience includes water supply planning, hydrogeologic investigations, groundwater modeling, water use permitting, well construction oversight, EIS and EA preparation, minimum flow and level (MFL) impact analysis, monitoring well network design, aquifer performance tests, and GIS analysis.	Groundwater

Name/Education	Experience	Project Role
<p>Ellen Mullins <i>M.S. Forestry, Mississippi State University, Starkville, Mississippi, 2015</i> <i>B.S. Forestry, University of Kentucky, Lexington, Kentucky, 2011</i></p>	<p>Ms. Ellen Mullins is a project manager with 15 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>Deputy Project Manager, QA/QC, Prime Farmland, Air Quality and Climate Change, Noise</p>
<p>Chris Knabel, TN-QHP <i>B.S. Natural Resources and Environmental Science, University of Kentucky</i></p>	<p>Mr. Knabel is a biologist with 7 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 11 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 medeoloides</i>). Additionally, he is a federally permitted bat biologist for all listed bat species throughout the TVA service area.</p>	<p>Aquatics, Wetlands</p>

Name/Education	Experience	Project Role
<p>Iris Eschen <i>Heald Business College, San Francisco, CA</i></p>	<p>As Document Production Manager, Ms. Eschen has more than 36 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>10 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>
<p>Emily Smith <i>M.S. Lipscomb University B.S. University of Tennessee at Chattanooga</i></p>	<p>She has worked extensively on NEPA documents, including Categorical Exclusions, EAs, and Comprehensive Impact Analyses.</p>	<p>Socioeconomics, Recreation</p>
<p>Kathleen Pangan <i>M.S. Biology, University of California – San Diego B.S. Biology: Ecology, Behavior, and Evolution, University of California – San Diego</i></p>	<p>A biologist with more than 16 years of experience in ecology, technical analysis, and scientific fieldwork.</p>	<p>Surface Water, Aquatics, Wetlands</p>
<p>Afton Tankersley <i>M.S. Environmental Science, Columbus State University B.S. Biology, Bethel College</i></p>	<p>A biologist with experience preparing multiple NEPA documents, including EISs for the FERC and the Nuclear Regulatory Commission.</p>	<p>Air Quality and Climate Change, Noise, Visual Resources</p>

8.0 AGENCIES AND OTHERS CONSULTED

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

- Tennessee Department of Archives and History / State Historic Preservation Office
- Alabama-Coushatta Tribe of Texas, Cherokee Nation, Coushatta Tribe of Louisiana, Eastern Band of Cherokee Indians, Eastern Shawnee Tribe of Oklahoma, Jena Band of Choctaw Indians, Kialegee Tribal Town, The Muscogee (Creek) Nation, The Seminole Nation of Oklahoma, Shawnee Tribe, Thlopthlocco Tribal Town, and the United Keetoowah Band of Cherokee Indians in Oklahoma

