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ECONOMIC DEVELOPMENT GRANT PROPOSAL FOR PROPOSED BREEDING NORTH INDUSTRIAL PARK EXPANSION

ENVIRONMENTAL ASSESSMENT

Limestone County, Alabama

Prepared by:

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1.0 PROPOSED ACTION AND NEED

An integral part of Tennessee Valley Authority's (TVA) mission is to promote economic development within the TVA service area. TVA provides financial assistance to help bring to market new/improved sites and facilities within the TVA service area and position communities to compete successfully for new jobs and capital investment. TVA proposes to provide an economic development grant through TVA InvestPrep funds to the City of Athens, Alabama (City) to facilitate development of the Breeding North Industrial Park expansion site. TVA funds would be used for tree removal, rough grading of a 400,000-square foot building pad, and construction of a gravel marketing road. The Breeding North Industrial Park is located approximately 1 mile south of US Highway 72 (Mooresville Highway) in Athens, Limestone County, Alabama. The area of TVA's Proposed Action (herein referred to as the Project Area) is a 40.7-acre area in the former Woodlands Golf Course that is located east of County Road 61 (Hine Street) and north of Martin Luther King Jr. Drive (see **Figure 1** below and Attachment 1, Figure 1-A). The Project Area is a portion of the Breeding North Industrial Park expansion site, a larger 47.0-acre property proposed for development by the City as an industrial site (see Attachment 1, Figure 1-A).

TVA's Proposed Action would facilitate the marketability of the Breeding North Industrial Park expansion site. The land for this expansion was acquired by the City using non-TVA funds. This Environmental Assessment (EA) assesses the environmental impacts that would potentially be directly, indirectly, or cumulatively affected by TVA's Proposed Action. TVA's decision is whether to provide the requested funding to the City.

2.0 OTHER ENVIRONMENTAL REVIEWS AND DOCUMENTATION

A Phase I Environmental Site Assessment (ESA) of an approximately 60.2-acre property, which included the Project Area, was performed, consistent with the procedures included in ASTM E 1527-13 (Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process) by GSE, Inc. in May 2019 (GSE, Inc. 2019a). The purpose of the Phase I ESA was to identify the presence of recognized environmental concerns (RECs) or other environmental liabilities in connection with the property. The results of the Phase I ESA determined that RECs were associated with the property and a Phase II ESA investigation was performed by GSE, Inc. in June 2019 to address the RECs (GSE, Inc. 2019b).

A Preliminary Geotechnical Exploration of an approximately 60.2-acre property, which included the Project Area, was performed by Morell Engineering in May 2019 (Morell Engineering, LLC 2019). The purpose of the Preliminary Geotechnical Exploration was to evaluate general subsurface conditions to gather data on which to base general recommendations regarding site preparation and grading, foundation design, and pavement design for the planned construction.

A field survey of an approximately 60.2-acre property, which included the Project Area, was performed by Kelly EcoSource, LLC in May 2019 (Kelly EcoSource, LLC 2019). The purpose of the wetland delineation was to determine if potentially jurisdictional wetlands and streams were located in the study areas.

A Phase I Cultural Resources Survey of an approximately 60.2-acre property, which included the Project Area, was performed by Cedars Consulting, LLC in May 2019 (Cedars Consulting, LLC 2019) to identify potential archaeological resources in the study areas.

The Phase I and II ESAs, Preliminary Geotechnical Exploration Report, Wetland Delineation Report, and Phase I Cultural Resources Survey Report were used in the preparation of this EA.

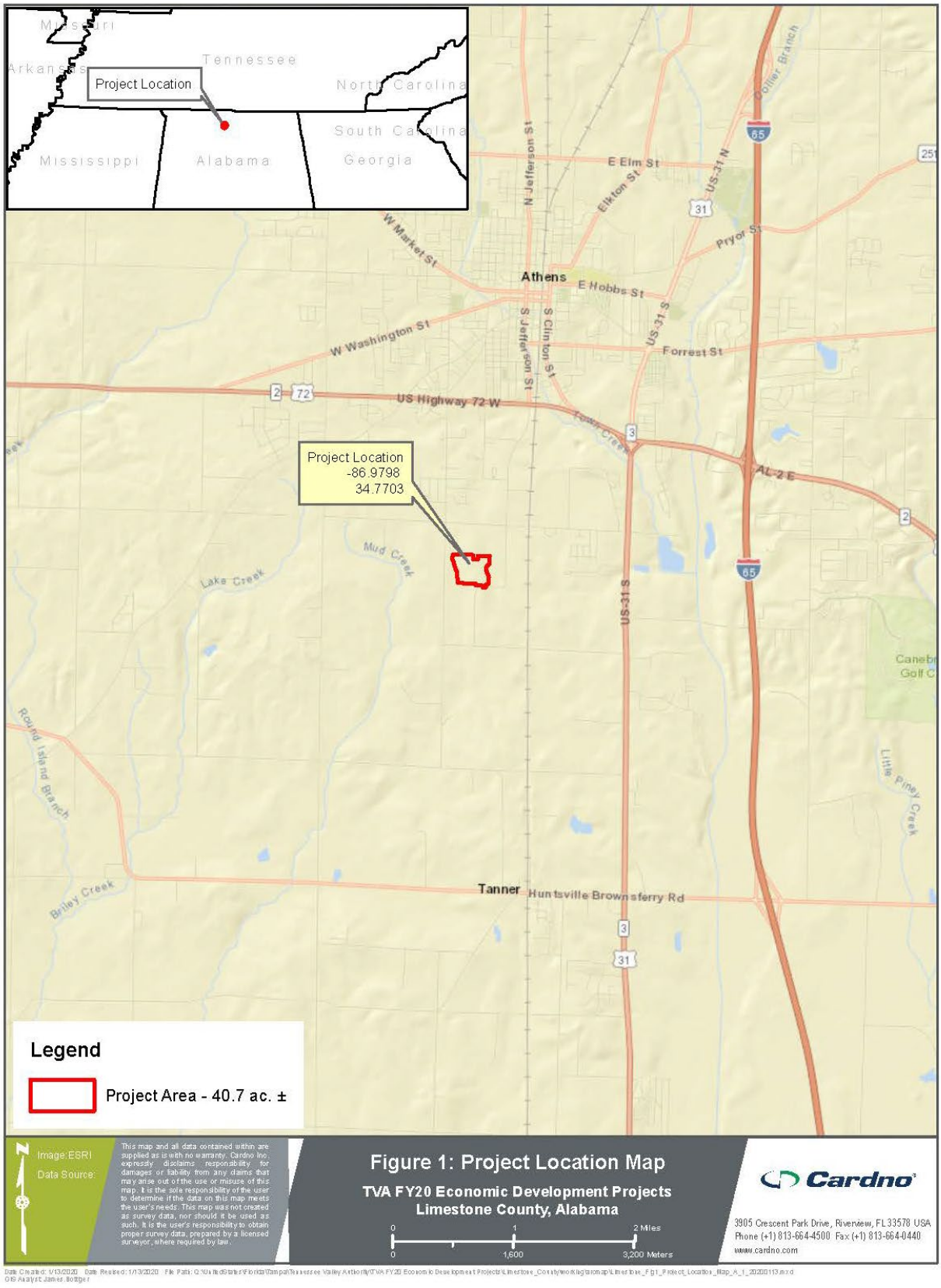

Figure 1: Project Location

3.0 ALTERNATIVES

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

The No Action Alternative

Under the No Action Alternative, TVA would not provide TVA InvestPrep funds to the City. 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. The City may seek alternate funding (if available) to complete tree removal, rough grading of a 400,000-square foot building pad, and construction of a gravel marketing road. Success in obtaining alternate funding would result in similar impacts and benefits as the Action Alternative.

If the City were not able to secure the funding for the actions described above, the land use at the site would likely remain unchanged, no direct or indirect environmental impacts would be anticipated, and the economic benefits associated with the Action Alternative would not be realized.

The Action Alternative

Under the Action Alternative, TVA would provide TVA InvestPrep funds to the City to complete tree removal, rough grading of a 400,000-square foot building pad, and construction of a gravel marketing road. The Action Alternative would require disturbance of up to 40.7 acres and would result in clearing of 11.2 acres of trees (Attachment 1, Figures 1-A and 1-B). Site activities required for the Action Alternative would occur over a short period of time, approximately eight months, and would involve operation of an excavator, bulldozer, dump truck, or similar vehicles and heavy machinery. Cleared trees, stumps, vegetation, and debris would be burned onsite and conservation measures identified in TVA's Bat Strategy Project Screening Form (Attachment 2) would be implemented. TVA's preferred alternative is the Action Alternative.

It is anticipated that the City or its contractors would implement appropriate measures, such as best management practices (BMPs) and best construction practices, to avoid, minimize or reduce negative potential environmental impacts of the Action Alternative in accordance with all local, state and federal permits and regulations. These practices include, but are not limited to, installation of sediment and erosion controls (silt fences, sediment traps, etc.); management of fugitive dust; and a restriction allowing work during day time work hours only.

The Action Alternative does not include assessment of activities that may be directly or indirectly associated with the eventual build-out, occupation, and future use of the Project Area. It would be speculative to do so because the future use of the site has not been determined. However, TVA assumed future disturbance of the entire Breeding North Industrial Park expansion site, as a conservative approach for purposes of assessing cumulative impacts. Cumulative Impacts are discussed in Section 5 of this EA.

4.0 AFFECTED ENVIRONMENT AND ANTICIPATED IMPACTS

4.1 Site Description

The Project Area is located along the east side of County Road 61 (Hine Street) and north side of Martin Luther King Jr. Drive, approximately 1 mile south of US Highway 72 (Mooresville Highway) in Athens, Limestone County, Alabama, and is comprised of a 40.7-acre area. The Project Area is situated in the former Woodlands Golf Course. The property has not been in operation as a golf course since 2006, and a barn/storage shed is the only permanent structure present in the Project Area. Access is provided from Martin Luther King Jr. Drive along the southeast corner of the Project Area.

Although the Project Area was maintained for recreational land use during operation of the Woodlands Golf Course, the area is no longer used for recreational purposes and the current land use in the Project Area is open land with scattered parallel rows of primarily evergreen trees (loblolly pine [*Pinus taeda*]) and few deciduous trees (water oak [*Quercus nigra*]) amongst the evergreens (Attachment 1, Figure 1-A). The Project Area is bordered by mixed deciduous forest fragments on most sides. The Project Area is currently zoned for industrial use.

The Breeding North Industrial Park is located approximately 1 mile south of US Highway 72 (Mooresville Highway), along West Sanderfer Road, South Jefferson Street SE, and Martin Luther King Jr. Drive. The existing industrial park is adjacent to the eastern Project Area boundary and extends to the northeast, east and southeast of the Project Area. Toyota Boshoku is currently constructing a facility in the vacant property located immediately to the north of the Project Area. A single residence was located adjacent to the northern Project Area boundary and is visible on the aerial figure provided in Attachment 1, Figure 1-A; however, this residence was demolished between January 21 and February 4, 2020. Additional residences are located to the northwest, west, southwest, and immediately south of the Project Area along the east and west sides of Hine Street and along the southern Project Area boundary.

The Project Area generally consists of gently sloping topography. The Project Area has higher elevation areas located in the center of the site and gently slopes to the southeast and southwest (Attachment 1, Figure 1-C). Stormwater drains from the center of the site to the west toward Mud Creek or to the east toward Swan Creek as depicted on Attachment 1, Figure 1-C. Mud Creek, the nearest named stream, is located approximately 150 feet away from the southwest boundary of the Project Area. Swan Creek is located approximately 1.7 miles east of the northeast boundary of the Project Area.

4.2 Impacts Evaluated

Based on 2018 Limestone County, Alabama, Flood Insurance Rate Map 01083C0188F, the Action Alternative would not involve activities in the 100-year floodplain. Additionally, no unmapped perennial streams are located in the Project Area. Therefore, the InvestPrep grant would be consistent with Executive Order (EO) 11988 (Floodplain Management).

A field survey of an approximately 60.2-acre property, which included the Project Area, was performed in May 2019 to determine if potentially jurisdictional wetlands and streams were located in the study areas (Kelly EcoSource, LLC 2019). The field survey was conducted in general accordance with the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and with the Regional Supplement to the Corps of Engineers

Wetland Delineation Manual: Eastern Mountains and Piedmont Region (USACE 2012). Broader definitions of wetlands, such as the one used by the United States Fish and Wildlife Service (USFWS) (Cowardin et al. 1979), and the TVA Environmental Review Procedures definition, were also considered in this review. The field survey documented four potentially jurisdictional wetlands adjacent to the Project Area and no wetlands in the Project Area. Because no wetlands were identified in the Project Area, there would be no direct or indirect impacts to wetlands. Therefore, implementation of the Action Alternative would be consistent with EO 11990 (Protection of Wetlands).

There would be no impact to land use and prime farmland as the Project Area is located in a property zoned for industrial use and the Proposed Action would not result in a change to the current land use.

Natural areas include ecologically significant sites; federal, state, or local park lands; national or state forests; wilderness areas; scenic areas; wildlife management areas; recreational areas; greenways; trails; United States National Park Service (USNPS) Nationwide Rivers Inventory (NRI) segments; and Wild and Scenic Rivers. Managed areas include lands held in public ownership that are managed by an entity (e.g., TVA, United States Department of Agriculture (USDA), United States Forest Service, State of Alabama) to protect and maintain certain ecological and/or recreational features. A review of data from the TVA Regional Natural Heritage Database, USNPS NRI database (USNPS 2020), and Wild and Scenic River database (WSR 2020) indicated there are no natural or managed areas within 3 miles of the Project Area. Based on the review of publically available information, the Action Alternative is not anticipated to result in impacts to these resources.

No offsite waste disposal activities are associated with the Action Alternative. A small barn/storage shed would be demolished and burned onsite during tree clearing and grading activities. The May 2019 Phase I ESA determined that two RECs were associated with the approximately 60.2-acre property, which included the Project Area. One of the RECs identified was located outside of the Project Area. Another REC, a dumping area, was identified in the northeast corner of the Project Area. Following the Phase I ESA, a Phase II ESA investigation was performed in June 2019 to address the identified RECs. As a part of the Phase II ESA investigation, all waste debris were removed from the REC sites and transported to a local landfill, and soil and groundwater samples were collected and analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, herbicides, and metals. No VOCs, SVOCs, pesticides, or herbicides were detected above their respective laboratory method detection limits (MDLs) in the soil samples collected. Arsenic was detected in the soil samples, but was below the United States Environmental Protection Agency (USEPA) level to be considered hazardous. No VOCs, SVOCs, pesticides, herbicides, or metals were detected above the laboratory MDLs in the groundwater samples collected. Based on the results of the Phase II ESA investigation, no further action was recommended. Therefore, the Action Alternative is not anticipated to result in significant impacts from the creation or disposal of solid and hazardous wastes.

Based on the above analysis, TVA has determined that the Action Alternative, subsequent to TVA's selection of the Action Alternative, would not significantly affect floodplains, wetlands, land use and prime farmland, and natural and managed areas. The Action Alternative would

not result in significant impacts from the creation or disposal of solid and hazardous wastes. Therefore, potential impacts to these resources are not described in further detail in this EA.

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

4.2.1 Air Quality and Climate Change

Ambient air quality is protected by federal and state regulations. With authority granted by the Clean Air Act (CAA) 42 U.S.C. 7401 et seq. as amended in 1977 and 1990, the USEPA established National Ambient Air Quality Standards (NAAQS) to protect human health and public welfare. The USEPA codified NAAQS in 40 CFR 50 for the following "criteria pollutants:" nitrogen dioxide (NO_2), carbon monoxide (CO), ozone, sulfur dioxide (SO_2), lead, particulate matter (PM) with an aerodynamic diameter equal to or less than 10 microns (PM_{10}), and PM with an aerodynamic diameter equal to or less than 2.5 microns ($PM_{2.5}$). The NAAQS reflect the relationship between pollutant concentrations and health and welfare effects. Primary standards are designed to 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 Limestone County, Alabama meets the ambient air quality standards and is designated in attainment with respect to criteria pollutants (USEPA 2020).

Other pollutants, such as hazardous air pollutants (HAPs) and greenhouse gases (GHGs) are also a consideration in air quality impacts analyses. HAPs, also known as toxic air pollutants or air toxics, are those that are listed under Section 112(b) of the CAA 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. They 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 as a result of human activities, such as the burning of fossil fuels. GHG emissions due to human activity are the main cause of increased atmospheric concentration of GHGs since the industrial age and are the primary contributor to climate change. The principal GHGs are carbon dioxide (CO_2), methane, and nitrous oxide.

Air quality impacts associated with activities under the Action Alternative include emissions from fossil fuel-fired equipment, fugitive dust from ground disturbances, and emissions from the burning of wood debris. Fossil fuel-fired equipment are a source of combustion emissions, including nitrogen oxides (NO_X), CO, VOCs, SO_2, PM_{10}, $PM_{2.5}$, GHGs, and small amounts of HAPs. Gasoline and diesel engines used as a result of the Action Alternative would comply 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).

Fugitive dust is a source of respirable airborne PM, including PM_{10} and $PM_{2.5}$, which could result from ground disturbances such as land clearing, grading, excavation, and travel on unpaved roads. The amount of dust generated is a function of the activity, silt and moisture content of the soil, wind speed, frequency of precipitation, vehicle traffic, vehicle types, and roadway characteristics. It is anticipated that the City and its contractors would comply with the Alabama Department of Environmental Management (ADEM) Air Division Administrative Code Chapter 335-3-4, Control of Particulate Emissions, which requires reasonable precautions to prevent PM from becoming airborne. Such reasonable precautions include, but are not limited to, grading of roads; clearing of land; and the use of water or chemicals for control of dust in construction operations on dirt roads and stock piles as needed.

