Document Type: EA-Administrative Record
Index Field: Environmental Assessment
Project Name: Economic Development Grant – McMinn County, TN (Etowah)
Project Number: 2021-1

ECONOMIC DEVELOPMENT GRANT PROPOSAL FOR NORTH ETOWAH INDUSTRIAL PARK

ENVIRONMENTAL ASSESSMENT

McMinn County, TN (Etowah)

Prepared by:

TENNESSEE VALLEY AUTHORITY
Knoxville, Tennessee

March 2021

For Information, contact:

Ashley Pilakowski

NEPA Compliance

Tennessee Valley Authority

400 West Summit Hill Drive, WT 11B

Knoxville, Tennessee 37902-1499

Phone: 865-632-2256

Email: aapilakowski@tva.gov

This page intentionally left blank

Table of Contents

List of Tables

List of Figures

List of Attachments

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 McMinn County Economic Development Authority (MCEDA) to assist with the development of the North Etowah Industrial Park. The area of potential effect (APE) of TVA's proposed action (herein referred to as the Project Area) comprises approximately 118.4 acres of the total 271 acres of the North Etowah Industrial Park located between County Road 561 and North Industrial Park Drive, approximately 3.5 miles north of the City of Etowah, Tennessee (TN) (see Figure 1-1 below and Attachment 1, Figure 1-A). TVA funds would be used for the clearing of approximately 14.2 acres of trees, 5,260 linear feet of fence removal, the rough grading of a 35-acre dirt building pad, construction of three temporary sediment basins totaling 8.2 acres, construction of a gravel access road extending for 1,692 linear feet, and draining and grading of a 1.6-acre isolated farm pond within the North Etowah Industrial Park. The North Etowah Industrial Pak is located in McMinn County, TN.

The purpose of the Proposed Action is to enable the MCEDA to continue development of the North Etowah Industrial Park. The proposed grant to the MCEDA would assist with the preparation of a new site to put the North Etowah Industrial Park in a more marketable position and allow prospects to better envision the development potential. Proposed improvements would lead to an increased probability of achieving TVA's core mission of job creation and capital investment. Target industries for the North Etowah Industrial Park include automotive suppliers, aerospace manufacturers, food/beverage manufacturers, and heavy industries that need rail access. This Environmental Assessment (EA) assesses the environmental resources that would potentially be affected by TVA's Proposed Action. TVA's decision is whether or not to provide the requested funding to the MCEDA.

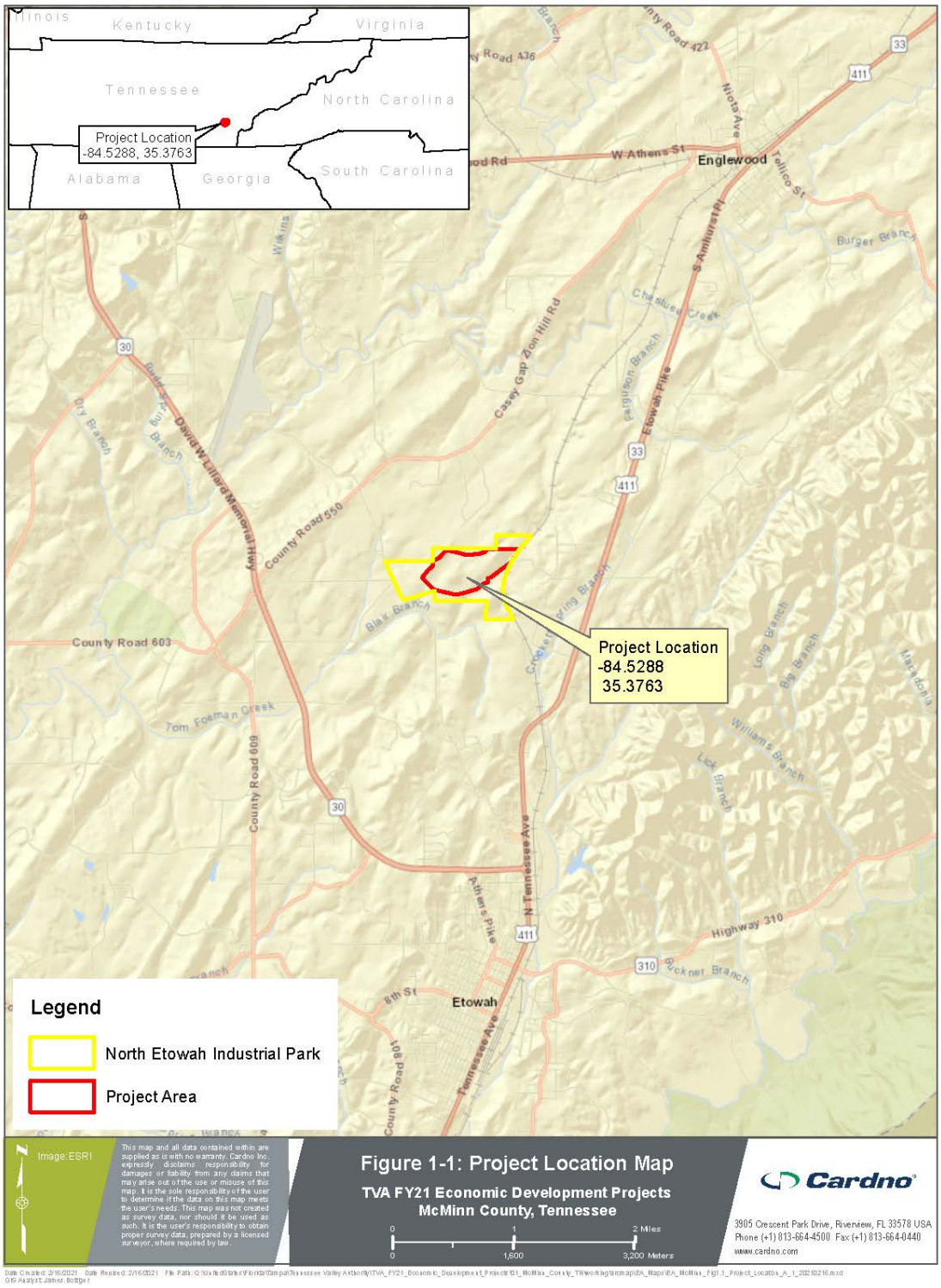


Figure 1-1 Project Location Map

2.0 OTHER ENVIRONMENTAL REVIEWS AND DOCUMENTATION

A Phase I Environmental Site Assessment of the Project Area was performed consistent with the procedures included in ASTM E 1527-13 (Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process) by Streamline Environmental in October 2016 (Streamline Environmental 2016). The primary purpose of the Phase I Environmental Site Assessment was to identify the presence of recognized environmental concerns or other environmental liabilities within the Project Area. Geophysical Studies of the Project Area were performed by GeoServices, LLC in September 2012 and February 2017 (GeoServices 2012 and 2017a). The primary purpose of the Geophysical Study was to explore the general site and subsurface conditions within the Project Area. GeoServices, LLC also conducted an on-site wetland delineation and hydrologic determination in May 2017 (GeoServices 2017b). The primary purpose of the wetland delineation and hydrologic determination was to identify wetlands and waterbodies jurisdictional to the United States Army Corps of Engineers (USACE) and the Tennessee Department of Environment and Conservation (TDEC). The Phase I Environmental Site Assessment, Geophysical Studies Reports, and the Wetland Delineation and Hydrologic Determination 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 InvestPrep funds to the MCEDA. TVA would not be furthering its mission of promoting economic development by assisting the local community to compete successfully for new jobs and capital investment through the Proposed Action. If the MCEDA were to obtain alternate funding and proceed with its current plans, the overall environmental consequences would be similar to those expected from implementing the Action Alterative. In the event the project is postponed, any environmental effects would be delayed for the duration of the postponement. If the project were cancelled, no environmental effects are anticipated, as environmental conditions on the site would remain essentially unchanged from the current conditions for the foreseeable future.

The Action Alternative

Under the Action Alterative, TVA would provide InvestPrep funds to the MCEDA for site improvements to the North Etowah Industrial Park. These improvements would include clearing of approximately 14.2 acres of trees, 5,260 linear feet of fence removal, the rough grading of a 35-acre dirt building pad, construction of three temporary sediment basins totaling 8.2 acres, construction of a gravel access road extending for 1,692 linear feet, and draining and grading of a 1.6-acre isolated farm pond within the North Etowah Industrial Park (Attachment 1, Figures 1-A and 1-B). Site activities required for the Action Alternative would occur over a short period of time, approximately 8 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 burned on-site. TVA's preferred alternative is the Action Alternative.

The MCEDA would take appropriate feasible measures, such as implementing best management practices (BMPs) and best construction practices, to minimize or reduce the potential environmental effects of the proposed project to insignificant levels. These practices would include but are not limited to installation of sediment and erosion controls (silt fences, sediment traps, etc.) management of fugitive dust; and daytime work hours.

The Action Alternative does not include assessment of activities that may be 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.

4.0 AFFECTED ENVIRONMENT AND ANTICIPATED IMPACTS

4.1 Site Description

The 118.4-acre Project Area is located on the 271-acre North Etowah Industrial Park in McMinn County, TN between County Road 561 and North Industrial Park Drive, approximately 3.5 miles north of the City of Etowah, TN. The Project Area is dominated by pasture grasses with small patches of forested areas and one pond (hereafter referred to as Pond 1). No permanent structures are present within the Project Area. Access is provided from County Road 561 along

the western boundary of the Project Area (Attachment 1, Figure 1-A). The Project Area is bordered by similar habitats consisting of a mix of agricultural fields of mainly pasture grasses and woodlands with localized areas of single-family residential, commercial, industrial, and public/semi-public uses.

Land uses identified in the Tennessee Real Estate Assessment Data database include Pasture (54), Rotation (46), and Woodland2 (62) as assessed using land use data derived from the Computer Assisted Appraisal System (CAAS) property assessment data maintained by the State of Tennessee's Comptroller of the Treasury (Tennessee 2021). The CAAS data supporting documentation indicates Pasture (54) is among reserved vacant codes for future use (54-59). Rotation (46) is likewise included with those codes (42-49) reserved for utility codes for future use. Woodland2 (62) is coded as agricultural tract with single family residence (may be used for agricultural or timber production). Although coded for a single family residence, the parcel details indicate the land is vacant with no buildings or mobile homes. The North Etowah Industrial Park website states that it (and therefore the Project Area) is currently zoned for heavy manufacturing (MCEDA 2021).

The Project Area is gently sloping with elevations varying between approximately 850 feet to 910 feet. Higher elevations occur along a ridge bisecting the Project Area from the southwest to the northeast (Attachment 1, Figure 1-C). One isolated pond is located within the Project Area. One un-named drainage feature (classified as a wet- weather conveyance), one isolated pond, and two streams were identified outside the Project Area on the North Etowah Industrial Park site (Attachment 1, Figure 1-F). Stormwater on the west side of the North Etowah Industrial Park flows into an unnamed stream tributary of Tom Foreman Creek (hereafter referred to as Stream 1) which is also associated with two adjacent/abutting herbaceous wetlands (hereafter referred to as Wetland 2 and Wetland 3). Stormwater on the east side of the North Etowah Industrial Park flows toward an unnamed tributary of Blair Branch (hereafter referred to as Stream 2). The wet-weather conveyance (hereafter referred to as WWC-1) shares a direct connection to Blair Branch at its southern terminus and to an herbaceous wetland (hereafter referred to as Wetland 1) at its northern terminus. The two ponds (hereafter referred to as Pond 1 [within Project Area] and Pond 2) do not have any surficial hydrologic inflows or outflows and are isolated.

4.2 Impacts Evaluated

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

The Phase I Environmental Site Assessment did not identify any current or historical chemical, petroleum, or hazardous substance operations or storage areas or locations that would indicate the presence of solid or hazardous wastes (Streamline Environmental 2016). Therefore, the Proposed Action is not expected to result in significant impacts from the creation or disposal of solid and hazardous wastes.

The Federal Emergency Management Agency (FEMA) flood insurance rate map for McMinn County, Tennessee (panel numbers 47107C0225D, effective 9/28/2007; 47107C0306D, effective 9/28/2007; and 47107C0307D, effective 9/28/2007) indicate the Proposed Action

would be located outside identified 100-year floodplains, as well as Stream 1 and Stream 2, which would be consistent with EO 11988. The Proposed Action would therefore have no significant impact on floodplains and their natural and beneficial values.

There would be no impact to land use and prime farmland as the Project Area is located within a property zoned as heavy manufacturing 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 Regional Natural Heritage Database, USNPS NRI database (USNPS 2021), and WSR database (WSR 2021) 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 parks or outdoor recreation areas in the immediate vicinity of the proposed project. The Chestuee Golf Course is located approximately two miles west of the Project Area. Given the substantial distance between the project and the golf course, the Proposed Action is not expected to have any impact on use of this recreational area.

Resources that could potentially be impacted (negatively or positively) by implementing the Action Alternative include air quality and climate change, groundwater, surface water, wetlands, 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

Federal and state regulations protect ambient air quality. With authority granted by the Clean Air Act (CAA) 42 U.S.C. 7401 et seq. as amended in 1977 and 1990, the USEPA established National Ambient Air Quality Standards (NAAQS) to protect human health and public welfare. The USEPA codified NAAQS in 40 CFR 50 for the following “criteria pollutants:” nitrogen dioxide (NO_2), carbon monoxide (CO), ozone, sulfur dioxide (SO_2), lead, particulate matter (PM) with an aerodynamic diameter equal to or less than 10 microns (PM_{10}), and PM with an aerodynamic diameter equal to or less than 2.5 microns ($PM_{2.5}$). The NAAQS reflect the relationship between pollutant concentrations and health and welfare effects. Primary standards protect human health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards are designed to protect public welfare, including visibility, animals, crops, vegetation, and buildings. These standards reflect the latest scientific knowledge and have an adequate margin of safety intended to address uncertainties and provide a reasonable degree of protection. The air quality in McMinn County, Tennessee, meets the ambient air quality standards and is in attainment with respect to the criteria pollutants (USEPA 2021).

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

Air quality impacts associated with activities under the Action Alternative include emissions from fossil fuel-fired equipment, fugitive dust from ground disturbances, and emissions from the burning of wood debris. Fossil fuel-fired equipment are a source of combustion emissions, including nitrogen oxides (NO_X), CO, VOCs, SO_2, PM_{10}, $PM_{2.5}$, GHGs, and small amounts of HAPs. Gasoline and diesel engines used as a result of the Action Alternative would comply with the USEPA mobile source regulations in 40 CFR Part 85 for on-road engines and 40 CFR Part 89 for non-road engines. These regulations are designed to minimize emissions and require a maximum sulfur content in diesel fuel of 15 parts per million (ppm).

Fugitive dust is a source of respirable airborne PM, including PM_{10} and $PM_{2.5}$, which could result from ground disturbances such as land clearing, grading, excavation, and travel on unpaved roads. The amount of dust generated is a function of the activity, silt and moisture content of the soil, wind speed, frequency of precipitation, vehicle traffic, vehicle types, and roadway characteristics. The MCEDA and its contractors would be expected to comply with TDEC Air Pollution Control Rule 1200-3-8, which requires reasonable precautions to prevent PM from becoming airborne. Such reasonable precautions include, 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 stockpiles as needed.

