Document Type: EA-Administrative Record
Index Field: Draft Environmental Assessment
Project Name: Economic Development Grant – Monroe County, Tennessee
Project Number: 2020-5

ECONOMIC DEVELOPMENT GRANT PROPOSAL FOR TELLICO WEST INDUSTRIAL PARK

DRAFT ENVIRONMENTAL ASSESSMENT

Monroe County, Tennessee

Prepared by:

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March 2020

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1.0 PROPOSED ACTION AND NEED

An integral part of Tennessee Valley Authority's (TVA) mission is to promote economic development in the TVA service area. TVA provides financial assistance to help bring to market new/improved sites and facilities in the TVA service area and position communities to compete successfully for new jobs and capital investment. TVA proposes to provide an economic development grant through TVA InvestPrep funds to the Tellico Reservoir Development Agency (TRDA) to facilitate the development of a site within the Tellico West Industrial Park. TRDA would use TVA funds for due diligence studies (Phase I Environmental Site Assessment [ESA] and boundary survey), tree clearing, site grading including the construction of a 200,000 square foot pad, and construction of a stormwater detention basin and gravel access road. The Tellico West Industrial Park is located along the east side of State Road (SR) 72 in Vonore, Monroe County, Tennessee. The area of TVA's Proposed Action (herein referred to as the Project Area) is an approximately 39.4-acre area that is located east of SR 72 and north of Old Slag Road (see **Figure 1** below and Attachment 1, Figure 1-A). The Project Area is a portion of the Tellico West Industrial Park and is proposed for development by the TRDA as a future graded industrial site with rail feasibility (see Attachment 1, Figure 1-A).

TVA's Proposed Action would assist the TRDA with the development of a graded industrial site with rail feasibility, increasing the probability of achieving TVA's mission of job creation and capital investment. This Environmental Assessment (EA) provides an assessment of the environmental impacts that would potentially be directly, indirectly, or cumulatively affected by TVA's Proposed Action. TVA's decision is whether to provide the requested funding to the TRDA.

2.0 OTHER ENVIRONMENTAL REVIEWS AND DOCUMENTATION

TRC Garrow Associates, Inc. conducted a Phase I Cultural Resources Survey in February 2000 over portions of the Tellico West Industrial Park, which included much of the Project Area (Stanyard 2000). The purpose of the survey was to identify potential archaeological resources in the study areas. The Phase I Cultural Resources Survey Report was used in the preparation of this EA.

TVA and TRDA entered into an agreement in 1982 (Contract No. TV-6000A) under which TVA agreed to offer for sale certain shorelands surrounding Tellico Reservoir designated for industrial, residential, commercial recreational, and cultural/public use/open space purposes (TVA 2000). Industrial development along Tellico Reservoir has occurred in areas that were designated for Industrial Development in the Contract No. TV-60000A land plan and is therefore consistent with TVA's Tellico Reservoir Land Plan.