Ground-level open burning emissions are affected by many variables, including wind, ambient temperature, composition and moisture content of the debris burned, and compactness of the pile. In general, the relatively low temperatures associated with open burning increase emissions of NO_X, CO, VOCs, PM_{10}, $PM_{2.5}$, GHGs, and HAPs. The City and its contractors would be subject to local burn permits and the requirements in ADEM Air Division Administrative Code Chapter 335-3-3, Open Burning and Incineration, which provides open burning prohibitions, exceptions, and certification requirements and the conservation measures identified in TVA's Bat Strategy Project Screening Form (Attachment 2).

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

Concerning climate change, trees, like other green plants, are carbon sinks that use photosynthesis to convert CO_2 into sugar, cellulose, and other carbon-containing carbohydrates that they use for food and growth. The process by which carbon sinks remove CO_2 from the atmosphere is known as carbon sequestration. Although forests do release some CO_2 from natural processes such as decay and respiration, a healthy forest typically stores carbon at a greater rate than it releases carbon. The clearing of 11.2 acres of land containing trees for the Action Alternative would result in a minor loss of carbon sequestration capacity in the area as evergreen and deciduous forest habitat is common and well represented throughout the region and in the immediate vicinity of the Project Area.

Under the No Action Alternative, if the City were able to secure the funding for the proposed actions described in this EA from other non-TVA sources, similar emissions associated from equipment, ground disturbances, and burning would occur, resulting in similar air quality and climate change impacts as those described above for the Action Alternative. If the City were not able to secure the funding for the actions described in this EA, emissions from equipment, ground disturbances, and burning 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 in the Interior Low Plateaus aquifers (United States Geological Survey [USGS] 2003). The Interior Low Plateaus aquifers are categorized as consolidated limestone, dolomite, and sandstone aquifers. The aquifer system is composed predominately of permeable stratigraphic units within flat-lying Paleozoic sedimentary rocks, most of which are limestone, sandstone, and shale, but also include beds of siltstone, conglomerate, dolomite, and chert and ranging in age from Devonian to Pennsylvanian (USGS 1990). Water quality in these aquifers varies with the majority of the water suitable for most uses, although concentrations of sulfate and iron are objectionable in places.

Implementation of the Action Alternative would result in ground disturbance during construction activities. Tree clearing and construction of the gravel access road would result in minor ground disturbance at shallow depths, while site grading, including construction of a building pad would result in greater ground disturbance at moderate depths (up to approximately four feet). However, ground disturbance would be temporary and would not be at depths that would intersect public groundwater supplies (typically 50 to 150 feet beneath the land surface [USGS 1990]) or result in significant impacts to groundwater resources. Shallow aquifers could sustain minor impacts from changes in overland water flow and recharge caused by clearing and grading of the Project Area. Water infiltration, which is normally enhanced by vegetation, would be reduced until vegetation is re-established. Additionally, 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. Furthermore, it is anticipated that the City or its contractors would conduct operations involving chemical or fuel storage or resupply and equipment and vehicle servicing to avoid leakage, spillage, and subsequent groundwater contamination.

Under the No Action Alternative, if the City were able to secure the funding for the proposed actions described in this EA from other non-TVA sources, similar ground disturbance would occur, resulting in similar impacts to groundwater resources as those described above for the Action Alternative. If the City were not able to secure the funding for the actions described in this EA, ground disturbance associated with clearing and grading would not occur and there would be no impacts to groundwater resources.

4.2.3 Surface Water

Aerial photographs, site photographs, topographic maps, the USFWS National Wetland Inventory (NWI), the USGS National Hydrological Dataset (NHD), and the Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO)/State Soil Geographic (STATSGO) databases were reviewed to determine the surface water resources (streams, ponds, and wetlands) potentially present in the Project Area. In addition, a field survey of an approximately 60.2-acre property, which included the Project Area, was performed in May 2019 to delineate surface water and wetland resources present in the study areas (Kelly EcoSource, LLC 2019). The field survey included a delineation of surface water resources and was conducted in general accordance with the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and with the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (USACE 2012). Broader definitions of wetlands, such as the one used by USFWS (Cowardin et al. 1979), and the TVA Environmental Review Procedures definition, were also considered in

this review. The field survey documented four potentially jurisdictional wetlands, two ponds and one stream adjacent to the Project Area and one stream and one pond in the Project Area. No wetlands were documented in the Project Area.

The Project Area is located in the Wheeler Lake Watershed (8-digit Hydrologic Unit Code [HUC] 06030002) and in the Spring Creek-Mud Creek Subwatershed (12-digit HUC 060300021105) and Swan Creek Subwatershed (12-digit HUC 060300021101). Swan Creek, located approximately 1.7 miles east of the Project Area, is designated for agricultural and industrial (A&I) water use and is included on the Final 2018 List of Impaired Waters in Alabama, required by Section 303(d) of the Clean Water Act (ADEM 2018). This waterbody is listed as impaired for Nutrients. Although not the nearest named receiving waterbody, Swan Creek is joined by an unnamed tributary to Swan Creek, the nearest receiving waterbody for the eastern one-third of the Project Area.

Based on the field survey observations, the stream identified in the Project Area could be classified as intermittent and is designated for fish and wildlife (F&W) water use. The stream extends approximately 115 linear across the northeastern corner of the Project Area, and is depicted as a blue-line stream on the USGS topographic map (Attachment 1, Figure 1-C). During the field survey, the stream was observed to be dry and was noted to contain some channel characteristics, with some areas of the channel more defined than others. Portions of the channel were noted to have no definition, with flow appearing to drain as sheet-flow to the south. The stream eventually flows into Swan Creek, a relatively permanent water (RPW), and is classified as waters of the United States (WOTUS) regulated by the United States Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act (RHA). Based on the field survey observations, the stream could be considered to be a non-relatively permanent water (non-RPW) by the USACE, because it has a direct connection to a RPW. The pond identified in the Project Area comprised approximately 0.1 acre in the Project Area and is not depicted on the USGS topographic map. The pond appears to be isolated with no surface water connection to WOTUS, and consequently would not be considered a WOTUS. The USACE is the regulatory authority that must make the final determination as to the jurisdictional status of the surface water resources in the Project Area.

Implementation of the Action Alternative would result in ground disturbance during construction activities that could result in temporary and minor indirect impacts to surface water resources due to sediment laden runoff and minor changes in drainage patterns. Construction activities, would be performed in compliance with applicable stormwater permitting requirements. The City, or its contractors, would be required to obtain coverage under the 2016 National Pollutant and Discharge Elimination System (NPDES) General Permit for Discharges Associated with Construction Activity (ALR100000). Coverage would require development of a site-specific Construction Best Management Practices Plan (CBMPP) that would specify applicable BMPs such as installation of sediment and erosion controls (silt fences, sediment traps, etc.) that would be employed during construction activities. Therefore, indirect impacts to surface water resources resulting from sediment laden runoff during construction activities would be minimized or avoided.

Implementation of the Action Alternative would remove the riparian canopy along approximately 115 linear feet of the stream in the Project Area. Removal of riparian canopy would reduce

shading of the stream channel resulting in increased water temperatures (during times of the year when water is present), and would potentially reduce species habitat and increase susceptibility to bank erosion and surface runoff. However, because the stream is intermittent in the Project Area and is dry during portions of the year, the stream does not provide unique, continuous habitat for aquatic-dependent species, and the removal of trees in this area is not anticipated to adversely affect water quality.

Impacts beneath the Ordinary High Water Mark (OHWM) of the stream identified in the Project Area would require USACE permitting, but such impacts are not anticipated. Should impacts beneath the OHWM of jurisdictional waters be necessary, consultation and permitting with the USACE Nashville District and ADEM would be required. Impacts to a WOTUS would require a CWA Section 404 permit and a CWA Section 401 Water Quality Certification.

Under the No Action Alternative, if the City were able to secure the funding for the proposed actions described in this EA from other non-TVA sources, similar surface water impacts would occur as described above for the Action Alternative. If the City were not able to secure the funding for the actions described in this EA, the proposed disturbances would not occur and existing site conditions would likely be maintained resulting in no surface water impacts. However this would not preclude funding from being obtained from another source, and similar indirect impacts to surface water resources could occur as described above for the Action Alternative.

4.2.4 Aquatic Ecology

The Endangered Species Act (ESA) provides broad protection for species of fish, wildlife, and plants that are listed as threatened or endangered in the United States or elsewhere. The ESA outlines procedures for federal agencies to follow when taking actions that may jeopardize federally listed species or their designated critical habitat. The statute directs federal agencies to conserve endangered and threatened species and use their authorities in furtherance of the ESA's purposes. The state of Alabama provides protection for species considered threatened, endangered, or deemed in need of management in the state in addition to those federally listed under the ESA.

The TVA Regional Natural Heritage Project database (assessed December 11, 2019) and the USFWS Information for Planning and Consultation (IPaC) database (assessed December 12, 2019) indicated that eight federally listed endangered, two federally listed threatened, and 12 state-listed aquatic species are currently known from within the 10-digit HUC watershed encompassing the Project Area (**Table 4-1**).

Table 4-1: Records of Federal and State-Listed Aquatic Species in the Upper Lake Wheeler (0603000211) 10-digit HUC Watershed (TVA Request ID 35628).[1]

Common Name	Scientific Name	Element Rank	Federal Status	State Status (rank)
FISH				
Slackwater Darter	*Etheostoma boschungi*	E	LT	SP (S1)
Slender Madtom	*Noturus exilis*	H?	--	CNGF (S3)
Spring Pygmy Sunfish	*Elassoma alabamae*	E	LT	SP (S1)

Table 4-1: Records of Federal and State-Listed Aquatic Species in the Upper Lake Wheeler (0603000211) 10-digit HUC Watershed (TVA Request ID 35628).[1]

Common Name	Scientific Name	Element Rank	Federal Status	State Status (rank)
Tuscumbia Darter	*Etheostoma tuscumbia*	E	--	SP (S2)
MUSSELS				
Hickorynut	*Obovaria olivaria*	H	--	PSM (SX)
Kidneyshell	*Ptychobranchus fasciolaris*	H	--	PSM (S2)
Mucket	*Actinonaias ligamentina*	E	--	PSM (S2)
Ohio Pigtoe	*Pleurobema cordatum*	H	--	PSM (S2)
Orange-foot Pimpleback	*Plethobasus cooperianus*	H	LE	SP (SX)
Painted Creekshell	*Villosa taeniata*	H	--	PSM (S2)
Pink Mucket	*Lampsilis abrupta*	E	LE	SP (S1)
Pink Papershell	*Potamilus ohiensis*	E	--	PSM (S3)
Pocketbook	*Lampsilis ovata*	E	--	PSM (S2)
Purple Lilliput	*Toxolasma lividus*	E	--	PSM (S2)
Ring Pink	*Obovaria retusa*	H	LE	SP,EX
Rough Pigtoe	*Pleurobema plenum*	E	LE	SP (S1)
Sheepnose	*Plethobasus cyphyus*	E	LE	SP (S1)
Snuffbox[5]	*Epioblasma triquetra*	--	LE	PSM (S1)
Spectaclecase	*Cumberlandia monodonta*	E	LE	SP (S1)
Tennessee Pigtoe	*Fusconaia barnesiana*	E	--	PSM (S1)
White Heelsplitter	*Lasmigona complanata*	H	--	PSM (S2)
SNAILS				
Slender Campeloma[5]	*Campelona decampi*	--	LE	SP (S1)

[1] Source: TVA Regional Natural Heritage Database, queried on 12/11/2019

[2] Heritage Element Occurrence Rank; E = extant record ≤25 years old; H=historical record ≥ 25 years old; H?=possibly historical; X = Extirpated

[3] Status Codes: LE or E = Listed Endangered; LT or T = Listed Threatened; D = Deemed In Need of Management

[4] State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; SX = Extirpated

[5] Source: USFWS IPaC Database, queried on 12/12/2019

A letter dated July 31, 2019 from the USFWS identified two federally listed endangered and threatened species, slackwater darter (*Etheostoma boschungi*) and slender campeloma (*Campelona decampi*), as potentially occurring in or near the Project Area (USFWS 2019). A brief description of these species is provided below. Habitat requirements described below utilized NatureServe (2010), Etnier and Starnes (1993), and Parmalee and Bogan (1998) as references.

Slackwater darter typically inhabits gravel-bottomed pools in sluggish areas of creeks and small rivers; often it occurs in slow water beneath undercut or in accumulations of old leaf litter or

detritus. It typically avoids riffle and rapids but will traverse swifter streams during migrations to breeding habitat. Typical breeding habitat is characterized by the presence of rushes (*Juncus* spp.) and sedges (*Eleocharis* spp.) in clear, moving seepages or spring waters that are dry in the summer.

Slender campeloma is typically found burrowing in soft sediment (sand and/or mud) or detritus in specific lake and spring sites. It primarily occurs in slow to moderate current, often along stream margins and may be found in gravel, mud deposits in water willow beds, or on marginal clay edges.

The May 2019 field survey documented no wetlands in the Project Area. One stream was documented in the northeast corner of the Project Area and one pond was documented along the southern border of the Project Area. No aquatic species or communities were identified in the Project Area. The stream was observed to be dry at the time of the survey and could be classified as intermittent, and thus does not provide unique, continuous habitat for the threatened and endangered aquatic-dependent species identified in **Table 4-1**. The small pond appears to be isolated with no surface water connection to other surface waters. The pond does not provide suitable habitat for the threatened and endangered aquatic species identified in **Table 4-1** as these species mostly occur in flowing stream and river systems with several also occurring in large lakes. As such, no direct impacts to threatened and endangered aquatic species or their habitats are anticipated. Indirect impacts to nearby aquatic species and their habitats resulting from sediment laden runoff during construction activities would be minimized or avoided through implementation of applicable BMPs such as installation of sediment and erosion controls (silt fences, sediment traps, etc.) and activities would be accomplished in compliance with applicable stormwater permitting requirements.

Under the No Action Alternative, if the City were able to secure the funding for the proposed actions described in this EA from other non-TVA sources, similar indirect impacts to aquatic species could occur as described above for the Action Alternative. However, with implementation of applicable BMPs, indirect impacts would be minimized or avoided. If the City were not able to secure the funding for the actions described in this EA, the proposed disturbances would not occur and existing site conditions would likely be maintained resulting in no impacts to aquatic species.

4.2.5 Terrestrial Zoology

Terrestrial Zoology

The Project Area is comprised of herbaceous grassy fields with scattered parallel rows of primarily evergreen trees (loblolly pine) and few deciduous trees (water oak) amongst the evergreens. The property is bordered by mixed deciduous forest fragments on most sides. A small amount of this forest also falls in the northeast corner of the Project Area and around a small pond in the Project Area.

Fields covered in herbaceous growth provide habitat for common birds such as field sparrow (*Spizella pusilla*), indigo bunting (*Passerina cyanea*), white-eyed vireo (*Vireo griseus*), and yellow-breasted chat (*Icteria virens*) (National Geographic 2002). Mammals such as bobcat (*Lynx rufus*), coyote (*Canis latrans*), eastern mole (*Scalopus aquaticus*), golden mouse (*Ochrotomys nuttalli*), groundhog (*Marmota monax*), and white-tailed deer (*Odocoileus virginianus*) also are likely to use this habitat type in this region (Whitaker 1996). Reptiles that

may use these habitats in this region include black racer (*Coluber constrictor priapus*), corn snake (*Pantherophis guttatus*), eastern kingsnake (*Lampropeltis getula*), gray rat snake (*Pantherophis spiloides*), and red milksnake (*Lampropeltis Triangulum*) (Gibbons and Dorcas 2005). Amphibians that may use this area are American toad (*Anaxyrus americanus*) and Fowler's toad (*Anaxyrus fowleri*) (Powell et al. 2016).

The rows of loblolly pines and water oaks are large-diameter trees, 80 to 100 feet tall with sections of exfoliating bark and dead and dying limbs. Some brushy habitat (mainly Chinese privet [*Ligustrum sinense*]) has grown around the base of the trees and individual oaks can be found dispersed among the pines. The small fragments of mixed deciduous forest and rows of trees adjacent to open grassy fields provide habitat for common birds such as Carolina chickadee (*Poecile carolinensis*), Carolina wren (*Thryothorus ludovicianus*), cedar waxwings (*Bombycilla cedrorum*), chipping sparrow (*Spizella passerina*), eastern bluebird (*Sialia sialis*), eastern towhee (*Pipilo erythrophthalmus*), golden crowned kinglet (*Regulus satrapa*), northern cardinal (*Cardinalis cardinalis*), northern flicker (*Colaptes auratus*), northern mockingbird (*Mimus polyglottos*), prairie warbler (*Setophaga discolor*), pine warbler (*Dendroica pinus*), red-tailed hawk (*Buteo jamaicensis*), song sparrow (*Melospiza melodia*), tufted titmouse (*Baeolophus bicolor*), and white-throated sparrow (*Zonotrichia albicollis*) (National Geographic 2002). A red-shouldered hawk (*Buteo lineatus*) nest was also observed in a pine tree during a wildlife field survey conducted by TVA on December 4, 2019. Mammals found in these habitats include common raccoon *(Procyon lotor*), eastern gray squirrel (*Sciurus carolinensis*), hispid cotton rat (*Sigmodon hispidus*), nine-banded armadillo (*Dasypus novemcinctus*), and Virginia opossum (*Didelphis virginiana*) (Whitaker 1996). Common amphibian and reptile species also use similarly disturbed habitats including American toad, eastern box turtle (*Terrapene carolina carolina*), eastern garter snake (*Thamnophis sirtalis sirtalis*), and Fowler's toad (Powel et al. 2016).