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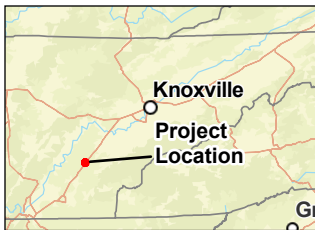
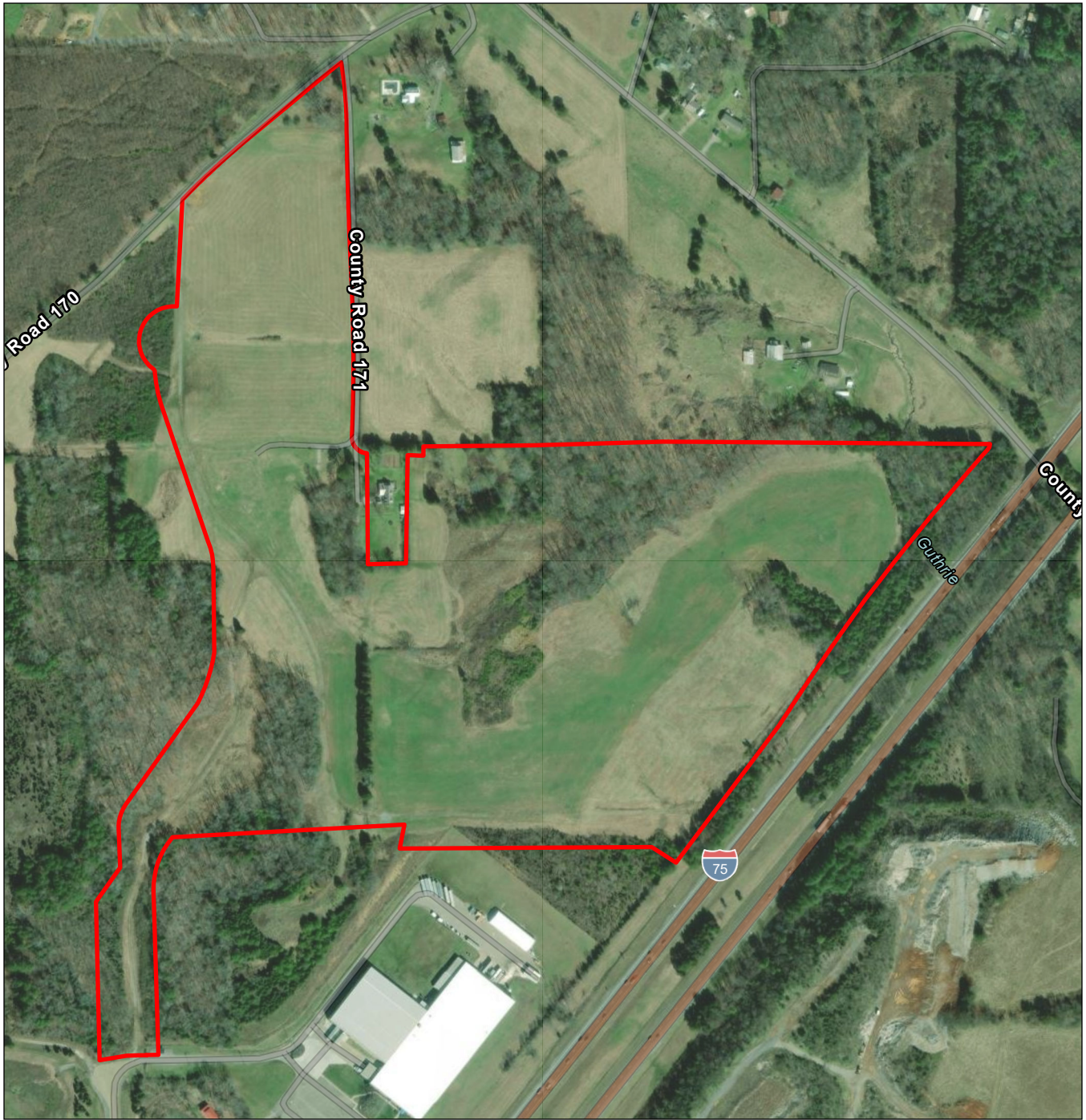
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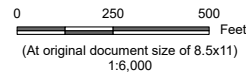
Attachment 1

Project Figures

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 Project Boundary (78.30 ac)



