

**ECONOMIC DEVELOPMENT GRANT PROPOSAL FOR EAST
TENNESSEE PROGRESS CENTER, LOT 12
FINAL DRAFT ENVIRONMENTAL ASSESSMENT
Hamblen and Jefferson Counties, TN (Morristown)**

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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 InvestPrep funds to the City of Morristown (the City) to assist with the development of Lot 12 in the East Tennessee Progress Center (ETPC). Lot 12 would be improved through a combination of TVA and non-TVA funds. The area of TVA's Proposed Action, Lot 12, (herein referred to as the Project Area) is an 84.6-acre area that is located north of Allen Road and west of Progress Parkway (see **Figure 1** below and Attachment 1, Figure 1-A). TVA funds would be used for the clearing of approximately 5.3 acres of trees, rough grading of approximately 51.7 acres and the addition of lot signage at the southeast corner of the site to clearly delineate Lot 12. The Project Area is a portion of the ETPC, a larger ±800.0-acre property proposed for development by the City as an industrial park (see Attachment 1, Figure 2). The ETPC is located north of Interstate 81 (I-81) and west of Witt Road in Morristown, Hamblen and Jefferson Counties, Tennessee.

The primary purpose of the Proposed Action is to enable the City to continue development of Lot 12 of the ETPC. The proposed grant to the City would assist with improvements that will lead to an increased probability of achieving TVA's mission of job creation and capital investment. Target industries for Lot 12 include automotive and/or transportation-related suppliers and food manufacturers. 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 or not to provide the requested funding to the City.

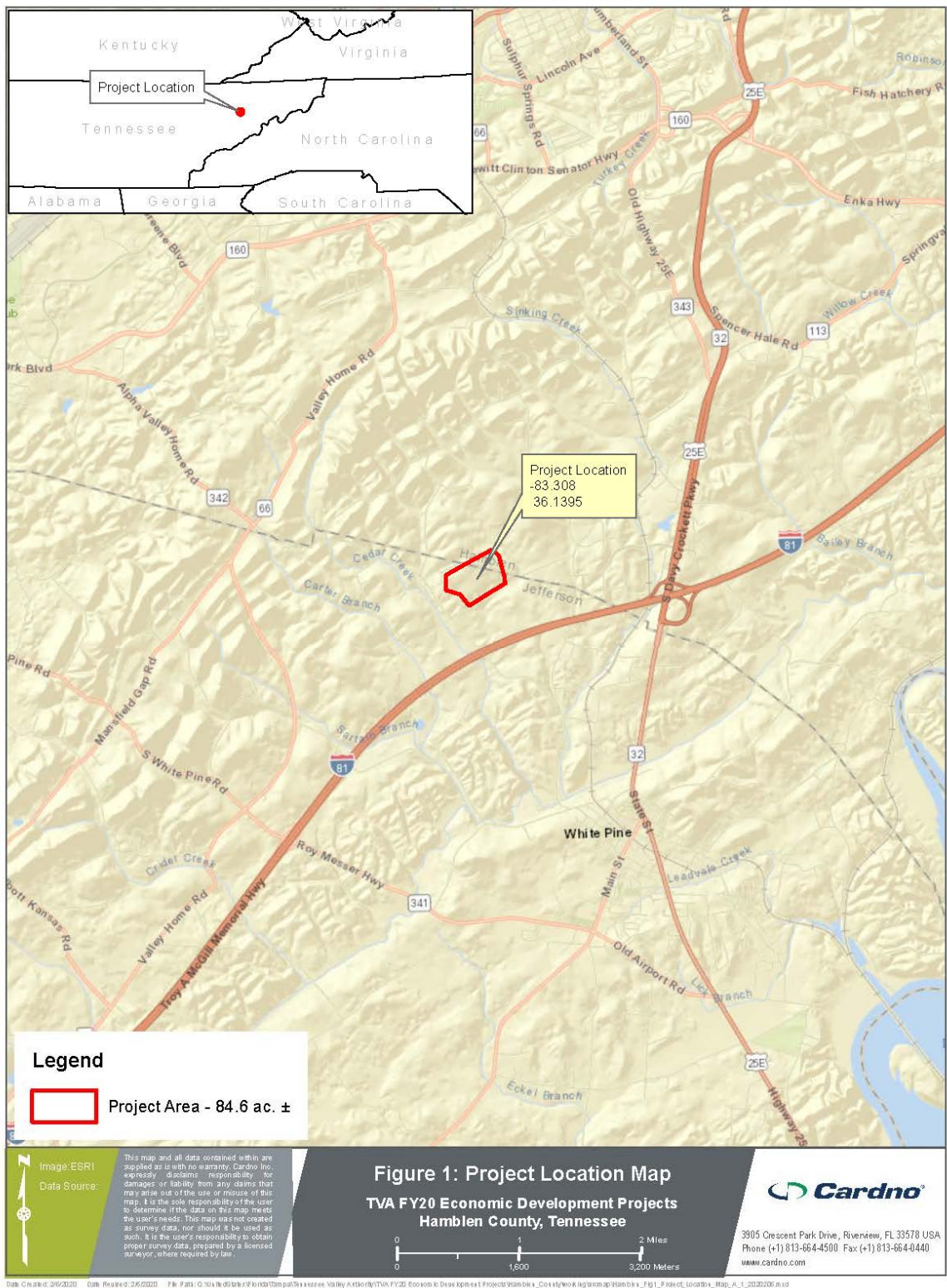


Figure 1. Project Location Map

2.0 OTHER ENVIRONMENTAL REVIEWS AND DOCUMENTATION

A Phase I Environmental Site Assessment (ESA) of the approximately 84.6-acre 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 GEOServices, LLC in May 2019 (GEOS, LLC 2019a). The purpose of the Phase I ESA was to identify the presence of recognized environmental conditions (RECs) or other environmental liabilities in connection with the property. The Phase I ESA did not identify RECs associated with the property.

A Water Resource Inventory of the approximately 84.6-acre Project Area, was performed by GEOS, LLC in April 2019 (GEOS, LLC 2019b). The purpose of the water inventory was to identify water resources, wetlands, and drainage features potentially located within the Project Area.

A Threatened and Endangered Species Habitat Report was prepared by GEOS in May 2019. The report reviewed site-specific information from the U.S. Fish and Wildlife Service (USFWS) and Tennessee's Division of Natural Heritage related to Lot 12 (GEOS, LLC 2019c).

A Phase I Archaeological Survey of the approximately 84.6-acre Project Area was also performed by Cardno, Inc. between January 7 and 9, 2020, to identify potential archaeological resources within the Project Area.

The Phase I ESA, Water Resource Inventory Report, Threatened and Endangered Species Habitat Report, and Phase I Archaeological Survey Report were used in the preparation of this EA.

3.0 ALTERNATIVES

Based on internal scoping, TVA has determined that there are two reasonable alternatives to assess under 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, and installation of signage. 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, and installation of signage on Lot 12 of the ETPC. The Action Alternative would require disturbance of 51.7 acres and would result in clearing of 5.3 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 five 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 cut and chipped on-site. TVA's preferred alternative is the Action Alternative.

It is expected that the City or its contractors would implement appropriate measures, such as best management practices (BMPs), to avoid and minimize 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 adjacent lots already developed or under construction or 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 fully defined. However, TVA assumed disturbance of the entire ETPC 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 west side of Progress Parkway and north side of Allen Road, approximately 0.5 mile north of I-81 in Morristown, Hamblen and Jefferson Counties, Tennessee, and is comprised of an 84.6-acre area. The Project Area is situated within the ETPC, and is dominated by pasture grasses, row crop residue, two hydrologically isolated ponds, and small patches of forested areas. No permanent structures are present within the Project Area. Access to the Project Area is provided from Allen Road along the southern boundary of the Project Area.

The Project Area is a former agricultural field that was previously used for row crops, but it is no longer used for agricultural purposes. The current land use within the Project Area is open land consisting primarily of pasture grasses. Two forested areas consisting of primarily deciduous trees also occur within the Project Area (Attachment 1, Figure 1-A). The Project Area is bordered by similar habitat consisting of a mix of past agricultural and commercial/industrial uses on most sides. The Project Area is currently zoned for heavy industrial use.

The ETPC, located along Highway 25 East and I-81, is an ±800-acre publicly owned industrial park. Development of the ETPC began in 1998, when the land was purchased by the City. Lot 12 is one of several sites that are available for development for commercial and industrial uses. The industrial park is adjacent to the eastern Project Area boundary and extends to the northeast, east and southeast of the Project Area. Target industries for Lot 12 include automotive and/or transportation-related suppliers and food manufacturers.

Van Hool, a Belgian manufacturer of buses, coaches, trolleybuses, and trailers, announced in July 2018 plans to construct a new facility on a 156-acre site (formerly Lots 3 and 4) in the ETPC. Lot 3 is across Progress Parkway from Lot 12. A mobile home community is located adjacent to the northwestern Project Area boundary. The trailer park was constructed after 1992. Additional single family residences are located to the west and southwest of the Project Area along the west side of Hardy Road.

The Project Area generally consists of a north/south running ridge that has a severe slope to the east (Attachment 1, Figure 1-C). Three un-named drainage features, classified as wet weather conveyances and two isolated ponds, were identified onsite. Stormwater drains from the site to the southwest and west toward Cedar Creek (site topography is depicted on Attachment 1, Figure 1-C). Cedar Creek, the nearest named stream, is located approximately 1,000 feet away from the western boundary of the Project Area. Drainage also occurs to the south and southeast to an un-named tributary, which is approximately 120 feet from the southern boundary of the Project Area.

4.2 Impacts Evaluated

Based on 2015 Hamblen and Jefferson Counties, Tennessee, Federal Emergency Management Agency (FEMA) 100 Year Floodplain Map (Attachment 1, Figure 1-D), the Proposed Action would not involve activities within the 100-year floodplain. Additionally, no unmapped perennial streams are located within the Project Area. Therefore, the InvestPrep grant would be consistent with Executive Order (EO) 11988 (Floodplain Management).

Onsite wetland determinations were conducted for the Project Area according to U.S. Army Corps of Engineers (the Corps) standards (Environmental Laboratory 1987); the Corps wetland

standards require documentation of hydrophytic vegetation (Reed 1997), hydric soil, and wetland hydrology. Broader definitions of wetlands, such as the one used by the USFWS (Cowardin et al. 1979), and the TVA Environmental Review Procedures definition, were also considered in this review. A field survey conducted in May 2019 determined there are no jurisdictional wetlands present in the Project Area. There will be no impacts to wetlands as the result of either the No Action or Action Alternative for this project as there are no wetlands present within the proposed Project Area.

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

Natural areas include ecologically significant sites; federal, state, or local park lands; national or state forests; wilderness areas; scenic areas; wildlife management areas; recreational areas; greenways; trails; United States National Park Service (USNPS) Nationwide Rivers Inventory (NRI) segments; and Wild and Scenic Rivers (WSRs). 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 (USFS), State of Tennessee) to protect and maintain certain ecological and/or recreational features. A review of data from the TVA Natural Heritage Database, USNPS NRI database (USNPS 2020), and WSR database (WSR 2020) indicated there are no natural or managed areas within three miles of the Project Area. Therefore, the Proposed Action is not expected to result in impacts to these resources.

There are no developed parks or outdoor recreation areas in the vicinity of the Project Area. Some limited dispersed outdoor recreational activity such as walking for pleasure or nature observation may take place in the area around the site. Because there are no developed parks or recreation areas in the vicinity of the Project Area, no impacts on parks or recreation areas would occur as a result of the Proposed Action. Implementation could cause some minor shifts in any dispersed outdoor recreation activities that occur near the Project Area but impacts would be minor and insignificant.