The small pond in the Project Area may provide suitable habitat for a multitude of amphibian and reptilian species. Amphibians likely to use the area include American bullfrog (*Lithobatescatesbeianus*), Cope's gray treefrog (*Hyla chrysoscelis*), eastern red-spotted newt (*Notophthalmus viridescens*), northern cricket frog (*Acris crepitans*), southern leopard frog (Lithobates *sphenocephala*), and upland chorus frog (*Pseudacris feriarum*). Reptiles utilizing this wet area and the surrounding habitat include eastern garter snake, northern water snake (*Nerodia sipedon*), rat snake (various species), and ring-necked snake (*Diadophis punctatus*) (Powel et al. 2016, Gibbons and Dorcas 2005).

The wildlife field survey conducted by TVA resulted in the finding of at least 11 red imported fire ant (*Solenopsis invicta*) colonies throughout the Project Area. This species is an exotic, invasive species that was introduced into the United States during the 1930's through the port of Mobile, Alabama, and has since spread to at least 15 states. A combination of mild winters, and an increase in residential and industrial development continues to cause population expansion. Imported fire ants have an impact on agriculture and natural resources by damaging crops, agricultural equipment, and impacting wildlife. The USDA's Animal and Plant Health Inspection Service (APHIS) works to prevent the artificial (human) spread of this species by enforcing the Federal Quarantine and works with state cooperators to regulate high risk commodities, such as nursery stock, hay, and soil-moving equipment. Limestone County, Alabama is currently under APHIS quarantine, as such, any soil, baled hay or straw, plants and sod with roots and soil

attached, soil-moving equipment or other “Regulated Articles” as defined by USDA shall be in compliance with APHIS Quarantine Regulations.

Review of the USFWS’s IPaC database in December 2019 identified two migratory bird species of conservation concern as having the potential to occur in the Project Area (rusty blackbird [*Euphagus carolinus*] and lesser yellowlegs [*Tringa flavipes*]). No suitable habitat exists in the Project Area for lesser yellowlegs as the pond in the Project Area does not have suitable muddy, exposed shoreline for foraging. Suitable foraging habitat for rusty blackbird is present around the small pond in the Project Area.

Under the Action Alternative, 11.2 acres of trees would be cleared. The removal of wildlife habitat would result in the displacement of wildlife (primarily common, habituated species) currently using the area. Direct impacts to some individuals may occur if those individuals are immobile during the time of tree removal. This could be the case if activities took place during breeding/nesting seasons. Habitat removal likely would disperse mobile wildlife into surrounding areas in an attempt to find new food sources and shelter and to reestablish territories. Due to the amount of similar habitat in areas immediately adjacent to the Project Area, populations of common wildlife species would not be impacted by implementation of the Action Alternative.

Some migratory birds of conservation concern identified by the USFWS may be impacted by implementation of the Action Alternative. Suitable habitat for lesser yellowlegs does not exist in the Project Area, therefore this species would not be impacted. Rusty blackbirds may use the vegetated area around the small pond in the Project Area for foraging in winter; however, they are not found in this region during breeding summer months. Should individuals occur in the Project Area during winter months, they are anticipated to flush if disturbed. No direct mortality to this species is anticipated. Due to the seasonal presence of rusty black birds in winter (non-breeding), the relative abundance of similar habitat nearby, and the size of the Project Area, it is not anticipated that populations of these migratory bird species would be impacted by implementation of the Action Alternative.

One red-shouldered hawk nest was observed in a pine tree proposed for removal. To avoid impacts, disturbing activities must be avoided within 660 feet of the nest when it is active (typically February to May). If this restriction cannot be adhered to, the USDA would be consulted for guidance and minimization measures.

Under the No Action Alternative, if the City were able to secure the funding for the proposed actions described in this EA from other non-TVA sources, similar direct and indirect impacts to terrestrial species could occur as described above for the Action Alternative. If the City were not able to secure the funding for the actions described in this EA, the proposed disturbances would not occur and existing site conditions would likely be maintained resulting in no impacts to terrestrial species.

Terrestrial Threatened and Endangered Species

Review of the TVA Natural Heritage Project database in December 2019 indicated that there is one record of a state-listed terrestrial species (osprey [*Pandion haliaetus*]) within 3 miles of the Project Area. One federally listed terrestrial species (gray bat [*Myotis grisescens*]) and one federally monitored terrestrial species (bald eagle [*Haliaeetus leucocephalus*]) have been reported from Limestone County, Alabama. The USFWS determined that the federally listed

Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*) also have the potential to occur in Limestone County, Alabama.

Table 4-2: Federal and State-Listed Terrestrial Species in Limestone County, Alabama and Other Species of Concern Documented in 3 Miles of the Project Area[1]

Common Name	Scientific Name	Federal Status[2]	State Rank[3]
BIRDS			
Bald eagle[4]	*Haliaeetus leucocephalus*	DM	SP(S4B)
Osprey	*Pandion haliaetus*	--	SP(S4)
MAMMALS			
Gray bat[4]	*Myotis grisescens*	LE	SP(S2)
Indiana bat[5]	*Myotis sodalis*	LE	SP(S2)
Northern long-eared bat[5]	*Myotis septentrionalis*	LT	SP(S2)

[1] Source: TVA Regional Natural Heritage Database and USFWS Information for Planning and Consultation (https://ecos.fws.gov/ipac/), extracted 12/18/2019.

[2] Status Codes: DM = Delisted, recovered, and still being monitored; E = Endangered; LE = Listed Endangered; LT = Listed Threatened; SP = State Protected.

[3] State Ranks: S2 = Imperiled; S3 = Vulnerable; S4 = Apparently Secure; S#B = Rank of breeding population.

[4] Federally listed or protected species known from Limestone County, Alabama, but not within 3 miles of the Project Area.

[5] Federally listed species that is not yet known from Limestone County, Alabama, but is thought to occur in this county.

Bald eagles are protected under the Bald and Golden Eagle Protection Act (USFWS 2013). This species is associated with larger mature trees capable of supporting large nests. These are usually found near larger waterways where the eagles forage (USFWS 2007). Records document the occurrence of three bald eagle nests in Limestone County, Alabama, the closest of which is approximately 4.98 miles from the Project Area. No bald eagles or bald eagle nests were observed during field reviews of the Project Area. Potential nesting trees occur in the large pines in the Project Area, but no suitable foraging habitat exists in or adjacent to the Project Area.

In northern Alabama, osprey are found along rivers, lakes and reservoirs where they forage. They build nests out of large sticks on trees and man-made structures such as transmission towers, utility poles, channel markers, and microwave towers (NatureServe 2019). One record of an osprey is documented approximately 2.5 miles from the Project Area. No osprey or osprey nests were observed during field reviews of the Project Area. Potential nesting trees occur in the large pines in the Project Area, but no suitable foraging habitat exists in or adjacent to the Project Area.

Gray bats roost in caves year-round and migrate between summer and winter roosts during spring and fall (Brady et al. 1982, Tuttle 1976a). Bats disperse over bodies of water at dusk where they forage for insects emerging from the surface of the water (Tuttle 1976b). Gray bats have been reported from a cave hibernacula in Limestone County, Alabama, approximately 9.3 miles away. No caves are known to exist in the Project Area or were observed during wildlife field surveys. No evidence of bats was observed at the pole barn or around the exterior of the residence that was previously located outside of the Project Area, but demolished between January 21 and February 4, 2020. The nearest recorded cave is greater than 3 miles away.

One pond was documented in the Project Area that could be used as foraging habitat. Additional foraging habitat and sources of drinking water exist in ponds immediately adjacent to the Project Area.

Indiana bats hibernate in caves in winter and use areas around them for swarming (mating) in the fall and staging in the spring, prior to migration back to summer habitat. During the summer, Indiana bats roost under the exfoliating bark of dead snags and living trees in mature forests with an open understory and a nearby source of water (Pruitt and TeWinkel 2007, Kurta et al. 2002). Indiana bats are known to change roost trees frequently throughout the season, while still maintaining site fidelity, returning to the same summer roosting areas in subsequent years (Pruitt and TeWinkel 2007). No records of Indiana bat are known from Limestone County, Alabama. The closest known Indiana bat record is an extirpated record from a cave approximately 17.0 miles away.

The northern long-eared bat predominantly overwinters in large hibernacula such as caves, abandoned mines, and cave-like structures. During the fall and spring they use entrances of caves and the surrounding forested areas for swarming and staging. In the summer, northern long-eared bats roost individually or in colonies beneath exfoliating bark or in crevices of both live and dead trees (typically greater than three inches in diameter). Roost selection by the northern long-eared bat is similar to that of Indiana bat, however northern long-eared bats are thought to be more opportunistic in roost site selection. This species also roosts in abandoned buildings and under bridges. Northern long-eared bats emerge at dusk to forage below the canopy of mature forests on hillsides and roads, and occasionally over forest clearings and along riparian areas (USFWS 2014). There are no known northern long-eared bat records in Limestone County, Alabama. The closest records of northern long-eared bat are acoustic records from approximately 9 miles away on Red Stone Arsenal Base.

No known caves or suitable winter roosting structures for Indiana bat or northern long-eared bats exist in the Project Area. Based on the 2019 Range-Wide Indiana Bat Survey Guidelines (USFWS 2019), TVA has determined that most of the old loblolly pine trees and the fragment of hardwood forest is suitable habitat for summer roosting Indiana bat and northern long-eared bat (approximately 6.7 acres). Snags, white oaks, shagbark hickories and other species with suitable cracks and crevices were observed in the fragment of hardwood forest. Most of the loblolly pines are very large and suitable exfoliating bark has formed. Dead and dying limbs also provide suitable cracks and crevices for these species to roost in. These trees offer foraging habitat for bat species as well. One pond documented in the Project Area offers additional foraging habitat.

Under the Action Alternative, 11.2 acres of trees and shrubs would be cleared and the Project Area would be rough graded. The one osprey nest located within 3 miles of the Project Area is a sufficient distance from the Project Area (2.5 miles) such that it would not be impacted. No bald eagle nests would be impacted by the Action Alternative as the closest nest is 5 miles from the Project Area. Further, foraging habitat for the bald eagle does not exist in the Project Area. The Action Alternative is in compliance with the National Bald Eagle Management Guidelines. Bald eagles would not be impacted by implementation of the Action Alternative.

Three federally listed or protected species were evaluated based on the potential for the species to occur in the Project Area. All of these (gray bat, Indiana bat, and northern long-eared bat) have the potential to use the Project Area.

No caves or other hibernacula for gray bat, Indiana bat or northern long-eared bat exist in the Project Area or would be impacted by the Action Alternative. Approximately 6.7 acres of summer roosting habitat for Indiana bat and northern long-eared bat occurs in the Project Area. These tree rows/forest also offer foraging habitat for Indiana and northern long-eared bat. One pond in the Project Area offers additional foraging habitat and sources of drinking water for all three bat species. The project has committed to removing trees between August 1 and May 31. This would avoid direct impacts to Indiana bat and northern long-eared bat while they are birthing and rearing pups in trees (June-July). However, direct impacts could occur to individuals if they are roosting in trees in the Project Area during spring migration or staging and fall swarming seasons. Habitat removal during winter months would avoid direct impacts to these species, as bats roost underground at that time.

A number of activities associated with the Action Alternative, including tree removal, were addressed in TVA's programmatic consultation with the USFWS on routine actions and federally listed bats in accordance with ESA Section 7(a)(2) and completed in April 2018. For those activities with potential to affect bats, TVA committed to implementing specific conservation measures. These activities and associated conservation measures are identified on page 5 of the TVA Bat Strategy Project Screening Form (Attachment 2) and must be reviewed/implemented as part of the Action Alternative. With implementation of these conservation measures, no significant impacts are anticipated to occur to federally listed bats.

Under the No Action Alternative, if the City were able to secure the funding for the proposed actions described in this EA from other non-TVA sources, similar direct and indirect impacts to threatened or endangered terrestrial species could occur as described above for the Action Alternative. If the City were not able to secure the funding for the actions described in this EA, the proposed disturbances would not occur and existing site conditions would likely be maintained resulting in no impacts to threatened or endangered terrestrial species.

4.2.6 Botany

Vegetation

The Project Area has been heavily disturbed through the previous use as a golf course. Vegetation in the Project Area consists of early successional vegetation dominated by non-native and native herbaceous vegetation with scattered rows of primarily evergreen trees (loblolly pine) and few deciduous trees (water oak) amongst the evergreens. These areas provide minimal conservation value and the plant communities found there are common and well represented throughout the region.

Implementation of the Action Alternative would result in the removal of the existing vegetation in the Project Area. The herbaceous fields on the parcel support primarily non-native species and have minimal conservation value. Neither the open fields containing herbaceous vegetation, nor the rows of trees support unique natural plant communities. These low-quality early successional habitats are common and well represented throughout the region. Thus, direct and indirect vegetation impacts resulting from the Action Alternative are anticipated to be minor.

Under the No Action Alternative, if the City were able to secure the funding for the proposed actions described in this EA from other non-TVA sources, similar direct and indirect impacts to vegetation could occur as described above for the Action Alternative. If the City were not able to secure the funding for the actions described in this EA, the proposed disturbances would not

occur and existing site conditions would likely be maintained resulting in no impacts to vegetation.

Threatened and Endangered Plant Species

Review of the TVA Regional Natural Heritage Database indicates that no state-listed and no federally listed threatened and endangered plant species are known from within a 5-mile vicinity of the Project Area. No federally listed plants have been previously reported from Limestone County, Alabama. A desktop review of the Project Area indicates that no habitat for federal or state-listed plant species occurs in the areas where work would occur. Further, no designated critical habitat for plants occurs in the Project Area.

There is no habitat for state and federally listed threatened and endangered plant species in the Project Area. Implementation of the Action Alternative would not impact state-listed and would have no effect on federally listed plant species.

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

4.2.7 Archaeology and Historic Structures and Sites

Federal agencies are required by the National Historic Preservation Act (NHPA) and by the NEPA to consider the possible effects of their undertakings on historic properties. The term “undertaking” means any project, activity, or program that is funded under the direct or indirect jurisdiction of a federal agency or is licensed, permitted, or assisted by a federal agency. An agency may fulfill its statutory obligations under NEPA by following the process outlined in the regulations implementing Section 106 of NHPA, at 36 CFR Part 800. Under these regulations, considering an undertaking’s possible effects on historic properties is accomplished through a four-step review process: (1) initiation (defining the undertaking and the area of potential effects (APE), and identifying the consulting parties); (2) identification (studies to determine whether cultural resources are present in the APE and whether they qualify as historic properties); (3) assessment of adverse effects (determining whether the undertaking would damage the qualities that make the property eligible for the National Register of Historic Places (NRHP); and (4) resolution of adverse effects (by avoidance, minimization, or mitigation). Throughout the process, the agency must consult with the appropriate State Historic Preservation Officer (SHPO), federally-recognized Indian tribes that have an interest in the undertaking, and any other party with a vested interest in the undertaking.

Cultural resources include prehistoric and historic archaeological sites, districts, buildings, structures, and objects, and locations of important historic events that lack material evidence of those events. Cultural resources that are included or considered eligible for inclusion in the NRHP maintained by the USNPS are called historic properties. To be included or considered eligible for inclusion in the NRHP, a cultural resource must possess integrity of location, design, setting, materials, workmanship, feeling, and association. In addition, it must also meet one of four criteria: (a) association with important historical events; (b) association with the lives of significant historic persons; (c) having distinctive characteristics of a type, period, or method of

construction, or representing the work of a master, or having high artistic value; or (d) having yielded or having the potential to yield information important in history or prehistory.

An undertaking may have effects on a historic property that are not adverse, if those effects do not diminish the qualities of the property that identify it as eligible for listing on the NRHP. However, if the agency determines (in consultation) that the undertaking's effect on a historic property within the APE would diminish any of the qualities that make the property eligible for the NRHP (based on the criteria for evaluation at 36 CFR 60.4), the effect is said to be adverse. Examples of adverse effects would be ground disturbing activity in an archaeological site, or erecting structures within the viewshed of a historic building in such a way as to diminish the structure's integrity of feeling or setting. Federal agencies are required to resolve the adverse effects of their undertakings on historic properties. Resolution may consist of avoidance (such as choosing a project alternative that does not result in adverse effects), minimization (such as redesign to lessen the effects), or mitigation. Adverse effects to archaeological sites are typically mitigated by means of excavation to recover the important scientific information contained within the site. Mitigation of adverse effects to historic structures sometimes involves thorough documentation of the structure by compiling historic records, studies, and photographs. Agencies are required to consult with SHPOs, tribes, and others throughout the Section 106 process and to document adverse effects to historic properties resulting from agency undertakings.

Cultural resource investigations were performed that included a Phase I archaeological survey (Meredith 2019) and an assessment of historic architectural resources in the area of potential effects (APE) (Randall 2020). The archaeological study area consisted of a 60.2-acre area that included the Project Area. The architectural study area consisted of the Project Area and an unobstructed half-mile viewshed surrounding the Project Area. Background research revealed no previously recorded archaeological sites within the study area, and no NRHP listed properties within 1 mile of the Project Area.

The archaeological survey identified two archaeological sites. Site 1Li854 represents historic debris related to an early twentieth century house that was present from approximately 1920 to 1940. All materials were found in disturbed context and the site in general lacks integrity. Given the site's lack of integrity and ephemeral deposits, the site was not recommended to be eligible for listing on NRHP. Site 1Li855 consists of the remains from an early twentieth century house that remained in use to the twenty-first century. In addition to the historic period materials, a single piece of prehistoric debitage was recovered. All materials were found in disturbed context and the site in general lacks integrity. Given the site's lack of integrity and ephemeral deposits, the site was not recommended to be eligible for NRHP listing.

The architectural resource survey identified twelve newly identified architectural resources over 50 years old (Li00001-Li00012), three of which have since been demolished (Randall 2020) (**Table 4-3**). At the time of survey, three buildings associated with the Woodlands Golf Course were still extant. All three were located outside of the Project Area but within the viewshed. These three resources (Li00004, Li00006, and Li00007) were all demolished between January 21 and February 4, 2020. As they were extant at the time of the survey, they are included in the survey report. None of the surveyed historic architectural resources, including those that were recently demolished, were recommended to be eligible for NRHP listing. Thus, TVA finds that the Action Alternative will not have an effect on historic properties.