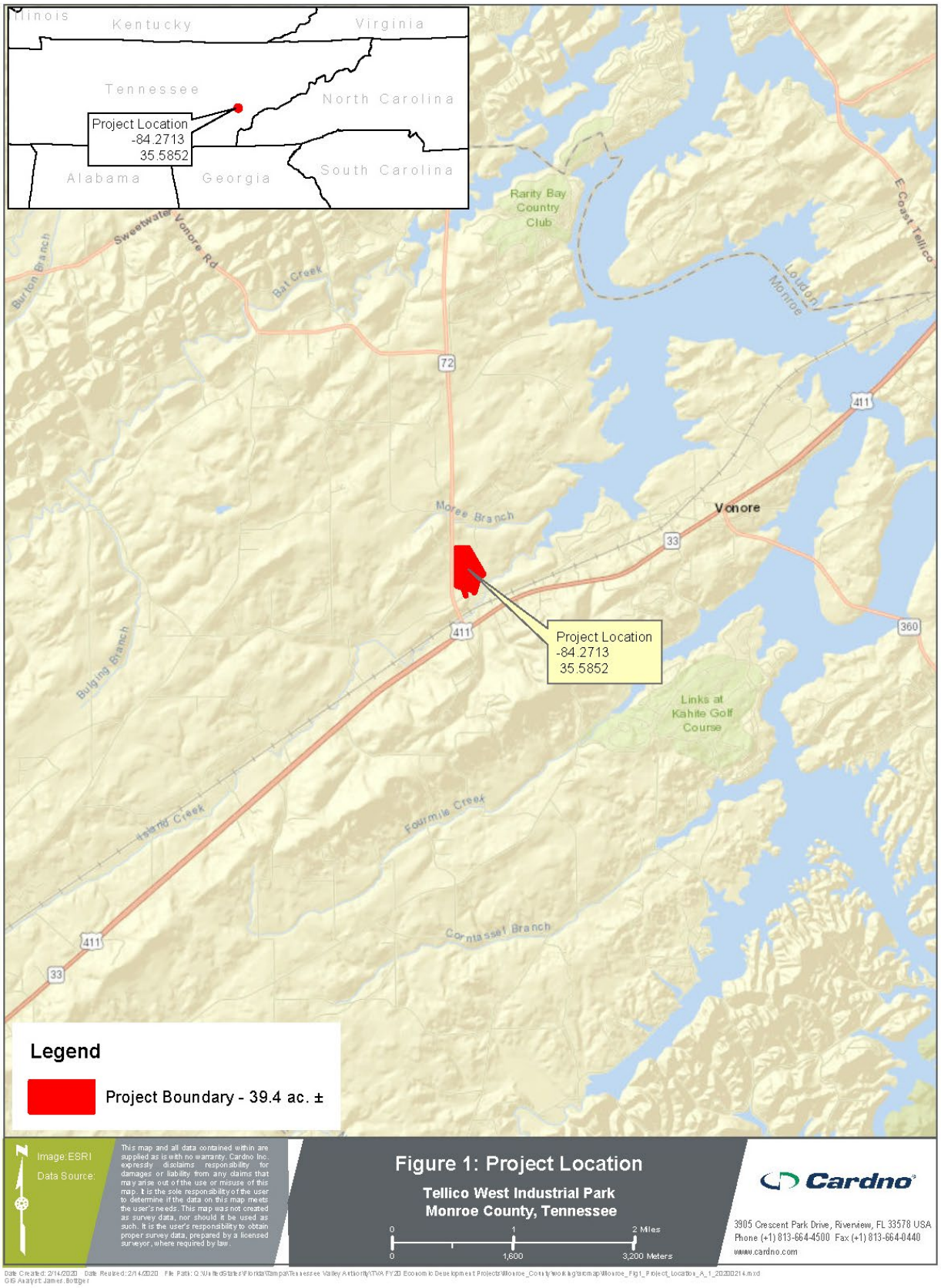


Figure 1: Project Location

3.0 ALTERNATIVES

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

The No Action Alternative

Under the No Action Alternative, TVA would not provide TVA InvestPrep funds to the TRDA. TVA would not be furthering its mission of promoting economic development by assisting the local community to compete successfully for new jobs and capital investment through the Proposed Action. The TRDA may seek alternate funding (if available) to complete due diligence studies (Phase I ESA and boundary survey), tree clearing, site grading including the construction of a 200,000 square foot pad, and construction of a stormwater detention basin and gravel access road. Success in obtaining alternate funding would result in similar impacts and benefits as the Action Alternative.

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

The Action Alternative

Under the Action Alternative, TVA would provide TVA InvestPrep funds to the TRDA to complete due diligence studies (Phase I ESA and boundary survey), tree clearing, site grading including the construction of a 200,000 square foot pad, and construction of a stormwater detention basin and gravel access road. The Action Alternative would require disturbance of approximately 39.4 acres and would result in clearing of approximately 3.7 acres of trees (Attachment 1, Figures 1-A and 1-B). Site activities required for the Action Alternative would occur over a short period and would involve operation of an excavator, bulldozer, dump truck, or similar vehicles and heavy machinery. Cleared trees, stumps, and vegetation would be burned on-site, and conservation measures identified in TVA's Bat Strategy Project Screening Form (Attachment 2) would be implemented. TVA's preferred alternative is the Action Alternative.