Many variables affect emissions from ground-level open burning emissions, including wind, ambient temperature, composition and moisture content of the debris burned, and compactness of the pile. In general, the relatively low temperatures associated with open burning increase emissions of NO_X, CO, VOCs, PM_{10}, $PM_{2.5}$, GHGs, and HAPs. The MCEDA and its contractors would be subject to local burn permits and the requirements in TDEC Air Pollution Control Rule 1200-3-4, which provides open burning prohibitions, exceptions, and certification requirements.

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

Concerning climate change, trees, like other green plants, are carbon sinks that use photosynthesis to convert CO_2 into sugar, cellulose, and other carbon-containing carbohydrates that they use for food and growth. Carbon sequestration is the process by which carbon sinks remove CO_2 from the atmosphere. Although forests do release some CO_2 from natural

processes such as decay and respiration, a healthy forest typically stores carbon at a greater rate than it releases carbon. The clearing of approximately 14.2 acres of land containing trees for the Action Alternative would result in a minor loss of carbon sequestration capacity in the area since 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 MCEDA were able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, similar emissions associated from equipment, ground disturbances, and burning would occur, resulting in similar air quality and climate change impacts as those described above for the Action Alternative. If the MCEDA were not able to secure the funding for the actions described in this EA, emissions associated 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 (USNPS 2017). 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 principal aquifers in the Valley and Ridge Province consist of carbonate rocks that are primarily Cambrian and Ordovician in age, with minor Silurian, Devonian, and Mississippian rocks also present (USGS 1995). Locally this system is referred to as the East Tennessee aquifer system and consists of soluble carbonate rocks. Some easily eroded shales underlie the valleys while more erosion-resistant siltstone, sandstone, and some cherty dolomite underlie ridges (USGS 1986). Water quality in the carbonate aquifers of the Valley and Ridge Province is characterized as hard, with dissolved solids concentrations of 170 milligrams per liter or less. Due to the complex network of fractures, bedding planes, and solution openings in the carbonate rocks in areas with thin residuum overlying the substrate, water recharges rapidly and, water quality in these aquifers is susceptible to contamination by human activities (USGS 1995). Recharge occurs primarily along the flanks of the ridges and groundwater flow is generally from the ridges (higher groundwater levels) toward major streams and center of the valleys where groundwater levels are lower (USGS 1995).

Implementation of the Action Alternative would result in ground disturbance during construction activities. Tree clearing and fence removal would result in minor ground disturbance at shallow depths. Existing topography ranges from approximately ±850 feet mean sea level (MSL) to ±910 feet MSL. Site grading for development of the dirt building pad and excavation for the three temporary sediment basins would result in greater ground disturbance at moderate depths. However, ground disturbances are not anticipated to 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, grading and construction of temporary sediment basins within the Project Area. Water infiltration, which is normally enhanced by vegetation, would be reduced until vegetation is re-established. In addition, near-surface soil compaction caused by heavy construction vehicles could reduce the ability of soil to absorb water. These minor impacts would be temporary and would not significantly affect groundwater resources. Additionally any impacts caused by the creation of

sediment basins during construction activities would be temporary as these would be filled in after the completion of construction activities. Furthermore, it is expected that the MCEDA 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 MCEDA were able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, similar ground disturbance would occur, resulting in similar impacts to groundwater resources as those described above for the Action Alternative. If the MCEDA were not able to secure the funding for the actions described in this EA, ground disturbance associated with tree clearing, fence removal, grading and construction of temporary sediment basins would not occur and there would be no impacts to groundwater resources.

4.2.3 Soil Erosion and Surface Water

The Project Area is located within the Valley and Ridge Province (USNPS 2017). The Project Area drains to streams within the Hiwassee River watershed (Hydrologic Unit Code [HUC]-8 06020002). According to the field survey conducted by a Tennessee Qualified Hydrologic Professional (TN-QHP) in May 2017, two streams (Stream 1 and Stream 2), one wet-weather conveyance (WWC-1) and two isolated ponds (Pond 1 and Pond 2) are located within the North Etowah Industrial Park (GeoServices 2017b). Stream 1 is an unnamed tributary of Tom Foreman Creek. Stream 2 is an unnamed tributary of Blair Branch. The WWC-1 flows directly into Blair Branch. Pond 1 and Pond 2 have no surficial hydrologic inflows or outflows and are isolated. Only Pond 1 is located within the Project Area (Attachment 1, Figure 1-F).

Precipitation in the general area of the proposed project averages about 55.6 inches per year. The wettest month is January with approximately 5.3 inches of precipitation, and the driest month is October with 3.5 inches. The average annual air temperature is 58 degrees Fahrenheit, ranging from an annual average of 46 degrees Fahrenheit to 70 degrees Fahrenheit (US Climate Data 2020). Stream flow varies with rainfall and averages about 28.56 inches of runoff per year, i.e., approximately 2.10 cubic feet per second, per square mile of drainage area (USGS 2008).

The federal Clean Water Act (CWA) requires all states to identify all waters where required pollution controls are not sufficient to attain or maintain applicable water quality standards and to establish priorities for the development of limits based on the severity of the pollution and the sensitivity of the established uses of those waters. States are required to submit reports to the USEPA. The term “303(d) list” refers to the list of impaired and threatened streams and water bodies identified by the state. Blair Creek is currently listed as impaired for *E.Coli* due to livestock grazing in riparian or shoreline zones.

Table 4-1 provides a listing of local streams with their state (TDEC 2013) designated uses.

Table 4-1 Designations for Streams in the Vicinity of the Project Area

Streams	Use Classification[1]						
	NAV	DOM	IWS	FAL	REC	LWW	IRR
Chestuee Creek[2] and Mis Tribs				X	X	X	X
Jackson Branch				X	X	X	X
Tom Foeman Creek[2]				X	X	X	X
Blair Branch				X	X	X	X

[1] Codes: DOM = Domestic Water Supply; IWS = Industrial Water Supply; FAL = Fish and Aquatic Life; REC = Recreation; LWW = Livestock Watering and Wildlife; IRR = Irrigation, NAV = Navigation

[2] Not in Project Area, shown for flow network.

Should the Action Alternative be implemented, construction activities have the potential to temporarily affect surface water via storm water runoff. Soil erosion and sedimentation can clog small streams and threaten aquatic life. MCEDA would comply with all appropriate federal, state and local permit requirements. It is expected that MCEDA would follow all appropriate BMPs, and all proposed project activities would be conducted in a manner to ensure that waste materials are contained, and the introduction of pollution materials to the receiving waters would be minimized. A general construction stormwater permit would be needed since more than one acre would be disturbed. This permit also requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP would identify specific BMPs to address construction-related activities that would be adopted to minimize stormwater impacts. Part of these BMPs would be the construction of three temporary sediment basins to control sediment discharges from the Project Area.

A farm pond (Pond 1) would be drained and then graded as part of the proposed actions. This pond would need to be deemed as a non-jurisdictional Waters of the United States (WOTUS) under the 2020 Navigable Waters Protection Rule (NWPR) in order to remove it without additional permitting from the USACE.

BMPs, as described in the Tennessee Erosion and Sediment Control Handbook (TDEC 2012a) and *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority* (TVA 2017), would be used during site development to avoid contamination of surface water in the Project Area.

Impervious buildings and infrastructure prevent rain from percolating through the soil and result in additional runoff of water and pollutants into storm drains, ditches, and streams. The Action Alternative would increase impervious flows in the Project Area. All flows would need to be properly treated with either implementation of the proper BMPs or to engineer a discharge drainage system that could handle any increased flows prior to discharge into the outfall(s).

It is expected that portable toilets would be provided for the construction workforce as needed. These toilets would be pumped out regularly, and the sewage would be transported by tanker truck to a publicly-owned wastewater treatment plant that accepts pump out. Permanent restroom facilities are not proposed as part of the Action Alternative. Any permanent restroom facilities built in the future at the site would be properly sized, permitted and maintained.

Equipment washing and dust control discharges would be handled in accordance with BMPs described in the SWPPP for water-only cleaning.

With proper implementation of the controls described above, it is expected that implementation of the Action Alternative would result in only minor temporary impacts to surface waters.

Under the No Action Alternative, if the MCEDA were able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, similar site activities would occur, resulting in similar impacts to surface water resources as those described above for the Action Alternative. If the MCEDA were unable to secure the funding no immediate environmental impacts to surface water would occur.

4.2.4 Wetlands

Wetlands are areas inundated by surface or groundwater often enough to support vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, mud flats, and natural ponds.

Activities in wetlands are regulated under Section 404 of the CWA, as well as Executive Order 11990. Under Section 404, the USACE established a permit system to regulate activities in WOTUS, including wetlands. In order to conduct specific activities in jurisdictional wetlands, authorization under either a Nationwide Permit or an Individual Permit from the USACE is required. Section 401 water quality certification (ARAP) issued by the TDEC is also required. Executive Order 11990 requires all Federal agencies to minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities.

Onsite wetland determinations were conducted in 2017 for the parcel by an external contractor (GeoServices 2017b). Surveys were performed according to USACE standards (Environmental Laboratory 1987). The USACE 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 United States Fish and Wildlife Service (USFWS) (Cowardin et al. 1979), and as defined under 18 Code of Federal Register (CFR) Part 1318.40, were also considered in this review.

Three wetlands are present within the North Etowah Industrial Park boundary. All are emergent wetlands, comprised of herbaceous/low-growing species of plants (Table 4-2). All three wetlands are located outside the Project Area.

Table 4-2 Wetlands Identified Near the Project Area

Wetland ID	Wetland Type	Wetland Acreage
Wetland 1	Emergent Wetland	1.36
Wetland 2	Emergent Wetland	1.50
Wetland 3	Emergent Wetland	0.89

There are no wetlands present within the Project Area. Wetland 1 is immediately adjacent to the Project Area, and has been set aside for protection, including a 50-ft buffer zone. While no direct impacts would occur due to avoidance, there could be indirect impacts associated with changes in hydrology and sedimentation if the Action Alternative is implemented. Standard

construction BMPs would minimize these impacts to an insignificant level. Wetlands 2 and 3 are located at a sufficient distance from the Project Area such that there would be no impacts.

Under the No Action Alternative, if the MCEDA were able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, similar disturbances would occur, resulting in similar impacts to wetlands resources as those described above for the Action Alternative. If the MCEDA were not able to secure the funding for the actions described in this EA, disturbance associated with tree clearing, fence removal, grading and construction of temporary sediment basins would not occur and there would be no impacts to wetland resources.

4.2.5 Aquatic Ecology

As described above, according to the field survey conducted in May 2017, two streams (Stream 1 and Stream 2), one wet-weather conveyance (WWC-1) and two isolated ponds (Pond 1 and Pond 2) are located within the North Etowah Industrial Park (GeoServices 2017b). Pond 1 is located within the Project Area. Temporary effects to surface waters outside the Project Area because of storm water runoff during construction activities are described above.

A farm pond (Pond 1) would be drained and then graded as part of the Action Alternative. The aquatic community within the pond would be directly and permanently impacted from its removal. The aquatic community within Pond 1 is expected to be lacking in diversity and of low quality due to the pond's isolation from surface water inflows and outflows and lack of littoral or aquatic vegetation. This aquatic ecosystem is not unique to the surrounding area with other similar ponds (e.g., Pond 2) occurring on the North Etowah Industrial Park and surrounding properties.

A query of the TVA Regional Natural Heritage Database indicated that no federally listed, and one state-listed fish (Tennessee dace [*Chrosomus tennesseensis*]) may occur within the Chestuee 10-digit HUC (0602000210) watershed. However, letters from the TDEC dated August 10, 2012 and February 14, 2021 (TDEC 2012b and TDEC 2021), stated that no known records of rare species occur within or near the Project Area. The letters further state that streams identified within the Project Area do not likely provide suitable habitat for any listed species. Therefore impacts to federal or state listed aquatic species as a result of the Proposed Action are not anticipated.

Under the No Action Alternative, if the MCEDA were able to secure funding for the proposed actions described in this EA from outside sources, similar direct and indirect impacts to aquatic species could occur as described above for the Action Alternative. However, with implementation of applicable BMPs, impacts would be minimized or avoided. If the MCEDA 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.

4.2.6 Terrestrial Zoology

4.2.6.1 Terrestrial Wildlife

A field survey conducted in December 2020 included a habitat assessment for terrestrial animal species in the Project Area (Cardno 2020). The Project Area is comprised of pastureland habitats and fragmented forest. The fragmented forest consists of mature, deciduous, mixed evergreen-deciduous, and evergreen trees. Forest fragments, and residential areas border the

Project Area. Each of the varying land cover types offer habitat for species common to the region, both seasonal individuals and permanent residents.

Early successional habitats, consisting of open pastureland, constitute most of the Project Area. Common inhabitants of this type of habitat include American goldfinch (*Spinus tristis*), brown-headed cowbird (*Molothrus ater*), blue-winged warbler (*Vermivora cyanoptera*), brown thrasher (*Toxostoma rufum*), eastern bluebird (*Sialia sialis*), eastern meadowlark (*Sturnella magna*), killdeer (*Charadrius vociferus*), prairie warbler (*Setophaga discolor*), and mourning dove (*Zenaida macroura*) (National Geographic 2002, Sibley 2003). Bobcat (*Lynx rufus*), coyote (*Canis latrans*), eastern cottontail (*Sylvilagus floridanus*), woodchuck (*Marmota monax*), red fox (*Vulpes vulpes*), and white-tailed deer (*Odocoileus virginianus*) are mammals typical of fields and cultivated land (TWRA 2021).

Amphibians such as fowler's toad (*Anaxyrus fowleri*) and reptiles including black racer (*Coluber constrictor priapus*) and black rat snake (*Elaphe o. obsoleta*) also occur in this habitat type (Bailey et al. 2006, Conant and Collins 1998, Dorcas and Gibbons 2005). Pollinators such as eastern tiger swallowtail (*Papilio glaucus*), great spangled fritillary (*Speyeria cybele*), and red-spotted purple (*Limenitis arthemis*) may occur in this region (Brock and Kaufman 2003).

Deciduous and evergreen forests in the Project Area provide habitat for an array of terrestrial animal species. Birds typical of this habitat include eastern whip-poor-will (*Antrostomus vociferus*), pileated woodpecker (*Dryocopus pileatus*), red-bellied woodpecker (*Melanerpes carolinus*), red-eyed vireo (*Vireo olivaceus*), red-tailed hawk (*Buteo jamaicensis*), scarlet tanager (*Piranga olivacea*), wild turkey (*Meleagris gallopavo*), eastern blue bird (*Sialia sialis*) wood thrush (*Hylocichla mustelina*), and northern cardinal (*Cardinalis cardinalis;*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 in this habitat include big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), and evening bat (*Nycticeius humeralis*). Eastern chipmunk (*Tamias striatus*), eastern woodrat (*Neotoma floridana*), and white-tailed deer are other mammals likely to occur in this habitat (Kays and Wilson 2002, Whitaker 1996).