Table 4-3: Cultural Resources Identified During the Archaeological and Architectural Survey

Cultural Resource Number	Description	Eligibility Recommendation	Effects Determination
Li00001	c. 1965 Ranch House	Ineligible	Not Applicable
Li00002	c. 1945 American Small House and garage	Ineligible	Not Applicable
Li00003	c. 1955 American Small House and garage	Ineligible	Not Applicable
Li00004	c. 1965 Ranch House	Ineligible (No Longer Extant)	Not Applicable
Li00005	c. 1969 Golf Course and equipment shed	Ineligible	Not Applicable
Li00006	c. 1960 Ranch House and shed	Ineligible (No Longer Extant)	Not Applicable
Li00007	c. 1920 Gable front and wing house, barn, and equipment shed (Woodlands Golf Course Clubhouse/Sweetland Farmhouse, Barn, and Equipment shed)	Ineligible (No Longer Extant)	Not Applicable
Li00008	c. 1965 Ranch House and outbuildings	Ineligible	Not Applicable
Li00009	c. 1963 Ranch House	Ineligible	Not Applicable
Li00010	c. 1965 Ranch House and garage	Ineligible	Not Applicable
Li00011	c. 1963 Ranch House and garage	Ineligible	Not Applicable
Li00012	c. 1960 Ranch House and outbuildings	Ineligible	Not Applicable
1Li844	Historic (20th century)	Ineligible	Not Applicable
1Li845	Historic (20th century) and limited Prehistoric	Ineligible	Not Applicable

Pursuant to Section 106 of the National Historic Preservation Act, TVA consulted with the Alabama Historical Commission (AHC) or Alabama SHPO in a letter dated March 16, 2020 requesting concurrence that the Action Alternative would have no effect on NRHP-eligible archaeological and architectural resources. The Alabama SHPO concurred with this determination in a letter dated May 13, 2020 (Attachment 3). Pursuant to 36 CFR Part 800.3(f)(2), TVA also consulted with federally recognized Indian tribes regarding properties that may have religious and cultural significance to their tribe and eligible for the NRHP and two responses were received, indicating no objection to the Action Alternative (Attachment 3).

Under the No Action Alternative, if the City were able to secure the funding for the actions described in this EA from other non-TVA sources, construction of project components would occur, resulting in no adverse impacts to archaeological and historic resources as described above for the Action Alternative. If the City were not able to secure the funding for the actions described in this EA, construction of project components would not occur and existing site conditions would likely be maintained.

4.2.8 Visual

The visual landscape surrounding the Project Area consists of gently sloping residential land, open fields, intermittent forested land, and various developments and industry. The Breeding

North Industrial Park is located to the northeast, east and southeast of the Project Area. Toyota Boshoku is currently constructing a facility in the vacant property located to the north of the Project Area. A single residence was located adjacent to the northern Project Area boundary and is visible on the aerial figure provided in Attachment 1, Figure 1-A; however, this residence was demolished between January 21 and February 4, 2020. Additional residences are located to the northwest, west, southwest, and south of the Project Area along the east and west sides of Hine Street and along the southern Project Area boundary.

Most of the Project Area is shielded from the views of surrounding residences and nearby roads by trees along the perimeter of the site. A band of trees along Mud Creek and along the northernmost and southernmost boundaries create a visual screen between the Project Area and residences located to the northwest, west, southwest, and immediately south of the Project Area. Approximately 580 feet of the southernmost boundary lacks visual screening. There are also trees along the easternmost boundary that create a visual screen between the existing industrial park and the Project Area. The scattered parallel rows of trees in the Project Area create a visual screen between much of the Project Area and ongoing construction of the Toyota Boshoku facility to the north.

Construction vehicles and equipment visible during construction activities (an excavator, bulldozer, dump truck, or similar vehicles and heavy machinery) would have a minor visual impact over the temporary construction period and a minor permanent impact due to tree removal, rough grading of a 400,000-square foot building pad, and construction of a gravel marketing road. Due to the existing tree line barriers between the residences along Hine Street and along the southern Project Area boundary, it is anticipated that temporary construction activity and permanent changes to the landscape in the Project Area would have limited visibility to the residences or to motorists along Hine Street. Removal of the scattered parallel rows of trees would remove the visual screen between the Project Area and the ongoing construction of the Toyota Boshoku facility to the north. However, the overall visual character of the Project Area following implementation of the Action Alternative would be comparable with other nearby areas that include areas of open fields and developed/industrial areas. Additionally, clearing and grading activities would be conducted in compliance with stormwater permitting requirements which require timely establishment of vegetation or other stabilization measures following completion of ground disturbing activities. Reestablishment of vegetation in disturbed areas would aid in returning the Project Area to a similar visual character as pre-construction conditions. Consequently, changes in visual quality resulting from implementation of the Action Alternative would be minor.

Under the No Action Alternative, if the City were able to secure the funding for the actions described in this EA from other non-TVA sources, construction of project components would occur, resulting in similar direct and indirect visual quality impacts as described above for the Action Alternative. If the City were not able to secure the funding for the actions described in this EA, construction of project components would not occur and existing site conditions would likely be maintained resulting in no visual quality impacts.

4.2.9 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 the existing industries in the Breeding North Industrial Park, traffic along Hine Street, and surrounding residential activities.

Noise impacts associated with construction activities under the Action Alternative would be primarily from construction equipment. Construction activities would involve operation of an excavator, bulldozer, dump truck, or similar vehicles and heavy machinery over the temporary duration of construction. Construction equipment noise levels are temporary and rarely steady; they fluctuate depending on the number and type of vehicles and equipment in use at any given time. In addition, construction-related sound levels experienced by a noise sensitive receptor in the vicinity of construction activity would be a function of distance, other noise sources, and the presence and extent of vegetation, structures, and intervening topography between the noise source and receptor.

Primary sensitive noise receptors in the area include residents of homes located approximately 250 to 1,000 feet to the northwest, west, south and southwest of the Project Area and industrial facilities located approximately 100 to 3,000 feet to the northeast, east and southeast of the Project Area in the existing Breeding North Industrial Park. However, the noise would be localized and temporary, and no receptor would be exposed to significant noise levels for an extended period of time. The anticipated noise levels resulting from construction equipment would not differ substantially from equipment that is in regular use in the surrounding area from industrial activities. Further, construction activities would be conducted during daylight hours only, when ambient noise levels are often higher and most individuals are less sensitive to noise. Thus, noise-related impacts resulting from implementation of the Action Alternative are anticipated to be temporary and minor.

Under the No Action Alternative, if the City were able to secure the funding for the actions described in this EA from other non-TVA sources, construction of project components would occur, resulting in similar direct and indirect noise-related impact as described above for the Action Alternative. If the City were not able to secure the funding for the actions described in this EA, construction of project components would not occur and existing site conditions would likely be maintained resulting in no impacts to noise quality in the area.

4.2.10 Socioeconomics and Environmental Justice

The socioeconomic analysis for the Action Alternative focuses on the state, county, and locality in which the Action Alternative would occur. Publically available statistics generated by the United States Census Bureau and the United States Bureau of Labor Statistics were used to characterize socioeconomic conditions in Alabama, Limestone County, and Athens (**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 county and locality were considered, relative to the demographics and wealth levels at the state level, to identify the potential for a disproportionate and adverse impact on minority and low-income populations, which is commonly referred to as an evaluation of Environmental Justice.

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

	Alabama	Limestone County	Athens
Population [1]			
April 2010 Population	4,779,736	82,782	21,897
Most Recent Population Estimate (July 2018)	4,887,871	96,174	26,247
Population Change: April 2010 to July 2018	2.3%	16.2%	19.9%
People per Square Mile	94.4	147.8	553.8
Demographics [1]			
White Alone, not Hispanic or Latino	65.4%	76.1%	71.0%
Black or African American Alone	26.8%	13.8%	17.0%
American Indian and Alaska Native Alone	0.7%	0.8%	0.9%
Asian Alone	1.5%	1.6%	1.3%
Native Hawaiian and Other Pacific Islander Alone	0.1%	0.2%	0.1%
Two or More Races	1.7%	2.4%	2.8%
Hispanic or Latino (of any race)	4.4%	6.1%	7.4%
Income [1]			
Median Household Income	$48,486	$56,460	$49,549
Per Capita Income	$26,846	$27,699	$29,336
Percent with Income Below the Poverty Level	16.8%	11.4%	14.7%
Seasonally Adjusted Employment: October 2019 [2]			
Labor Force	2,264,142	44,357	12,139
Employed	2,200,858	43,441	11,904
Unemployed	63,284	916	235
Unemployment Rate (%)	2.8%	2.1%	1.9%

1 – Source: United States Census Bureau (2020)
2 – Source: United States Bureau of Labor Statistics (2020).

The results of the evaluation of Environmental Justice consist of the following:

- Relative to the average Alabama resident, the residents of Limestone County and Athens live at greater densities and have recently experienced more rapid population growth.

- Relative to the average Alabama resident, the residents of Limestone County and Athens are less likely to self-identify as a minority race or ethnicity.
- Median household income and per capita income are lower in Alabama than they are in Limestone County and Athens. This is consistent with the observation that the proportion of Alabama residents living below the poverty level exceeds these proportions in Limestone County and Athens.
- The unemployment rate in Alabama is greater than the unemployment rate in Limestone County.

As described in Section 1.0 (Proposed Action and Need), the Action Alternative would include tree removal, rough grading of a 400,000-square foot building pad, and construction of a gravel road. This effort would require a small workforce, likely drawn from existing contractors working on similar projects in the region, for approximately eight months. This activity would result in a minor, short-term, positive effect on the local economy that would not be detectable at the county or state level.

Under the No Action Alternative, if the City were able to secure the funding for the proposed TVA-funded action described in this EA from other non-TVA sources, similar activities would occur which would result in socioeconomic impacts similar to those described above. If the City were not able to secure the funding for the action, the economic activity and socioeconomic changes would not occur.

There is minimal potential that the Action Alternative would result in a disproportionate and adverse impact on minority and low-income populations. The Action Alternative would have a positive effect on the local economy, the environmental impacts associated with the Action Alternative would be minor and would generally be constrained to the Breeding North Industrial Park and adjacent properties, and Athens is not disproportionately composed of minority or low income residents.

4.2.11 Recreation

The Project Area is situated in the former Woodlands Golf Course, a public, nine-hole course, which first opened in 1969. According to public records, the golf course closed in 2006. The Project Area is surrounded by residential homes, open fields, isolated woodlots, and various commercial developments and industry. The existing Breeding North Industrial Park is adjacent to the eastern Project Area boundary and extends to the northeast, east and southeast. Toyota Boshoku is currently constructing a facility in the vacant property located immediately to the north of the Project Area. Jimmy Gill Park is the closest public park and it is located approximately 0.2 mile north of the Project Area. This park is permanently closed due to construction of the Toyota Boshoku facility; however; the City has plans to relocate the park to newly acquired City property located nearby. Additional recreational areas including the Robert Allen Tinnon Park, Swan Creek Park, the Swan Creek Greenway National Recreational Trail, Big Spring Park, and Christopher Park are located within 2 miles from the Project Area.

Although the Project Area is the former location of the Woodlands Golf Course, the facility has been closed to the public for 14 years. Furthermore, the nearest recreational facility (Jimmy Gill Park) was closed due to other development projects in the area. Implementation of the Action Alternative would permanently preclude the Project Area from future reopening of the golf course or development of other recreational facilities. However, because the golf course has

been closed to the public for 14 years, much of the surrounding areas have experienced industrial development, and the property is zoned for industrial use, it is unlikely that the golf course would be reopened in the future or that the site would be developed for other recreational facilities. Therefore, the Action Alternative is not anticipated to result in significant direct or indirect impacts on recreational opportunities in the vicinity of the Project Area.

Under the No Action Alternative, if the City were able to secure the funding for the actions described in this EA from other non-TVA sources, construction of project components would occur, resulting in similar, minor direct and indirect impacts to recreational opportunities as described above for the Action Alternative. If the City were not able to secure the funding for the actions described in this EA, construction of project components would not occur and existing site conditions would likely be maintained resulting in no impacts to recreational opportunities.

4.2.12 Transportation

The primary site entrance would be on the southeast side of the Project Area, on Martin Luther King Jr. Drive, approximately 0.1 mile from the intersection of Martin Luther King Jr. Drive and Durham Drive. Martin Luther King Jr. Drive is a two-lane road defined as a rural principal arterial road by Alabama Department of Transportation (ALDOT) mapping (ALDOT 2016). This section of the road is orientated east-west providing access to existing commercial businesses from State Road (SR) 40 and W Sanderfer Road. Based on preliminary review of Google streetview images (recorded March 2019), the road is in good condition, marked, with curb and gutter. The speed limit for this road is 30 miles per hour. The site entrance would be located near a curve of the roadway to the south, with unimpeded visibility from the site entrance in both directions of the roadway. There are no turning lanes in either direction for traffic entering or leaving the site. The site entrance configuration should consider safe sight distances and other safety concerns for traffic entering Martin Luther King Jr. Drive. It is anticipated that normal care would be taken by workers entering and leaving Martin Luther King Jr. Drive with regards to traffic safety. Based on a review of Athens traffic data (2010 to 2013), a traffic count station is on Durham Drive, roughly 0.4 mile north of its intersection with Martin Luther King Jr. Drive. The 2013 annual average daily traffic count (AADT) for this station is 2,141. There is another Athens traffic count station on Roy Long Road, located roughly 0.2 mile east of its intersection with Martin Luther King Jr. Drive. The 2013 AADT for this station is 930.

In the context of existing AADT road volumes, the anticipated traffic generated by development of the Project Area would be manageable. It is anticipated that implementation of the Action Alternative would generate minor traffic associated with construction activities and have a temporary negligible impact on overall traffic volumes and level of service for Martin Luther King Jr. Drive. In accordance with The City of Athens Traffic Impact Study Requirements, the development does not propose direct access to a collector or arterial roadway and a traffic study is not required (Skipper Consulting, Inc. 2007).

Under the No Action Alternative, if the City were able to secure the funding for the actions described in this EA from other non-TVA sources, construction of project components would occur, resulting in negligible direct and indirect impact on overall traffic volumes and level of service as described above for the Action Alternative. If the City were not able to secure the funding for the actions described in this EA, construction of project components would not occur and existing site conditions would likely be maintained resulting in no traffic-related impacts.

5.0 CUMULATIVE AND REASONABLY FORESEEABLE IMPACTS

The potential impacts resulting from the Action Alternative in the Project Area are discussed in Section 4.0. This section discusses the potential impacts from future development of the Breeding North Industrial Park expansion site and nearby properties available for development in combination with the impacts from the Action Alternative. Aside from the 47.0-acre Breeding North Industrial Park expansion site, a review of available information from the Limestone County Economic Development Association (LCEDA 2020) and the North Alabama Industrial Development Association (NAIDA) identified five additional properties totaling approximately 597 acres that are available for development or under development within 1 mile of the Project Area (see **Figure 2** below) (NAIDA 2020). One of the properties, located immediately to the north, is currently under development by Toyota Boshoku. Based on desktop review, these properties appear to consist of open land and mixed deciduous and evergreen forest with potential for wetlands and waterbodies.

Information from the Limestone County Government (Limestone County 2020) and media sources identified three projects (a proposed residential development, a mixed-use development, and the expansion of an existing Sportsplex) in Limestone County that are either underway or planned for development in the near future. A review of the ALDOT also identified county-wide road and bridge improvement projects that are proposed for 2020 (ALDOT 2020). While these projects are proposed to occur within the next year, they were not considered in the development of the cumulative impact analysis as they do not occur within 1 mile of the Action Alternative.

Resources that could potentially be cumulatively impacted by implementation of the Action Alternative and future development of the Breeding North Industrial Park expansion site and the five additional properties identified within 1 mile of the Project Area include air quality and climate change, groundwater, surface water, aquatic ecology, terrestrial zoology, botany, and public recreation opportunities. In addition, implementation of the Action Alternative and future development of the Breeding North Industrial Park expansion site and the five additional properties identified within 1 mile of the Project Area could create potential cumulative impacts to the human environment, including visual effects, noise, socioeconomics and environmental justice, and transportation issues. TVA has determined that the Action Alternative would not significantly affect floodplains, wetlands, land use and prime farmland, natural and managed areas, and archaeology and historical structures, nor would it result in significant impacts from the creation or disposal of solid and hazardous wastes as discussed in Section 4. Therefore, these resources are not considered in this cumulative impacts assessment.