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

The Action Alternative does not include assessment of activities that may be directly or indirectly associated with the eventual build-out, occupation, and future use of the Tellico West Industrial Park. It would be speculative to do so as details of such future use, if any, are unknown at this time. However, TVA assumed future disturbance of the remaining available parcels within the Tellico West Industrial Park as a conservative approach for purposes of assessing cumulative impacts. Section 5 of this EA provides a discussion of cumulative impacts.

4.0 AFFECTED ENVIRONMENT AND ANTICIPATED IMPACTS

4.1 Site Description

The Project Area is located along the east side of SR 72 and north side of Old Slag Road, approximately 0.2 miles north of US Highway 411 in Vonore, Monroe County, Tennessee, and is comprised of an approximately 39.4-acre area. The Project Area is located in an undeveloped area of the Tellico West Industrial Park, with no permanent structures present in the Project Area. Old Slag Road provides access from along the southernmost border of the Project Area. The current land use in the Project Area is open herbaceous land with areas of fragmented forest (Attachment 1, Figure 1-A). The Project Area is zoned for industrial use, which is appropriately zoned per TVA's Tellico Reservoir Land Management Plan.

The developed areas of the Tellico West Industrial Park are located along the east side of SR 72, approximately 0.5 miles north of US Highway 411. The industrial park is adjacent to the northernmost Project Area border and extends to the north and northeast of the Project Area. Over a dozen industries/service providers are located in the Tellico West Industrial Park, including Conagra Inc. Distribution Center, Mastercraft Boat Company, Yamaha Jet Boat Manufacturing, Sea Ray, HCB Yachts, JTEKT, Carlex Glass, Great Lakes Boat Top, and Commercial Vehicle Group.

The northernmost Project Area is bordered by deciduous, mixed evergreen and deciduous, and evergreen forest. The Conagra Inc. Distribution Center is located immediately to the northeast of the Project Area. A CSX Railroad spur and mixed evergreen and deciduous forest borders the easternmost Project Area. Mixed evergreen and deciduous forest and Old Slag Road borders the southernmost Project Area. An electric transmission line right-of-way and mixed evergreen and deciduous forest borders the westernmost Project Area, followed by SR 72 approximately 175 feet from the Project Area. A storage unit facility and corrugated packaging manufacturer are located along the west side of SR 72, across from the Project Area. Open fields and residential areas are located further to the west and southwest beyond the storage unit facility and corrugated packaging manufacturer.

The Project Area generally consists of gently sloping topography. Topography within the Project Area is higher in the center and along the west side of the site and gently slopes to the northeast, east, and southeast (Attachment 1, Figure 1-C). Stormwater drains from the west-northwest of the site toward an unnamed tributary of Island Creek and from the west-southwest side of the site toward another unnamed tributary of Island Creek as depicted on Attachment 1, Figure 1-C. Island Creek, the nearest named stream, is located approximately 300 feet to the east of the Project Area.

4.2 Impacts Evaluated

Two unnamed tributaries of Island Creek cross the Project Area; however, the Project Area does not intersect any identified floodplains. Based on 2010 Monroe County, Tennessee, Flood Insurance Rate Maps, tree clearing, site grading including the construction of a 200,000 square foot pad, and construction of a stormwater detention basin would be located outside 100-year floodplains, which would be consistent with Executive Order (EO) 11988 (Floodplain Management). The gravel access road would cross an unnamed tributary of Island Creek. Consistent with EO 11988, access roads are considered to be repetitive actions in the 100-year

floodplain that should result in minor impacts (TVA 1981). As a mitigation measure to minimize adverse impacts of the Action Alternative, it is expected that TRDA or its contractor would complete road construction in such a manner that upstream flood elevations would not be increased by more than one foot. Therefore, the Action Alternative would not result in significant impacts to floodplains and their natural and beneficial values.