Broad-headed skink (*Plestiodon laticeps*), eastern box turtle (*Terrapene carolina carolina*), five-lined skink (*Plestiodon fasciatus*), gray ratsnake (*Pantherophis spiloides*), and scarlet snake (*Cemophora coccinea*) are common reptiles of eastern deciduous forests (Conant and Collins 1998, Dorcas and Gibbons 2005). Forested streams in this region likely provide habitat for amphibians including Cope's gray treefrog (*Hyla chrysoscelis*), spotted salamander (*Ambystoma maculatum*), northern slimy salamander (*Plethodon glutinosus*), spring peepers (*Pseudacris crucifer*), and two-lined salamander (*Eurycea bislineata;*Bailey et al. 2006, Conant and Collins 1998).

Developed areas and areas otherwise previously disturbed by human activity are home to a large number of common species. American crow (*Corvus brachyrhynchos*), American robin (*Turdus migratorius*), black vulture (*Coragyps atratus*), Carolina wren (*Thryothorus ludovicianus*), common nighthawk (*Chordeiles minor*), eastern phoebe (*Sayornis phoebe*), northern cardinal (*Cardinalis cardinalis*), northern mockingbird (*Mimus polyglottos*), and turkey vulture (*Cathartes aura*) are birds commonly found along roads, in industrial complexes, and in residential neighborhoods (National Geographic 2002, Sibley 2003). Mammals found in these

locations include eastern common raccoon *(Procyon lotor*), gray squirrel (*Sciurus carolinensis*), striped skunk (*Mephitis mephitis*), and Virginia opossum (*Didelphis virginiana;* Kays and Wilson 2002, Whitaker 1996). Roadside ditches provide potential habitat for amphibians including American toad (*Anaxyrus americanus*) and spring peeper (*Pseudacris crucifer;* Bailey et al. 2006). Reptiles potentially present include eastern fence lizard (*Sceloporus undulatus*) and rough green snake (*Opheodrys aestivus;* Conant and Collins 1998, Dorcas and Gibbons 2005).

Review of the TVA Regional Natural Heritage Database performed in December 2020 identified no caves within three miles of the Project Area. The field survey on December 7, 2020, did not identify caves or other unique or important terrestrial habitats in the Project Area. No osprey (*Pandion haliaetus*) or wading bird colony nest records occur within three miles of the Project Area. The field survey did not record new wading bird colonies or osprey nests. A large nest was identified near the southern border in a stand of trees (Attachment 1, Figure 1-H). Observations in March 2021 indicated the nest is occupied by great horned owl (*Bubo virginianus*). In order to avoid impacts to these species, disturbing activities must be avoided within 660 feet of this nest when it is active (typically January-mid May). If this restriction cannot be adhered to, USFWS would be contacted by MCEDA for guidance and minimization measures.

Review of the USFWS's Information, Planning, and Consultation (IPAC) website resulted in the identification of one migratory bird species of conservation concern with the potential to occur in the Project Area, the yellow-bellied sapsucker (*Sphyrapicus varius*). This species has the potential to be in the region during winter months when mobile adults would be able to flush if disturbed.

The Action Alternative includes clearing of vegetation and trees (approximately 14.2 acres) in the Project Area and other earth disturbance activities to construct the stormwater detention basins and building pad. Proposed actions would remove wildlife habitat, resulting in the displacement of wildlife (primarily common, habituated species) currently using the Project Area. Direct effects to some individuals may occur, particularly if those individuals are immobile during the time of habitat removal. This could be the case if activities took place during winter or breeding/nesting seasons when animals burrow underground and/or are too young to flee. Habitat removal likely would disperse mobile wildlife into surrounding areas in an attempt to find new food sources, shelter sources, and to re-establish territories. Adherence to commitments around known resources (e.g. great horned owl nest) would avoid impacts to this protected migratory bird. Use of applicable BMPs would minimize potential impacts to stream banks and water quality in and adjacent to the Project Area. Due to the relatively small amount of habitat to be impacted, the lower quality of the habitat across most of the Project Area, adherence to commitments, and the amount of similarly suitable habitat in areas in the surrounding landscape, populations of common wildlife species likely would not be impacted by the Action Alternative. Following the implementation of the Action Alternative, those species of animal that are able to use developed areas would likely return to the Project Area.

Under the No Action Alternative, if the MCEDA were able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, impacts to terrestrial wildlife species would be similar to those described for the Action Alternative. If the MCEDA were not able to secure the funding for the actions described in this EA, no direct environmental effects

are anticipated, as environmental conditions on the site would remain essentially unchanged from the current conditions for the foreseeable future.

4.2.6.2 Threatened and Endangered Species

A review of the TVA Regional Natural Heritage Database in December 2020 indicated that there have been no observations of state or federally listed terrestrial species reported within three miles of the Project Area. Based on a review of the USFWS IPaC database, records of four federally listed species Indiana bat ([*Myotis sodalis*], northern long-eared bat [NLEB] [*Myotis septentrionalis*], and rusty-patched bumblebee [*Bombus affinis*]) exist in McMinn County, TN. The USFWS has determined that one additional federally listed species (gray bat [*Myotis grisescens*]) potentially occurs in the Project Area (Table 4-3).

Table 4-3 Federal and State-Listed Terrestrial Species in McMinn County, Tennessee and Other Species of Concern Documented within Three Miles of the Project Area[1]

Common Name	Scientific Name	Federal Status[2]	State Status (Rank)[3]
INVERTEBRATES			
Rusty-patched bumble bee[4]	Bombus affinis	E	- (S1)
MAMMALS			
Gray bat[5]	*Myotis grisescens*	E	E (S2)
Indiana bat[5]	*Myotis sodalis*	E	E (S1)
Northern long-eared bat[5]	*Myotis septentrionalis*	T	E (S1, S2)

[1] Source: TVA Regional Natural Heritage Database / USFWS IPaC database (https://ecos.fws.gov/ipac/), extracted 12/18/2020.

[2] Status Codes: E = Endangered; T = Threatened.

[3] State Ranks: S1= Extremely rare; S2 = Imperiled; S3 = Vulnerable; S4 = Apparently Secure.

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

[5] Federally listed species whose range includes the Project Area though no records are known from McMinn County.

The rusty-patched bumblebee inhabits grasslands, prairies, woodlands, marshes, agricultural landscapes, and residential parks and gardens. They require both diverse, abundant flowers from April to September and undisturbed nesting sites nearby in order to have sufficient food and overwintering sites for queens. They often build nests in abandoned, underground rodent cavities of large clumps of grass (USFWS 2016). One record of rusty-patched bumblebee is present in McMinn County, located approximately nine miles away from the Project Area. This record is possibly historical due to the age of the record (1966). Potential habitat for this species is present in the Project Area, which is largely open, early-successional habitat interspersed with fragmented forest throughout.

Gray bats roost in caves year-round and migrate between summer and winter roosts during spring and fall (USFWS 2011). Bats disperse over bodies of water at dusk where they forage for insects emerging from the surface of the water (USFWS 2011). There are no records of gray bat known from McMinn County; however, the USFWS has determined that the Project Area is in the range of this species. There are no cave records within three miles of the Project Area. During the field survey, no hibernacula or roosting habitat for gray bat was observed in the Project Area. Two streams, one wet-weather conveyance, and two ponds occur in North

Etowah Industrial Park, with only Pond 1 occurring within the Project Area. These surface waters may provide foraging habitat for gray bats.

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 may 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). This species forages over forest canopies, along forest edges and tree lines, and occasionally over bodies of water (Pruitt and TeWinkel 2007, Kurta et al. 2002, USFWS 2019a).

The NLEB predominantly overwinters in large hibernacula such as caves, abandoned mines, and cave-like structures. During fall and spring they use 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).

Assessment of the Project Area for presence of summer roosting habitat for Indiana bat and NLEB followed federal guidance (USFWS 2019a). All of the 14.2 acres of forest proposed for removal may provide suitable summer roosting habitat for these species. A total of 83 potential roost trees (PRTs) were identified within the 118.4-acre Project Area. Of the 83 PRTs identified, 44 are potential primary roost trees that contain moderate or high quality roosting characteristics, and the remaining 39 are potential secondary roost trees. No caves or other winter roosting habitat for Indiana bat or NLEB was observed in the Project Area during the field survey. Foraging habitat for both species occurs over, alongside, and through the forest fragments, Pond 1 in the Project Area and the remaining streams, wet weather conveyances and pond identified in the North Etowah Industrial Park.

Four federally listed or protected species have the potential to occur in the Project Area (gray bat, Indiana bat, NLEB, and rusty-patched bumblebee). Of these federally listed species, the Action Alternative may affect gray bat, Indiana bat, and NLEB. Based on guidance provided by the USFWS Rusty Patched Bumble Bee Map (USFWS 2021) the Action Alternative is in the Historical Range of the rusty-patched bumblebee. The USFWS states that for this portion of the historical range, the rusty-patch bumblebee is not present and Section 7 consultation and Incidental Take Permits are not required. Rusty-patched bumblebee would not be impacted by implementation of the Action Alternative.

No caves or other hibernacula for gray bat, Indiana bat, or NLEB exist in the Project Area or would be impacted by the Action Alternative. Foraging habitat for all three species occurs over within Pond 1 located in the Project Area, which would be permanently removed by the Action Alternative. Tree clearing would remove suitable summer roosting habitat for Indiana bat and NLEB.

Several activities associated with the Action Alternative (including burning and tree clearing during potentially occupied timeframes) 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). For those activities with potential to affect bats, TVA committed to implementing specific conservation measures. These activities and associated conservation measures, identified on page 5 of the TVA Bat Strategy Project Screening Form (Attachment 2), would be reviewed/implemented as part of the Action Alternative. With adherence to the identified conservation measures, implementation of the Action Alternative would not significantly affect gray bat, Indiana bat, or NLEB.

Under the No Action Alternative, if the MCEDA were able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, impacts to threatened and endangered terrestrial species would be similar to those described for the Action Alternative. If the MCEDA were not able to secure the funding for the actions described in this EA, no direct environmental effects are anticipated, as environmental conditions on the site would remain essentially unchanged from the current conditions for the foreseeable future.

4.2.7 Botany

4.2.7.1 Vegetation

The entirety of the Project Area is actively grazed and populated primarily by non-native and native plant species indicative of early successional, weedy habitats. Common herbaceous species in the open pastures include Canadian horseweed (*Conyza canadensis*), Carolina horsenettle (*Solanum carolinense*), crab grass (*Digitaria* sp.), English plantain (*Plantago lanceolata*), goose grass (*Eleusine indica*), Johnson grass (*Sorghum halepense*), knot root bristle grass (*Setaria parviflora*), purpletop tridens (*Tridens flavus*), rough cocklebur (*Xanthium strumarium*), and white clover (*Trifolium repens*).

The forested sections of the Project Area have an overstory of deciduous tree species, but these areas are also actively grazed. Common trees in these areas include mockernut hickory (*Carya tomentosa*), northern red oak (*Quercus rubra*), southern red oak (*Quercus falcata*), sugar maple (*Acer saccharum*), willow oak (*Quercus phellos*), winged elm (*Ulmus alata*), and yellow-poplar (*Liriodendron tulipifera*). Overstory trees in many areas are mature, but because of the grazing there are virtually no species in the midstory and shrub layer. The herbaceous layer is species poor and dominated by plants found in disturbed habitats including annual marsh elder (*Iva annua*), beefsteak plant (*Perilla frutescens*), nimblewill (*Muhlenbergia schreberi*), and path rush (Juncus tenuis).

Overall, the proposed Project Area does not support high quality plant communities with significant conservation value. Adoption of this alternative would result in wholesale disturbance across at least 35 acres of the site. The area would be graded and all vegetation would be removed. Impacts to vegetation may be permanent, but the vegetation found on site is comprised of non-native weeds and early successional plants that have no conservation value.

With adoption of the No Action Alternative, the property would remain in its current condition and no work would occur unless alternative funding was secured by the MCEDA. The parcel would continue to be dominated by non-native and early successional species indicative of disturbed habitats. Any changes to vegetation on-site would be the result of other natural or

anthropogenic factors. If alternative funding was secured by the MCEDA, impacts to vegetation would be similar to those described for the Action Alternative.

4.2.7.2 Threatened and Endangered Plant Species

An October 2020 query of the TVA Regional Natural Heritage Database indicates that no state or federally listed plant species have been previously reported from within a five-mile vicinity of the proposed Project Area. One federally threatened plant species, white fringeless orchid (*Platanthera integrilabia*), has been reported from Starr Mountain on the border of McMinn and Monroe County, TN. White fringeless orchid occurs in small headwater wetlands on soils with low fertility and organic matter in both closed canopy forest and open situations (Shea 1992, USWFS 2015).

Field surveys indicate that no habitat for white fringeless orchid, or any other state or federally listed plant species, occurs on-site. The entirety of the Project Area is actively grazed, highly disturbed, and is populated primarily with non-native species. No designated critical habitat for plants occurs in the proposed Project Area. Previous agricultural activities within the Project Area have resulted in significant disturbance that makes the parcel unsuitable for threatened or endangered plant species.

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

4.2.8 Archaeology and Historic Structures and Sites

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

The Project Area consists of the 118.4 acres that would be directly impacted by the Action Alternative. The project setting is primarily of upland pasture with a small overall percentage of forested areas. The Project Area is located on the Athens, TN and Etowah, TN United States Geological Survey (USGS) 7.5' topographic map quadrangles. The APE consisted of the 118.4-acre Project Area. The architectural survey consisted of the Project Area (or APE) and an adjacent half-mile in areas with high visibility surrounding the Project Area. Background research revealed 11 previously identified cultural resources that included three cemeteries, three historic structures, four archaeological sites, and a historic trail within proximity of the Project Area, none of which are located within the Project Area itself.

A Phase I cultural resources investigation was performed that included both an assessment of standing structures as well as archaeological survey of the Project Area (Simpson et al., 2021). The architectural survey identified 33 structures of over 50 years in age (HS-1 and HS-33 (Table 4-4). A background check at the Tennessee Historical Commission identified one architectural resource, a portion of the Louisville and Nashville (L&N) railroad line located on the eastern

boundary, just outside, of the project area APE (HS-33). The line was operational as early as 1887 under the Marietta and North Georgia Railroad Company (MNG) and was sold to L&N in 1902. It is still operational as the L&N Railroad. TVA recommends the L&N Railroad eligible for the National Register of Historic Places (NRHP) under Criterion A for its importance in the economic development of the region. The proposed undertaking would not change the physical features within the resource's setting that contribute to its historic significance under Criterion A. Therefore, TVA finds that the L&N Railroad would not be adversely affected by the proposed undertaking. It should be noted that TVA's eligibility recommendation only regards the portion of the L&N Railroad within the APE.