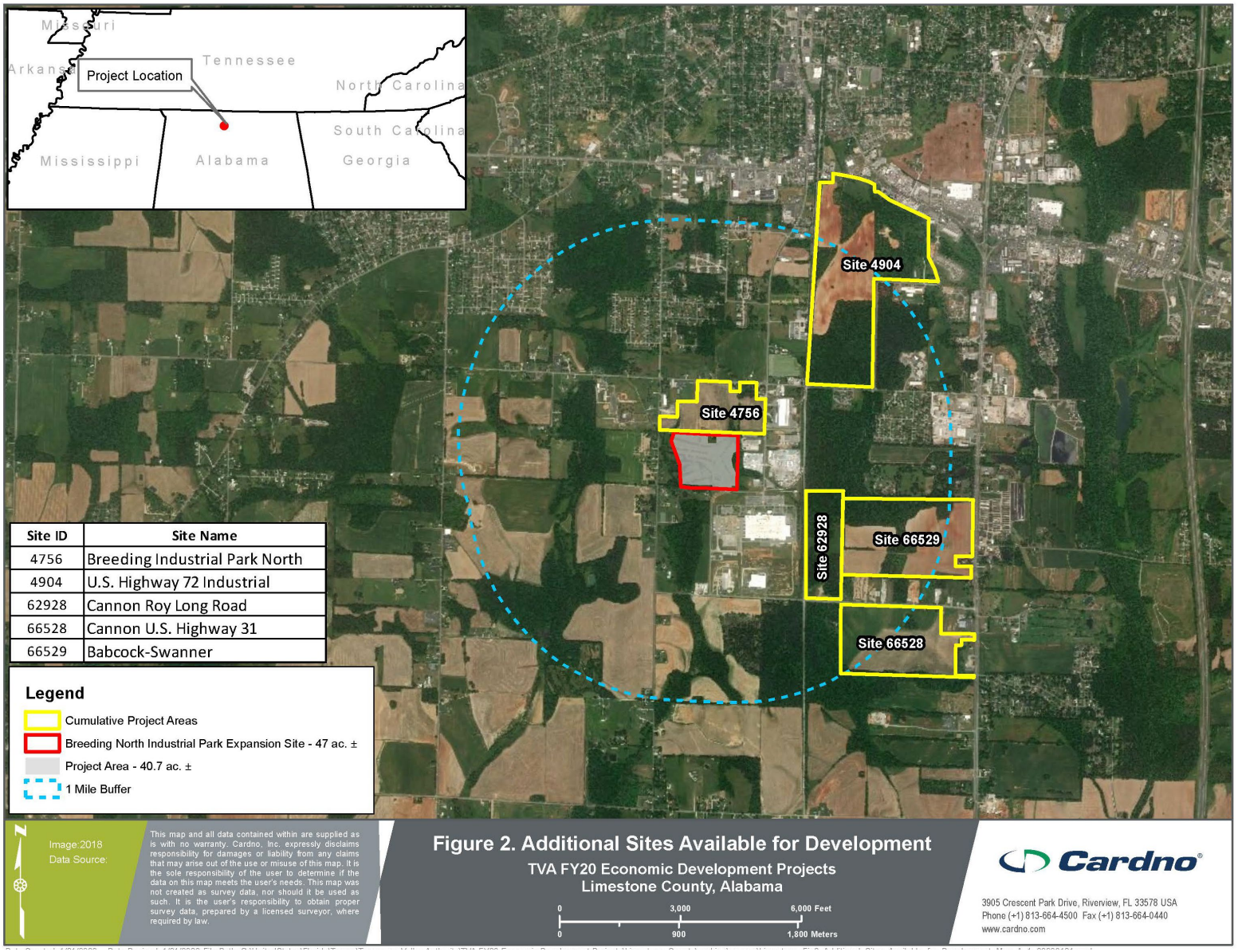

Figure 2: Cumulative Impact Areas

5.1 Air Quality and Climate Change

The Action Alternative would result in temporary and minor impacts on air quality and climate change as described in Section 4. Activities that produce air pollutants, including site preparation and the location of industrial tenants during future development of the Breeding North Industrial Park expansion site and ongoing and future development of the additional properties identified within 1 mile of the Project Area, would be subject to various applicable air quality regulations including Prevention of Significant Deterioration permits under the CAA. Clearing, demolition activities, and construction of individual sites would generate some air pollution in the form of emissions from fossil fuel-fired equipment, fugitive dust from ground disturbances, and emissions associated with burning of wood debris. Individual sites would likely be developed in stages as new tenants are established, with associated short time periods for construction, resulting in minor, temporary, and localized adverse impacts to local air quality. However, BMPs and adherence to local regulations would minimize these effects, as described in Section 4. Air emissions from future and ongoing development of these properties are anticipated to be minor and are not anticipated to impact regional air quality or result in a violation of applicable ambient air quality standards.

Conversion of greenfield sites to developed land for future industrial use would result in some loss of carbon sequestration in the area, particularly if large trees are removed. However, considering that the areas proposed for development and currently under development are relatively small, and much of it in open land, these effects are anticipated to be minor. Furthermore, future and ongoing industrial development would be subject to local permits and ordinances, and it is anticipated that they would implement BMPs and adhere to other required measures to reduce emissions associated with clearing and development.

Temporary and minor cumulative impacts to air quality and climate change would occur if construction activities associated with the Action Alternative and future development of the Breeding North Industrial Park expansion site and ongoing and future development of the additional properties identified within 1 mile of the Project Area were to occur during the same time period. However, with regulatory measures in place, reasonably foreseeable long-term and cumulative impacts to local air quality and climate change resulting from the Action Alternative and future and ongoing development of these properties are anticipated to be temporary and minor. If there were no overlap of construction activities, cumulative impacts would not occur.

5.2 Groundwater

The Action Alternative would result in temporary and minor groundwater impacts as described in Section 4. The temporary ground disturbance that would occur during construction activities would not be at depths that would result in significant impacts to groundwater resources, but would result in minor impacts from changes in overland water flow and recharge caused by clearing and grading of the Project Area.

Future development of the Breeding North Industrial Park expansion site and ongoing and future development of the additional properties identified within 1 mile of the Project Area would have the potential to impact groundwater resources. Site preparation associated with future and ongoing development, including grading, could cause minor changes in drainage patterns. Likewise, the placement of buildings and associated hard surfaces on the site would likely

increase the amount of impermeable surface and possibly lead to less infiltration and faster runoff of onsite precipitation. Activities that could impact groundwater resources would be subject to state and federal regulations, and it is anticipated that these actions would include BMPs (such as sediment and erosion controls) and compliance with applicable stormwater permitting requirements to minimize impacts to groundwater resources. Therefore, cumulative impacts on groundwater resources associated with implementation of the Action Alternative and future and ongoing development of these properties are anticipated to be temporary and minor.

5.3 Surface Water

The Action Alternative would result in temporary and minor surface water impacts as described in Section 4. Site preparation associated with future development of the Breeding North Industrial Park expansion site and ongoing and future development of the additional properties identified within 1 mile of the Project Area could cause increased sediment laden runoff and minor changes in drainage patterns that could result in minor impacts to surface water resources. Likewise, the placement of buildings and associated hard surfaces on the site would likely increase the amount of impermeable surface and possibly lead to faster runoff of onsite precipitation. It is anticipated that these actions would include BMPs (such as sediment and erosion controls), compliance with applicable stormwater permitting requirements, and adequate design of stormwater conveyance features. Thus, cumulative surface water impacts associated with implementation of the Action Alternative and future and ongoing development of these properties are anticipated to be temporary and minor.

5.4 Aquatic Ecology

The Action Alternative would not impact state and federally protected aquatic species, but could result in temporary and minor indirect impacts to aquatic species common to the area as described in Section 4. Future development of the Breeding North Industrial Park expansion site and ongoing and future development of the additional properties identified within 1 mile of the Project Area would potentially impact aquatic habitats through clearing and grading, which could affect aquatic species that may be present. It is anticipated that these actions would include BMPs (such as sediment and erosion controls) and be conducted in compliance with applicable stormwater permitting requirements, which would minimize impacts to aquatic species. Cumulative impacts to aquatic species associated with the Action Alternative and future and ongoing development of these properties are anticipated to be temporary and minor.

5.5 Terrestrial Zoology

The Action Alternative would result in minor impacts to wildlife as described in Section 4. Future development of the Breeding North Industrial Park expansion site and ongoing and future development of the additional properties identified within 1 mile of the Project Area would potentially remove tree species in mixed deciduous and evergreen forest areas and grasses for development of individual sites. Mobile wildlife in these habitats would be displaced by habitat removal and noise, and immobile wildlife may be injured or destroyed by heavy machinery and construction, particularly if clearing activities take place during breeding /nesting seasons. However, this development is not likely to impact populations of species common to the area, as similar habitats exist in abundance in the surrounding landscape. Considering that the landscape is highly fragmented and already impacted by human activity (e.g., maintained cattle pastures, agriculture crop lands, and roads), and in consideration of the abundance of similar

habitat in the surrounding landscape, cumulative impacts to wildlife associated with implementation of the Action Alternative and future and ongoing development of these properties are anticipated to be minor.

The Action Alternative may result in impacts to federally and state-listed bat species through habitat removal as described in Section 4. However, with the implementation of the Conservation Measures described in Section 4 and identified in the TVA Bat Strategy Project Screening Form (Attachment 2), any impacts to these species are anticipated to be minor. Future development of the Breeding North Industrial Park expansion site and ongoing and future development of the additional properties identified within 1 mile of the Project Area could impact federally and state-listed bat species. If future developments cannot avoid impacts to these species, it is assumed that these actions would be conducted in consultation with the USFWS. Development of areas/actions not covered under this EA would be subject to all state and federal laws and likely would require conservation measures to be developed in consultation with the USFWS to minimize impacts to federally and state-listed bat species. Although the Action Alternative and future development of the Breeding North Industrial Park expansion site and ongoing and future development of the additional properties identified within 1 mile of the Project Area would potentially impact federally and state-listed bat species, it is anticipated that activities would be conducted in consultation with the USFWS and the Action Alternative would involve implementation of the identified Conservation Measures. As a result, significant cumulative impacts on federally and state-listed bat species are not anticipated as a result of the Action Alternative and future and ongoing development of these properties.

5.6 Botany

The Action Alternative would not impact state and federally protected plant species, but could result in temporary and minor impacts to plant species common to the area as described in Section 4. Future development of the Breeding North Industrial Park expansion site and ongoing and future development of the additional properties identified within 1 mile of the Project Area would potentially convert vegetated areas containing open land and mixed deciduous and evergreen forest to an industrial setting. Similar to the Project Area, the vegetation types that would be affected by development of these properties are common in the area, resulting in minor cumulative impacts on vegetation in the region. Cumulative impacts to vegetation resulting from the Action Alternative and future and ongoing development of these properties are anticipated to be minor.

5.7 Visual

The Action Alternative would result in temporary and minor visual quality impacts as described in Section 4. Future development of the Breeding North Industrial Park expansion site and ongoing and future development of the additional properties identified within 1 mile of the Project Area could result in visual quality impacts during operation of construction vehicles and equipment over a temporary period during future construction. Future development could also result in permanent visual changes in the landscape as areas are converted from predominantly open and forested lands to industrial areas. However, the development of these areas for industrial uses would be consistent with the visual character of the surrounding industrial and commercial areas. Overall, it is anticipated that future and ongoing development of these properties would result in minor temporary and permanent visual quality impacts.

5.8 Noise

The Action Alternative would result in temporary and minor noise quality impacts as described in Section 4. Future development of the Breeding North Industrial Park expansion site and ongoing and future development of the additional properties identified within 1 mile of the Project Area could generate increased noise from operation of equipment and construction of industrial buildings. However, the anticipated noise levels resulting from future operation of equipment and construction of industrial buildings would not differ significantly from equipment that is in regular use in the surrounding area from industrial activities. Furthermore, it is anticipated that construction activities would be conducted during daylight hours only. Thus, noise quality impacts resulting from future and ongoing development of these properties are anticipated to be minor and temporary. Temporary and minor noise-related cumulative impacts would occur if construction activities associated with the Action Alternative and future and ongoing development of these properties were to occur during the same time period. If there were no overlap of construction activities, cumulative impacts would not occur.

5.9 Socioeconomic Conditions and Environmental Justice

Socioeconomic conditions would continue to be impacted by general population increases and development growth in the area. The Action Alternative is anticipated to have a minor, short-term, positive effect on the local economy as described in Section 4. Future development of the Breeding North Industrial Park expansion site and ongoing and future development of the additional properties identified within 1 mile of the Project Area is anticipated to create jobs and capital investment with associated beneficial impacts to the local economy, resulting in beneficial impacts to socioeconomic conditions. Therefore, implementation of the Action Alternative and future and ongoing development of these properties is anticipated to result in minor positive cumulative impacts to socioeconomic conditions in the area.

Because the local community is not disproportionately composed of minority or low income residents and the Action Alternative and future and ongoing development of these properties would have minor positive effects on the local economy, no disproportionate and adverse cumulative impacts would occur to minority or low-income populations.

5.10 Recreation

As described in Section 4, the Action Alternative is anticipated to have a minor impact on recreation. The Breeding North Industrial Park expansion site is situated in the former Woodlands Golf Course, a public, nine-hole course, which first opened in 1969 and closed in 2006. The nearest recreational facility (Jimmy Gill Park) was closed due to other development projects in the area, however; the City has plans to relocate the park to newly acquired City property located nearby. No recreational land uses occur on any of the other properties identified within 1 mile of the Project Area and there are no operational parks or recreational sites in the immediate vicinity of these properties. Several recreational areas including the Robert Allen Tinnon Park, Swan Creek Park, the Swan Creek Greenway National Recreational Trail, Big Spring Park, and Christopher Park are located within 2 miles of the site.

Future development of the Breeding North Industrial Park expansion site would permanently preclude the site from future reopening of the golf course or development of other recreational facilities. However, because the golf course has been closed to the public for 14 years and much of the surrounding areas have experienced industrial development, it is unlikely that the

golf course would be reopened in the future or that the site would be developed for other recreational facilities. In addition, much of the areas surrounding the additional properties identified within 1 mile of the Project Area have experienced industrial development and these properties would not be preferred areas for future development of recreational facilities. Consequently, implementation of the Action Alternative and future and ongoing development of these properties is not anticipated to result in cumulative impacts on recreational opportunities.

5.11 Transportation

The Action Alternative would result in temporary impacts to traffic as described in Section 4. Short term increases in construction traffic would occur during construction periods during future development of the Breeding North Industrial Park expansion site and ongoing and future development of the additional properties identified within 1 mile of the Project Area. It is anticipated that construction traffic associated with future and ongoing development of these properties would consist of a small fleet over short time periods, as individual sites are developed. Temporary and minor cumulative traffic impacts would occur if construction activities associated with the Action Alternative and future and ongoing development of these properties were to occur during the same time period. If there was no overlap of construction activities, temporary cumulative impacts resulting from construction traffic would not occur.

Future development of the Breeding North Industrial Park expansion site and ongoing and future development of the additional properties identified within 1 mile of the Project Area could result in permanent increases in traffic due to new industrial development. The degree of increased traffic would depend on the type and number of industrial facilities potentially constructed. If the potential increase in traffic generated by future development would be significant, consultation with ALDOT would be required. Therefore, potential permanent traffic-related cumulative impacts are anticipated to be minor.

6.0 PERMITS, LICENSES, AND APPROVALS

The Action Alternative would result in greater than one acre of earth disturbing activities; therefore, it would be necessary to obtain coverage under the 2016 NPDES General Permit for Discharges Associated with Construction Activity (ALR100000). Coverage would require submittal of a Notice of Intent (NOI) and development of a site-specific CBMPP. Impacts to WOTUS would require a Section 404 permit and a Section 401 Clean Water Act Water Quality Certification. At this time, impacts to WOTUS are not proposed as part of the Action Alternative. The Action Alternative would result in onsite burning of cleared trees and vegetation. Onsite burning activities would be subject to local burn permits and the requirements in ADEM Air Division Administrative Code Chapter 335-3-3, which provides open burning prohibitions, exceptions, and certification requirements. The City or its contractors would be responsible for obtaining local, state, or federal permits, licenses, and approvals necessary for the project.

7.0 BEST MANAGEMENT PRACTICES AND MITIGATION MEASURES

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

burning activities are to be conducted in compliance with local burn permits and the requirements in ADEM Air Division Administrative Code Chapter 335-3-3.

Operations involving chemical or fuel storage or resupply and vehicle servicing are anticipated to 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 are anticipated to be installed to protect nearby stream channels from direct surface runoff. It is anticipated that servicing of equipment and vehicles would be done with care to avoid leakage, spillage, and subsequent surface or groundwater contamination. It is anticipated that oil waste, filters, and other litter would be collected and disposed of properly.

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

Disturbing activities would be avoided within 660 feet of the red-shouldered hawk nest when it is active (typically February to May). If this restriction cannot be adhered to, the USDA would be consulted for guidance and minimization measures.

To minimize the potential spread of fire ants, any soil, baled hay or straw, plants and sod with roots and soil attached, soil-moving equipment or other “Regulated Articles” as defined by USDA would be in compliance with APHIS Quarantine Regulations.

8.0 LIST OF PREPARERS

Table 8-1 summarizes the expertise and contribution made to the EA by the Project Team.