No offsite waste disposal activities are associated with the Action Alternative. During the Phase I ESA no evidence of RECs were identified onsite, however, *de minimis* conditions including an abandoned septic tank and/or heating oil tank and possible buried debris were identified. Based on the results of the Phase I ESA investigation, no further action was recommended. Therefore, the Proposed Action is not expected 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 Proposed Action, subsequent to TVA's selection of the Action Alternative, would not significantly affect floodplains, wetlands, land use and prime farmland, natural and managed areas, and public recreation opportunities. The Proposed Action would not result in significant impacts from the creation of solid and hazardous wastes, nor would it create significant impacts on safety. 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, soil erosion and surface water, aquatic ecology, terrestrial zoology, botany, archaeology, and historic structures and sites. 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 (NO₂), carbon monoxide (CO), ozone, sulfur dioxide (SO₂), lead, particulate matter (PM) with an aerodynamic diameter equal to or less than 10 microns (PM₁₀), and PM with an aerodynamic diameter equal to or less than 2.5 microns (PM_{2.5}). The NAAQS reflect the relationship between pollutant concentrations and health and welfare effects. Primary standards 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 Hamblen and Jefferson Counties, Tennessee meets the ambient air quality standards and is designated in attainment with respect to criteria pollutants (USEPA 2020a).

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 (CO₂), methane, and nitrous oxide.

Air quality impacts associated with activities under the Action Alternative include emissions from fossil fuel-fired equipment, and fugitive dust from ground disturbances. Fossil fuel-fired equipment are a source of combustion emissions, including nitrogen oxides (NO_x), CO, Volatile Organic Compounds (VOCs), SO₂, PM₁₀, PM_{2.5}, GHGs, and small amounts of HAPs. Gasoline and diesel engines used as a result of the Action Alternative 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 PM₁₀ and PM_{2.5}, which could result from ground disturbances such as land clearing, grading, excavation, and travel on unpaved roads. The amount of dust generated is a function of the activity, silt and moisture content of the soil, wind speed, frequency of precipitation, vehicle traffic, vehicle types, and roadway

characteristics. The City and its contractors would be expected to comply with the Tennessee Division of Air Pollution Control (APC) Rule Chapter 1200-03-09 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.

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 expected to result in any violation of applicable ambient air quality standards or impact regional air quality.

With regard to climate change, trees, like other green plants, are carbon sinks that use photosynthesis to convert CO₂ into sugar, cellulose, and other carbon-containing carbohydrates that they use for food and growth. The process by which carbon sinks remove CO₂ from the atmosphere is known as carbon sequestration. Although forests do release some CO₂ from natural processes such as decay and respiration, a healthy forest typically stores carbon at a greater rate than it releases carbon. The clearing of 5.3 acres of land containing trees for the Action Alternative would result in a minor loss of carbon sequestration capacity in the area because 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, and ground disturbances 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 within the Valley and Ridge Province (United States Geological Survey [USGS] 2003). The Valley and Ridge Province extends southwest to northeast and is characterized by a sequence of folded and faulted, Paleozoic sedimentary rocks that form a series of alternating valleys and ridges that extend from Alabama and Georgia to New York (USGS 1995). In the eastern part of Tennessee, the Valley and Ridge Province is underlain by rocks that are primarily Cambrian and Ordovician in age, with minor Silurian, Devonian, and Mississippian rocks also present (USGS 1995). Soluble carbonate rocks and some easily eroded shales underlie the valleys in the province, while more erosion-resistant siltstone, sandstone, and some cherty dolomite underlie ridges (USGS 1995). Water quality in the aquifers of the Valley and Ridge Province is characterized as hard, with dissolved solids concentrations of 170 milligrams per liter or less. Due to the complex network of fractures, bedding planes, and solution openings in the carbonate rocks, water recharges rapidly and, water quality in these aquifers is susceptible to contamination by human activities (USGS 1995). Recharge occurs primarily along the flanks of the ridges and groundwater flow is generally toward the center of the valleys.

Implementation of the Action Alternative would result in ground disturbance during construction activities. Tree clearing and installation of lot signage would result in minor ground disturbance at shallow depths. Existing topography ranges from 1,340 feet mean sea-level (MSL) at the northwest corner of the Project Area to 1,258 feet MSL at the southeast corner. Site grading

would result in greater ground disturbance at moderate depths resulting in proposed final grade elevations of 1,336 feet MSL at the northwest corner of the Project Area to 1,283 feet at the southeast corner. To achieve these elevations, it is expected that earthwork cuts of up to 20 feet and earthwork fill of up to 25 feet will be required. However, ground disturbance would be temporary and would not be at depths that would intersect public groundwater supplies (typically 50 to 250 feet beneath the land surface [USGS 2016]) or result in significant impacts to groundwater resources. 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. In addition, near-surface soil compaction caused by heavy construction vehicles could reduce the ability of soil to absorb water. These minor impacts would be temporary and would not significantly affect groundwater resources. Furthermore, it is expected that the City or its contractors would conduct operations involving chemical or fuel storage or resupply and equipment and vehicle servicing with care to avoid leakage, spillage, and subsequent ground water contamination.

Under the No Action Alternative, if the City were able to secure the funding for the proposed TVA-funded actions described in this EA, 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 tree clearing and grading would not occur and there would be no impacts to groundwater resources.

4.2.3 Soil Erosion and 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 within the Project Area. In addition, a field survey was conducted in April 2019 to inventory water resources and delineate surface water and wetland resources present within the Project Area (GEOS, LLC 2019b). 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. A water resource inventory was also conducted by a Tennessee Qualified Hydrologic Professional (TN-QHP). The field survey documented two isolated ponds and three temporary wet-weather conveyances within the Project Area. No wetlands were documented within the Project Area.

The Project Area is located within the Nolichucky River Watershed (8-digit Hydrologic Unit Code [HUC] 06010108) and within the Long Creek Subwatershed (12-digit HUC 060101080904). Long Creek is located approximately 1.7 miles east of the Project Area and is included on the Final 2018 List of Impaired Waters in Tennessee, required by Section 303(d) of the Clean Water Act (TDEC 2020). This waterbody is listed as impaired for *Escherichia coli* from pasture grazing. Although not the nearest named receiving waterbody, Long Creek is joined by an un-named

tributary to Cedar Creek, the nearest receiving waterbody for the western portion of the Project Area.

The three un-named conveyances identified within the Project Area comprise approximately 1,735 linear feet of conveyances and are depicted on the NWI and Water Resources Inventory Map (Attachment 1, Figure 1-E). Because they are ephemeral in nature, these features do not appear on the USGS Quadrangle Map (Attachment 1, Figure 1-C). In addition, during the field survey, these features were observed to be dry and are considered as wet-weather, temporary conveyances that eventually flow into Cedar 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, these un-named tributaries are classified as ephemeral and considered to be a non-relatively permanent water (non-RPW) by the USACE, because they have a direct connection to a relatively permanent water. The two ponds identified within the Project Area comprised approximately 0.20 acre within the Project Area. One of the two ponds is depicted on the USGS topographic map. These ponds appear to be isolated with no surface water connections to WOTUS in the vicinity of the Project Area, and would therefore not be considered WOTUS. As currently designed, the pond located in the northeastern portion of the Project Area (0.12-acre) would be removed and the pond located along the southern boundary of the Project Area (0.08-acre) would be expanded. The USACE is the regulatory authority that must make the final determination as to the jurisdictional status of the surface water resources within 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. During construction activities, applicable BMPs such as installation of sediment and erosion controls (silt fences, sediment traps, etc.) would be employed and activities would be accomplished in compliance with applicable storm water permitting requirements. Therefore, indirect impacts to surface water resources resulting from sediment laden runoff during construction activities would be minimized or avoided. Further, because no wetlands were identified within the Project Area, there would be no impacts to wetlands and implementation of the Action Alternative would be consistent with EO 11990 (Protection of Wetlands).

Implementation of the Action Alternative would result in grading of the site and the removal of the three ephemeral un-named wet weather conveyance features (approximately 1,735 linear feet) from the Project Area. Because the conveyances are ephemeral within the Project Area and are dry during portions of the year, they are not likely to provide preferential habitat for aquatic species, and the removal of these features are not expected to adversely affect water quality.

If impacts to WOTUS or Waters of the State of Tennessee (WOST) cannot be avoided, consultation and permitting with the USACE Nashville District and TDEC would be required prior to initiation of construction. Impacts to WOTUS would require a CWA Section 404 permit and a CWA Section 401 Water Quality Certification. Impacts to WOST would require an Aquatic Resource Alteration Permit (ARAP) from TDEC, which would also serve as the Section 401 Water Quality Certification. During construction activities, a TDEC General NPDES Construction Storm Water Permit (TNR100000) would be required if more than one acre would be disturbed. A Storm Water Pollution Prevention Plan would also be required, which would detail applicable BMPs to

be employed to minimize impacts, and activities. If proposed, these impacts would be expected to be conducted and mitigated in accordance with Section 404 and Section 401 permits and would be expected to have direct, but minor, temporary impacts to local surface water quality or groundwater supplies or quality.

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 soil erosion and 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 soil erosion and surface water impacts.

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 Tennessee provides protection for species considered threatened, endangered, or deemed in need of management within the state in addition to those federally listed under the ESA.

A review by GEOServices (GEOS, 2019c) of the Tennessee Division of Natural Heritage and the USFWS Information for Planning and Consultation (IPaC) databases (accessed May 2019) indicated that six federally listed endangered, one federally listed threatened, and seven state-listed aquatic species are currently known to be present within the 12-digit HUC watershed encompassing the Project Area (**Table 4-1**).

Table 4-1: Records of Federal and State-Listed Aquatic Species within Long Creek (060101080904) 12-digit HUC Watershed (TVA Request ID 35598)¹

Common Name	Scientific Name	Global Rank ²	Federal Status ³	State Status (rank) ^{4,5}
FISH				
Chucky madtom	<i>Noturus crypticus</i>	G1	LE	E(S1)
Snail darter	<i>Percina tanasi</i>	G2G3	LT	T(S2S3)
MUSSELS				
Cumberland bean	<i>Villosa trabalis</i>	G1	LE	E(S1)
Finerayed pigtoe	<i>Fusconaia cuneolus</i>	G1	LE	E(S1)
Fluted kidneyshell	<i>Ptychobranthus subtentum</i>	G2	LE	E(S2)
Oyster mussel	<i>Epioblasma capsaeformis</i>	G1	LE	E(S1)
Spectaclecase	<i>Cumberlandia monodonta</i>	G3	LE	E(S2S3)
¹ Source: Tennessee Division of Natural Heritage VA Natural Heritage Database and USFWS Information for Planning and Consultation (IPaC) resource list (https://ecos.fws.gov/ipac/), accessed May 2019 ² Global Rank: G1 = Extremely Rare and Critically Imperiled; G2 = Very rare and Imperiled; G3 = Rare and Uncommon ³ Federal Status Codes: LE = Listed Endangered; LT = Listed Threatened ⁴ State Status Codes: E = Endangered; T = Threatened ⁵ State Ranks: S1 = Extremely Rare and Critically Imperiled; S2 = Very Rare and Imperiled; S3 = Rare and Uncommon				

Historically, the chucky madtom (*Noturus crypticus*) is known from two streams, both within the French Broad River system of eastern Tennessee, consisting of a single specimen from Dunn Creek (Sevier County) in 1940 and fewer than 20 specimens from three stream kilometers of Little Chucky Creek, from the mouth of Jackson Branch downstream to Bible Bridge road crossing, Greene County. Surveys targeting this species in neighboring streams with potentially suitable habitat have not yielded additional specimens (Burr and Eisenhour, 2005). Threats to the species include loss of habitat, small population size, inability to offset mortality with natural reproduction, and their resulting vulnerability to natural or human-induced catastrophic events, such as droughts and pollution. Currently, the chucky madtom is known within a single tributary of the Nolichucky River in East Tennessee. (USFWS, 2020a).