Project Location Prepared by pmarsey on 12/23/2024

McMinn Co., TN

Client/Project Tennessee Valley Authority 172608874

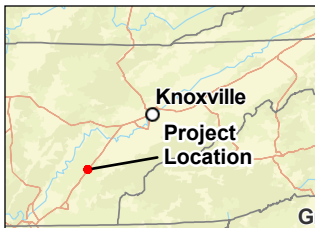
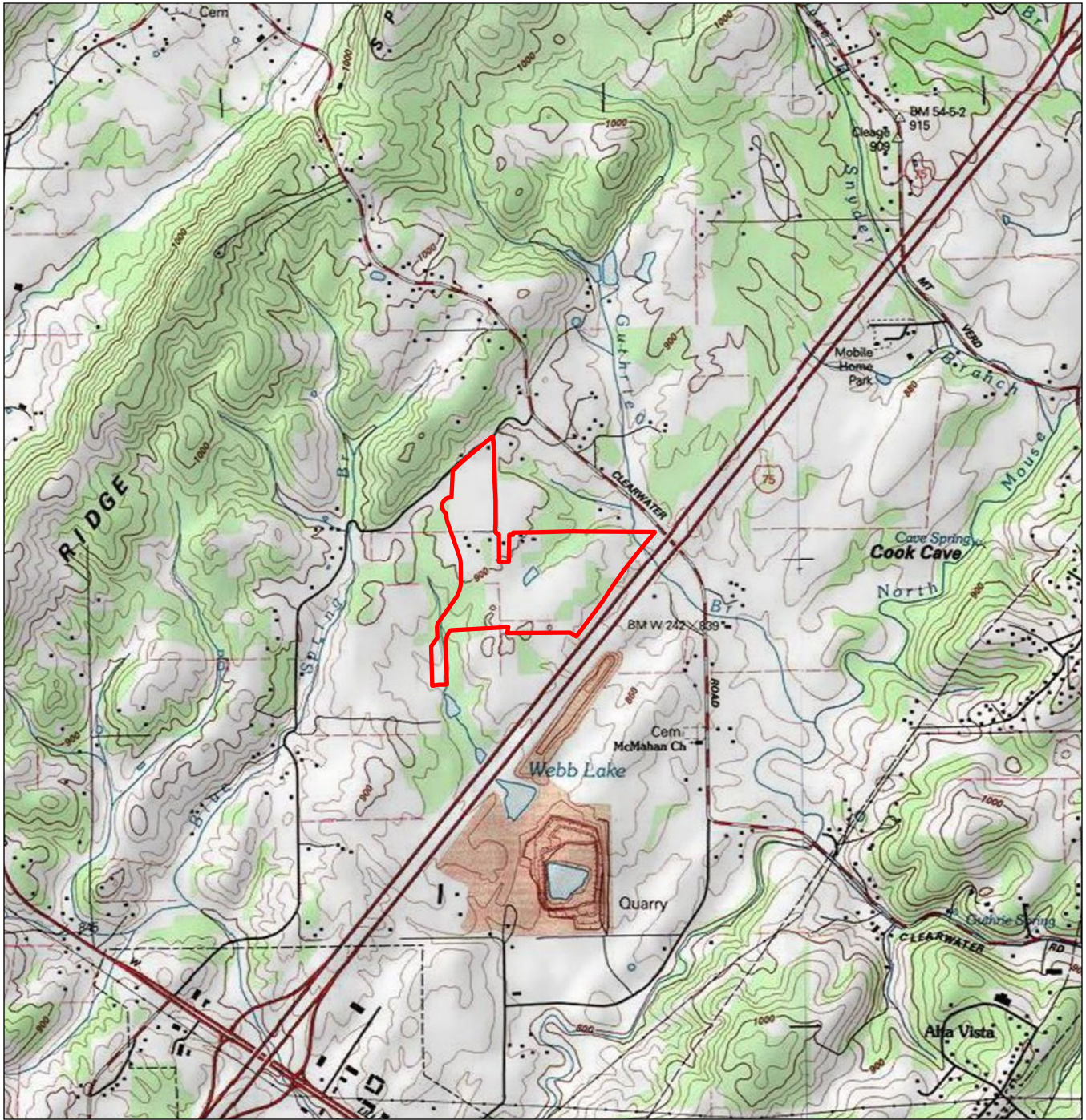
TVA FY25 McMinn County Environmental Assessment Report


Figure No.

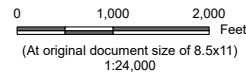
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Title Project Aerial

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 Project Boundary (78.30 ac)