Table 8-1: Environmental Assessment Project Team

Name/Education	Experience	Project Role
TVA		
Kim Pilarski-Hall *MS, Geography, Minor Ecology*	24 years expertise in wetland assessment, wetland monitoring, watershed assessment, wetland mitigation, restoration as well as NEPA and Clean Water Act compliance	Wetlands and Natural Areas
Elizabeth Hamrick *MS, Wildlife and Fisheries Science, University of Tennessee B.A. Biology, BA Anthropology, Grinnell College*	20 years in biological field studies, 8 years in biological compliance, NEPA compliance, and ESA consultation for T&E terrestrial animals.	Terrestrial Zoology, Implementation of ESA Section 7 Programmatic Consultation for federally listed bats and routine actions
David Nestor *MS, Botany; BS, Aquaculture, Fisheries, and Wildlife Biology*	18 years in Floristic Surveys; 12 years in Wetland Delineations.	Botany
Kerry Nichols *PhD Anthropology, University of Missouri-Columbia, M.A. Anthropology, University of Colorado-Denver, B.A. Political Science, University of Northern Colorado*	21 years of experience as a field archaeologist and SHPO project reviewer.	Cultural resources, NHPA Section 106 compliance

Table 8-1: Environmental Assessment Project Team

Name/Education	Experience	Project Role
Craig Phillips *MS, and BS, Wildlife and Fisheries Science*	10 years Sampling and Hydrologic Determinations for Streams and Wet-Weather Conveyances; 9 years in Environmental Reviews.	Aquatic Ecology
Ashley A. Pilakowski *BS, Environmental Management*	9 years in environmental planning and policy and NEPA compliance.	NEPA Compliance
Carrie Williamson, P.E., CFM *BS and MS, Civil Engineering*	7 years in floodplains and flood risk	Floodplains
Dana M. Nelson *M.S. Education, B.A. Biology*	13 years in environmental compliance and policy; 4 years NEPA compliance	Environmental Program Manager
Cardno		
Rachel Bell, PMP *BS, Environmental Science*	14 years in natural resources planning and NEPA compliance, including project management, preparation of EAs and Environmental Impact Statements (EISs), state and federal permitting, and biological and environmental studies and analysis.	EA Project Manager Proposed Action and Need, Alternatives, Site Description, Air Quality and Climate Change, Groundwater, Surface Water, Noise and Visual
Amanda Koonjebeharry, PMP *BS, Zoology and Botany*	19 years in environmental resource surveys and permitting, including EIS and EA preparation, compliance monitoring, state and federal wetland and waterbody permitting and mitigation, protected species surveys and coordination, and wetland delineations.	Cumulative Impacts
Peter Marsey *MA, Geography, University of Toronto* *BA, Geography, University of Delaware*	14 years in civil engineering and environmental consulting including NEPA compliance, wetland and waterbody delineation, NPDES 316b compliance, renewable energy site permitting, construction monitoring, and linear energy permitting.	Socioeconomics and Environmental Justice
Darren Bishop *M.S., Soil and Water Science* *B.S., Environmental Science* *B.A., English*	18 years in natural resources planning and NEPA compliance, including project management and biological and environmental studies and analysis.	EA QA/QC Reviewer
Tammy Miller *MS, Natural Resources, University of Wisconsin-Steven's Point* *BS, Terrestrial Ecology-Wildlife Management, University of Vermont*	18 years in biological resource investigations including NEPA compliance, waterway permitting and mitigation, threatened and endangered species surveys and coordination, wetland and stream delineations, and water quality investigation.	Recreation, Transportation
Duane Simpson *MA, Anthropology, University of Arkansas* *BA, Anthropology, Ohio University*	26 years in archaeological consulting including management of projects across the southeast and midatlantic regions. Principal Investigator for over 15 years.	Archaeology

9.0 AGENCIES AND OTHERS CONSULTED

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

- Alabama Historical Commission
- United States Fish and Wildlife Service
- Absentee Shawnee Tribe of Indians of Oklahoma
- Alabama-Coushatta Tribe of Texas
- Alabama-Quassarte Tribal Town
- Cherokee Nation
- The Chickasaw Nation
- Coushatta Tribe of Louisiana
- Eastern Band of Cherokee Indians
- Eastern Shawnee Tribe of Oklahoma
- Jena Band of Choctaw Indians
- Kialegee Tribal Town
- Poarch Band of Creek Indians
- The Muscogee (Creek) Nation
- The Seminole Nation of Oklahoma
- Shawnee Tribe
- Thlopthlocco Tribal Town
- United Keetoowah Band of Cherokee Indians in Oklahoma.

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ATTACHMENT 1

PROJECT FIGURES

Figure 1-A

Aerial

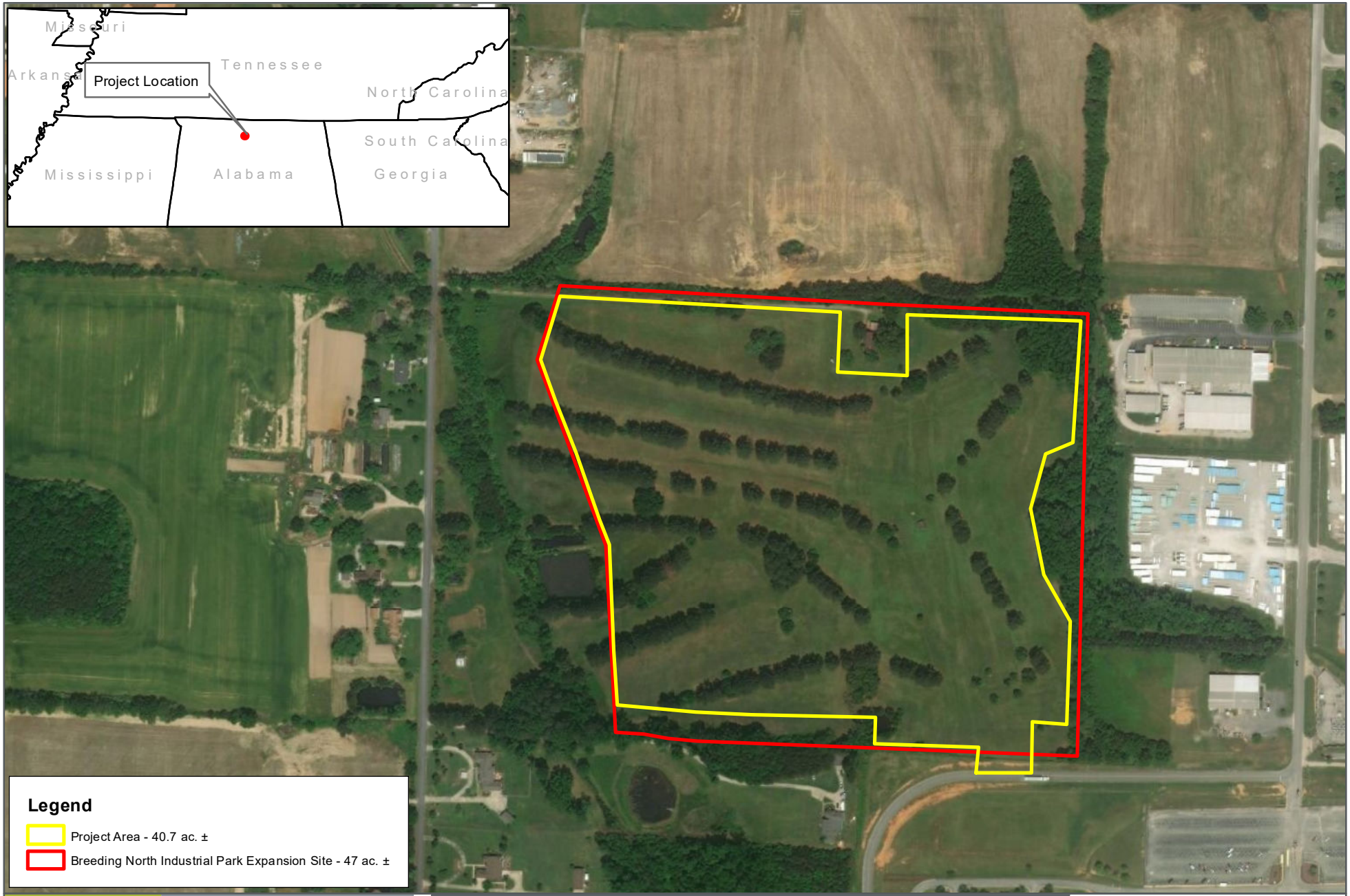

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Figure 1-A: Aerial Map

TVA FY20 Economic Development Projects
Limestone County, Alabama

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Date Created: 1/13/2020 Date Revised: 1/13/2020 File Path: Q:\UnitedStates\Florida\Tampa\Tennessee Valley Authority\TVA FY20 Economic Development Projects\Limestone_County\working\arcmap\Limestone_Fig1A_Aerial_Map_A_1_20200113.mxd
GIS Analyst: James.Bottiger

Figure 1-B

Tree Clearing Areas

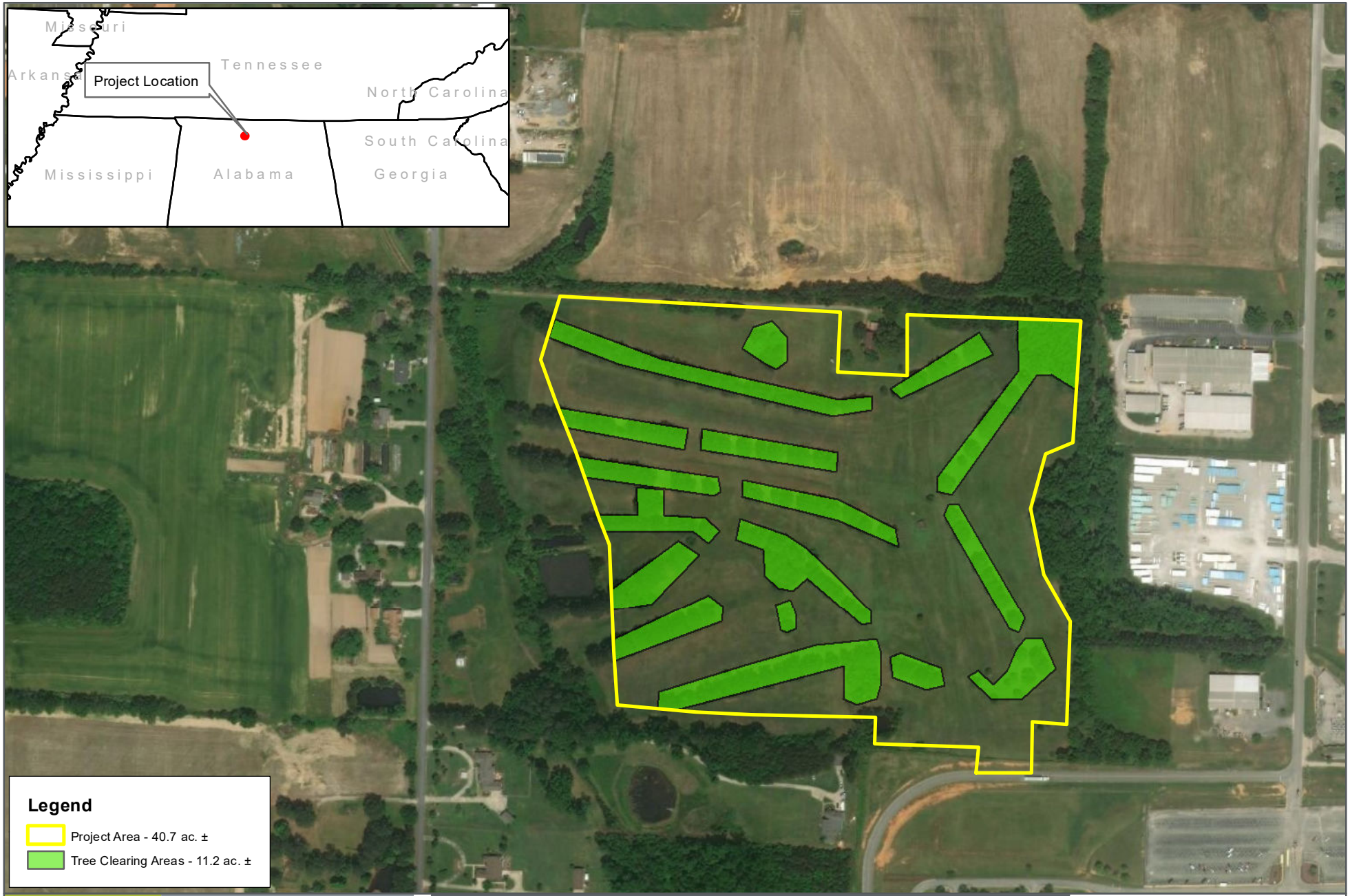

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Figure 1-B: Tree Clearing Areas Map

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Figure 1-C

USGS Quadrangle

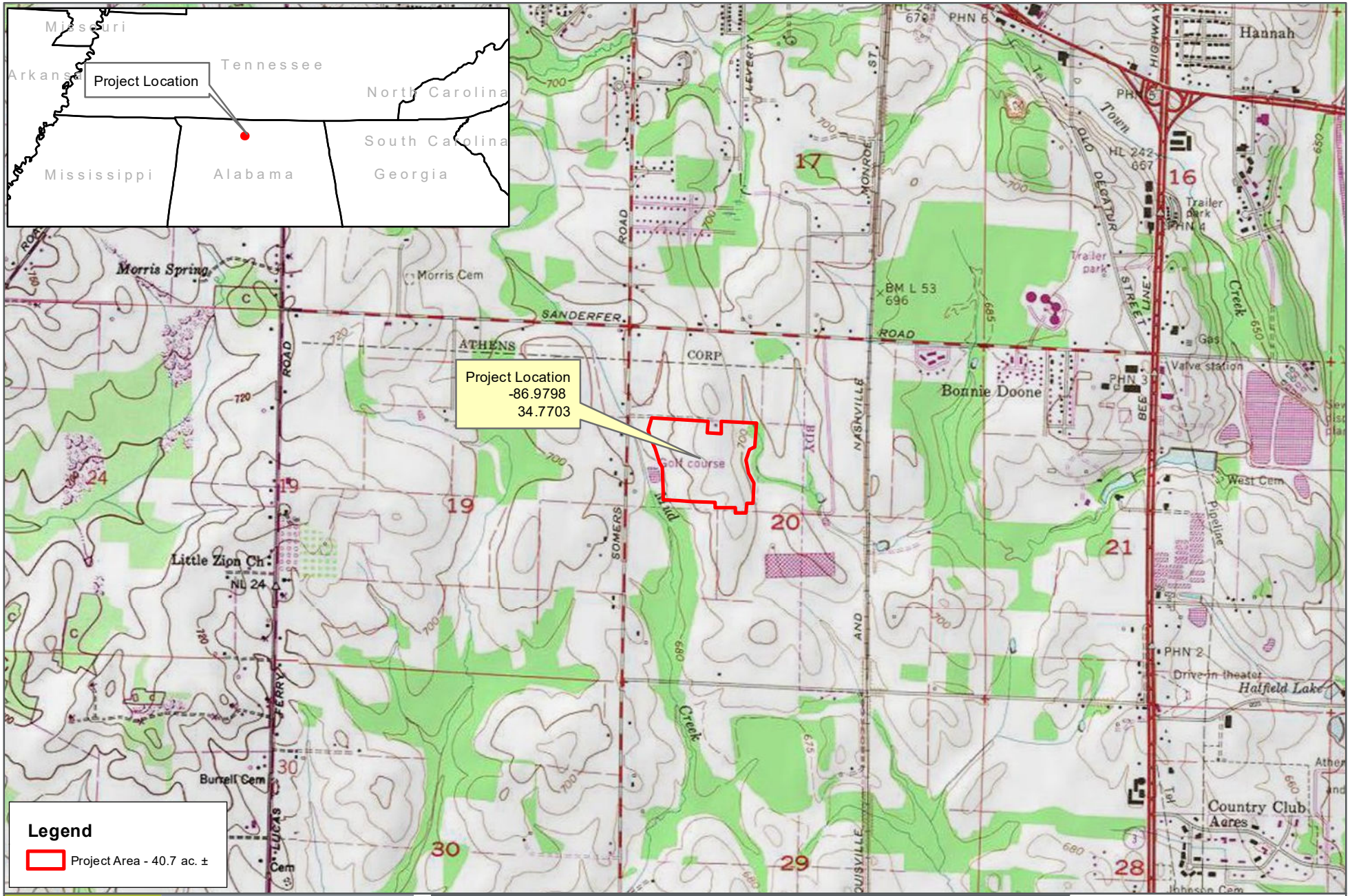

Image:2018
Data Source:

Figure 1-C: USGS Quadrangle Map

TVA FY20 Economic Development Projects
Limestone County, Alabama

0 2,000 4,000 Feet
0 600 1,200 Meters

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Figure 1-D

FEMA Floodplain

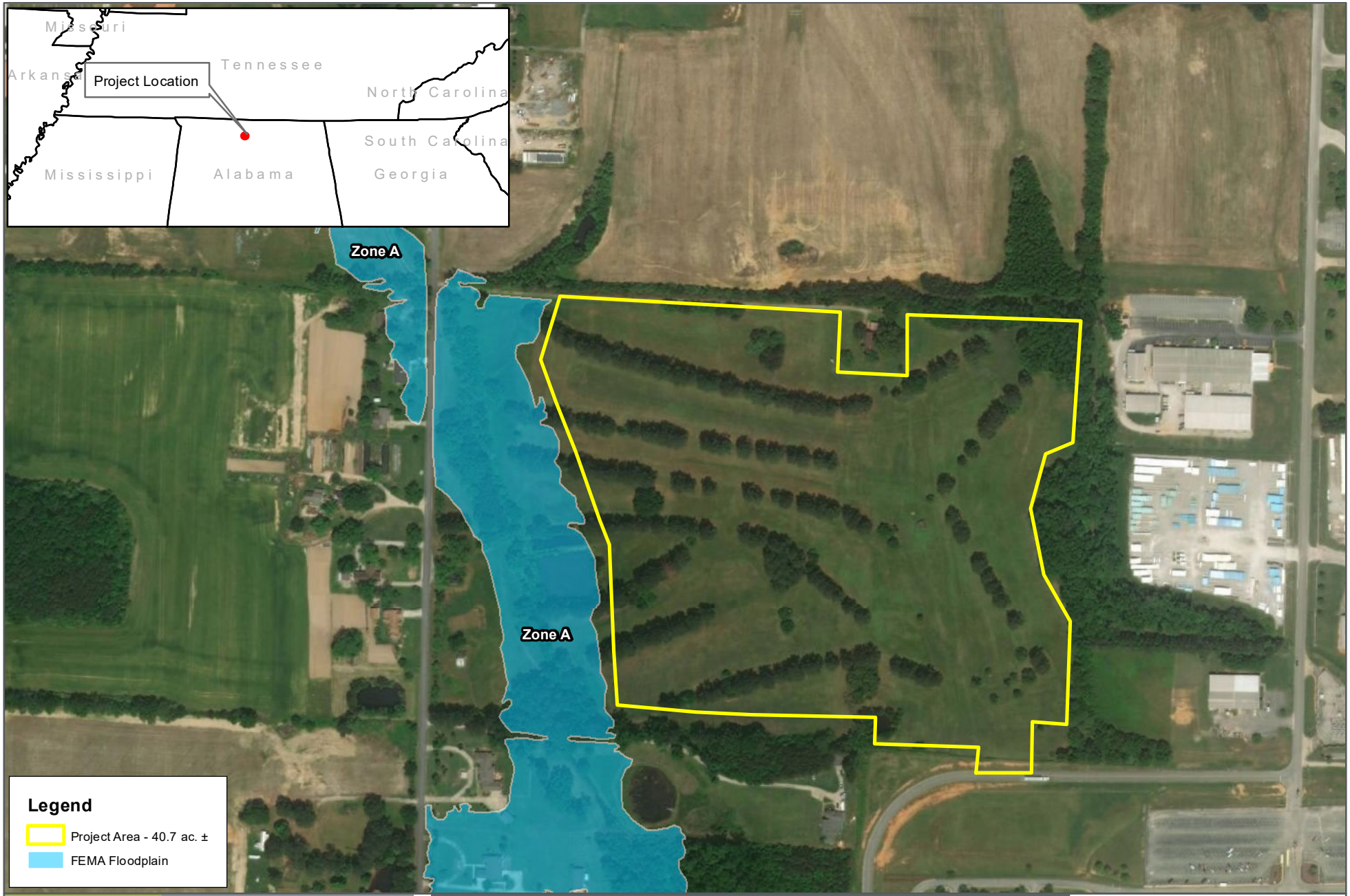

Image:2018
Data Source:

Figure 1-D: FEMA Floodplain Map

TVA FY20 Economic Development Projects
Limestone County, Alabama

0 400 800 Feet
0 120 240 Meters

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Figure 1-E

USFWS NWI

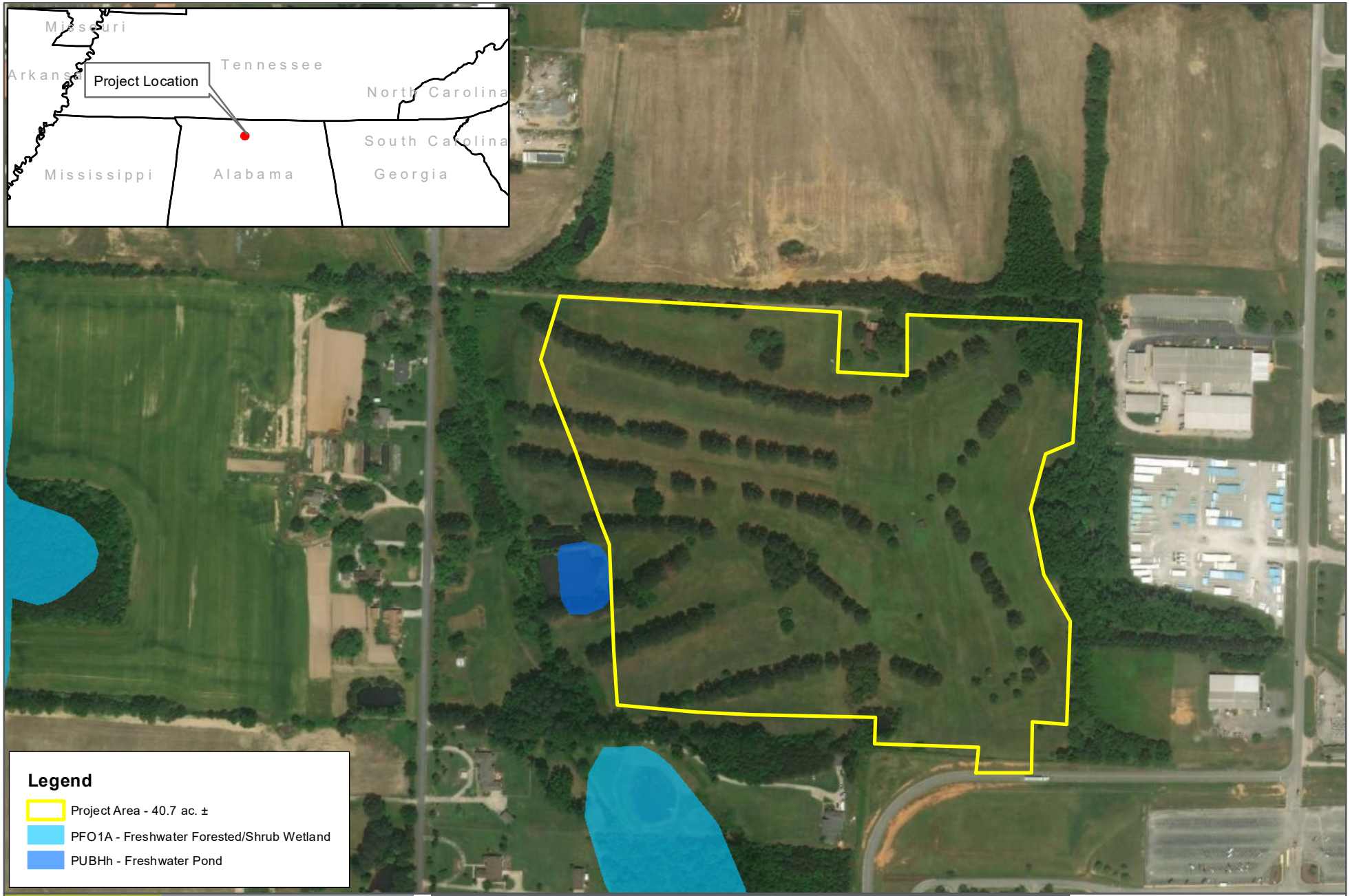

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Figure 1-E: USFWS NWI Map

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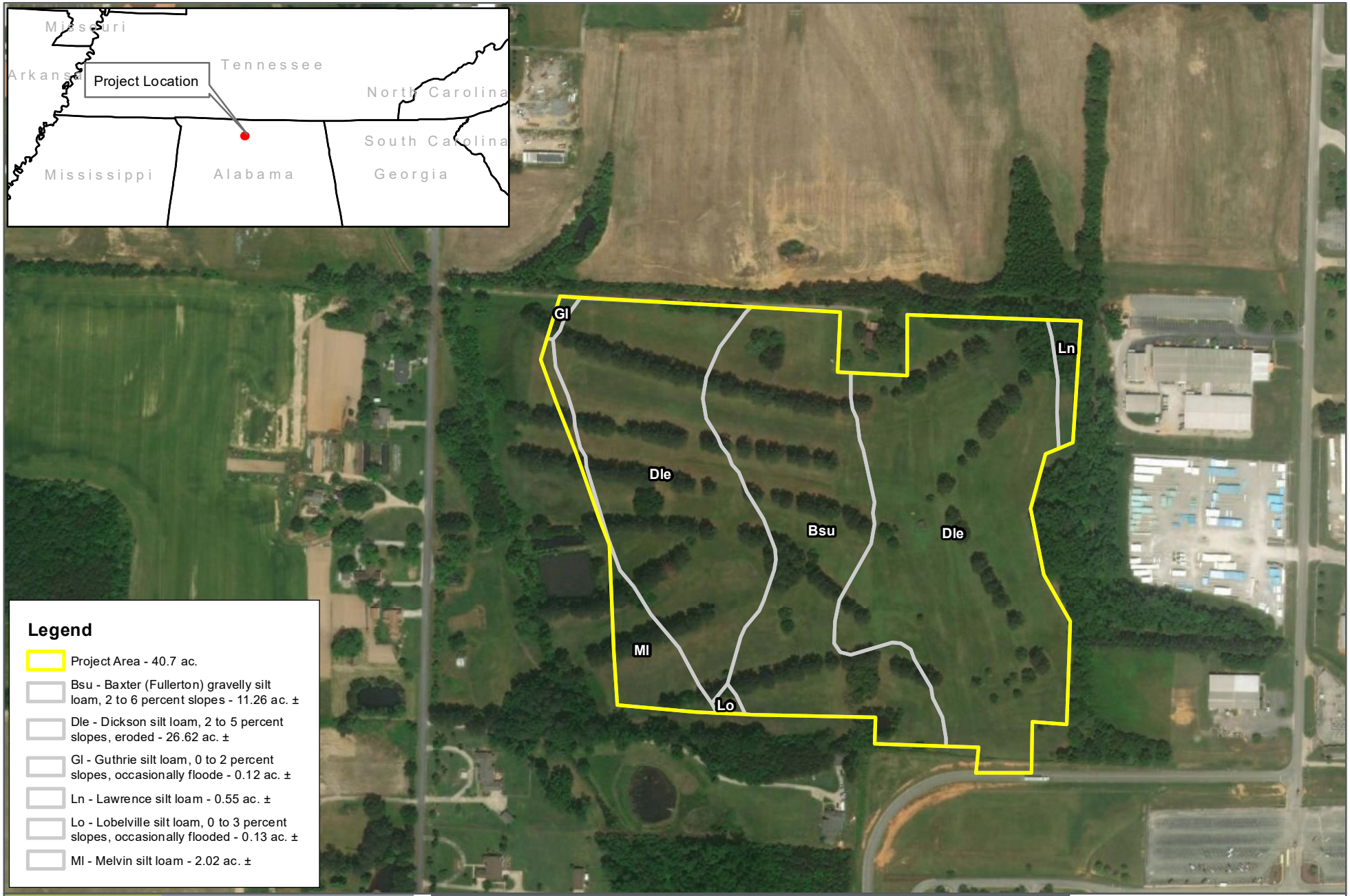
GIS Analyst: James.Bottiger

Figure 1-F

NRCS Soils



N

Image:2018
Data Source:

Figure 1-F: NRCS Soils Map

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Limestone County, Alabama

0 400 800 Feet
0 120 240 Meters

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GIS Analyst: James.Bottiger

ATTACHMENT 2

TVA BAT STRATEGY PROJECT SCREENING FORM

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

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

Project Name: Economic Development InvestPrep Grant for Limestone County, Alabama **Date:** 12/19/2019

Contact(s): Ashley Pilakowski **CEC#:** **Project ID:** 409298

Project Location (City, County, State): Limestone County, Alabama

Project Description:

Utilize TVA InvestPrep™ funding to assist with tree clearing, the rough grading of 400,000 SF building pad and construction of a gravel marketing road in Limestone County, Alabama.

SECTION 1: PROJECT INFORMATION - ACTION AND ACTIVITIES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

e) If **tree removal (activity 33 or 34)**, estimated amount: [11.2] (●)**ac** ( )**trees** ( )**N/A**

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

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

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

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

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

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

Info below completed by:

☐ **Heritage Reviewer**	(name)		Date	
☐ **OSAR Reviewer**	(name)		Date	
☒ **Terrestrial Zoologist**	(name)	Elizabeth Hamrick	Date	Dec 19, 2019

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

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

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

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

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

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

Amount of SUITABLE habitat to be removed/burned (may differ from STEP 4e): [6.7] (●)**ac** ( )**trees)*** ( )**N/A**

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

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

Indiana bats are extirpated from a saltpeter cave in Lauderdale County 17 miles away. NLEB are known from acoustic recordings on Red Stone Arsenal 9 miles away in Madison County

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

STEP 7) Project will involve:

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

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

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

STEP 10) Project ◉ **WILL** ○ **WILL NOT** require use of Incidental Take in the amount of 6.73 ◉ **acres or** ○ **trees** proposed to be used during the ■ **WINTER** ■ **VOLANT SEASON** ○ **NON-VOLANT SEASON** ○ **N/A**

STEP 11) Available Incidental Take (prior to accounting for this project) as of Dec 19, 2019

TVA Action	Total 20-year	Winter	Volant Season	Non-Volant Season
9 Promote Economic Development	7,509.35	6,759.73	749.62	0

STEP 12) Amount contributed to TVA's Bat Conservation Fund upon activity completion: $ 3,365 OR ○ **N/A**

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

SECTION 3: REQUIRED CONSERVATION MEASURES

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

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

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

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

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

Manual Override

Name: Elizabeth Hamrick

Check if Applies to Project	Activities Subject To Conservation Measure	Conservation Measure Description
		NV1 - Noise will be short-term, transient, and not significantly different from urban interface or natural events (i.e., thunderstorms) that bats are frequently exposed to when present on the landscape.
		SHF2 - Site-specific conditions (e.g., acres burned, transport wind speed, mixing heights) will be considered to ensure smoke is limited and adequately dispersed away from caves so that smoke does not enter cave or cave-like structures.
		SHF4 - If burns need to be conducted during April and May, when there is some potential for bats to present on the landscape and more likely to enter torpor due to colder temperatures, burns will only be conducted if the air temperature is 55° or greater, and preferably 60° or greater.
		SHF7 - Burning will only occur if site specific conditions (e.g. acres burned, transport wind speed, mixing heights) can be modified to ensure that smoke is adequately dispersed away from caves or cave-like structures. This applies to prescribed burns and burn piles of woody vegetation.
		TR1* - Removal of potentially suitable summer roosting habitat during time of potential occupancy has been quantified and minimized programmatically. TVA will track and document alignment of activities that include tree removal (i.e., hazard trees, mechanical vegetation removal) with the programmatic quantitative cumulative estimate of seasonal removal of potential summer roost trees for Indiana bat and northern long-eared bat. Project will therefore communicate completion of tree removal to appropriate TVA staff.
		TR4* - Removal of suitable summer roosting habitat within potential habitat for Indiana bat or northern long-eared bat will be tracked, documented, and included in annual reporting. Project will therefore communicate completion of tree removal to appropriate TVA staff.
		TR9 - If removal of suitable summer roosting habitat occurs when bats are present on the landscape, a funding contribution (based on amount of habitat removed) towards future conservation and recovery efforts for federally listed bats would be carried out. Project can consider seasonal bat presence/absence surveys (mist netting or emergence counts) that allow for positive detections without resulting in increased constraints in cost and project schedule. This will enable TVA to contribute to increased knowledge of bat presence on the landscape while carrying out TVA's broad mission and responsibilities.
		SSPC2 - Operations involving chemical/fuel storage or resupply and vehicle servicing will be handled outside of riparian zones (streamside management zones) in a manner to prevent these items from reaching a watercourse. Earthen berms or other effective means are installed to protect stream channel from direct surface runoff. Servicing will be done with care to avoid leakage, spillage, and subsequent stream, wetland, or ground water contamination. Oil waste, filters, other litter will be collected and disposed of properly. Equipment servicing and chemical/fuel storage will be limited to locations greater than 300-ft from sinkholes, fissures, or areas draining into known sinkholes, fissures, or other karst features.

	SSPC5 (**26a, Solar, Economic Development only**) - Section 26a permits and contracts associated with solar projects, economic development projects or land use projects include standards and conditions that include standard BMPs for sediment and contaminants as well as measures to avoid or minimize impacts to sensitive species or other resources consistent with applicable laws and Executive Orders.
	L1 - Direct temporary lighting away from suitable habitat during the active season.
	L2 - Evaluate the use of outdoor lighting during the active season and seek to minimize light pollution when installing new or replacing existing permanent lights by angling lights downward or via other light minimization measures (e.g., dimming, directed lighting, motion-sensitive lighting).

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

Hide All Unchecked Conservation Measures

- (•) HIDE
- ( ) UNHIDE

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

- (•) HIDE
- ( ) UNHIDE

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

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

[ ] (name) is (or will be made) aware of the requirements below.

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

For Use by Terrestrial Zoologist Only

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

☒ For projects that require use of Take and/or contribution to TVA's Bat Conservation Fund, Terrestrial Zoologist acknowledges that Project Lead/Contact has been informed that project will result in use of Incidental Take 6.73 (•) ac ( ) trees and that use of Take will require $ 3,365 contribution to TVA's Conservation Fund upon completion of activity (amount entered should be $0 if cleared in winter).

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

ATTACHMENT 3

AGENCY CORRESPONDENCE

3-A

Alabama Historical Commission

Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902

March 16, 2020

Ms. Lee Anne Wofford
Deputy State Historic Preservation Officer
Alabama Historical Commission
468 South Perry Street
Montgomery, Alabama 36130-0900

Dear Ms. Wofford:

TENNESSEE VALLEY AUTHORITY (TVA), BREEDING NORTH INDUSTRIAL PARK EXPANSION, LIMESTONE COUNTY, ALABAMA (-86.979640, 34.770075)

TVA's InvestPrep program proposes to provide financial assistance to the City of Athens in preparation for the planned Breeding North industrial park expansion in Limestone County, Alabama (Figure 1). The preparation work includes tree removal, rough grading of a 400,000 square foot building pad and construction of a gravel marketing road. All of the trees within the project footprint will be cleared. TVA determined the area of potential effects (APE) to be the area of proposed ground-disturbance (40.7 acres), where physical effects could occur, as well as areas within a half-mile radius of the project within which the industrial development would be visible, where visual effects on above-ground [or, historic architectural] resources could occur (Figure 2).

Prior to TVA's involvement, the City of Athens initiated the consultation process with your office, which included submitting the results of a Phase I Cultural Resources survey (*A Cultural Resources Survey for Hines Street Property, Athens, Limestone County, Alabama; Meredith 2019)* in preparation for the planned industrial park. During the course of the survey, two archaeological sites (1Li854, 1Li855) were discovered within the project footprint and both were recommended as ineligible for the National Register of Historic Places (NRHP) due to previous ground disturbance (Figure 3). Both site Li854 and Li855 are heavily disturbed 20th century artifact scatters. In a letter dated September 12, 2019, the Alabama Historical Commission concurred with a finding of "no effect" for this project. However, during TVA's review of the survey report, we determined that although the archaeological survey part of the report was adequate, the architectural resource survey part was not. TVA, therefore contracted with Afore Preservation Consulting of Florence, Alabama to perform an architectural resource survey for the planned industrial park. TVA also had the archaeological contractor, Cedars Consulting, LLC edit their report to remove the architectural resource portion from their report.