Because the Project Area is located in a property zoned for industrial use and the Action Alternative would not result in a change to the current land use, there would be no impact to land use and prime farmland.

No demolition or waste disposal activities are associated with the Action Alternative. Therefore, the Action Alternative would not result in the creation or disposal of solid and hazardous wastes.

Based on the above analysis, TVA has determined that the Action Alternative would not significantly affect floodplains, land use, and prime farmland. The Action Alternative would not result in significant impacts from the creation or disposal of solid and hazardous wastes. Therefore, this EA does not describe potential impacts to these resources in further detail.

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

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 Monroe County, Tennessee, meets the ambient air quality standards and is in attainment with respect to the criteria pollutants (USEPA 2020).

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 TRDA and its contractors would be expected to comply with Tennessee Department of Environment and Conservation (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 TRDA 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 3.7 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 TRDA were able to secure the funding for the proposed TVA-funded actions described in this EA, 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 TRDA 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 in the Valley and Ridge Province (United States Geological Survey [USGS] 2003). The Valley and Ridge Province extends southwest to northeast and is characterized by a sequence of folded and faulted, Paleozoic sedimentary rocks that form a series of alternating valleys and ridges that extend from Alabama and Georgia to New York (USGS 1995). In the eastern part of Tennessee, the Valley and Ridge Province is underlain by rocks that are primarily Cambrian and Ordovician in age, with minor Silurian, Devonian, and Mississippian rocks also present (USGS 1995). Soluble carbonate rocks and some easily eroded shales underlie the valleys in the province, while more erosion-resistant siltstone, sandstone, and some cherty dolomite underlie ridges (USGS 1995). Water quality in the aquifers of the Valley and Ridge Province is characterized as hard, with dissolved solids concentrations of 170 milligrams per liter or less. Due to the complex network of fractures, bedding planes, and solution openings in the carbonate rocks, water recharges rapidly and, water quality in these aquifers is susceptible to contamination by human activities (USGS 1995). Recharge occurs primarily along the flanks of the ridges and groundwater flow is generally toward the center of the valleys.

Implementation of the Action Alternative would result in ground disturbance during construction activities. Tree clearing and construction of the gravel access road would result in minor ground disturbance at shallow depths. Existing topography ranges from 833 feet mean sea level (MSL) near the southern boundary of the Project Area to 860 feet MSL in the center and along the northwest side of the Project Area. Site grading, including construction of a building pad and stormwater detention basin would result in greater ground disturbance at moderate depths resulting in proposed final grade elevations of 828 feet MSL near the southern boundary of the Project Area to 900 feet at the northern end of the Project Area. Earthwork cuts of up to 22 feet and earthwork fill of up to 40 feet would be required to achieve these elevations. However, ground disturbance would be temporary and would not be at depths that would intersect public groundwater supplies (typically 50 to 250 feet beneath the land surface [USGS 2016]) or result in significant impacts to groundwater resources. Shallow aquifers could sustain minor impacts from changes in overland water flow and recharge caused by clearing and grading of the Project Area. Water infiltration, which is normally enhanced by vegetation, would be reduced until vegetation is re-established. In addition, near-surface soil compaction caused by heavy construction vehicles could reduce the ability of soil to absorb water. These minor impacts would be temporary and would not significantly affect groundwater resources. Furthermore, it is expected that the TRDA or its contractors would conduct operations involving chemical or fuel storage or resupply and equipment and vehicle servicing with care to avoid leakage, spillage, and subsequent groundwater contamination.

Under the No Action Alternative, if the TRDA were able to secure the funding for the proposed TVA-funded actions described in this EA, similar ground disturbance would occur, resulting in similar impacts to groundwater resources as those described above for the Action Alternative. If the TRDA were not able to secure the funding for the actions described in this EA, ground disturbance would not occur and there would be no impacts to groundwater resources.