Project Location Prepared by pmarsey on 12/23/2024

McMinn Co., TN

Client/Project Tennessee Valley Authority 172608874

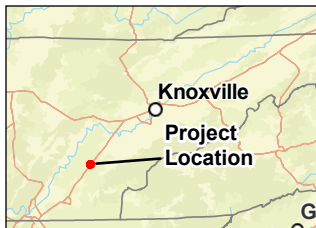
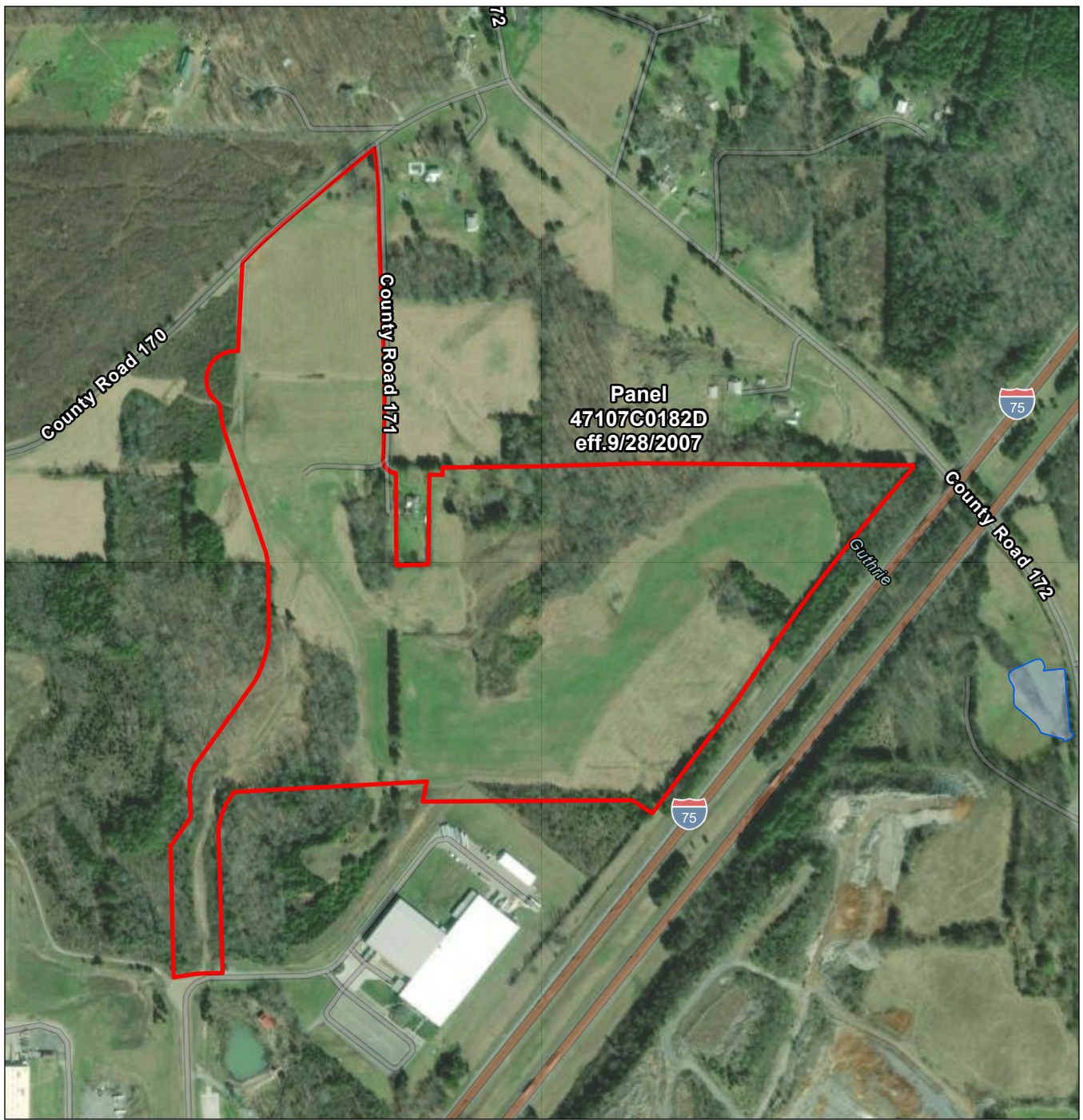
TVA FY25 McMinn County Environmental Assessment Report

Figure No.

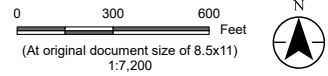
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Title USGS Quadrangle

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



- Project Boundary (78.30 ac)
- FEMA Floodplain (0.00 ac)



Project Location Prepared by pmarsey on 12/23/2024

McMinn Co., TN 172608874

Client/Project Tennessee Valley Authority
 TVA FY25 McMinn County
 Environmental Assessment Report