The habitat of the snail darter (*Percina tanasi*) is known to be in specific locations of the Holston and French Broad Rivers. The snail darter was discovered August 1973 in the lower Little Tennessee River, Loudon County, Tennessee, by Dr. David A. Etnier. After further collections and study, Dr. Etnier published his findings in January 1976, indicating the snail darter to be a new species of percoid fish. Before the construction of various impoundments, this fish was believed to be abundant in the main channel of the Tennessee River and possibly ranged from the Holston, French Broad, Lower Clinch, and Hiwassee Rivers, and downstream in the Tennessee drainage to northern Alabama (NRCS, 2020).

The Cumberland bean (*Villosa trabalis*) is found in sand, gravel, and cobble substrates in waters with moderate to swift currents and depths less than one meter. Mussels are most often observed in clean, fast-flowing water in substrate which contain relatively firm rubble, gravel, and sand swept-free from siltation; usually buried in shallow riffle and shoal areas. Typically, *V. trabalis* is

found buried in shallow riffle and shoal areas, often located under large rocks that must be removed by hand to inspect the habitat underneath. (USFWS, 2020b).

The finereyed pigtoe (*Fusconaia cuneolus*) is a medium-sized (reaching up to 90 mm in length) freshwater mussel with a yellow to brown shell and fine green rays. The fine-rayed pigtoe is found in moderate to high gradient streams with firm cobble or gravel substrates. It appears to prefer riffle areas; however, given the rarity of the species, minimal information is known about specific habitat needs. This species is apparently intolerant of lentic conditions and has been extirpated from many river sections of its historic range that were impounded. No critical habitat has been designated for the finereyed pigtoe (EPA, 2020). Habitat for this species is specific portions of the French Broad, Holston, and Clinch Rivers.

The fluted kidneyshell (*Ptychobranhus subtentum*) inhabits small to medium rivers in areas with swift current or riffles, although a few populations were recorded from larger rivers in shoal areas. It is often found embedded in sand, gravel, and cobble substrates. It requires flowing, well-oxygenated waters. The fluted kidneyshell is found only in portions of the Cumberland and Tennessee River systems of Alabama, Kentucky, Mississippi, Tennessee, and Virginia (USFWS, 2020c).

The oyster mussel (*Epioblasma capsaeformis*) inhabits small to medium-sized rivers, and sometimes large rivers, in areas with coarse sand to boulder substrate (rarely in mud) and moderate to swift currents (NatureServe, 2020).

The spectaclecase (*Cumberlandia momodonta*) is a large, freshwater mussel that can grow up to nine inches in length. Spectaclecase mussels are found in large rivers where they live in areas sheltered from the main force of the river current. This species often clusters in firm mud and in sheltered areas, such as beneath rock slabs, between boulders and even under tree roots. The spectaclecase is known or believed to occur in Alabama, Arkansas, Illinois, Iowa, Kansas, Kentucky, Minnesota, Missouri, Tennessee, Virginia, West Virginia, and Wisconsin (USFWS, 2020d).

These species have not been observed in the Long Creek subwatershed or in Cedar Creek which is adjacent to the Project Area. Due to the specific location of these species and the fact that no construction will occur in Cedar Creek, no direct or indirect Project impacts are anticipated.

The April and May 2019 field surveys (GEOS, LLC 2019a and GEOS, LLC 2019b) documented no wetlands within the Project Area. Three un-named wet weather conveyances were documented in the southeast and southwest corners of the Project Area and two isolated ponds were documented within the Project Area. No listed aquatic species or communities were identified within the Project Area. The streams were observed to be dry at the time of the survey and could be classified as ephemeral and therefore do not provide suitable habitat for threatened and endangered aquatic species identified in **Table 4-1**. The small ponds appear to be isolated with no surface water connection to other surface waters. These ponds do 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. 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 storm water 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

Habitat assessments for terrestrial animal species were conducted in the field on November 26th, 2019 for the proposed development of the East Tennessee Progress Center, Lot 12 in Hamblen and Jefferson Counties, Tennessee. The project proposes to clear approximately 5.3 acres of forested land and to rough grade approximately 51.7 acres. Landscape features within and surrounding the Project Area consist of fragmented forested habitat, ponds, early successional habitat (pasture and agricultural), and residential or otherwise disturbed areas. Each of the varying community types offers suitable habitat for species common to the region, both seasonal individuals and permanent residents.

Deciduous forests in the project footprint provide habitat for an array of terrestrial animal species. Birds typical of this habitat include eastern whip-poor-will, chuck-wills-widow, scarlet tanager, summer tanager, tufted titmouse, white-throated sparrow, yellow-billed cuckoo, white-eyed vireo, red-eyed vireo, yellow-throated vireo, yellow-throated warbler, Kentucky warbler, red-bellied woodpecker, pileated woodpecker, wood thrush, wild turkey, red-tailed hawk, and red-shouldered hawk (National Geographic 2002, Sibley 2003). This area also provides foraging and roosting habitat for several species of bat, particularly in areas where the forest understory is partially open. Bat species likely found within this habitat include big brown bat, eastern red bat, evening bat, tricolored bat, northern long-eared bat, and Indiana bat. Eastern chipmunk, eastern woodrat, gray fox, and white-tailed deer are other mammals likely to occur within this habitat (Kays and Wilson 2002, Whitaker 1996). Eastern box turtle, five-lined skink, broad-headed skink, smooth earth snake, timber rattlesnake, and gray ratsnake are common reptiles of eastern deciduous forests (Conant and Collins 1998, Dorcas and Gibbons 2005). In forests with aquatic features, amphibians likely found in the area include eastern newt, dusky salamander, northern slimy salamander, and Cope's gray treefrog (Bailey et al. 2006, Petranka 1998).

Pastures, agricultural fields, and other early successional habitats comprise approximately over half of the project footprint. Common inhabitants of this type of habitat include killdeer, mourning dove, brown-headed cowbird, brown thrasher, American goldfinch, indigo bunting, eastern bluebird, blue-winged warbler, and eastern meadowlark (National Geographic 2002, Sibley 2003). During field survey, on November 26th, 2019, a number of bird species were observed in this habitat including killdeer and northern harrier. Bobcat, white-tailed deer, groundhog, coyote, eastern cottontail, and red fox are mammals typical of fields and cultivated land (Kays and Wilson 2002, Whitaker 1996). Amphibians such as eastern narrow-mouthed toad and reptiles including black racer, ring-necked snake, and midland brown snake are also known to occur in this habitat type (Bailey et al. 2006, Conant and Collins 1998, Dorcas and Gibbons 2005). Pollinators such as red-spotted purple butterfly, great spangled fritillary, and eastern tiger swallowtail may be observed in this region (Brock and Kaufman 2003).

Developed areas and areas otherwise previously disturbed by human activity are home to a large number of common species. American robin, American crow, eastern phoebe, common nighthawk, Carolina wren, northern cardinal, northern mockingbird, black vulture, and turkey vulture are birds commonly found along transmission right-of-ways, road edges, and residential neighborhoods (National Geographic 2002, Sibley 2003). Mammals found in this community type include eastern gray squirrel, striped skunk, common raccoon, and Virginia opossum (Kays and Wilson 2002, Whitaker 1996). Road-side ditches provide potential habitat for amphibians including American toad and spring peeper (Bailey et al. 2006). Reptiles potentially present include red-bellied snake and eastern fence lizard (Conant and Collins 1998, Dorcas and Gibbons 2005).

Review of the TVA Regional Natural Heritage database performed in November 2019 resulted in six cave records within three miles of the Project Area, the closest of which is approximately 1.47 miles from the proposed actions. No additional caves were identified during field review of the APE on November 26th, 2019. No other unique or important terrestrial habitats were identified within the Project Area. No osprey or wading bird colony nest records are known within three miles of the project footprint. No new wading bird colony or osprey records were recorded during field review.

Review of the U.S. Fish and Wildlife Service's (USFWS's) Information for Planning and Consultation (IPaC) website resulted in the identification of one migratory bird of conservation concern that has the potential to occur in the APE (yellow-bellied sapsucker). Suitable habitat for this species exists in the deciduous forest found in the action area.

Under the Action Alternative, 5.3 acres of trees would be cleared. The removal of wildlife habitat would result in the displacement of any 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 habitat 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, shelter sources 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.

The one migratory bird of conservation concern identified by the USFWS may be impacted by the proposed action. Yellow-bellied sapsucker have the potential to use the forested habitat in the APE for foraging. Direct effects could occur to yellow-bellied sapsuckers since they may be found in the Project Area in winter when tree clearing would occur. It is expected that individuals disturbed by tree clearing actions would flush to adjacent habitats. This forested habitat would be permanently removed and unavailable in future years to migrating yellow-bellied sapsuckers. Due to the avoidance of the breeding season, the relative abundance of similarly suitable habitat nearby, and the size of the action area it is not expected that populations of yellow-bellied sapsuckers would be impacted. 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 November 2019 indicated that there are no records of state or federally listed species reported within three miles of the Project Area. Records of three federally listed species (gray bat, Indiana bat, and northern long-eared bat) occur in Jefferson County, and records of one federally protected species (bald eagle) occur in both Hamblen and Jefferson Counties.

Table 4-2: Federally listed terrestrial animal species within Hamblen and Jefferson Counties, Tennessee and species of conservation concern recorded within three miles of InvestPrep ETPC¹

Common Name	Scientific Name	Federal Status ²	State Rank ³
BIRDS			
Bald eagle ^{4,5}	<i>Haliaeetus leucocephalus</i>	DM	D(S3)
MAMMALS			
Gray bat ⁵	<i>Myotis grisescens</i>	LE	E(S2)
Indiana bat ⁵	<i>Myotis sodalis</i>	LE	E(S1)
Northern long-eared bat ⁵	<i>Myotis septentrionalis</i>	LT	T(S1S2)
¹ Source: TVA Regional Natural Heritage Database, extracted 11/6/2019; and USFWS Information for Planning and Consultation (IPaC) resource list (https://ecos.fws.gov/ipac/), accessed 11/6/2019. ² Status Codes: D = Deemed in need of management; DM = Delisted, but is still being monitored; E = Endangered; LE = Listed Endangered; LT = Listed Threatened; T = Threatened; SP = State Protected. ³ State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Rare or uncommon. ⁴ Federally listed or protected species recorded in Hamblen County, Tennessee, but not within three miles of the Project APE. ⁵ Federally listed or protected species recorded in Jefferson County, Tennessee, but not within three miles of the Project APE.			

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 its massive nests. These are usually found near larger waterways where the eagles forage (USFWS 2007).

Bald eagle records are known from both Hamblen and Jefferson Counties (two and six, respectively), the nearest record is from Hamblen County occurring approximately 8.80 miles from the proposed project. No bald eagles or nests were observed during field survey on November 26th, 2019. Foraging habitat for bald eagle is not present within the proposed 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). The nearest gray bat record is from a mist net capture approximately 12.5 miles from the proposed actions. Six caves have been documented within three miles, the closest of which is approximately 1.47 miles from the proposed project. No hibernacula or roosting habitat for gray bat was observed in the APE during field reviews. The proposed action area includes two small ponds which are foraging habitat for gray bat.