The architectural resource survey (*Historic Architectural Resource Survey of the Breeding North Industrial Park Expansion Site in Athens, Limestone County, Alabama;*

Randall 2020) identified a total of twelve newly identified architectural resources over 50 years old (Li00001-Li00012) (Figure 4), three of which have since been demolished (Randall 2020). At the time of survey, three buildings associated with the Woodlands Golf Course were still extant. All three were located outside of the footprint of the proposed project area but within the viewshed. These three resources (Li00004, Li00006, and Li00007) were all demolished during the development of this report, between January 21 and February 4, 2020. As they were extant at the time of the survey, they are included in the survey report. Afore Preservation Consulting recommends that all 12 of the surveyed historic architectural resources, including those that were recently demolished, are ineligible for listing in the NRHP. Please find both of the above-listed reports enclosed for your review.

TVA has read the enclosed reports and agrees with the findings and recommendations of the authors. Based on the above findings of the architectural and archaeological surveys, TVA finds that the proposed undertaking would result in no effects to properties included in, or eligible for inclusion in, the NRHP.

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

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

Please contact Kerry Nichols by telephone, (865) 632-2458 or by email, kdnichols0@tva.gov with your comments.

Sincerely,

Clinton E. Jones
Manager
Cultural Compliance

KDN: ABM
Enclosures

REFERENCES CITED

Meredith, Steven M.

2019 *Phase I Cultural Resources Survey for Breeding North Industrial Park Expansion, Athens, Limestone County Alabama.* Prepared for Tennessee Valley Authority, Knoxville, Tennessee. Prepared by Cedars Consulting, LLC., Epes AL.

Randall, Katie

2020 *Historic Architectural Resource Survey of the Breeding North Industrial Park Expansion Site in Athens, Limestone County, Alabama.* Prepared for the Tennessee Valley Authority, Knoxville, Tennessee. Prepared by Afore Preservation Consulting, Florence AL.

INTERNAL COPIES ONLY, NOT TO BE INCLUDED WITH OUTGOING LETTER:

S. Dawn Booker, BR 2C-C
Michael C. Easley, BR 2C-C
Patricia B. Ezzell, WT 7C-K
Travis A. Giles, BR 2C-C
Bess R. Hubbard OCP 6D
Susan R. Jacks, WT 11C-K
Kerry D. Nichols, WT11 C-K
Paul J. Pearman, BR 2C-C
Ashley A. Pilakowski, WT 11 C-K
M. Susan Smelley, BR 2C-C
Rebecca C. Tolene, WT 7B-K
ECM, WT CA-K

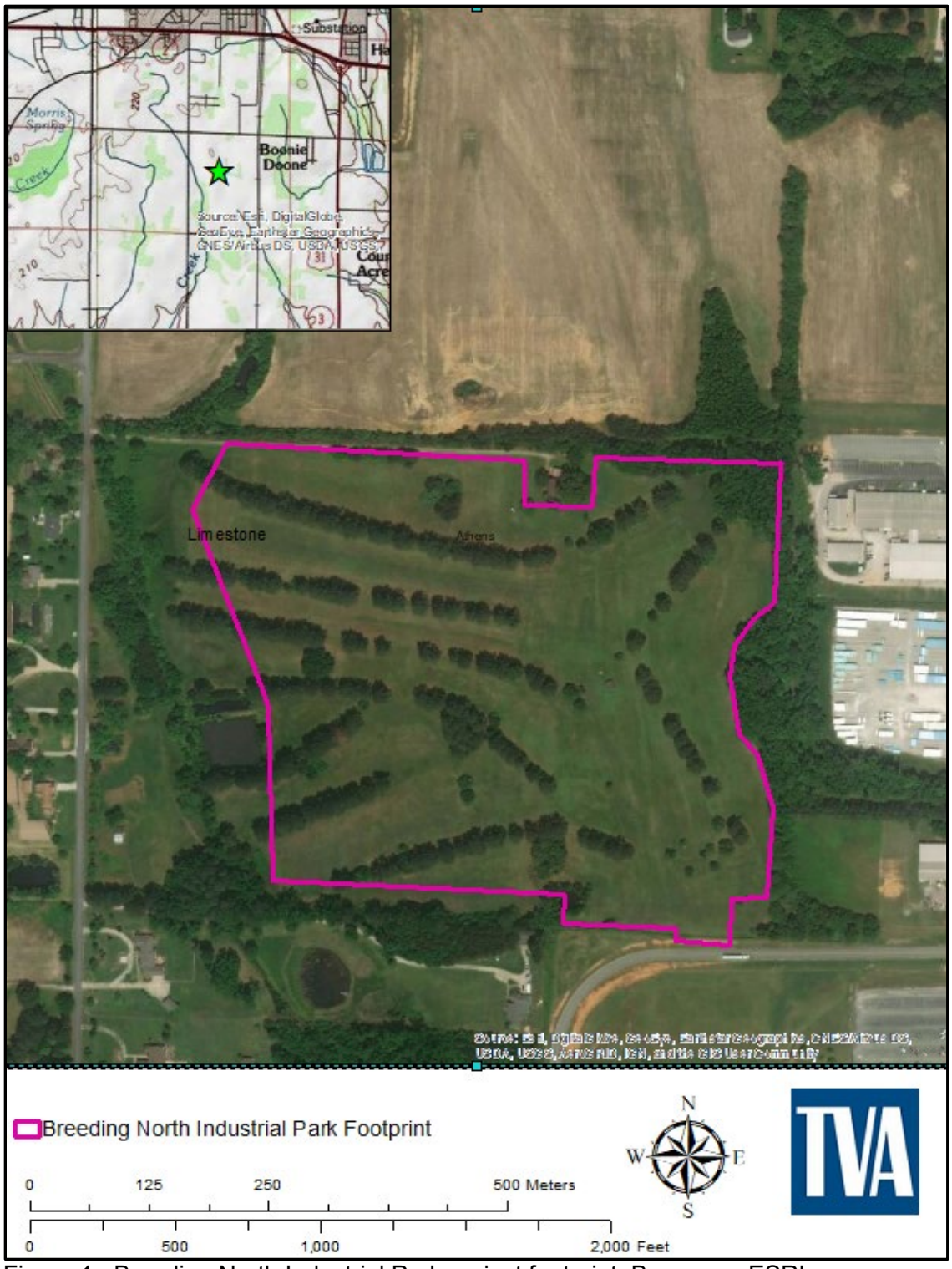

Figure 1. Breeding North Industrial Park project footprint. Basemap: ESRI.

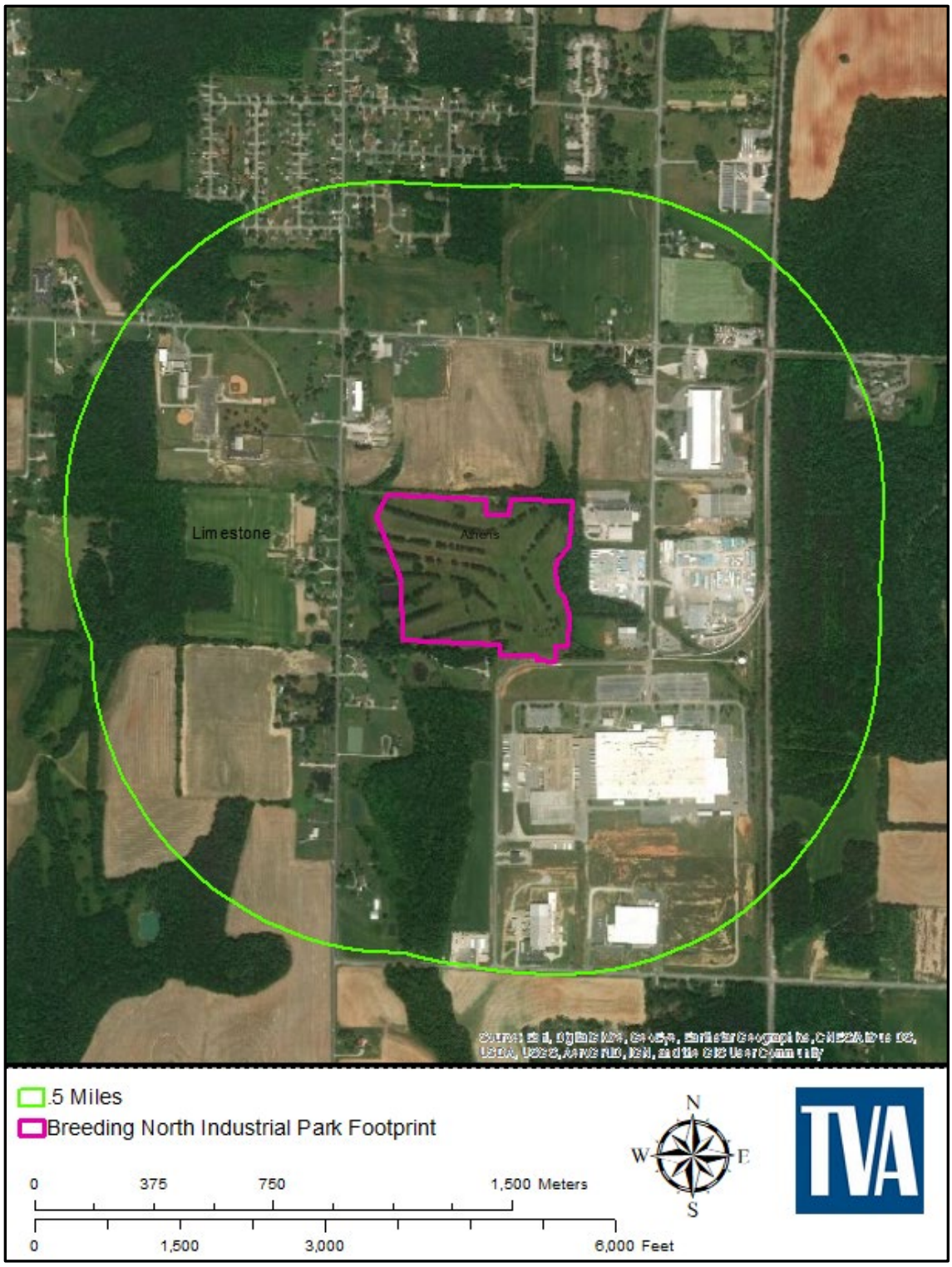

Figure 2. Project footprint and half mile extent. Basemap: ESRI.

ALABAMA HISTORICAL COMMISSION

468 South Perry Street
P.O. Box 300900
Montgomery, Alabama 36130-0900
334-242-3184 / Fax: 334-240-3477

Lisa D. Jones
Executive Director
State Historic Preservation Officer

May 13, 2020

Kerry Nichols
400 West Summit Hill Drive
Knoxville, Tennessee 37902

Re: AHC 2020-0640
CRA-Breeding North Industrial Park Expansion
Limestone County

Dear Mr. Nichols:

Upon review of the revised cultural resource assessment conducted by Cedars Consulting, LLC. for the above referenced project, we have determined that we agree with the author's findings. Archaeological sites 1Li854 and 1Li855 are not eligible for the National Register, and project activities will have no adverse effect on cultural resources eligible for or listed on the National Register of Historic Places. Therefore, we concur with the proposed project activities.

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

We appreciate your commitment to helping us preserve Alabama's historic archaeological and architectural resources. Should you have any questions, please contact William Lowe at 334.230.2670 or William.Lowe@ahc.alabama.gov. Have the AHC tracking number referenced above available and include it with any future correspondence.

Sincerely,

Lee Anne Wofford

Lee Anne Wofford
Deputy State Historic Preservation Officer

LAW/SGH/amh

3-B

Federally Recognized Indian Tribes

Rachel Bell

Subject: INCOMING: TVA-North Industrial Park Expansion-LimestoneCoAL-TRIBAL-16Mar2020

From: Section106 <Section106@mcn-nsn.gov>
Sent: Wednesday, April 08, 2020 4:28 PM
To: Shuler, Marianne M <mmshuler@tva.gov>
Subject: Re: TVA-North Industrial Park Expansion-LimestoneCoAL-TRIBAL-16Mar2020

Good afternoon Ms. Shuler,

Thank you for sending the correspondence regarding the proposed preparation work consisting of tree removal, rough grading and the construction of a gravel-marketing road for the planned Breeding North Industrial Park expansion located in Athens, Limestone County, Alabama. Limestone County is located within the Muscogee (Creek) Nation's historic area of interest and is of importance to us. After review, the Muscogee Nation is unaware of any Muscogee sacred sites, burial grounds, or significant cultural resources located within the immediate project area. The Muscogee Nation concurs that there should be **no effects to any known historic properties** and that work should continue as planned. However, due to the historic presence of Muscogee people in the project areas, inadvertent discoveries of human remains and related NAGPRA items may occur, even in areas of existing or prior development. Should this occur, the Muscogee (Creek) Nation requests that all work cease and our office as well as other appropriate agencies be notified immediately. This stipulation should be implemented into the project plans to ensure that contractors are aware of it. Please feel free to contact me if there are any questions or concerns.

Thank you,

Robin Soweka Jr.
Historic and Cultural Preservation Department | Cultural Resource Specialist
Muscogee (Creek) Nation
P.O. Box 580 | Okmulgee, OK 74447
T 918.732.7726
F 918.758.0649
http://www.muscogeenation-nsn.gov/

From: Shuler, Marianne M <mmshuler@tva.gov>
Sent: Monday, March 16, 2020 10:40:43 AM
To: thpo@estoo.net; 'HPO@chickasaw.net'; Section106; Bryant Celestne (Celestine.Bryant@actribe.org); THPO; 'David.Cook@kialegeetribe.net'; 'dc13.dc4@gmail.com'; dfrazier@astribe.com; 106NAGPRA@astribe.com; THPO; Linda Langley; Brigita Leader; leader.b@sno-nsn.gov; jlowe@alabama-quassarte.org; Alina Shively; tonya@shawnee-tribe.com; Whitney Warrior; Elizabeth Toombs; Stephen Yerka
Cc: pbarton@estoo.net; Corain Lowe; Sheila Bird; cwolfe@ukb-nsn.gov; Russell Townsend
Subject: TVA-North Industrial Park Expansion-LimestoneCoAL-TRIBAL-16Mar2020

Good Morning
By this email I am sending the attached letter regarding TVA's proposal to provide financial assistance to the City of Athens in preparation for the planned Breeding North Industrial Park expansion in Limestone County, Alabama.

Please let me know by April 15, 2020 if you have any questions or comments on the proposed undertaking.

Thanks
Marianne

Marianne Shuler
Senior Specialist, Archaeologist & Tribal Liaison
Cultural Compliance

Tennessee Valley Authority
400 W. Summit Hill Drive
Knoxville, TN 37902

865-632-2464 (w)
mmshuler@tva.gov

Rachel Bell

Subject: RE: INCOMING: TVA-North Industrial Park Expansion-LimestoneCoAL-TRIBAL-16Mar2020

From: Tonya Tipton <tonya@shawnee-tribe.com>
Sent: Wednesday, April 15, 2020 2:02 PM
To: Shuler, Marianne M <mmshuler@tva.gov>
Subject: RE: TVA-North Industrial Park Expansion-LimestoneCoAL-TRIBAL-16Mar2020

This letter is in response to the above referenced project.

The Shawnee Tribe's Tribal Historic Preservation Department concurs that no known historic properties will be negatively impacted by this project.

We have no issues or concerns at this time, but in the event that archaeological materials are encountered during construction, use, or maintenance of this location, please re-notify us at that time as we would like to resume immediate consultation under such a circumstance.

If you have any questions, you may contact me via email at tonya@shawnee-tribe.com

Thank you for giving us the opportunity to comment on this project.

Sincerely,

Tonya Tipton
Shawnee Tribe-THPO

29 S Highway 69A
Miami, OK 74354
Phone:(918)542-2441
Fax: (918)542-2922
tonya@shawnee-tribe.com

From: Shuler, Marianne M <mmshuler@tva.gov>
Sent: Monday, March 16, 2020 10:41 AM
To: thpo@estoo.net; 'HPO@chickasaw.net' <HPO@chickasaw.net>; Section106 <Section106@mcn-nsn.gov>; Bryant Celestne (Celestine.Bryant@actribe.org) <Celestine.Bryant@actribe.org>; THPO <THPO@tttown.org>; 'David.Cook@kialegeetribe.net' <David.Cook@kialegeetribe.net>; 'dc13.dc4@gmail.com' <dc13.dc4@gmail.com>; dfrazier@astribe.com; 106NAGPRA@astribe.com; THPO <THPO@pci-nsn.gov>; Linda Langley <LLangley@coushatta.org>; Brigita Leader <leaderb1961@gmail.com>; leader.b@sno-nsn.gov; jlowe@alabama-quassarte.org; Alina Shively <ashively@jenachoctaw.org>; Tonya Tipton <tonya@shawnee-tribe.com>; Whitney Warrior <wwarrior@ukb-nsn.gov>; Elizabeth Toombs <elizabeth-toombs@cherokee.org>; Stephen Yerka <syerka@nc-

cherokee.com>
Cc: pbarton@estoo.net; Corain Lowe <CLowe@mcn-nsn.gov>; Sheila Bird <sheila.bird@shawnee-tribe.com>; cwolfe@ukb-nsn.gov; Russell Townsend <RussellT@nc-cherokee.com>
Subject: TVA-North Industrial Park Expansion-LimestoneCoAL-TRIBAL-16Mar2020

Good Morning
By this email I am sending the attached letter regarding TVA's proposal to provide financial assistance to the City of Athens in preparation for the planned Breeding North Industrial Park expansion in Limestone County, Alabama.

Please let me know by April 15, 2020 if you have any questions or comments on the proposed undertaking.
Thanks
Marianne

Marianne Shuler
Senior Specialist, Archaeologist & Tribal Liaison
Cultural Compliance

Tennessee Valley Authority
400 W. Summit Hill Drive
Knoxville, TN 37902

865-632-2464 (w)
mmshuler@tva.gov