Table 4-4 Cultural Resources Identified during the Archaeological and Built Environment Survey

Cultural Resource Number	Description	Eligibility Recommendation
HS-1	170 Oakhill Drive: 1968 one-story, brick veneered, Ranch style house	Ineligible
HS-2	164 Oakhill Drive: 1971 split-level, brick and vinyl, Ranch style house	Ineligible
HS-3	165 Oakhill Drive: 1971 split-level house with side gable, brick and vinyl	Ineligible
HS-4	158 Oakhill Drive: 1975 one-story, vinyl siding, Ranch style house	Ineligible
HS-5	161 Oakhill Drive: 1971 one-story, stone veneered, Ranch style house	Ineligible
HS-6	157 Oakhill Drive: 1976 one-story, brick veneered, Ranch style house	Ineligible
HS-7	154 Oakhill Drive: 1965 one-story, brick veneered, Ranch style house	Ineligible
HS-8	150 Oakhill Drive: 1966 one-story, vinyl siding, Ranch style house	Ineligible
HS-9	149 Oakhill Drive: 1975 one-story, aluminum siding, Ranch style house	Ineligible
HS-10	156 McNabb Road: 1965 one-story, metal siding, Ranch style house	Ineligible
HS-11	165 McNabb Road: 1968 one-story, vinyl siding, Ranch style house	Ineligible
HS-12	164 McNabb Road: 1976 one-story, brick veneered, Ranch style house	Ineligible
HS-13	170 McNabb Road: 1970 one-story, brick veneered, Ranch style house	Ineligible
HS-14	171 McNabb Road: 1973 vinyl siding, Split-Level Ranch style house	Ineligible
HS-15	175 McNabb Road: 1968 one-story, brick veneered, Ranch style house	Ineligible
HS-16	176 McNabb Road: 1973 one-story, brick veneered, Ranch style house	Ineligible
HS-17	179 McNabb Road: 1967 one-story, brick veneered, Ranch style house	Ineligible
HS-18	183 McNabb Road: 1969 one-story, brick veneered, Ranch style house	Ineligible
HS-19	201 Dogwood Motel Road: 1925 horizontal plank siding, vernacular house	Ineligible
HS-20	197 Dogwood Motel Road: 1975 vertical wood siding, vernacular house	Ineligible
HS-21	153 Dogwood Motel Road: 1961 one-story, brick veneered, Ranch style house	Ineligible
HS-22	142 Dogwood Motel Road: 1960 one-story, brick veneered, Ranch style house	Ineligible
HS-23	227 Jack King Drive: 1910 metal siding, frame vernacular house	Ineligible
HS-24	245 Jack King Drive: 1932 [1905] vinyl siding, hall-and-parlor house	Ineligible
HS-25	240 Jack King Drive: 1965 one-story, vinyl siding, L-shaped house	Ineligible
HS-26	Old Athens Etowah Drive: 1940 transverse frame barn, vertical board	Ineligible
HS-27	2426 Old Athens Etowah Drive: 1935 one-half story, vinyl siding, Bungalow style house	Ineligible
HS-28	2399 Old Athens Etowah Drive: 1935 one-half story, vinyl siding, Vernacular style house	Ineligible

Cultural Resource Number	Description	Eligibility Recommendation
HS-29	2341 Old Athens Etowah Drive: 1935 one-half story, vinyl siding, Bungalow style house	Ineligible
HS-30	2288 Old Athens Etowah Drive: 1947 one-half story, vinyl siding, Minimal Traditional style house	Ineligible
HS-31	2242 Old Athens Etowah Drive: 1975 one story, vinyl siding, Vernacular style house	Ineligible
HS-32	2439 Old Athens Etowah Drive: 1940 one-half story, metal siding, Bungalow style house	Ineligible

The archaeological survey excavated a total of 514 shovel tests on a 30 meter grid across the entire breadth of the 118.4-acre Project Area. None of these shovel tests yielded any cultural material. No archaeological artifacts or resources were identified as a result of the Phase I survey. No further archaeological work is recommended in the Project Area.

TVA consulted with the Tennessee SHPO in a letter dated February 22, 2021 regarding TVA's findings and recommendations. In a letter dated February 22, 2021 the Tennessee SHPO concurred with TVA's findings and recommendations (Attachment 3). Pursuant to 36 CFR Part 800.3(f) (2), TVA also consulted with federally recognized Indian tribes regarding properties that may have religious and cultural significance to their tribe and eligible for the NRHP. TVA received one response from a federally recognized Indian tribe, indicating no objection regarding the Action Alternative.

Similar to the Action Alternative, under the No Action Alternative, if the MCEDA were able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, there would be no impacts to archaeological resources and historic structures. If the MCEDA were not able to secure the funding for the actions described in this EA, the proposed disturbances would not occur and existing site conditions would likely be unchanged, also resulting in no impacts to archaeological resources and historic structures.

4.2.9 Visual

The Project Area is 118.4 acres consisting mainly of open land and pasture land with three areas of forested habitat totally 14.2 acres. The forest areas include two areas (1.1 acres and 7.8 acres) with sporadic tree cover and a third area (5.3 acres) with denser tree cover on the edge of a larger forested parcel outside the Project Area. The Project Area is bordered by pasture lands to the east, south, and west and a forested area to the north. The visual landscape surrounding the Project Area consists of gently sloping residential land, open fields, and intermittent forested land. While there are some industrial areas within a half a mile of the Project Area, dense forest cover surrounds those industrial sites.

The Project Area would be directly adjacent to North Industrial Park Drive to the East and 0.23 miles from Old Athens Etowah Road (Route 561). There are no trees or visual screening between both roadways and the Project Area. Several residences are within proximity to the Project Area. One residence is 0.23 miles south of the Project Area. There are some sporadic trees on that property and the gentle sloping of the terrain provides some visual screening between the residence and the Project Area. There are also several residences along Route 561 that are between 0.2 and 0.4 miles from the Project Area with a direct line of site to the Project Area. Similar to other residences in the area, there are some sporadic trees on or near

these properties and the gentle sloping of the terrain may provide some visual screening between the residences and the Project Area. There is a neighborhood about 0.2 miles north of the Project Area; however, there is a dense forest between the neighborhood and the Project Area.

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 and rough grading. Drivers along Industrial Park Drive would have direct views of the Project Area. However, there are several other industrial areas along the roadway within 0.5 miles. Any changes to the views would be similar to other areas along the road. The land along Route 561 is dominated by agricultural/pasture land, residential areas, and forested land. While users of Route 561 may notice a change in the viewshed, this change would be minor given the distance of the Project Area and the brief period that drivers would be in the area. The views from the residence south of the Project Area as well as those residences along Route 561 would experience a minor to moderate change. Current views from those areas would change from open pasture/agricultural land with sporadic tree cover to developed industrial land. There are no other industrial areas in view of the impacted residences. However, the distance of these residences from the Project Area and the natural rolling topography would provide some visual screening. Implementation of the Action Alternative would result in a moderate decrease in visual quality for residents in the viewshed.

Under the No Action Alternative, if the MCEDA were able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, the proposed actions would occur, resulting in similar direct and indirect visual quality impacts as described above for the Action Alternative. If the MCEDA were not able to secure the funding for the actions described in this EA, the proposed actions 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 traffic along Route 561 and Industrial 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 in addition to power tools 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 the home located directly adjacent to the south, homes within 0.5 miles to the west along Route 561, the neighborhood

0.2 miles north, and the industrial businesses located southeast of the Project Area. The noise would be localized and temporary, and no receptor would be exposed to significant noise levels for an extended period of time. 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 to moderate.

Under the No Action Alternative, if the MCEDA were able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, the proposed actions would occur, resulting in similar noise-related impacts as described above for the Action Alternative. If the MCEDA were not able to secure the funding for the actions described in this EA, the proposed actions 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 (TN), county (McMinn), and locality (Athens, TN[1]) (Table 4-5). Details of the Action Alternative were then used to evaluate likely effects on existing socioeconomic resources. The demographics and income of the host-county and locality were considered, relative to the demographics and wealth levels at the state level, to identify the potential for a disproportionate and adverse impact on minority and low-income populations, which is commonly referred to as an evaluation of Environmental Justice.

Table 4-5 Population, Demographics, Income, and Employment in the Host State, County and Locality

	Tennessee	McMinn County	Athens, TN
Population[1]			
April 2010 Population	6,346,276	52,287	13,703
Most Recent Population Estimate (July 2019)	6,829,174	53,794	14,020
Population Change: April 2010 to July 2018	7.6%	2.9%	2.3%
People per Square Mile	153.9	121.5	962.7

[1] While the locality profiled here is Athens, TN (Population: 14,020), the parcel associated with the Action Alternative is located more closely to Etowah, TN (Population: 3,468). Athens is approximately 5.9 miles northwest of the parcel, whereas Etowah, TN is approximately 3.5 miles south of the parcel. Both localities are located in McMinn County, TN. Athens, TN was profiled as a result of the availability and recency of key socioeconomics data relative to those data available for Etowah, TN.

	Tennessee	McMinn County	Athens, TN
White Alone, not Hispanic or Latino	73.5%	88.7%	81.8%
Black or African American Alone	17.1%	3.9%	9.3%
American Indian and Alaska Native Alone	0.5%	0.5%	0.8%
Asian Alone	2.0%	0.8%	0.8%
Native Hawaiian and Other Pacific Islander Alone	0.1%	0.0%	0.0%
Two or More Races	2.0%	2.2%	2.0%
Hispanic or Latino (of any race)	5.7%	4.5%	5.2%
Income[1]			
Median Household Income	$53,320	$43,285	$31,913
Per Capita Income	$29,859	$23,885	$20,823
Percent with Income Below the Poverty Level	13.9%	14.5%	28.3%
Employment: 2019 ACS 5-Year Estimates[2]			
Labor Force	3,282,671	22,701	5,622
Employed	3,109,872	21,334	5,252
Unemployed	172,799	1,367	370
Unemployment Rate (%)	5.3%	6.0%	6.6%

[1]Source: United States Census Bureau (2020a)
[2]Source: United States Census Bureau (2020b)

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

- Relative to the average TN resident, the residents of McMinn County live at a moderately lower population density and much lower population growth. Relative to the average TN resident, the residents of Athens live at much greater densities and much lower population growth.
- Relative to the average TN resident, the residents of McMinn County and those of Athens are less likely to self-identify as a minority race or ethnicity.
- Median household income and per capita income are greater in TN than in McMinn County and those in Athens. This is consistent with the observation that the proportion of McMinn and Athens residents living below the poverty level exceeds these proportions in TN as a whole.
- The unemployment rate in McMinn County and Athens are both higher than the statewide unemployment rate in TN.

During project review, a subdivision in close proximity to the Project Area was identified (approximately 0.5 miles to the north). 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, a lower level of population with less than high school education, and higher level of lower income population.

The Action Alternative would require a small workforce, likely drawn from existing contractors working on similar projects in the region, for approximately 8 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 implementation of the Action Alternative, 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.

The Action Alternative would have a positive effect on the local economy and would be unlikely to result in a disproportionate or adverse impact on minority and low-income communities. Therefore, as described throughout this document, environmental effects associated with the Action Alternative on these resources would be minor and would generally be constrained to the Project Area, already zoned as heavy manufacturing.

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

4.2.12 Transportation

The Project Area would be accessed from one existing local road, North Industrial Park Drive. The primary site entrance would be on the east side of the Project Area, and would require installation of a new entrance to North Industrial Park Drive. North Industrial Park Drive provides access to two commercial facilities south of the Project Area, and has a single railroad track crossing south of the proposed Project Area entrance. North Industrial Park Drive terminates to the south at Waupaca Drive and Addison Station Road (Co Rd 512) to the north.

North Industrial Park Drive is paved along its length and is sufficiently wide for a single lane of traffic in each direction. Based on a review of Google streetview images (recorded January 2008) and verified during the December 2020 field review, the road is in good condition and has narrow, grassy verges. The site entrance location and configuration should consider safe sight distances and other safety concerns for the traffic that would enter North Industrial Park Drive from the property.

Waupaca Drive is paved along its entire length, is sufficiently wide for a single lane of traffic in each direction, and provides access to Waupaca Foundry and North Industrial Park Drive. Based on a review of Google streetview images (recorded January 2008) and verified during the December 2020 field review, the road is in good condition and has narrow, vegetated verges. Necessary precautions would be taken for Bakers Lane during mobilization and de-mobilization such as reduced speed in areas of poor visibility or poor road condition, with other precautions such as a flagman or traffic control to be considered if required.

Addison Station Road is a local road providing access to Dogwood Motel Road (Co Rd 511) to the southeast and three residential buildings and undeveloped land to the North. Addison Station Road is paved and unmarked along its length and is a single lane road. Based on a review of Google streetview images (recorded January 2008) and verified during the December 2020 field review, the road is in good condition and has narrow, densely vegetated verges. Dogwood Motel Road provides access to multiple residential properties, is paved along its

length, and sufficiently wide for a single lane of traffic in each direction. Based on a review of Google streetview images (recorded January 2008) and verified during the December 2020 field review, the road is in good condition and has narrow, vegetated verges with ditches on either side. Addison Station Road provides access to North Industrial Park Drive which may result in safety concerns during mobilization and de-mobilization of the equipment to the Project Area. If utilized, necessary precautions would be taken for Addison Station Road during mobilization and de-mobilization such as reduced speed in areas of poor visibility or poor road condition, with other precautions such as a flagman or traffic control to be considered if required.

Waupaca Drive and Dogwood Motel Road intersect with Highway 411 N (Tennessee Avenue) with stop signs currently used for access to Highway 411 N. It is expected that normal care would be taken by workers entering Highway 411 with regards to traffic safety.

There are no traffic count stations located on North Industrial Park Drive, Waupaca Drive, Addison Station Road, or Dogwood Motel Road. It is anticipated that existing traffic volumes for these local roads would be low during most daylight hours as they provide access to a small number of other sites. The exception would be during shift changes at the existing commercial facilities when traffic would be expected to increase. These shift changes could coincide with workers arriving and leaving the Project Area during construction. Because of the anticipated small workforce required for the proposed activities, and the short timeframe of the proposed work, impacts to local traffic are anticipated to be temporary and minor.

Based on a review of Tennessee Department of Transportation (TDOT) historical traffic data (2018) the nearest traffic count station on Highway 411 N is located approximately 0.58 miles north of Waupaca Drive and 0.77 miles south of Dogwood Motel Road (Station 000066 on Route SR033). The 2018 annual average daily traffic count (AADT) for this station is 6,471. The Project Area is located approximately 2.9 miles north of the intersection of Highway 411 N and David W Lillard Memorial Hwy (Hwy 30). The nearest traffic station to the intersection is located 0.1 miles north of the Hwy 30 on Highway 411 N (Station 000154 on Route SR033) and has an AADT for 2018 of 9,629. In the context of the existing AADT volumes of these highways the anticipated traffic generated by the proposed activities would be negligible. It is anticipated that implementation of the Action Alternative would have negligible impact on overall traffic volumes and level of service of either Highway 411 N or Interstate Hwy 30.

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

5.0 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 (or current version) 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, if Pond 1 is determined to be jurisdictional, would require a CWA Section

404 permit and a CWA Section 401 Water Quality Certification. At this time, it is assumed Pond 1 is non-jurisdictional and impacts to WOTUS and the state of Tennessee are not proposed as part of the Action Alternative. The MCEDA or its contractors would be responsible for obtaining local, state, or federal permits, licenses, and approvals necessary for the project.

6.0 BEST MANAGEMENT PRACTICES AND MITIGATION MEASURES

To minimize or reduce the environmental effects of site activities associated with the Action Alternative, the MCEDA or its contractors are expected to ensure all clearing and grading activities conducted are in compliance with stormwater 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 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 Pond 1 would require consultation and permitting with the USACE Nashville District and TDEC if determined to be jurisdictional. If determined jurisdictional, impacts to Pond 1 may require a CWA Section 404 permit and a CWA Section 401 Water Quality Certification (ARAP), which would include mitigation measures and possibly compensatory mitigation (e.g., purchase of mitigation credits or implementation of a permittee responsible mitigation plan).