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). There are no known records of Indiana bat within 10 miles of the proposed project or from Hamblen County. One Indiana bat record is known from Jefferson County, approximately 15.9 miles from the APE. Six caves have been documented within three miles, the nearest of which is approximately 1.47 miles from the proposed project. No winter roosting habitat for Indiana bat was observed in the APE during field reviews. Foraging habitat for Indiana bat exists in the APE over forest fragments and two ponds. Suitable summer roosting habitat for Indiana bat exists throughout forested areas of the project footprint.

The NLEB predominantly overwinters in large hibernacula such as caves, abandoned mines, and cave-like structures. During the fall and spring they utilize entrances of caves and the surrounding forested areas for swarming and staging. In the summer, NLEBs 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 NLEB is similar to that of Indiana bat, however NLEBs are thought to be more opportunistic in roost site selection. This species also roosts in abandoned buildings and under bridges. NLEBs 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). Mist net surveys documented NLEB in Jefferson County in 2011. The closest of these records is approximately 12.0 miles away. Six caves have been documented within three miles, the nearest approximately 1.47 miles from the proposed project. No winter roosting habitat for northern long-eared bat was observed in the APE during field reviews. Foraging habitat for northern long-eared bat exists in the APE over forest fragments and two ponds. Suitable summer roosting habitat for northern long-eared bat exists throughout forested areas of the project footprint.

Assessment of the Project Area for presence of summer roosting habitat for Indiana bats and northern long-eared bat followed federal guidance (USFWS 2019). Field surveys resulted in the identification of 3.0 acres of suitable summer roosting habitat for Indiana bat and northern long-eared bat within the Project Area that would be removed for the proposed actions. Habitat quality was moderate, based on the presence of trees with exfoliating bark, flaky bark, or crevices in close proximity to water (see Habitat Assessment Sheet, Attachment 2).

Four federally listed or protected species were addressed based on the potential for the species to occur in the project footprint. Of these, three federally listed species (gray bat, Indiana bat, and northern long-eared bat) have the potential to utilize the Project Area. No bald eagle nests would be impacted by the proposed actions as none are known within eight miles of the action area. Actions are in compliance with the National Bald Eagle Management Guidelines. Bald eagles would not be significantly impacted by proposed actions.

No caves or other hibernacula for gray bat, Indiana bat or northern long-eared bat exist in the project footprint or would be impacted by the proposed actions. Approximately 3.0 acres of suitable summer roosting habitat for Indiana bat and northern long-eared bat does occur in the APE and would be removed for the proposed actions. This forest also offers foraging habitat for Indiana and northern long-eared bat. Two ponds in the action area offer additional foraging habitat and sources of drinking water for all three bat species. The lower quality pond is proposed for closure while the higher quality pond is proposed for expansion. Tree removal is proposed between October 15 and March 31. This would avoid direct impacts to tree roosting federally listed bats (Indiana bat and northern long-eared bat).

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 expected 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

Approximately 95 percent of the vegetation within the Project Area has been heavily disturbed by previous agricultural land use. Within these areas, vegetation has been fundamentally altered such that the site is dominated by non-native species and plants indicative of early successional habitat. These areas provide minimal conservation value and do not support natural plant communities. Approximately five percent of the Project Area currently supports deciduous forest. These small, fragmented forest blocks do support a greater percentage of native species than the adjacent fields, but 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 within the Project Area. The herbaceous fields on the parcel support primarily non-native species and have minimal to no 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 Environmental Assessment 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 Environmental Assessment, 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 five-mile vicinity of the Project Area. No federally listed plants have been previously reported from Hamblen or Jefferson Counties, Tennessee where the Action Alternative would be located. 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 within the Project Area. As such, direct or indirect impacts to state and federally listed threatened and endangered plant species from the Action Alternative are not anticipated.

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 Environmental Assessment from other non-TVA sources, there would be no direct or indirect impacts to state and federally listed threatened and endangered plant species. If the City were not able to secure the funding for the actions described in this Environmental Assessment, 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

A Phase I archaeological survey was conducted between January 7 and 9, 2020 associated with planned economic development project, Lot 12, near Morristown, in Hamblen and Jefferson Counties, Tennessee. The study area for archaeological resources consisted of the 84.6 acre Project Area.

A literature review was completed in December 2019, which identified four previously identified cultural resources within a 1.0-mile buffer of the Project Area. These include two prehistoric lithic scatters of unknown age, one historic farmstead, and one multicomponent site with a prehistoric component of unknown age, and a scatter of historic artifacts dating from the early to mid-20th century. None of these sites are located within the Project Area, and none would be affected by the construction activities associated with the Action Alternative.

Due to poor surface visibility at the time of survey, the entire Project Area was surveyed by systematic shovel testing at a 30 m interval along north-south running transects spaced 30 meters apart. Of the potential 382 shovel test locations, a total of 323 were excavated as part of this Phase I survey; all were negative. Fifty-nine shovel tests could not be excavated due to extreme slope or other disturbances including the construction of a retention pond, and farm roads across the Project Area. No new archaeological sites were identified during the survey and no further work is recommended. TVA has therefore determined that the Action Alternative would result in no effect to NRHP-eligible resources.

TVA consulted with the Tennessee SHPO in a letter dated March 2, 2020 regarding TVA's findings and recommendations. In a letter dated March 12, 2020 the Tennessee SHPO concurred with TVA's findings that the Action Alternative will result in no effect to NRHP resources.

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. TVA received one response from a federally recognized Indian tribe indicating no objection to the Action Alternative.

Under the No Action Alternative, if the City were able to secure the funding for the actions described in this Environmental Assessment from other non-TVA sources, construction of project components would occur, but as described above for the Action Alternative, no adverse impacts to archaeological resources would result. If the City were not able to secure the funding for the

actions described in this Environmental Assessment, construction of project components would not occur and existing site conditions would likely be maintained.

4.2.8 Historic Structures and Sites

TVA Cultural Compliance staff conducted a historic architectural resource survey for the Project Area. TVA staff completed the historic architectural survey on December 16, 2019 and identified a total of six historic architectural resources, three of which were previously surveyed (JE-203, JE-204, and JE-205) and three of which were previously unrecorded (HS-001–HS-003) (**Table 4-3**). JE-203 has been determined eligible for listing in the NRHP as noted by THC records; JE-204 and JE-205 have been determined not eligible. Based on the results of the following evaluations, it is the opinion of TVA that HS-001–HS-003 and JE-205 are not eligible for listing in the NRHP due to their lack of architectural and historical significance and/or lack of integrity. In addition, TVA finds that JE-204 is undetermined as it was not visible from the Project Area. However, if future investigations were to determine JE-204 eligible for listing in the NRHP, the Action Alternative would not alter any of its character defining features. Thus, the Action Alternative would have no adverse effect to JE-204. Lastly, TVA finds the residence associated with JE-203 is eligible for listing in the NRHP under Criterion A for its association with the settlement patterns of Jefferson County and Criterion C as a representative example of the Folk Victorian style. The proposed project could potentially be visible from the NRHP-eligible residence; however, the surrounding setting does not contribute to the dwelling's significance. As such, the proposed project would not adversely affect the aspects of integrity for which the resource is eligible.

Table 4-3: Lot 12, Surveyed historic architectural resources

Temporary Inventory No.	Description	Construction Date	NRHP Recommendation	Effects Determination
JE-203	Farmstead	Pre-1893; circa 1900-1910	Residence Eligible	No Adverse Effect
JE-204	C.F. Hardy Watermill	Circa 1900	Undetermined	No Adverse Effect
JE-205	Residence and outbuildings	Circa 1920	Not Eligible	N/A
HS-001	Transmission Line Segment with tower structures (L5940-004)	1957; 1971	Not Eligible	N/A
HS-002	Pole barn	1939-1961	Not Eligible	N/A
HS-003	Pair of steel stringer/girder bridges (45I00810116 and 45I00810015)	1967	Not Eligible	N/A

Based on background research and the results of the field review, TVA finds that the Action Alternative would result in no adverse effect to historic properties. As stated in section 4.2.7, and pursuant to 36 CFR 800.5(c), TVA has notified the SHPO of its finding of no adverse effect to historic properties for the Action Alternative, providing the documentation specified in § 800.11(e), and providing the SHPO an opportunity to review this finding.

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

4.2.9 Visual

The Project Area is situated within the ±800-acre ETPC and consists of open land with two areas of forested habitat consisting primarily of deciduous trees. The Project Area is bordered by agricultural lands and mixed deciduous forest fragments on most sides. The visual landscape surrounding the Project Area consists of gently sloping residential land, open fields, intermittent forested land, and various developments and industry. The ETPC is adjacent to the eastern Project Area boundary and extends to the northeast, east and southeast of the Project Area. Van Hool is currently constructing a facility within the vacant property located immediately to the east of the Project Area. A trailer park is located adjacent to the northern Project Area boundary. Additional sporadic residences are located to the northwest, west, southwest, and immediately south of the Project Area along the east and west sides of Hardy Road and along the southern Project Area boundary.

Sporadic trees along the northern boundary of the Project Area offer fairly unobstructed views of the Project Area from the existing trailer park, however, the forested areas within the Project Area create a visual screen between this trailer park and much of the Project Area to the south. A band of trees along Cedar Creek and along the easternmost boundary creates a visual screen between the Project Area and residences located to the west of the Project Area. The majority of the southern boundary of the Project Area lacks visual screening from Allen Road. No residences occur immediately adjacent to the Project Area to the east or south.

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 as well as a minor permanent impact due to tree removal, rough grading, and installation of lot signage. Due to the existing tree line barriers between the residences along Hardy Road and along the southern Project Area boundary, it is expected that temporary construction activity and permanent changes to the landscape within the Project Area would have limited visibility to the residences or to motorists along Hardy Road. Views would primarily be impacted for the trailer park residents adjacent to the northern Project Area boundary as removal of the forested areas would remove the visual screen between the residence and the Project Area. 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. Changes in visual quality resulting from implementation of the Action Alternative would therefore be minor.

Under the No Action Alternative, if the City were able to secure the funding for the actions described in this Environmental Assessment 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 Environmental Assessment, construction of project components would

not occur and existing site conditions would likely be maintained resulting in no visual quality impacts.

4.2.10 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 within the ETPC, traffic along Allen Road and Progress Parkway, 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 directly adjacent to the north, and within ½-mile to the northwest, and 1.5 miles to the southwest of the Project Area and industrial businesses located to the northeast, east, and southeast of the Project Area within the ETPC. 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 Environmental Assessment 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 Environmental Assessment, construction of project components would not occur and existing site conditions would likely be maintained resulting in no noise-related impacts.