Figure No. 1C

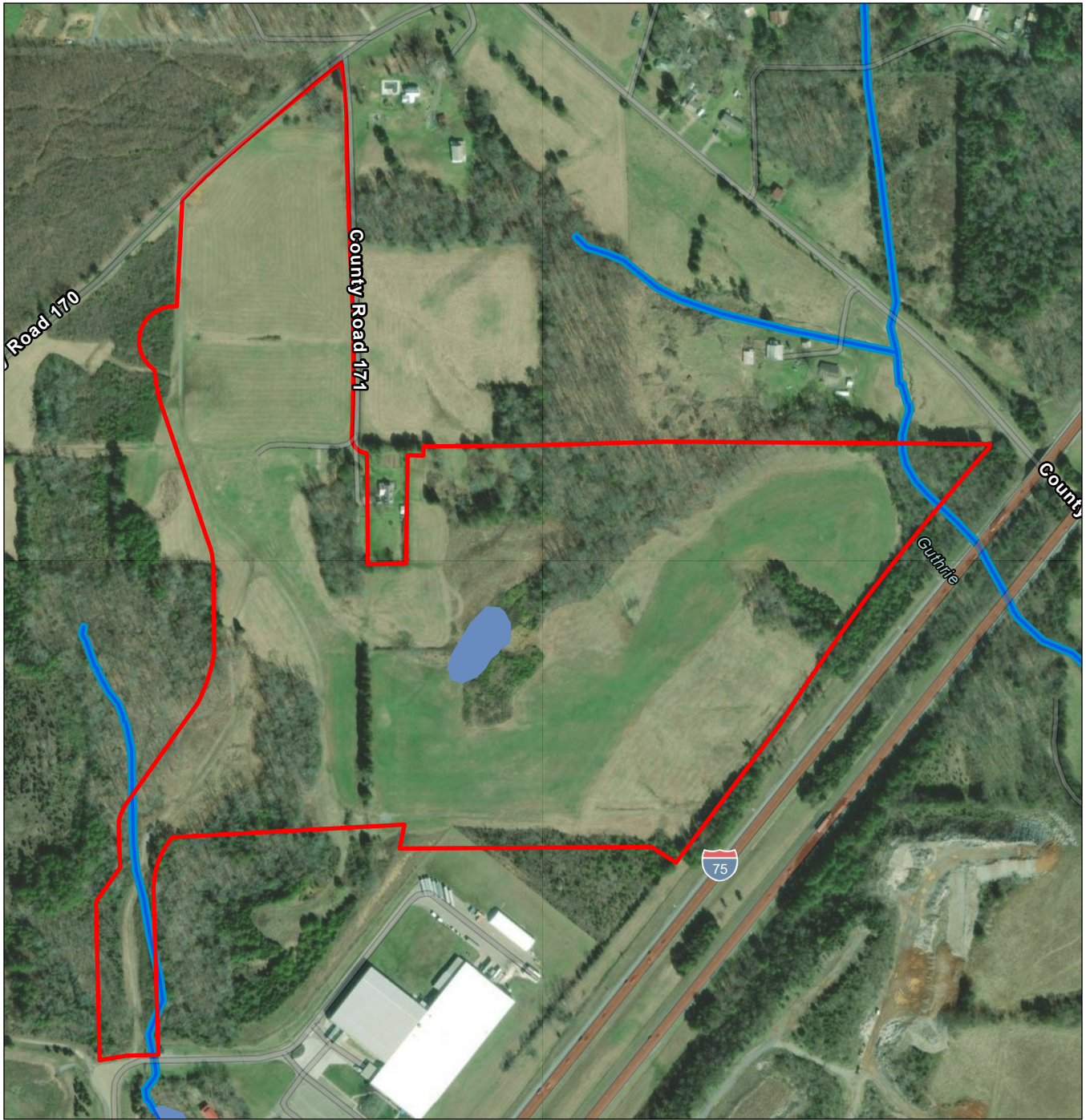
FEMA Floodplain

Notes
 1. Coordinate System: NAD 1983 StatePlane Tennessee FIPS 4100 Feet
 2. Data Sources: FEMA
 3. Background: Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS, Esri Community Maps Contributors, Tennessee STS GIS, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, MET/NASA,

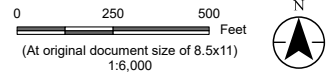
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- Project Boundary (78.30 ac)
- NHD Flowline
- NWI Wetlands**
- Freshwater Pond
- Riverine



Project Location Prepared by pmarsey on 12/23/2024

McMinn Co., TN 172608874

Client/Project Tennessee Valley Authority
TVA FY25 McMinn County
Environmental Assessment Report

Figure No. 1D

Title
USFWS NWI Wetland and Water Inventory

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Figure No.