In order to avoid potential impacts to the great horned owl, disturbing activities must be avoided within 660 feet of the large nest near the southern border of the project site when it is active (typically January-mid May). If this restriction cannot be adhered to, USFWS would be contacted by MCEDA for guidance and minimization measures.

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).

7.0 LIST OF PREPARERS

Table 7-1 summarizes the expertise and contribution made to the EA by the Project Team.

Table 7-1 Environmental Assessment Project Team

Name/Education	Experience	Project Role
TVA		
Ashley A. Pilakowski *B.S., Environmental Management*	10 years in environmental planning and policy and NEPA compliance.	NEPA Compliance, Implementation of ESA Section 7 Programmatic Consultation for federally listed bats and routine actions
Chevales Williams B.S. Environmental Engineering	15 years in water quality monitoring and compliance, 14 years in NEPA planning, input and environmental services	Soil Erosion and Surface Water
Kim Pilarski-Hall *M.S., Geography, Minor Ecology*	24 years expertise in wetland assessment, wetland monitoring, watershed assessment, wetland mitigation, restoration as well as NEPA and Clean Water Act compliance	Wetlands & Natural Areas
Adam Dattilo M.S., Forestry; B.S., Natural Resource Conservation Management	21 years in ecological restoration and plant ecology, 16 years in botany	Botany, Threatened and Endangered Species
Kerry Nichols *Ph.D. Anthropology, University of Missouri-Columbia, M.A. Anthropology, University of Colorado-Denver, B.A. Political Science, University of Northern Colorado*	21 years of experience as a field archaeologist and SHPO project reviewer.	Cultural resources, NHPA Section 106 compliance
Craig Phillips *M.S., and B.S., Wildlife and Fisheries Science*	10 years Sampling and Hydrologic Determinations for Streams and Wet-Weather Conveyances; 9 years in Environmental Reviews	Aquatic Ecology
Carrie Williamson, P.E., CFM *B.S. and M.S., Civil Engineering*	7 years in floodplains and flood risk	Floodplains
Robert A. Marker B.S. Outdoor Recreation Resources Management	45 years in outdoor Recreation planning and management	Recreation
Cardno		
Rachel Bell, PMP *B.S., Environmental Science, Auburn University*	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 Program Manager QA/QC

Name/Education	Experience	Project Role
Jason Sean Lancaster, CEP, CE, PWS, TN-QHP *MPH, Epidemiology, University of South Florida* *B.S., Environmental Science and Policy; University of South Florida*	24 years in natural resources planning and NEPA compliance, including project management and biological and environmental studies and analysis.	EA Project Manager QA/QC Purpose and Need, Other Environmental Documentation, Alternatives, Site Description, Permits, Licenses and Approvals, Best Management Practices and Mitigation Measures
Duane Simpson *MA, Anthropology, University of Arkansas* *BA, Anthropology, Ohio University*	26 years in archaeological consulting including management of projects across the southeast and midatlantic regions. Principal Investigator for over 15 years.	Archaeology
Amanda Koonjebeharry, PMP *B.S, Zoology and Botany, University of the West Indies*	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.	Air Quality and Climate Change
Josh Yates, P.G. *M.S., Geology, University of South Florida* *B.S. Natural Resources Management and Engineering, University of Connecticut*	15 years of hydrogeologic assessments and water resources permitting experience. This experience includes water supply planning, hydrogeologic investigations, groundwater modeling, water use permitting, well construction oversight, EIS and EA preparation, minimum flow and level (MFL) impact analysis, monitoring well network design, aquifer performance tests, and GIS analysis.	Groundwater
Sean Peacock *B.S., Environmental Science, Georgia College & State University*	6 years of experience in the environmental consulting field. He regularly conducts wetland and stream delineation; wildlife surveys and monitoring; gopher tortoise surveys, monitoring, and relocations; NPDES inspections, and water quality sampling.	Terrestrial Zoology
Sam Waltman *B.S., Marine Biology, Texas A&M University*	10 years in natural resource surveys and permitting, including EIS and EA preparation, field sampling, GIS analysis, USACE jurisdictional delineations, T&E species surveys, hydrogeomorphic assessments, NRDA, Phase 1 ESAs, and environmental compliance monitoring.	Prime Farmland

Name/Education	Experience	Project Role
Kimberly Sechrist *M.S., Environmental Science, Towson University* *B.S., Biology, McDaniel College (originally Western Maryland College)*	Over 13 years of professional experience in the environmental consulting field. During this time, she has participated in a wide range of projects and tasks including on data validation, chemistry lab coordination and sample tracking, restoration, wetland delineation, endangered species studies and environmental sampling. She has authored numerous Land Use, Recreation, Visual, Socioeconomic, and Environmental Justice resource sections on a variety of third party EAs/EISs.	Visual and Noise
Yosef Shirazi, Ph.D. *Ph.D., Marine Policy, University of Delaware* *M.S., Marine Science, University of North Carolina at Wilmington* *B.S., Biology, University of Maryland* *B.S., Environmental Science and Policy, University of Maryland*	10 years of experience in the fields of ecology and economics. He has performed extensive work implementing and interpreting surveys and survey results, valuing ecosystem services, and evaluating the socioeconomic impacts of infrastructure projects. His areas of technical knowledge include welfare economics, biophysical relationships in coastal environments, and regional economics modeling.	Socioeconomics and Environmental Justice
Brenton Jenkins, P.E. *B.S. Environmental Engineering, Louisiana State University*	8 years in environmental consulting for various private and public sector clients, including project management, engineering design, permitting, and assessments, primarily in the oil and gas sector.	Transportation

8.0 AGENCIES AND OTHERS CONSULTED

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

- Tennessee Historical Commission
- Absentee Shawnee Tribe of Indians of Oklahoma
- Alabama-Coushatta Tribe of Texas
- Cherokee Nation
- Coushatta Tribe of Louisiana
- Eastern Band of Cherokee Indians
- Eastern Shawnee Tribe of Oklahoma
- Jena Band of Choctaw Indians
- Kialegee Tribal Town
- The Muscogee (Creek) Nation
- The Seminole Nation of Oklahoma
- Shawnee Tribe
- Thlopthlocco Tribal Town
- United Keetoowah Band of Cherokee Indians in Oklahoma

9.0 REFERENCES

Bailey, M.A., J.N. Holmes, K.A. Buhlmann, and J.C. Mitchell. 2006. Habitat Management Guidelines for Amphibians and Reptiles of the Southeastern United States. Partners in Amphibian and Reptile Conservation Technical Publication HMG-2, Montgomery, AL.

Brock, J.P., and K. Kaufman. 2003. Field Guide to Butterflies of North America. Houghton Mifflin, New York, NY.

Cardno, Inc. 2020. Environmental Report. Rare, Threatened and Endangered Species Assessments. Tennessee Valley Authority McMinn County Economic Development Project. McMinn County, Tennessee.

Conant, R., and J. T. Collins. 1998. A Field Guide to Reptiles and Amphibians: Eastern and Central North America. Third edition. Houghton Mifflin, Boston, MA.

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of Wetland and Deepwater Habitats of the United States. Washington, D.C.: U.S. Fish and Wildlife Publication FWS/OBS-79/31.

Dorcas, L. and W. Gibbons. 2005. Snakes of the Southeast. The University of Georgia Press, Athens, GA.

Environmental Laboratory. 1987. Corps of Engineers Wetland Delineation Manual, Technical Report Y-87-1. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, Mississippi.

GeoServices. 2012. Report of Preliminary Geotechnical Exploration. North Etowah Industrial Park. GeoServices, LLC. Project No. 21-12387. McMinn County, Tennessee.

GeoServices. 2017a. Report of Geotechnical Exploration and Geophysical Services. Project Pillar N. Etowah IP Site. GeoServices, LLC. Project No. 41-16786. McMinn County, Tennessee.

GeoServices. 2017b. Wetland Delineation Report. Etowah Industrial Park. GeoServices, LLC. Project No. 34-171278. Etowah, Tennessee.

Kays, R, and D E. Wilson. 2002. *Mammals of North America*. Princeton University Press, Princeton, NJ. 240pp.

Kurta, A. and S.W. Murray. 2002. Philopatry and Migration of Indiana Bats (*Myotis Sodalis*) and Effects of Radion Transmitters. Journal of Mammology 83(2): 585-589. Available at: https://academic.oup.com/jmammal/article/83/2/585/2373356?login=true. Accessed January 26, 2021.

McMinn County Economic Development Authority (MCEDA). 2021. North Etowah Industrial Park. Available at: http://makeitinmcminn.org/properties/business-parks/north-etowah-industrial-park. Accessed January 20, 2021

National Geographic. 2002. A Field Guide to the Birds of North America. Fourth edition. National Geographic Society, Washington, D.C.

Pruitt L, TeWinkel L, editors. 2007. Indiana Bat (*Myotis sodalis*) Draft Recovery Plan. First Revision. Fort Snelling, MN: U.S. Fish and Wildlife Service. April 2007. 258 p. Available at: https://ecos.fws.gov/docs/recovery_plan/070416.pdf. Accessed January 26, 2021.

Reed, P. B., Jr. (compiler). 1997. Revision of the National List of Plant Species that Occur in Wetlands. In Cooperation with the National and Regional Interagency Review Panels: U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, and Natural Resources Conservation Service. Department of Interior, U.S. Fish and Wildlife Service, Washington, DC, USA.

Shea, M. 1992. Status Survey Report on *Platanthera integrilabia*. Technical Report to the United States Fish and Wildlife Service, Asheville, North Carolina.

Sibley, D.A. 2003. *The Sibley Field Guide to Birds of Eastern North America*. Alfred A. Knopf, Inc. New York, New York. (431 pp.).

Simpson, D., K. Hinder, V. Nobles, and M. Loughlin. 2021. Phase I Cultural Resources Investigation of the North Etowah Industrial Park, McMinn County, Tennessee

Streamline Environmental. 2016. Phase I Environmental Site Assessment Update for North Etowah Industrial Park – 270-Acre Western Parcel. Etowah, Tennessee.

Tennessee Department of Environment and Conservation (TDEC). 2012a. *Tennessee Erosion and Sediment Control Handbook* - Division of Water Resources. Nashville, TN. 4th Edition 2012. Available at: https://tnepsc.org/handbook.asp.

TDEC. 2012b. Letter to McMinn County Economic Development Authority regarding North Etowah Industrial Park, North Etowah, Tennessee. Dated August 10, 2012.

TDEC. 2013. Rules of the Tennessee Department of Environment and Conservation - Use Classifications for Surface Waters.

TDEC. 2021. Letter to Cardno, Inc. regarding North Etowah Industrial Park Development Project, North Etowah, Tennessee. Dated February 14, 2021.

Tennessee, State of; Comptroller of the Treasury. 2020. Real Estate Assessment Data. Available at: https://www.assessment.cot.tn.gov/RE_Assessment/SelectCounty.aspx?map=true&SelectCounty=054. Accessed January 20, 2021.

Tennessee Valley Authority (TVA). 2017. A Guide for Environmental Protection and Best management Practices for Tennessee Valley Authority Construction and Maintenance Activities, Revision 3. Edited by G. Behel, S. Benefield, R. Brannon, C. Buttram, G. Dalton, C. Ellis, G. Henley, T. Korth, T. Giles, A. Masters, J. Melton, R. Smith, J. Turk, T. White, and R. Wilson. Chattanooga, TN.: Retrieved from https://www.tva.com/Energy/Transmission-System/Transmission-System-Projects> (April 19, 2019).

Tennessee Wildlife Resources Agency (TWRA) 2021. Available at: https://www.tn.gov/twra/wildlife/mammals/medium.html. Accessed January 19, 2021.

United States Census Bureau (USCB). 2020a. Available at: https://www.census.gov/quickfacts/fact/table/TN,mcminncountytennessee,athenscitytennessee/PST045219. Accessed January 13, 2021.

USCB. 2020b. Available at: https://data.census.gov/cedsci/table?q=dp03&t=Employment%20and%20Labor%20Force%20Status&g=0400000US47_0500000US47107_1600000US4702320&tid=ACSDP5Y2019.DP03&hidePreview=true. Accessed January 13, 2021.

US Climate Data. 2020. Athens, Tennessee. Available at: https://www.usclimatedata.com/climate/athens/tennessee/united-states/ustn0021. Accessed September 30, 2020.

United States Environmental Protection Agency (USEPA). 2021. Green Book; Tennessee Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants. Available at: https://www3.epa.gov/airquality/greenbook/anayo_tn.html. Accessed January 13, 2021.

USFWS. 2011. Gray bat. *Myotis grisescens.* Available at: https://www.fws.gov/southeast/pdf/fact-sheet/gray-bat.pdf. Accessed January 19, 2021.

USFWS. 2014. Northern Long-eared Bat Interim Conference and Planning. Available at: https://www.fws.gov/northeast/virginiafield/pdf/NLEBinterimGuidance6Jan2014.pdf.

U.S. Fish and Wildlife Service. 2015. Endangered and Threatened Wildlife and Plants; Threatened Species Status for *Platanthera integrilabia* (Green pitcher plant). Federal Register 80(178): 55304-55321.

USFWS. 2016. Rusty-patched Bumblebee (*Bombis affinis*) Species Status Assessment. Available at: https://www.fws.gov/midwest/endangered/insects/rpbb/pdf/SSAReportRPBBwAdd.pdf. Accessed January 19, 2021.

USFWS. 2019a. 2019 Range-Wide Indiana Bat Summer Survey Guidelines. Available at: https://www.fws.gov/midwest/endangered/mammals/inba/surveys/pdf/2019_Rangewide_IBat_Survey_Guidelines.pdf. Accessed January 19, 2021.

USFWS. 2021. Rusty Patch Bumble Bee Map. Available at: https://www.fws.gov/midwest/endangered/insects/rpbb/rpbbmap.html. Accessed January 25, 2021.

United States Geological Survey (USGS). 1986. Water Resources Investigations Report 82-4091: Preliminary Delineation and Description of the Regional Aquifers of Tennessee – The East Tennessee Aquifer System. Available online: https://pubs.usgs.gov/wri/wri824091/pdf/wrir_82-4091_a.pdf. Accessed January 20, 2021.

USGS. 2008. *Annual Precipitation and Runoff Averages*. PRISM Product. The PRISM Climate Group. Oregon State University. Corvallis, OR.

USGS. 1995. Ground Water Atlas of the United States, Illinois, Indiana, Kentucky, Ohio, Tennessee, HA 730-k. 1995. Available at: https://pubs.usgs.gov/ha/ha730/ch_k/K-text4.html Accessed January 20, 2021.

USGS. 2008. *Annual Precipitation and Runoff Averages*. PRISM Product. The PRISM Climate Group. Oregon State University. Corvallis, OR.

USGS. 2016. Groundwater Quality in the Valley and Ridge and Piedmont and Blue Ridge Carbonate-Rock Aquifers, Eastern United States. 2016. Available at: hhttps://pubs.usgs.gov/fs/2016/3079/fs20163079.pdf. Accessed January 20, 2021.

United States National Park Service (USNPS). 2017. Physiographic Provinces. Available online: https://www.nps.gov/subjects/geology/physiographic-provinces.htm. Accessed January 20, 2021.

USNPS. 2021. Nationwide Rivers Inventory. Available at: https://www.nps.gov/subjects/rivers/nationwide-rivers-inventory.htm. Accessed January 26, 2021.