4.2.11 Socioeconomics and Environmental Justice

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

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

4-4). Details of the Action Alternative were then used to evaluate likely effects on existing socioeconomic resources. The demographics and income of the host counties 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

	Tennessee	Hamblen County	Jefferson County	Morristown
Population ¹				
April 2010 Population	6,346,105	62,544	51,668	29,137
Most Recent Population Estimate (July 2018)	6,770,010	64,569	54,012	29,926
Population Change: April 2010 to July 2018	6.7%	3.3%	4.5%	3.1%
People per Square Mile	153.9	388.0	187.6	1,044.3
Demographics ¹				
White Alone, not Hispanic or Latino	73.7%	81.1%	95.4%	68.3%
Black or African American Alone	17.1%	4.4%	2.1%	8.0%
American Indian and Alaska Native Alone	0.5%	0.9%	0.5%	0.3%
Asian Alone	1.9%	1.1%	0.6%	1.1%
Native Hawaiian and Other Pacific Islander Alone	0.1%	0.3%	0.1%	0.5%
Two or More Races	2.0%	2.0%	1.3%	3.5%
Hispanic or Latino (of any race)	5.6%	12.0%	3.9%	20.6%
Income ¹				
Median Household Income	\$50,972	\$42,589	\$47,264	\$32,386
Per Capita Income	\$28,511	\$22,252	\$24,855	\$18,569
Percent with Income Below the Poverty Level	15.3%	17.1%	13.8%	27.8%
Seasonally Adjusted Employment: October 2019 ²				
Labor Force	3,361,966	28,383	24,762	11,870
Employed	3,247,858	27,350	23,953	11,414
Unemployed	114,108	1,033	809	456
Unemployment Rate (%)	3.4%	3.6%	3.3%	3.8%
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 Tennessee resident, the residents of Hamblen and Jefferson Counties and the City of Morristown live at greater densities and have recently experienced less rapid population growth.
- Relative to the average Tennessee resident, the residents of Hamblen and Jefferson Counties are less likely to self-identify as a minority race or ethnicity, but residents of Morristown are more likely to self-identify as a minority race or ethnicity.
- Median household income and per capita income are greater in Tennessee than in Hamblen and Jefferson Counties and the City of Morristown. This is consistent with the observation that the proportion of Hamblen County and Morristown residents living below the poverty level exceeds these proportions in Tennessee as a whole. However, there is a lesser proportion of residents living below the poverty level in Jefferson County than that of Tennessee.
- The unemployment rate in Tennessee is less than the unemployment rate in Hamblen County and Morristown, but greater than that of Jefferson County.

During project review, a subdivision in close proximity to the subject area was identified (less than 0.5 miles to the west). Using EPA's EJScreen Tool, we identified the following demographic characteristics for this area. Relative to the state, this neighborhood has a lower minority population, is less linguistically isolated, and has a similar level of income and high school education.

As described in Section 1.0 (Proposed Action and Need), the Action Alternative would include tree removal, rough grading, and installation of signage on Lot 12. This effort would require a small workforce, likely drawn from existing contractors working on similar projects in the region, for approximately 5 months. Implementation of the Action Alternative is not anticipated to materially impact the local economy or workforce. In addition, no negative socioeconomic impacts are expected from the project, therefore no disproportionate negative impacts are anticipated to minority or economically disadvantaged populations as a result of the Action Alternative. Positive Indirect impacts may be noted through the increase in jobs as a result of the Action Alternative.

Under the No Action Alternative, if the City were able to secure the funding for the actions described in this Environmental Assessment from other non-TVA sources, similar activities would occur which would result in socioeconomic impacts similar to those described in the preceding paragraph. 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. This conclusion is based on two observations. First, the Action Alternative would have a positive effect on the local economy. Second, as described throughout this document, environmental effects associated with the Action Alternative would be minor and would generally be constrained to Lot 12 of the ETPC and adjacent properties.

4.2.12 Transportation

The proposed signage would be posted in the southeast corner of the Project Area at the intersection of Allen Road and Progress Parkway. The primary site entrance will be on the southern boundary of the Project Area, along Allen Road, approximately 1,000 feet east of the

intersection of Allen Road and Hardy Road. Allen Road is a two-lane road defined as a local route by Tennessee Department of Transportation (TDOT) mapping (Tennessee State Government, 2020). This section of the road is orientated east-west providing access to existing commercial businesses from I-81 and Witt Road. Based on preliminary review of Google streetview images (recorded February 2019), the road is in good condition. There is no curb or gutter associated with the road. The speed limit for this road is 30 miles per hour. There will be 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 Allen Road. It is expected that normal care would be taken by workers entering and leaving Allen Road with regards to traffic safety.

Based on a review of Morristown traffic data (1985 to 2018), a traffic count station is on Hardy Road, roughly 0.1 mile north of its intersection with Allen Road (Station Number 000118). The 2018 annual average daily traffic count (AADT) for this station is 584 (TDOT 2020a). There is another Morristown traffic count station on Witt Road (Station Number 000043), located roughly 0.4 mile east of its intersection with Allen Road. The 2018 AADT for this station is 143 (TDOT 2020a).

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 Allen and Hardy Roads. According to the TDOT Traffic Design Manual, Chapter 2, "Traffic Impact Studies" (TDOT, 2020b), the developer of a proposed development, as part of the application process, shall submit a Traffic Impact Study Screening Evaluation Form to TDOT for review. When the form is submitted for review, TDOT will determine the appropriate next step in the traffic impact study process – either granting a waiver or determining the type of traffic impact study required for evaluation. The proposed Action Alternative will not result in a direct increase in traffic.

Under the No Action Alternative, if the City were able to secure the funding for the actions described in this Environmental Assessment 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 Environmental Assessment, construction of project components would not occur and existing site conditions would likely be maintained resulting in no traffic-related impacts.

4.2.13 Safety

Hazards associated with construction activities at the Project Area include:

- Working near underground utilities and existing above ground electrical connections which are within the site;
- Use of heavy machinery, equipment and moving vehicles;
- General construction site risks related to signage installation, road construction, tree clearing, and site grading; and

It is expected that hazards associated with site preparation and construction activities would be suitably addressed using standard safety precautions. Prior to ground disturbance at the Project

Area, it is expected that the location of underground utilities would be identified and necessary precautions would be taken to avoid damage or disturbance of underground utilities. Similarly, it is expected that above ground electrical connections would be avoided where they are near areas of tree clearing or access roads.

Other safety precautions expected to be implemented include the safe use of heavy machinery associated with clearing activities and safe felling of large trees.

Natural hazards would also be acknowledged, including safe practices around the existing wetlands and surface water features would be implemented in accordance with standard construction permits.

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

5.0 CUMULATIVE AND REASONABLY FORESEEABLE IMPACTS

The potential impacts resulting from the Action Alternative within the Project Area are discussed in Section 4.0. This section discusses the potential impacts from future development of the ETPC, Lot 12 and nearby properties available for development in combination with the impacts from the Action Alternative.

The entire ETPC contains approximately 800 acres of land available for development with existing connections for electric power, gas, water, and sewage (ETPC, 2020). The Project Area is located within this larger area as shown in Figure 2. The additional areas proposed for development beyond the 84.6-acre Project Area include similar habitat as the Lot 12 Project Area. As mentioned, Van Hool is currently developing existing parcels (Lots 3 and 4), adjacent to Lot 12, within the 800-acre site. In addition, Mc Neilus Steel, Inc., plans on opening a 100,000-square foot metal making plant on Lot 8 of the ETPC, approximately 2,800 feet southeast of Lot 12. While it is unlikely that future industrial development would disturb (grading, vegetation removal, etc.) the entire 800 acres of available land, TVA assumed future disturbance of the entire 800-acre industrial park as a conservative approach for the purposes of assessing cumulative impacts.

A review of available information from the TDOT, Morristown Chamber of Commerce, ETPC, the Jefferson County Chamber of Commerce, and the City of Morristown, was also conducted to identify other developments that could potentially contribute to cumulative impacts in combination with those from the Action Alternative. This review revealed no other additional planned, under construction, or recently completed projects in the immediate vicinity of the Project Area (TDOT 2020, Morristown Chamber of Commerce, 2020, ETPC 2020, Jefferson County Chamber of Commerce 2020, City of Morristown 2020).

Resources that could be cumulatively impacted by the Action Alternative and the ETPC are: air quality and climate change, biological resources, visual, noise, socioeconomic conditions and environmental justice, and transportation. Based on preliminary review and analysis provided in this EA, TVA has determined that the Action Alternative would have no impact on floodplains, wetlands, natural and managed areas, land use and prime farmland, public recreation opportunities, solid and hazardous wastes, Nationwide Rivers Inventory streams, Wild and Scenic Rivers, or Safety as discussed in Section 4. Archaeology and historic structures would also not be impacted by the Action Alternative. Therefore, these resources are not considered in this cumulative impacts assessment.

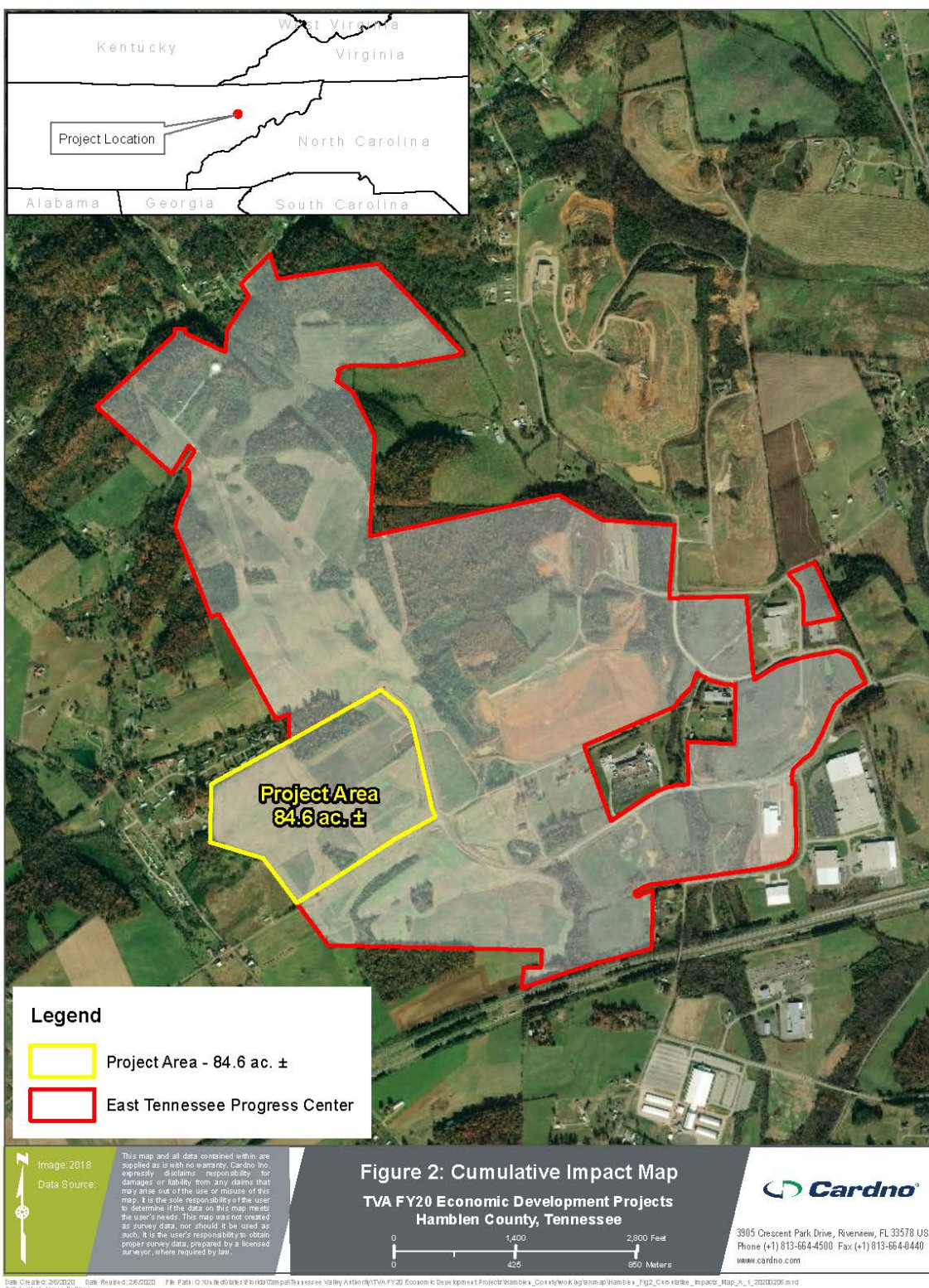


Figure 2. Cumulative Impact Map

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 Lot 12 and ongoing and future development of the 800-acre ETPC, 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 the properties are anticipated to be minor and are not expected 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 in the event that 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. In addition, future and ongoing industrial development would be subject to local permits and ordinances, and would be expected to adhere to BMPs and 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 Lot 12 and ongoing and future development of the ETPC 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 Lot 12 and ongoing and future development of the ETPC 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 expected that these actions would include BMPs (such as sediment and erosion controls) and compliance with applicable storm water 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 Soil Erosion and Surface Water