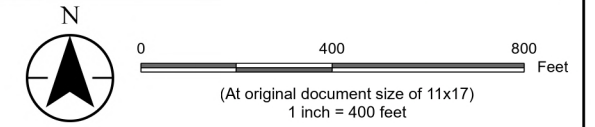
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Title

Wetland and Waterbody Delineation Map

Client/Project Tennessee Valley Authority 172608874
Aquatic Ecology and Wetland Delineation Report
Athens McMinn Innovation Park

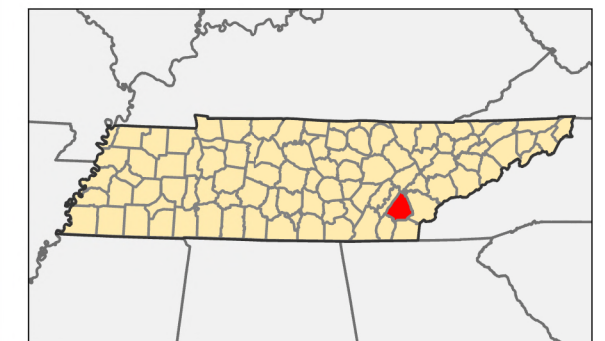
Project Location McMinn County, Tennessee Prepared by HLL on 2025-07-11
TR by SPK on 2025-07-25
IR by DM on 2025-07-25



Legend

- Project Boundary
- ◆ Seep Point
- Stream
- Ephemeral Channel
- Culvert
- Inlet
- Outlet
- Delineated Wetland
- PEM
- PFO
- PSS

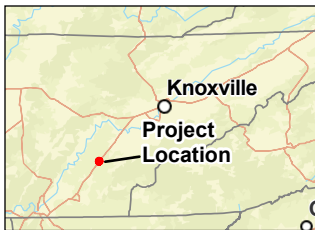
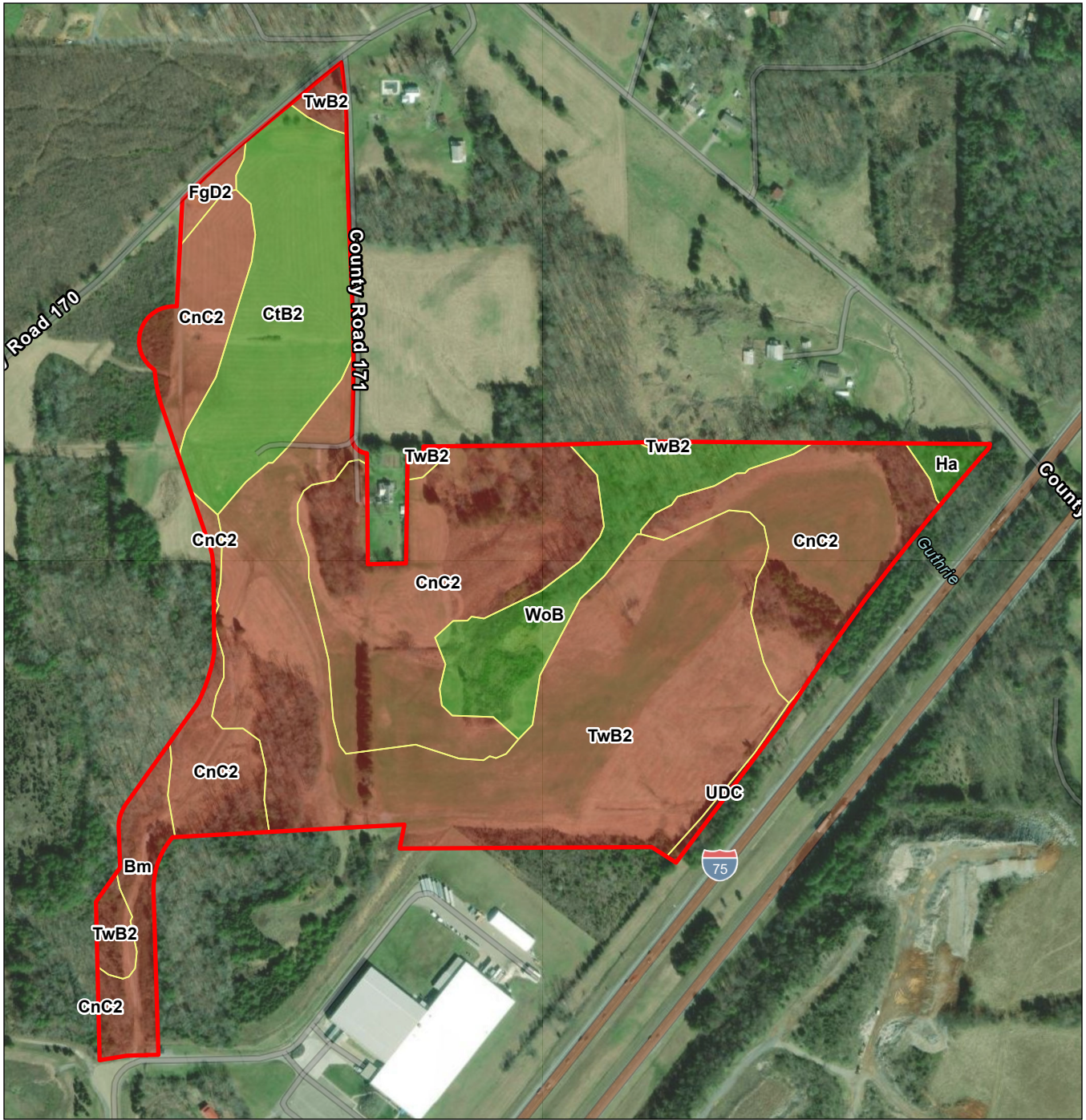
Note: open waters were not observed during field surveys