Whitaker, J.O. 1996. National Audubon Society: Field Guide to North American Mammals. Alfred A. Knopf, Inc., New York, NY.

Wild and Scenic Rivers Database (WSR). 2021. National Wild and Scenic Rivers System. Available online at https://www.rivers.gov/map.php. Accessed January 26, 2021.

ATTACHMENT 1

PROJECT FIGURES

Figure 1-A

Aerial

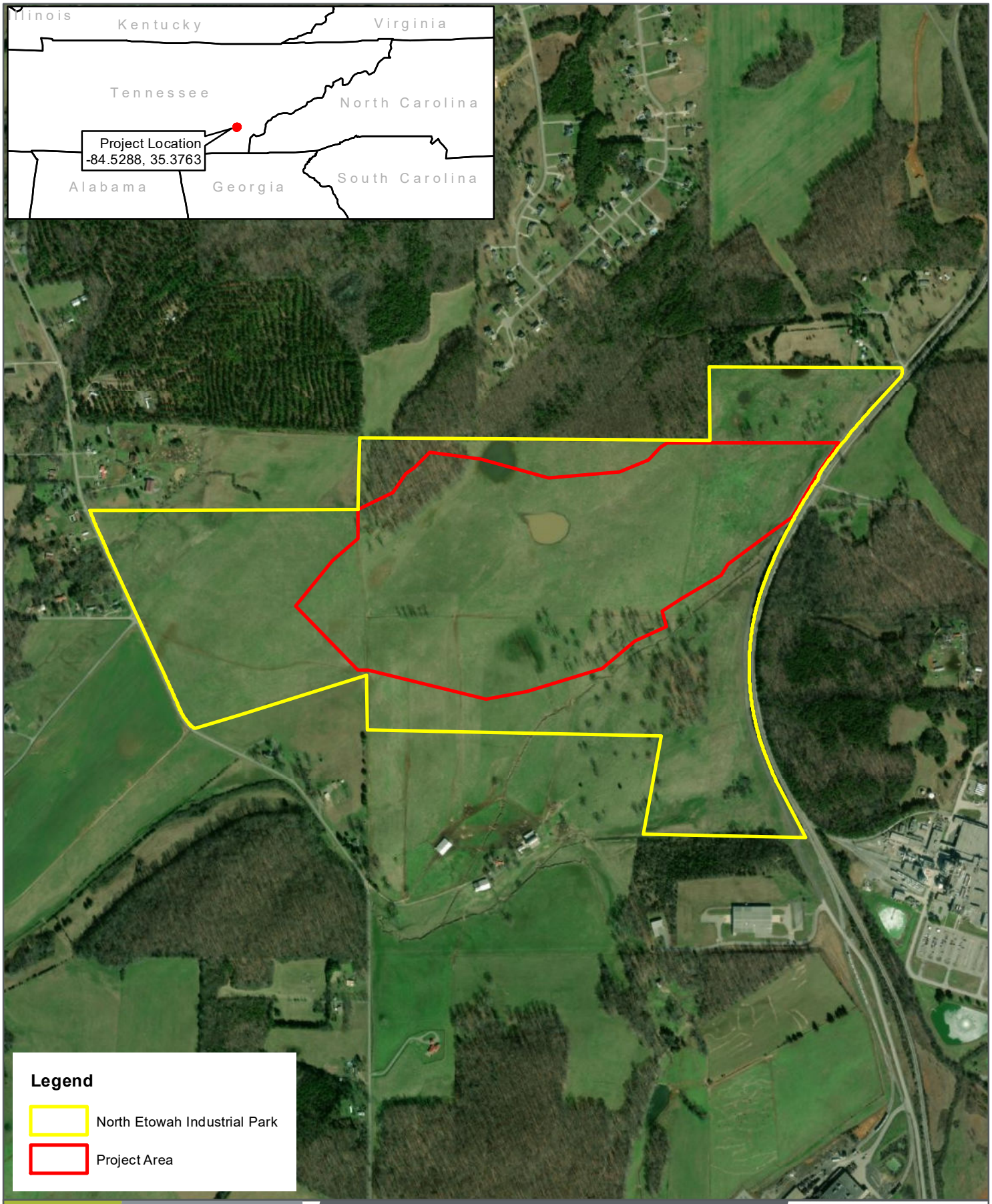


Figure 1-A: Aerial Map

TVA FY21 Economic Development Projects
McMinn County, Tennessee

0 1,000 2,000 Feet

0 300 600 Meters

Cardno

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

Date Created: 1/26/2021 Date Revised: 1/26/2021 File Path: Q:\UnitedStates\Florida\Tampa\Tennessee Valley Authority\TVA_FY21_Economic_Development_Projects\01_McMinn_County_TN\working\arcmap\EA_Maps\EA_McMinn_Fig1A_Aerial_A_1_20210126.mxd
GIS Analyst: James.Bottiger

Figure 1-B

Proposed Activities

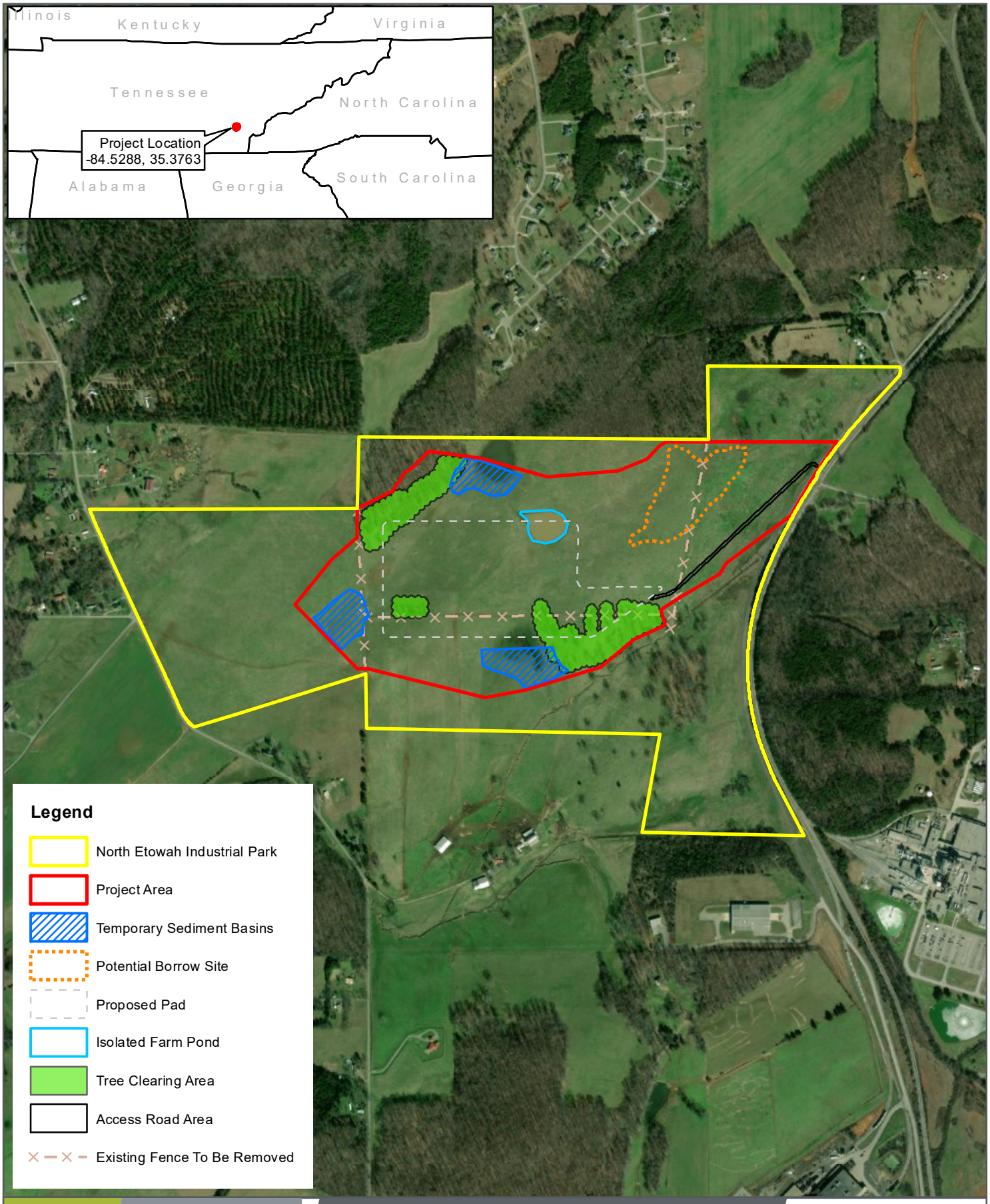


Figure 1-B: Proposed Activities Map

TVA FY21 Economic Development Projects
McMinn County, Tennessee

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

Date Created: 1/26/2021 Date Revised: 1/26/2021 File Path: Q:\UnitedStates\Florida\Tampa\Tennessee Valley Authority\TVA_FY21_Economic_Development_Projects\01_McMinn_County_TN\working\arcmap\EA_Maps\EA_McMinn_Fig1B_Proposed_Activities_A_1_20210126.mxd
GIS Analyst: James.Bottiger

Figure 1-C

USGS Quadrangle

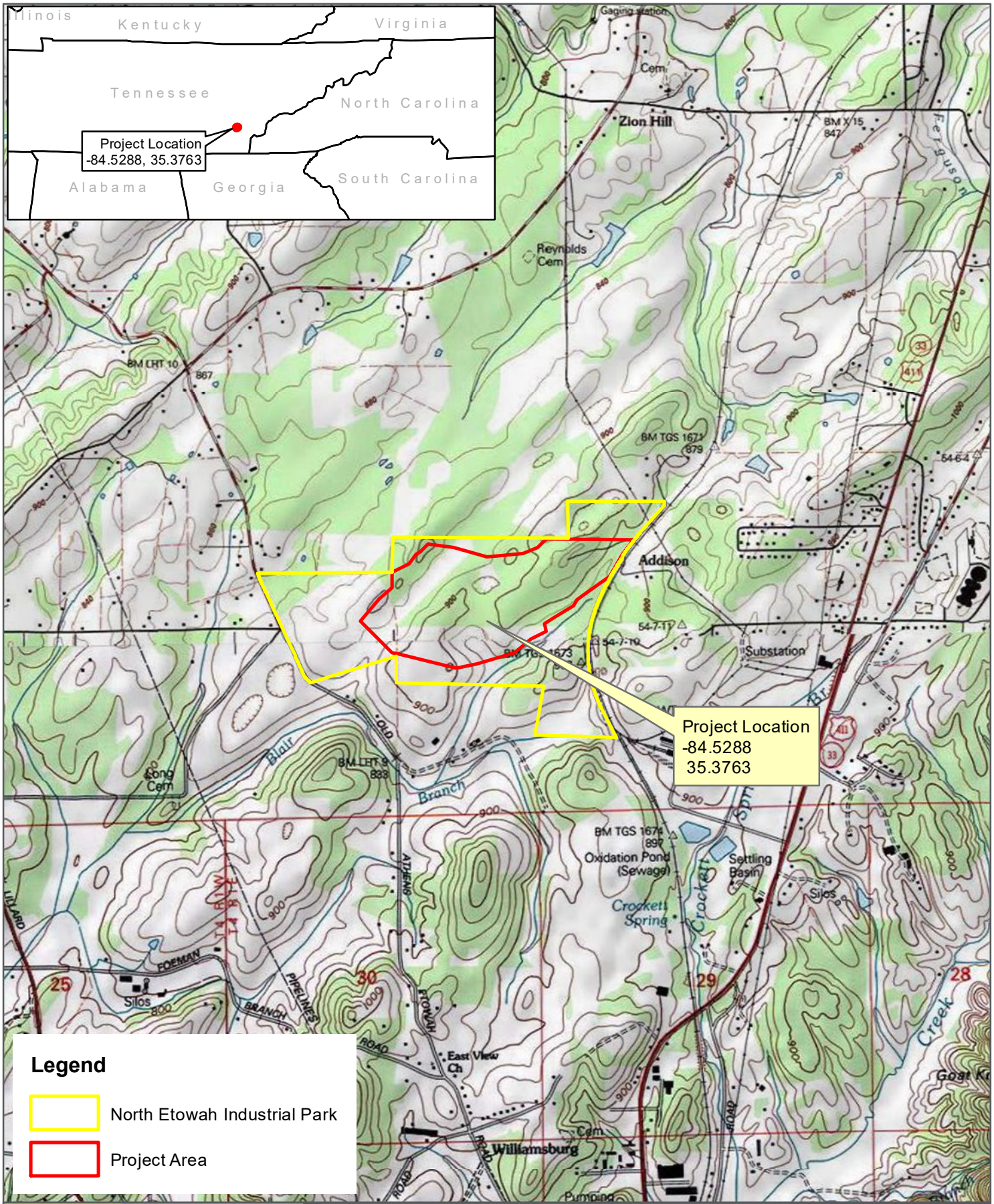


Image:ESRI

Figure 1-C: USGS Quadrangle Map

TVA FY21 Economic Development Projects
McMinn County, Tennessee

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

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

Date Created: 1/26/2021 Date Revised: 1/26/2021 File Path: Q:\UnitedStates\Florida\Tampa\Tennessee Valley Authority\TVA_FY21_Economic_Development_Projects\01_McMinn_County_TN\working\arcmap\EA_Maps\EA_McMinn_Fig1C_USGS_Quadrangle_A_1_20210126.mxd
GIS Analyst: James.Bottiger