The Action Alternative would result in temporary and minor soil erosion and surface water impacts as described in Section 4. Site preparation associated with future development of Lot 12 and ongoing and future development of the ETPC 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 expected that these actions would include BMPs (such as sediment and erosion controls) and compliance with applicable storm water permitting requirements. Therefore, cumulative soil erosion and 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 Lot 12 and ongoing and future development of the ETPC would potentially impact aquatic habitats through clearing and grading, which could affect aquatic species that may be present. It is expected that these actions would include BMPs (such as sediment and erosion controls) and be conducted in compliance with applicable storm water 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 Lot 12 and ongoing and future development of the ETPC would potentially remove tree species within mixed deciduous 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 in the form of 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 Lot 12 and ongoing and future development of the ETPC 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 ETPC would potentially impact federally and state-listed bat species, impacts would be expected to be conducted in consultation with the USFWS and the Action Alternative would involve implementation of the identified Conservation Measures. Therefore, 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 the ETPC.

5.6 Botany

Implementation of the Action Alternative would result in the removal of the existing vegetation consisting of early successional vegetation dominated by non-native and native weeds with scattered rows of primarily evergreen trees and few deciduous trees. While this would result in the loss of some vegetation, these areas provide minimal conservation value and the plant communities found there are common and well represented throughout the region.

The future development of Lot 12 and the ETPC would potentially convert vegetated areas containing open land and mixed deciduous and evergreen forest within the existing industrial park to an industrial setting. Similar to the Project Area, the vegetation types that would be affected by development of the ETPC 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 development of Lot 12 and the ETPC 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 Lot 12 and the ETPC 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 within the existing industrial park 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 expected that future development of Lot 12 and the ETPC 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 Lot 12 and the ETPC could generate increased noise from operation of equipment and construction of potential industrial buildings. However, the anticipated noise levels resulting from future operation of equipment and construction of potential industrial buildings would not differ significantly from equipment that is in regular use in the surrounding area from industrial activities. In addition, it is expected that construction activities would be conducted during daylight hours only. Thus, noise quality impacts resulting from future development of Lot 12 and the ETPC 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 development of Lot 12 and the ETPC 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 expected to have a minor, short-term, positive effect on the local economy as described in Section 4. Future development of Lot 12 and ongoing and future development of the ETPC is expected to create additional jobs 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 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 for the Action Alternative and future development of Lot 12 and the ETPC. It is anticipated that construction traffic associated with the Action Alternative and future development 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 development of Lot 12 and the ETPC were to occur during the same time period. If there were no overlap of construction activities, temporary cumulative impacts resulting from construction traffic would not occur.

Future development of Lot 12 and the ETPC 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 TDOT 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 (TNR100000). Coverage would require submittal of a Notice of Intent (NOI) and development of a site-specific SWPPP. Impacts to WOTUS would require a Section 404 permit and a Section 401 Clean Water Act certification. Impacts to WOST would require an Aquatic Resource Alteration Permit (ARAP) from the TDEC, which would also serve as the Section 401 Water Quality Certification. At this time, impacts to WOTUS are not proposed as part of the Action Alternative. 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, the City or its contractors are expected to ensure all clearing and grading activities conducted are in compliance with storm water permitting requirements and utilize applicable BMPs to minimize and control erosion and fugitive dust during these actions. Should onsite burning activities occur, these would be conducted in compliance with local burn permits and the requirements in Tennessee APC Rule Chapter 1200-03-09.

Operations involving chemical or fuel storage or resupply and vehicle servicing are expected 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 expected to be installed to protect nearby stream channels from direct surface runoff. Servicing of equipment and vehicles is expected to be done with care to avoid leakage, spillage, and subsequent surface or ground water contamination. Oil waste, filters, and other litter are expected to be collected and disposed of properly.

Unavoidable impacts to the three un-named wet-weather conveyances and modifications to the two onsite ponds would require consultation and permitting with the USACE Nashville District and TDEC. Impacts may require a CWA Section 404 permit and a CWA Section 401 authorization, which would include mitigation measures and possibly compensatory mitigation (e.g., purchase of mitigation credits or implementation of a permittee responsible mitigation plan).

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

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 <i>M.S., Geography, Minor Ecology</i>	24 years expertise in wetland assessment, wetland monitoring, watershed assessment, wetland mitigation, restoration as well as NEPA and Clean Water Act compliance	Wetlands & Natural Areas
Elizabeth Hamrick <i>M.S., Wildlife and Fisheries Science, University of Tennessee B.A. Biology, B.A. Anthropology, Grinnell College</i>	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 <i>M.S., Botany; B.S., Aquaculture, Fisheries, and Wildlife Biology</i>	18 years in Floristic Surveys; 12 years in Wetland Delineations	Botany
Kerry Nichols <i>Ph.D. Anthropology, University of Missouri-Columbia, M.A. Anthropology, University of Colorado-Denver, B.A. Political Science, University of Northern Colorado</i>	21 years of experience as a field archaeologist and SHPO project reviewer.	Cultural resources, NHPA Section 106 compliance
Craig Phillips <i>M.S., and B.S., Wildlife and Fisheries Science</i>	10 years Sampling and Hydrologic Determinations for Streams and Wet-Weather Conveyances; 9 years in Environmental Reviews	Aquatic Ecology
Ashley A. Pilakowski <i>B.S., Environmental Management</i>	9 years in environmental planning and policy and NEPA compliance.	NEPA Compliance
Carrie Williamson, P.E., CFM <i>B.S. and M.S., Civil Engineering</i>	7 years in floodplains and flood risk	Floodplains
Dana M. Nelson <i>M.S. Education, B.A. Biology</i>	13 years in environmental compliance and policy; 4 years NEPA compliance	Environmental Program Manager
Cardno		
Jason Sean Lancaster, CEP, CE, PWS, TN-QHP <i>MPH, Epidemiology, University of South Florida</i> <i>B.S., Environmental Science and Policy; University of South Florida</i>	20 years in natural resources planning and NEPA compliance, including project management and biological and environmental studies and analysis.	EA Project Manager QA/QC

Table 8-1: Environmental Assessment Project Team

Name/Education	Experience	Project Role
Rachel Bell, PMP <i>B.S., Environmental Science, Auburn University</i>	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, Soil Erosion and Surface Water, Noise and Visual
Amanda Koonjeberry, PMP <i>B.S, Zoology and Botany, University of the West Indies</i>	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.	Proposed Action and Need, Alternatives, Site Description, Air Quality and Climate Change, Groundwater, Soil Erosion and Surface Water, Noise and Visual, Cumulative Impacts
Peter Marsey <i>M.A., Geography, University of Toronto</i> <i>B.A., Geography, University of Delaware</i>	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 <i>MS, Soil and Water Science, University of Florida</i> <i>BS, Environmental Science, University of South Florida</i> <i>BA, English, University of South Florida</i>	18 years of experience managing and implementing science-based studies, planning, permitting, technical report preparation, and construction support for complex, multi-year projects.. Areas of expertise include permitting and regulatory compliance for large-scale energy industry projects (including nuclear, natural gas, wind, and solar) for commercial clients in the U.S. and for federal and state clients throughout the U.S., Caribbean, South America, and Central America.	QA/QC
Tammy Miller <i>MS, Natural Resources, University of Wisconsin-Stevens Point</i> <i>BS, Terrestrial Ecology-Wildlife Management, University of Vermont</i>	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 <i>MA, Anthropology, University of Arkansas</i> <i>BA, Anthropology, Ohio University</i>	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:

- Tennessee Historical Commission
- Alabama-Coushatta Tribe of Texas
- Cherokee Nation
- Coushatta Tribe of Louisiana
- Eastern Band of Cherokee Indians
- Eastern Shawnee Tribe of Oklahoma
- Kialegee Tribal Town
- The Muscogee (Creek) Nation
- Shawnee Tribe
- Thlopthlocco Tribal Town
- United Keetoowah Band of Cherokee Indians in Oklahoma
- Tennessee Department of Environment and Conservation, Division of Natural Areas

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ATTACHMENT 1

PROJECT FIGURES

Figure 1-A

Aerial

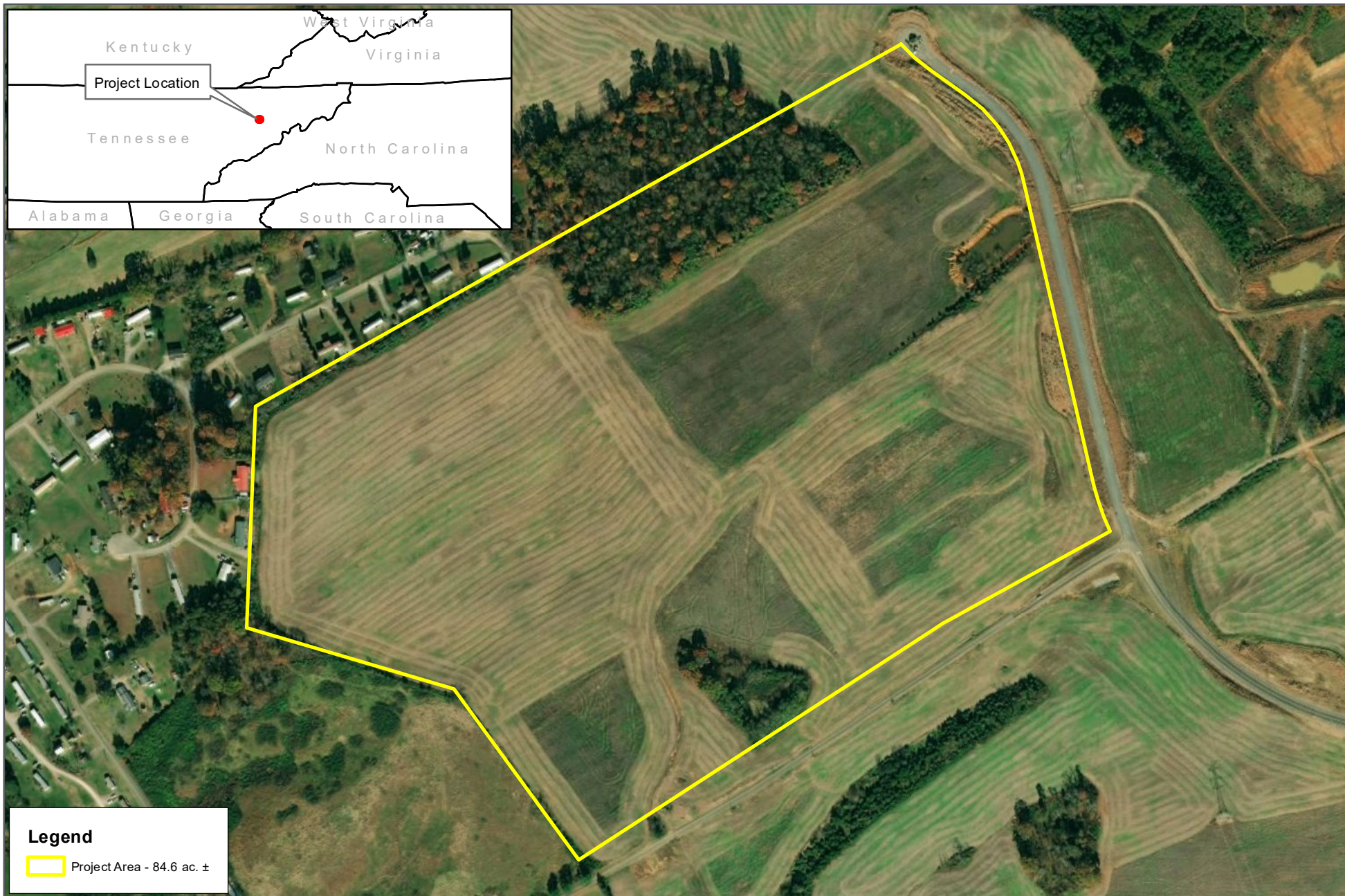


Image: 2018
Data Source:

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Figure 1-B
Disturbance Areas



Legend

- Project Area - 84.6 ac. ±
- Tree Clearing Areas - 5.3 ac. ±



Image: 2018
Data Source:

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Figure 1-B: Tree Clearing Areas Map

TVA FY20 Economic Development Projects
Hamblen County, Tennessee



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Figure 1-C
USGS Quadrangle

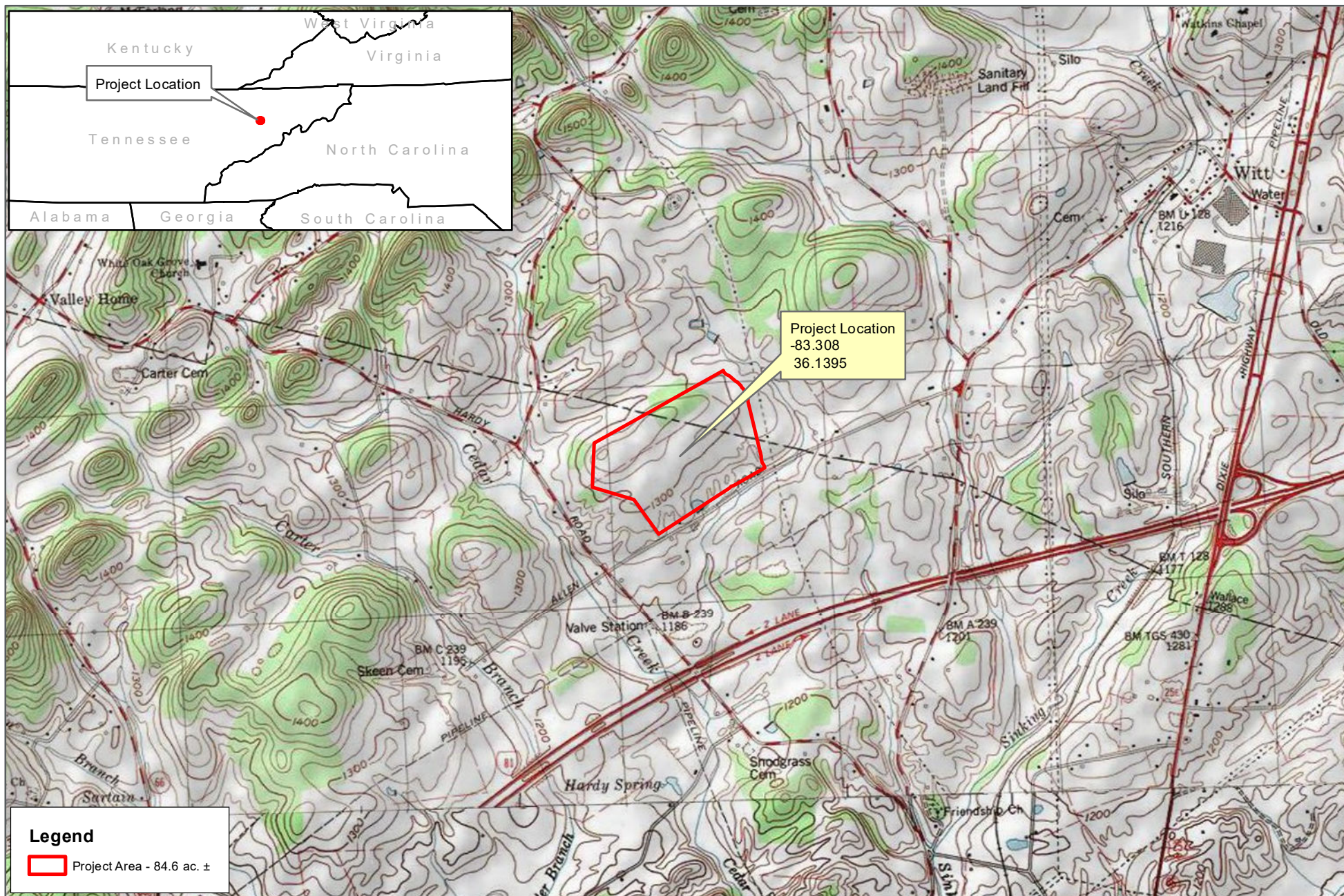


Figure 1-C: USGS Quadrangle Map
TVA FY20 Economic Development Projects
Hamblen County, Tennessee



Image:ESRI
Data Source:

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Figure 1-D

FEMA Floodplain

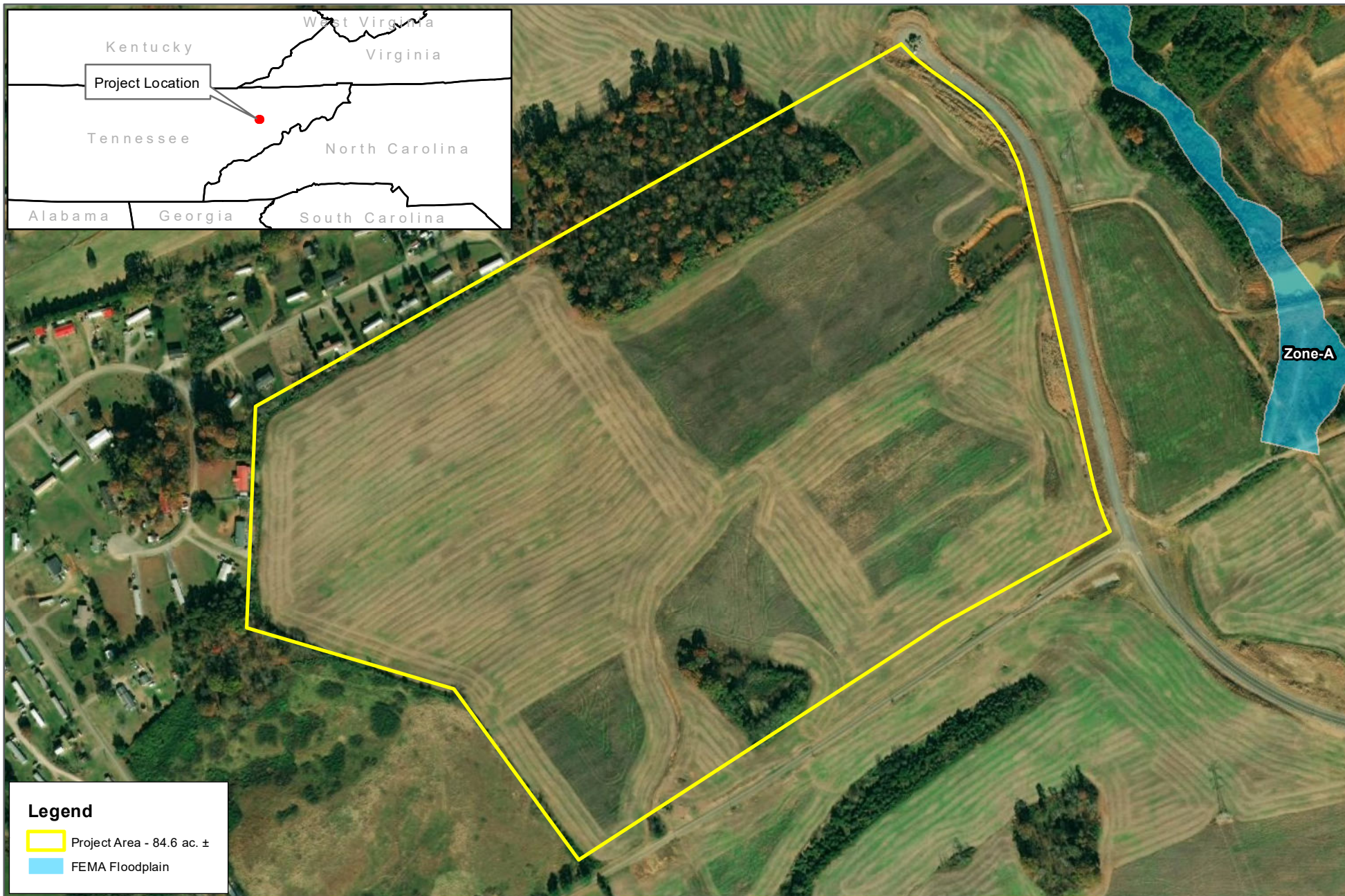


Image: 2018
Data Source:

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Figure 1-D: FEMA Floodplain Map