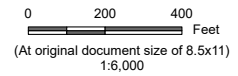
- Notes
1. Coordinate System: NAD 1983 StatePlane Tennessee FIPS 4100 Feet
 2. Data Sources: TVA, Stantec
 3. Background: Esri World Imagery Hybrid Basemap



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- Project Boundary (78.30 ac)
- Bm - Bloomingdale silty clay loam, occasionally flooded (2.89 ac)
- CnC2 - Coile silt loam, 5 to 12 percent slopes, eroded (28.43 ac)
- CtB2 - Corryton-Townley complex, 2 to 5 percent slopes, eroded (9.69 ac)
- FgD2 - Fullerton gravelly silt loam, 5 to 12 percent slopes, eroded (0.55 ac)
- Ha - Hamblen silt loam, clayey substratum, 0 to 3 percent slopes, occasionally flooded (0.61 ac)
- TwB2 - Townley-Coile complex, 2 to 5 percent slopes, eroded (29.75 ac)
- UDC - Udorthents-Urban land complex, 2 to 12 percent slopes (0.28 ac)
- WoB - Wolfvever silt loam, 1 to 5 percent slopes, occasionally flooded (6.10 ac)
- All areas are prime farmland (16.40 ac)
- Not prime farmland (61.90 ac)



Project Location Prepared by pmarsey on 12/23/2024

McMinn Co., TN 172608874

Client/Project Tennessee Valley Authority
TVA FY25 McMinn County
Environmental Assessment Report

Figure No. 1F

Title NRCS Soils

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Attachment 2

Agency Correspondence

From: [TN Help](#)
To: [Beliles, Emily](#)
Cc: [Reaux, Derek](#); [Harle, Michaelyn S](#)
Subject: Athens McMinn Innovation Park, CRMS 100795967633 - Project # SHPO0006479
Date: Wednesday, February 12, 2025 1:19:18 PM
Attachments: [image](#)
[image](#)

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

2025-02-12 12:18:32 CST

Dr. Michaelyn Harle
Tennessee Valley Authority

RE: Tennessee Valley Authority (TVA), Athens McMinn Innovation Park, CRMS 100795967633, Project#: SHPO0006479, Athens, McMinn County, TN

Dear Dr. Michaelyn Harle:

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

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

Please provide your Project # when submitting any additional information regarding this undertaking. Questions or comments may be directed to Kelley Reid, who drafted this response, at Kelley.Reid@tn.gov, +16157701099.

Sincerely,

A handwritten signature in black ink that reads "E. Patrick McIntyre, Jr." The signature is written in a cursive style with a large, stylized "E" and "M".

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

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