Figure 1-D

FEMA Floodplain

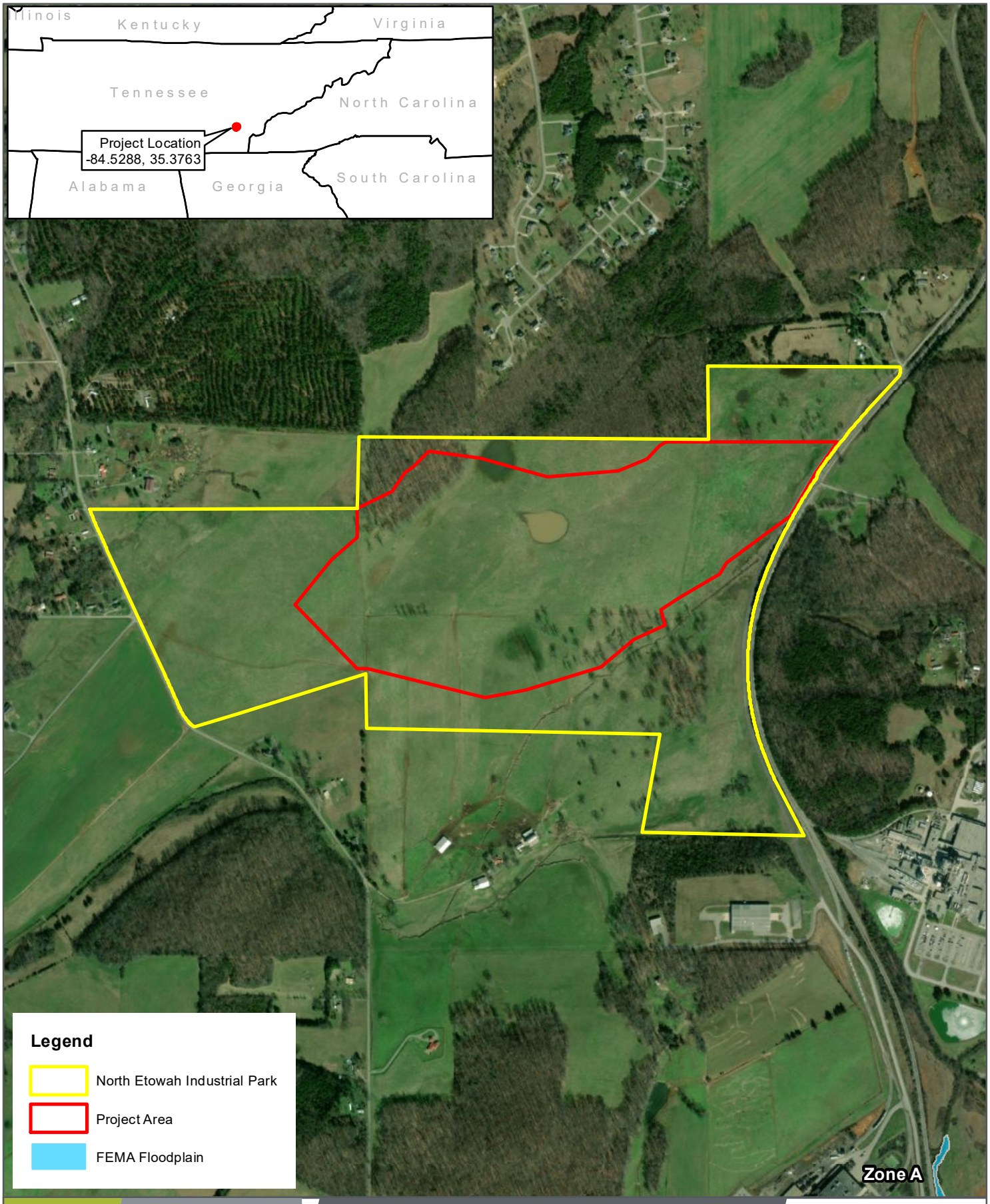


Image:2020

Figure 1-D: FEMA Floodplain Map

TVA FY21 Economic Development Projects
McMinn County, Tennessee

0 1,000 2,000 Feet

0 300 600 Meters

Cardno

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

Date Created: 1/26/2021 Date Revised: 1/26/2021 File Path: Q:\UnitedStates\Florida\Tampa\Tennessee Valley Authority\TVA_FY21_Economic_Development_Projects\01_McMinn_County_TN\working\arcmap\EA_Maps\EA_McMinn_Fig1D_FEMA_Floodplain_A_1_20210126.mxd
GIS Analyst: James.Bottiger

Figure 1-E

USFWS NWI and Water Resources Inventory Map

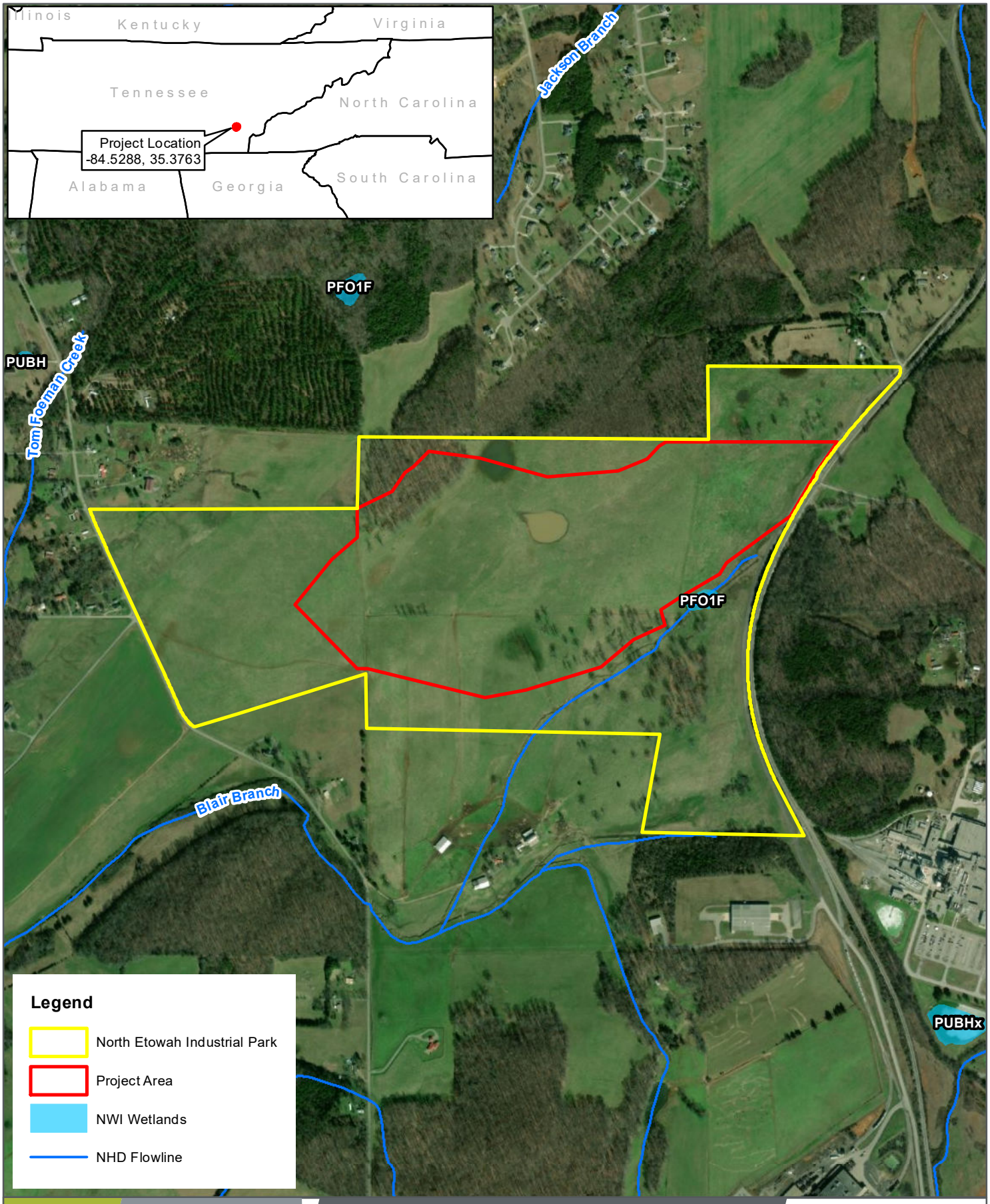


Figure 1-E: USFWS NWI and Water Inventory Map

TVA FY21 Economic Development Projects
McMinn County, Tennessee

0 1,000 2,000 Feet
0 300 600 Meters

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

Date Created: 1/26/2021 Date Revised: 1/26/2021 File Path: Q:\UnitedStates\Florida\Tampa\Tennessee Valley Authority\TVA_FY21_Economic_Development_Projects\01_McMinn_County_TN\working\arcmap\EA_Maps\EA_McMinn_Fig1E_USFWS_NWI_A_1_20210126.mxd
GIS Analyst: James.Bottiger

Figure 1-F

Wetlands and Waterbodies Map

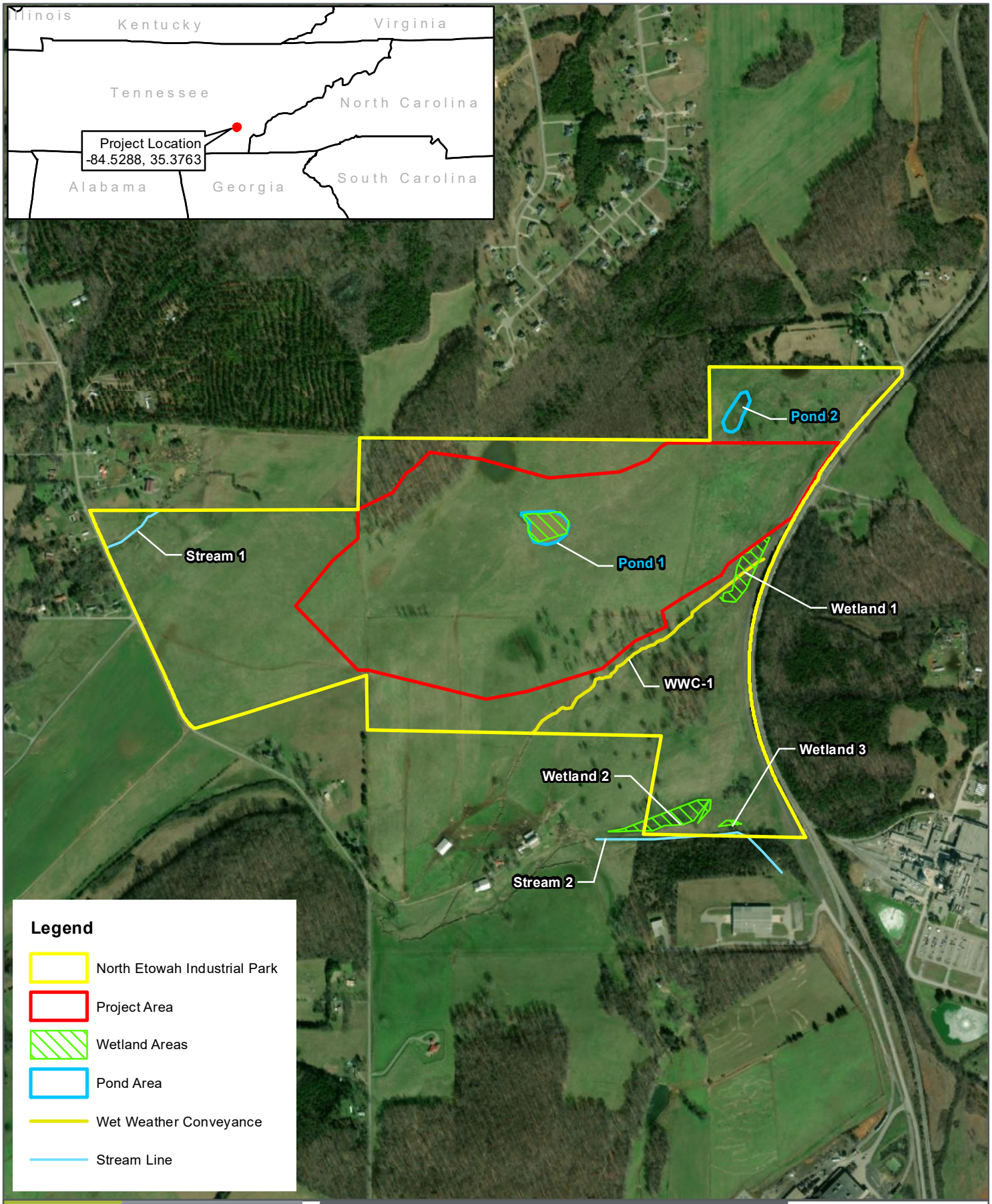


Image:2020

Figure 1-F: Wetlands and Waterbodies Map

TVA FY21 Economic Development Projects
McMinn County, Tennessee

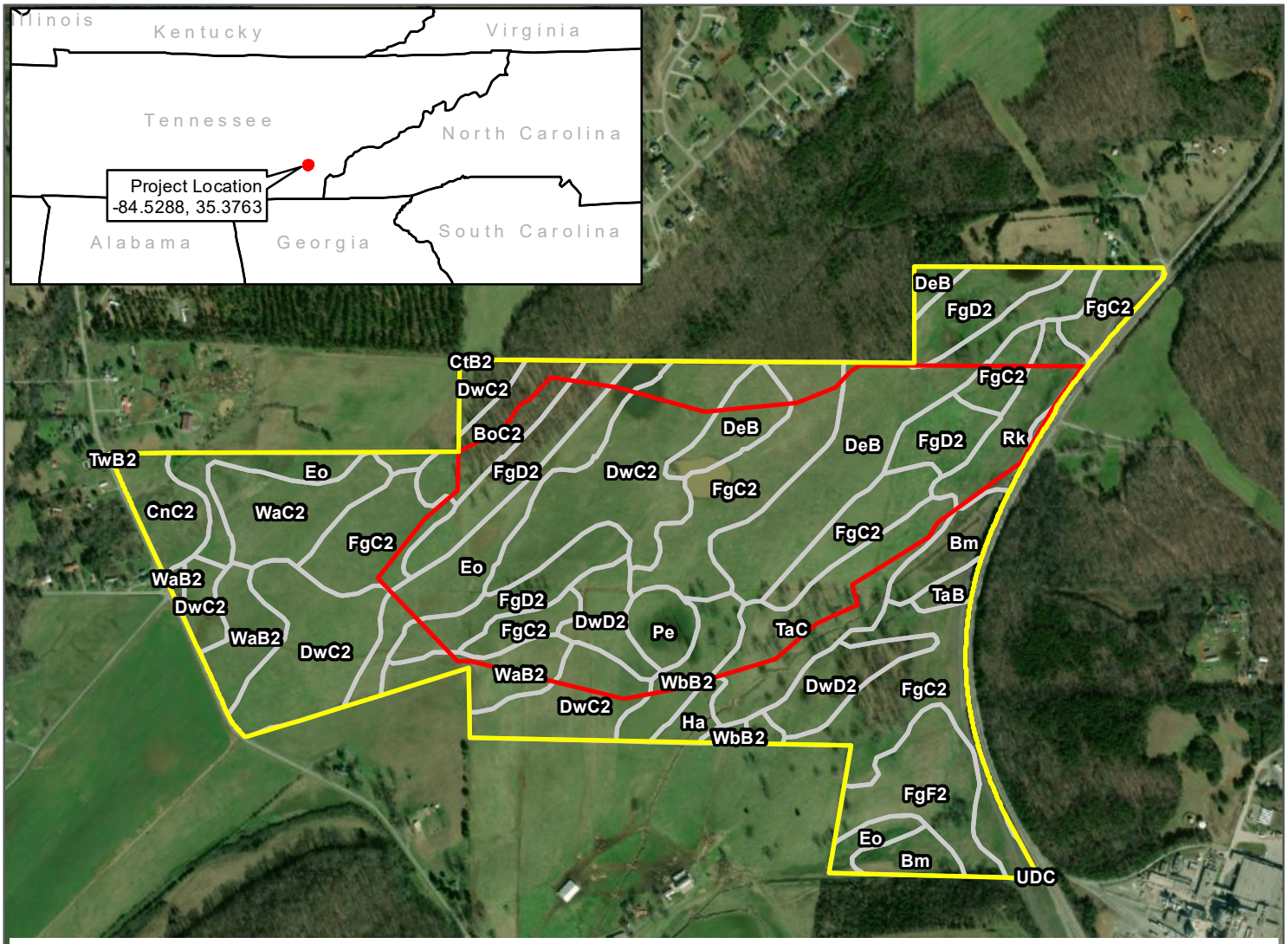
0 1,000 2,000 Feet
0 300 600 Meters

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

Date Created: 1/26/2021 Date Revised: 1/26/2021 File Path: Q:\UnitedStates\Florida\Tampa\Tennessee Valley Authority\TVA_FY21_Economic_Development_Projects\01_McMinn_County_TN\working\arcmap\EA_Maps\EA_McMinn_Fig1F_Wetlands_and_Waterbodies_A_1_20210126.mxd
GIS Analyst: James.Bottiger