TVA FY20 Economic Development Projects
Hamblen County, Tennessee

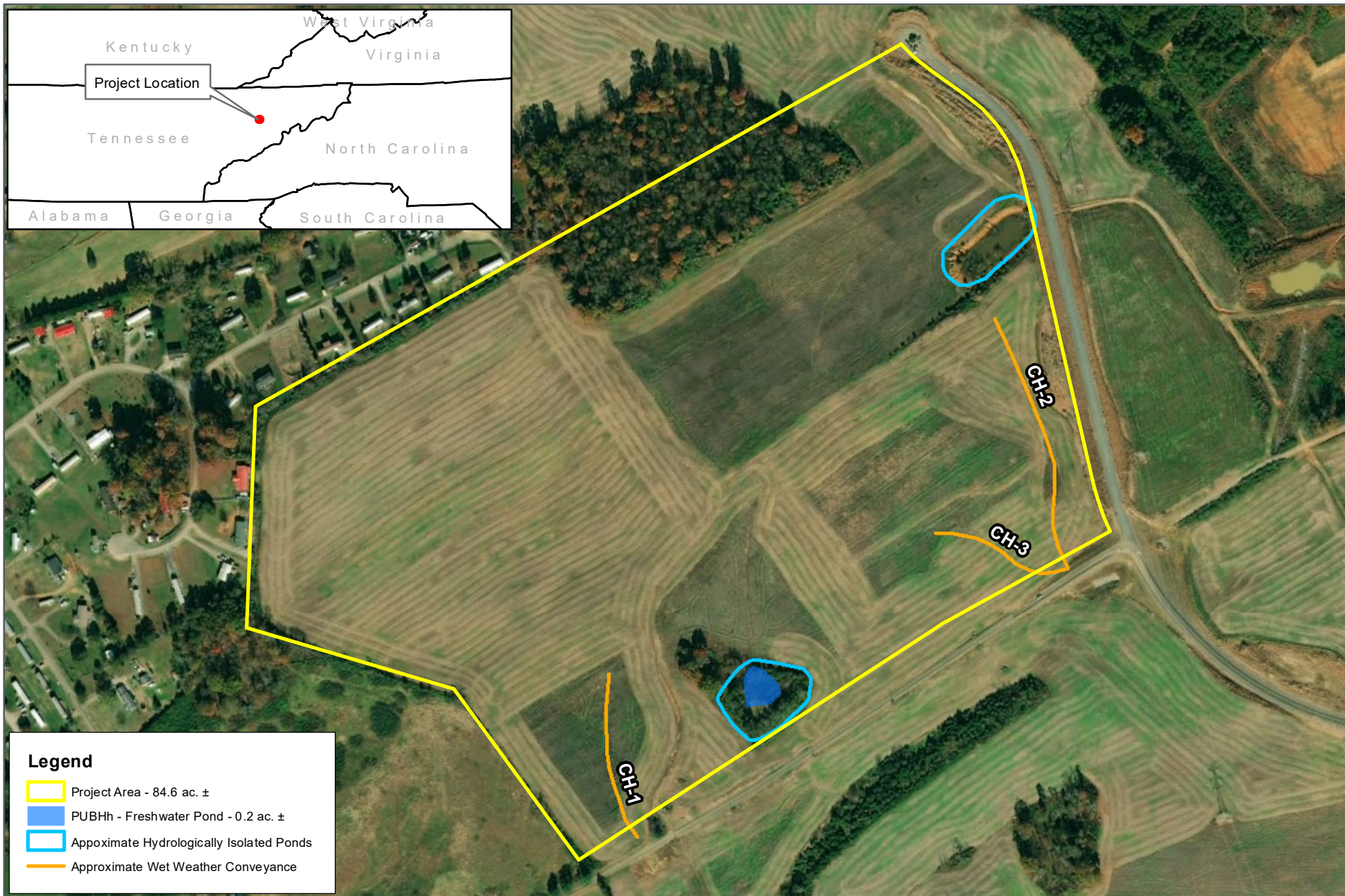
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www.cardno.com

0 400 800 Feet

0 120 240 Meters

Figure 1-E

USFWS NWI and Water Resources Inventory Map



Legend

- Project Area - 84.6 ac. ±
- PUBHh - Freshwater Pond - 0.2 ac. ±
- Approximate Hydrologically Isolated Ponds
- Approximate Wet Weather Conveyance

Figure 1-E: USFWS NWI and Water Inventory Map

TVA FY20 Economic Development Projects
Hamblen County, Tennessee



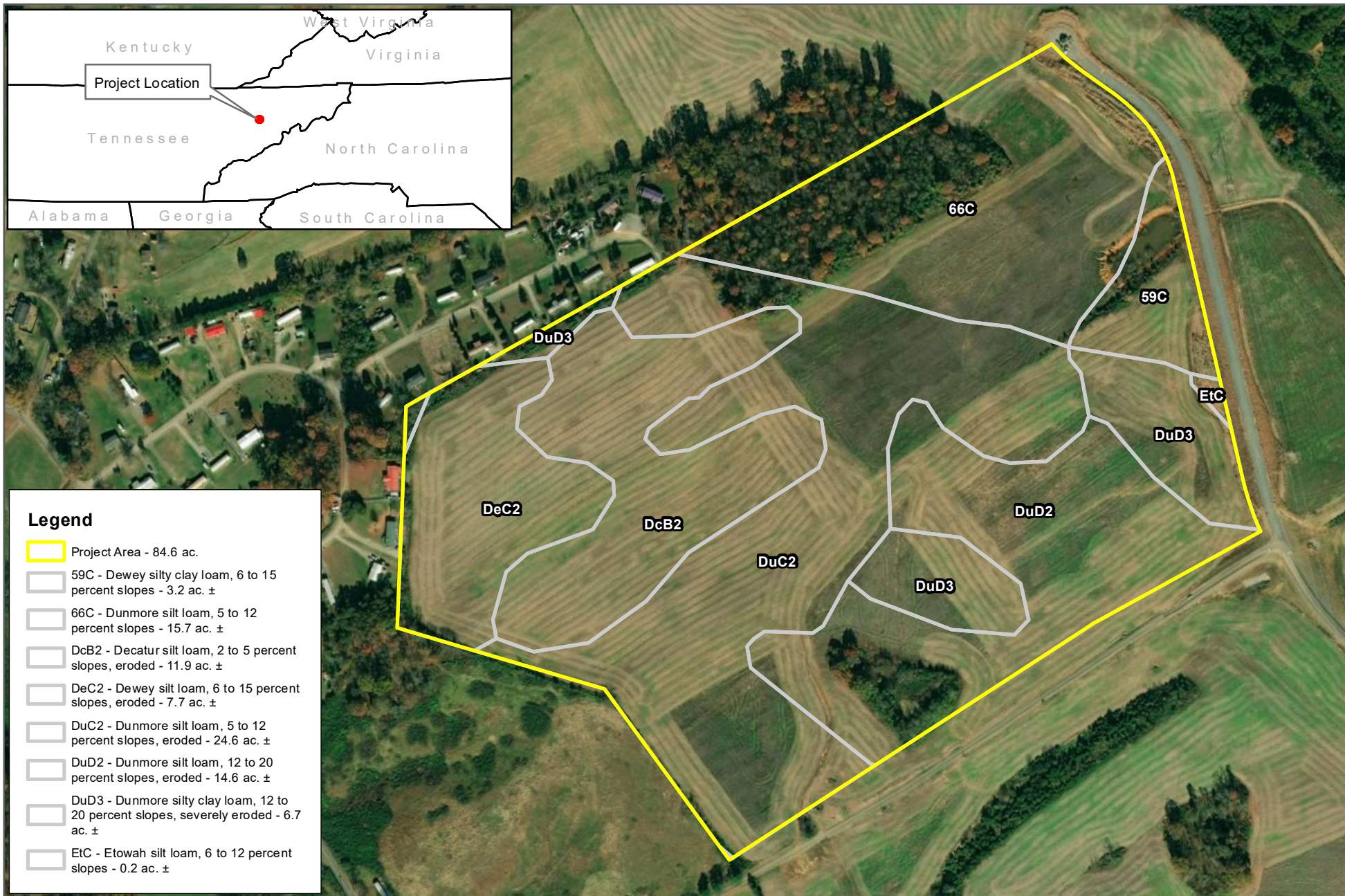
3905 Crescent Park Drive, Riverview, FL 33578 USA
Phone (+1) 813-664-4500 Fax (+1) 813-664-0440
www.cardno.com



Image: 2018
Data Source:

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Figure 1-F
NRCS Soils



ATTACHMENT 2

TVA Bat Strategy Project Screening Form

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

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

Project Name: Economic Development InvestPrep Grant for Hamblen County, Tennessee **Date:** 12/2/2019
Contact(s): Ashley Pilakowski **CEC#:** **Project ID:** 409298
Project Location (City, County, State): Hamblen and Jefferson Counties, Tennessee
Project Description:
 Utilize TVA InvestPrep™ funding to assist with tree clearing, the rough grading of Lot 12, and lot signage on Lot 12 of the East Tennessee Progress Center.

SECTION 1: PROJECT INFORMATION - ACTION AND ACTIVITIES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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) Joshua Argo Date Dec 5, 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): ((☒ **ac** ☐ **trees**)* ☐ **N/A**

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

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

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

STEP 7) Project will involve:

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

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

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

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

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

TVA Action	Total 20-year	Winter	Volant Season	Non-Volant Season
9 Promote Economic Development	7,512.35	6,762.73	749.62	0

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

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

SECTION 3: REQUIRED CONSERVATION MEASURES

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

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

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

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

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

Manual Override

Name: Joshua Argo

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.
		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.
		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.

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

Hide All Unchecked Conservation Measures

- ☒ HIDE
- ☐ UNHIDE

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

- ☒ HIDE
- ☐ UNHIDE

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

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

(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) 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 ☒ ac ☐ trees and that use of Take will require \$ 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

Tennessee Historical Commission



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

March 12, 2020

Mr. Clinton E. Jones
Tennessee Valley Authority
Biological and Cultural Compliance
400 West Summit Hill Drive
Knoxville, TN 37902

RE: TVA / Tennessee Valley Authority, Investprep 84.6 Acre Archaeological Survey for East TN Progress Center, Lot 12- Site Preparation, Morristown, Hamblen County, TN

Dear Mr. Jones:

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

After considering the documentation submitted, it is our opinion that there are no National Register of Historic Places listed or eligible properties affected by this undertaking. We have made this determination because either: no National Register listed or eligible Historic Properties exist within the undertaking's area of potential effects, the specific location, size, scope and/or nature of the undertaking and its area of potential effects precluded affects to Historic Properties, the undertaking will not alter any characteristics of an identified eligible or listed Historic Property that qualify the property for listing in the National Register, or it will not alter an eligible Historic Property's location, setting or use. We have no objections to your proceeding with your undertaking.

If your agency proposes any modifications in current project plans or discovers any archaeological remains during the ground disturbance or construction phase, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act. If you are applying for federal funds, license or permit, you should submit this letter as evidence of consultation under Section 106 to the appropriate federal agency, which, in turn, should contact us as required by 36 CFR 800. If you represent a federal agency, you should submit a formal determination of eligibility and effect to us for comment. You may direct questions or comments to Claire Meyer (615-770-1099).

Sincerely,

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

EPM/cem

3-B

Federally Recognized Indian Tribes



GWYD DBF
CHEROKEE NATION®
P.O. Box 948 • Tahlequah, OK 74465-0948
918-453-5000 • www.cherokee.org

Office of the Chief

Chuck Hoskin Jr.
Principal Chief

Bryan Warner
Deputy Principal Chief

March 31, 2020

Marianne Shuler
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, TN 37902

Re: InvestPrep East Tennessee Progress Center

Ms. Marianne Shuler:

The Cherokee Nation (Nation) is in receipt of your correspondence about and related reports for **InvestPrep East Tennessee Progress Center**, and appreciates the opportunity to provide comment upon this project. Please allow this letter to serve as the Nation's interest in acting as a consulting party to this proposed project.

The Nation maintains databases and records of cultural, historic, and pre-historic resources in this area. Our Historic Preservation Office reviewed this project, cross referenced the project's legal description against our information, and found instances where this project is within close proximity to such resources. These resources, however, are located outside the proposed Area of Potential Effects (APE) according to the related report. Thus, this Office does not object to the project proceeding as long as the following stipulations are observed:

- 1) The Nation requests additional consultation if there are any changes to the scope of or activities within the APE;
- 2) The Nation requests that the Tennessee Valley Authority (TVA) halt all project activities immediately and re-contact our Offices for further consultation if items of cultural significance are discovered during the course of this project; and
- 3) The Nation requests that TVA conduct appropriate inquiries with other pertinent Historic Preservation Offices regarding historic and prehistoric resources not included in the Nation's databases or records.

InvestPrep East Tennessee Progress Center

March 31, 2020

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If you require additional information or have any questions, please contact me at your convenience.
Thank you for your time and attention to this matter.

Wado,

A handwritten signature in blue ink that reads "Elizabeth Toombs". The signature is fluid and cursive, with the first name and last name clearly distinguishable.

Elizabeth Toombs, Tribal Historic Preservation Officer

Cherokee Nation Tribal Historic Preservation Office

elizabeth-toombs@cherokee.org

918.453.5389