Figure 1-G

NRCS Soils Map



Legend

- North Etowah Industrial Park
- Project Area
- Bm - Bloomingdale silty clay loam, occasionally flooded
- BoC2 - Bodine gravelly silt loam, 5 to 12 percent slopes, eroded
- CnC2 - Coile silt loam, 5 to 12 percent slopes, eroded
- CtB2 - Corryton-Townley complex, 2 to 5 percent slopes, eroded
- DeB - Dewey silt loam, 2 to 6 percent slopes
- DwC2 - Dewey silty clay loam, 5 to 12 percent slopes, eroded
- DwD2 - Dewey silty clay loam, 15 to 25 percent slopes, eroded
- Eo - Etowah loam, occasionally flooded, overwash
- FgC2 - Fullerton gravelly silt loam, 5 to 12 percent slopes, eroded
- FgD2 - Fullerton gravelly silt loam, 12 to 25 percent slopes, eroded
- FgF2 - Fullerton gravelly silt loam, 25 to 60 percent slopes, eroded
- Ha - Hamblen silt loam, clayey substratum, 0 to 3 percent slopes, occasionally flooded
- Pe - Pettyjon silty clay loam, occasionally flooded
- Rk - Rockdell gravelly loam, occasionally flooded
- TaB - Tasso loam, 2 to 5 percent slopes
- TaC - Tasso loam, 5 to 12 percent slopes
- TwB2 - Townley-Coile complex, 2 to 5 percent slopes, eroded
- UDC - Udorthents-Urban land complex, 2 to 12 percent slopes
- WaB2 - Waynesboro clay loam, 2 to 6 percent slopes, eroded
- WaC2 - Waynesboro clay loam, 6 to 15 percent slopes, eroded
- WbB2 - Waynesboro silt loam, 2 to 5 percent slopes, eroded

Image:2020

Data Source:

Figure 1-G: NRCS Soils

TVA FY21 Economic Development Projects
McMinn County, Tennessee

0 1,000 2,000 Feet

0 300 600 Meters

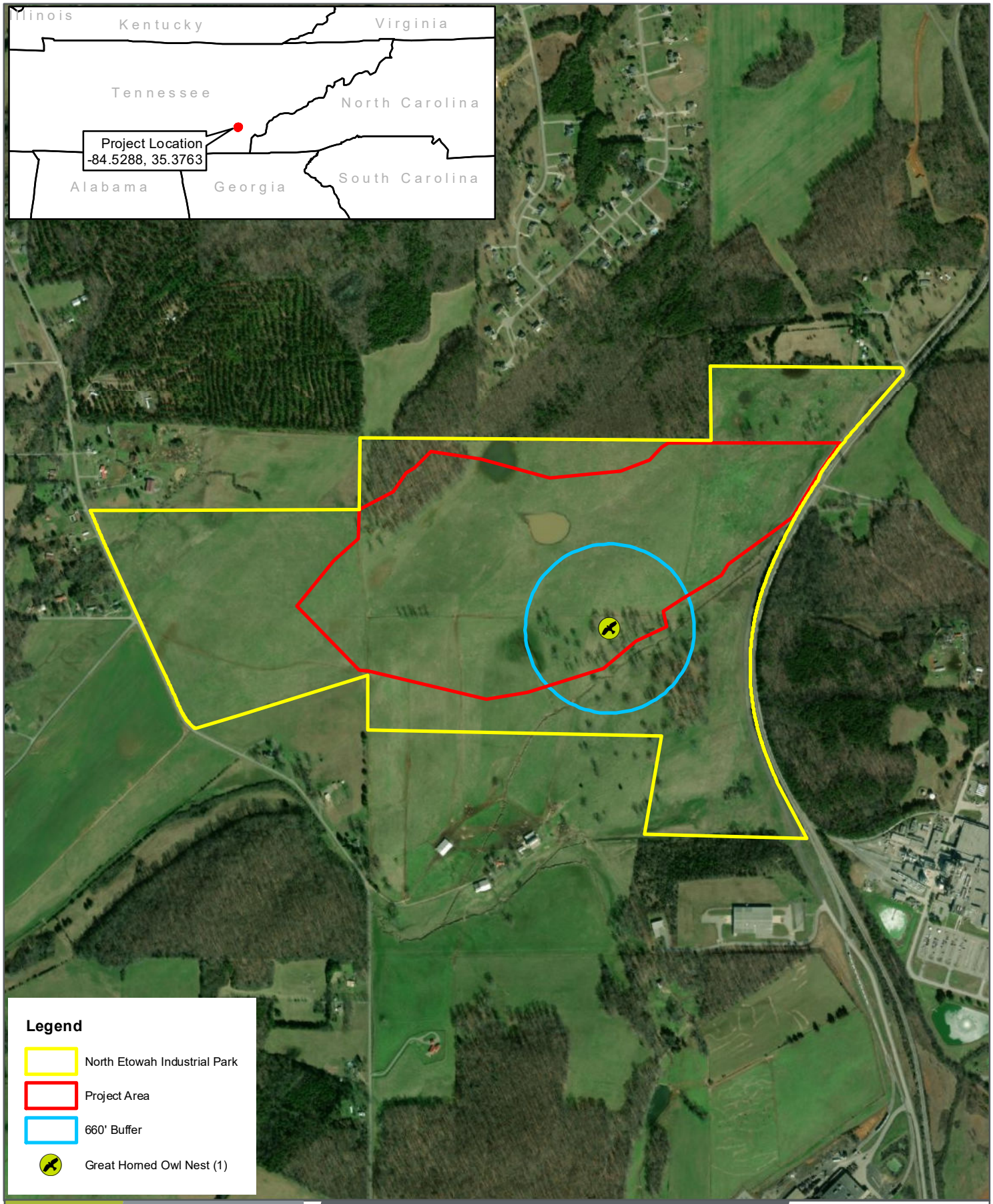
Cardno

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

Date Created: 1/26/2021 Date Revised: 1/26/2021 File Path: Q:\UnitedStates\Florida\Tampa\Tennessee Valley Authority\TVA_FY21_Economic_Development_Projects\01_McMinn_County_TN\working\arcmap\EA_Maps\EA_McMinn_Fig1G_NRCS_Soils_A_1_20210126.mxd
GIS Analyst: James.Bottiger

Figure 1-H

Great Horned Owl Nest



This map and all data contained within are supplied as is with no warranty. Cardno Inc. expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.

Figure 1-H: Great Horned Owl Nest

TVA FY21 Economic Development Projects
McMinn County, Tennessee

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

Date Created: 3/10/2021 Date Revised: 3/10/2021 File Path: Q:\UnitedStates\Florida\Tampa\Tennessee Valley Authority\TVA_FY21_Economic_Development_Projects\01_McMinn_County_TN\working\arcmap\EA_Maps\EA_McMinn_Fig1H_Great_Horned_Owl_Nest_A_1_20210310.mxd
GIS Analyst: James.Bottiger

ATTACHMENT 2

TVA Bat Strategy Project Screening Form

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

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

Project Name: InvestPrep - McMinn County **Date:** Oct 5, 2020

Contact(s): Bess Hubbard **CEC#:** **Project ID:** 37085

Project Location (City, County, State): Etowah, McMinn County, TN

Project Description:

TVA funding to assist with with tree clearing, fence removal, the rough grading of a 35-acre dirt building pad, construction of three temporary sediment basins, and construction of a gravel access road.

SECTION 1: PROJECT INFORMATION - ACTION AND ACTIVITIES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

e) If **tree removal (activity 33 or 34)**, estimated amount: [14.2] (•)**ac** ( )**trees** ( )**N/A**

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

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

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

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

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

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

Info below completed by:				
☐ **Heritage Reviewer**	(name)		Date	
☐ **OSAR Reviewer**	(name)		Date	
■ **Terrestrial Zoologist**	(name)	Elizabeth Hamrick	Date	Feb 9, 2021

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): [14.2] **(**( )**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 14.2 ◉ **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 Feb 9, 2021

TVA Action	Total 20-year	Winter	Volant Season	Non-Volant Season
9 Promote Economic Development	7,487.15	6,761.73	725.42	0

STEP 12) Amount contributed to TVA's Bat Conservation Fund upon activity completion: $ 7,100 OR ○ **N/A**

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

SECTION 3: REQUIRED CONSERVATION MEASURES

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

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

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

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

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

Manual Override

Name: Elizabeth Hamrick

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

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

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

Hide All Unchecked Conservation Measures

- (•) HIDE
- ( ) UNHIDE

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

- (•) HIDE
- ( ) UNHIDE

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

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

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

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

For Use by Terrestrial Zoologist Only

☒ Terrestrial Zoologist acknowledges that Project Lead/Contact (name) Bess Hubbard 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 14.2 (•) ac ( ) trees and that use of Take will require $ 7,100 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

February 22, 2021

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, North Etowah Industrial Park, CID 79587, Etowah, McMinn County, TN

Dear Mr. Jones:

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

Based on the information provided, we concur that the project area contains the National Register eligible Louisville and Nashville Railroad Line. We further concur that that the project as currently proposed will not adversely affect this historic property.

This office has no objection to the implementation of this project as currently planned. If project plans are changed or previously unevaluated archaeological resources are discovered during project construction, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act. Questions and comments may be directed to Jennifer M. Barnett (615) 687-4780, Jennifer.Barnett@tn.gov . We appreciate your cooperation.

Sincerely,

E. Patrick McIntyre, Jr.

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

EPM/jmb

3-B

Federally Recognized Indian Tribes

From: [redacted]
Subject: FW: TVA-Investprep-NorthEtowahBusinessPark-McMinnCoTN-CID79587-22Feb2021
Date: Wednesday, March 24, 2021 8:27:43 AM
Attachments: image010.png
image011.png
image012.png
image013.png
image014.png
image015.png
image016.png
image017.png
image002.png

Due to COVID-19 safety precautions enacted by TVA, I am currently teleworking.

My mobile phone is listed below and you can call or txt until further notice.

Michaelyn Harle, Ph.D
Archaeologist
Cultural Compliance

400 W. Summit Hill Drive
WT 11A-K
Knoxville, TN 37902

865-632-2248 (w)

717-756-3196 (m)
mharle@tva.gov

TVA logo

From: Shuler, Marianne M <mmshuler@tva.gov>
Sent: Wednesday, March 24, 2021 8:22 AM
To: Harle, Michaelyn S <mharle@tva.gov>
Subject: FW: TVA-Investprep-NorthEtowahBusinessPark-McMinnCoTN-CID79587-22Feb2021

From: [redacted]
Sent: Tuesday, March 23, 2021 5:28 PM
To: Shuler, Marianne M <mmshuler@tva.gov>
Subject: RE: TVA-Investprep-NorthEtowahBusinessPark-McMinnCoTN-CID79587-22Feb2021

Dear Marianne,

Regarding the above-mentioned project, the Jena Band of Choctaw Indians hereby defers to the other Tribes with interest in this area. This deference does not preclude future consultation with the Jena Band of Choctaw Indians. Thank you.

Sincerely,

Alina J. Shively, THPO
Jena Band of Choctaw Indians
[redacted]

From: Shuler, Marianne M <mmshuler@tva.gov>
Sent: Monday, February 22, 2021 11:11 AM
[redacted]

[redacted]

Subject: TVA-Investprep-NorthEtowahBusinessPark-McMinnCoTN-CID79587-22Feb2021

Good Morning
By this email I am sending the attached letter regarding TVA's proposal to provide funds to the McMinn County Economic Development Authority to assist North Etowah Industrial Park with improvements to portions of this property in McMinn County, Tennessee.

Please let me know by March 24, 2021 if you have any questions or comments on the proposed undertaking.
Thanks
Marianne

Due to COVID-19 safety precautions enacted by TVA, I am currently teleworking.

-

Marianne Shuler
Senior Specialist, Archaeologist & Tribal Liaison
Cultural Compliance

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

(865)253-1265 (w)
mmshuler@tva.gov

3-C

Tennessee Department of Environment and Conservation, Division of Natural Areas, Natural Heritage Program

STATE OF TENNESSEE

DEPARTMENT OF ENVIRONMENT AND CONSERVATION

Division of Natural Areas
Natural Heritage Program
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 2nd Floor
Nashville, Tennessee 37243
Phone 615/532-0431 Fax 615/532-0046

February 14, 2021

Trey Fitzpatrick
Cardno, Inc.
130 Inverness Plaza #290
Birmingham, AL 35242

Subject: North Etowah Industrial Park Development Project
(35.377279, -84.528855)
McMinn County, TN
Rare Species Database Review

Dear Mr. Fitzpatrick:

Thank you for your correspondence of 12 January 2021 requesting a rare species database review for the proposed rough grading, tree clearing, fence removal, access road construction, and sediment pond construction on Parcel No. 054 087 206.00 in North Etowah, McMinn County, Tennessee. The subject parcel is owned by Industrial Development Board of McMinn County and consists of 188.49 acres of which 118.4 acres have been delineated for impact. The project polygon provided to our office for review includes several wet areas, but excludes an unnamed tributary of Blair Branch which crosses the southeast corner of the parcel.

Per your submittal:

> *The topography of the North Etowah Industrial Park continues to eliminate McMinn County, TN from recruitment projects because of perceived risks related to the timing and cost of grading the site. In order to put this site in a more marketable position, rough grading of the site is needed. Upon completion, this project will allow prospects to better envision the development potential of the North Etowah Industrial Park by clearing approximately 14.2 acres of trees, removing approximately 5,260 linear feet (LF) of existing fence, rough grading a 35-acre dirt building pad, constructing three temporary sediment basins, and constructing a gravel access road.*

We have reviewed the state's natural heritage database with regard to the project boundaries, and we find that no rare species have been observed previously within one mile of the project area.

Within four miles of the project area the following rare species has been reported:

Type	Scientific Name	Common Name	Global Rank	St. Rank	Fed. Prot.	St. Prot.	Habitat
Vertebrate Animal	*Chrosomus tennesseensis*	Tennessee Dace	G3	S3	--	D	First order spring-fed streams of woodlands in Ridge and Valley limestone region; Tennessee River watershed.

The Division of Natural Areas - Natural Heritage Program has reviewed the location of the proposed project workspace with respect to rare plant species. Based on the habitat within the project area we do not anticipate any impacts to occurrences of rare, threatened, or endangered plant species from this project.

We ask that you coordinate this project with the Tennessee Wildlife Resources Agency (Rob Todd, rob.todd@tn.gov, 615-781-6577) to ensure that legal requirements for protection of state listed rare animals are addressed. Additionally, we ask that you contact the U.S. Fish and Wildlife Service Field Office, Cookeville, Tennessee (931-525-4970) for comments regarding federally listed species. Please ensure that best management practices to address erosion and sediment are implemented and maintained during construction activities. Note that the General Aquatic Resource Alteration Permit states that "use of monofilament-type erosion control netting or blanket is prohibited in the stream channel, stream banks, or any disturbed riparian areas within 30 feet of top of bank." Where necessary and feasible, we encourage use of biodegradable netting under the CGP (Construction General Stormwater Permit) as well.

Thank you for considering Tennessee's rare species throughout the planning of this project. Should you have any questions, please do not hesitate to contact me at 615-532-4799 or dillon.blankenship@tn.gov.

Sincerely,

Dillon

Dillon Blankenship | Environmental Review Coordinator
Tennessee Natural Heritage Program