4.2.3 Wetlands

To determine if wetlands are present in the Project Area, aerial photographs, site photographs, topographic maps, the United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI), the USGS National Hydrography Dataset (NHD), and the Natural Resources Conservation Service (NRCS) Soils and Soil Survey Geographic (SSURGO)/State Soil Geographic (STATSGO) databases were reviewed. Attachment 1, Figure 1-E depicts NWI data for the Project Area. Additionally, wetlands were delineated during a December 2019 field survey of the Project Area. The wetland delineation was performed using the routine on-site determination methods described in the Corps of Engineers Wetlands Delineation Manual (United States Army Corps of Engineers [USACE], Environmental Laboratory 1987) and was consistent with the methods, guidelines, and indicators present in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Regional Supplement USACE 2012). Five emergent and three forested wetlands were delineated in and adjacent to the Project Area during the December 2019 field survey (**Table 4-1**). Attachment 1, Figure 1-E depicts the delineated wetlands.

Table 4-1: Wetlands Delineated during December 2019 Field Survey

Wetland ID	Feature Class	Amount in Project Area (acres)	Impact Area (acres)
W1	*Forested*	0.00	0.00
W2a	*Forested*	0.20	0.00
W2b	*Emergent*	0.39	0.00
W3	*Emergent*	0.21	0.00
W4	*Emergent*	0.07	0.00
W5	*Forested*	0.02	0.00
W6	*Emergent*	0.08	0.00
W7	*Emergent*	0.08	0.08
Total		**2.01**	**0.08**

W1 is a mature bottomland forested wetland located adjacent to the Project Area along an unnamed tributary (UNT) of Island Creek. W1 is approximately 0.97 acres in size and is located entirely outside of the Project Area. Vegetative species such as sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), and sycamore (*Platanus occidentalis)* were dominant throughout the area. Munsell™ soil colors observed in W1 consisted of a soil matrix of 10YR 5/2 with 10 YR 4/6 redox concentrations, which meets the criteria of a depleted matrix. Primary indicators of hydrology included surface water, high water table, saturation, and drift deposits. This wetland abuts an UNT of Island Creek. Island Creek flows into the Little Tennessee River,

a Traditional Navigable Water (TNW). Due to this connection, it is anticipated the USACE would consider this wetland to be a Waters of the United States (WOTUS).

W2a and W2b are composed of two habitat types – a forested and emergent wetland located near the northern boundary of the Project Area along a UNT of Island Creek, totaling 0.59 acres in size. Vegetative species found include sycamore, green ash (*Fraxinus pennsylvanica*), river birch (*Betula nigra*), hackberry (*Celtis laevigata*), blunt broom sedge (*Carex tribuloides*), beggartick (*Bidens aristosa*), and switch grass (*Panicum virgatum*). Munsell™ soil colors observed in W2 consisted of a soil matrix of 10YR 5/2 with 10YR 5/8 redox concentrations, which meets the criteria of a depleted matrix. Primary indicators of hydrology included surface water, high water table, saturation, and drift deposits. This wetland is located in a swale, which flows into an UNT to Island Creek. Island Creek flows into the Little Tennessee River, a TNW. Due to this connection, it is anticipated the USACE would consider this wetland to be a WOTUS.

W3 is an emergent wetland located along the southwest border of the Project Area. W3 is mostly maintained via mowing and is approximately 0.21 acres in size. Vegetative species such as soft nutsedge (*Cyperus strigosus*), soft rush (*Juncus effusus*), fescue (*Festuca arundinacea*), calico aster (*Symphyotrichum lateriflorus var. lateriflorum*), and common rush (*Juncus effusus*) were dominant throughout the area. Munsell™ soil colors observed in W3 consisted of a soil matrix of 10YR 5/2 with 10YR 5/8 redox concentrations, which meets the criteria of a depleted matrix. Primary indicators of hydrology included high water table, saturation, and drift deposits. This wetland has a surface water connection to an UNT to Island Creek. Island Creek flows into the Little Tennessee River, a TNW. Due to this connection, it is anticipated the USACE would consider this wetland to be a WOTUS.

W4 is an emergent wetland, 0.07 acres in size, located in the southwest corner of the Project Area along an ephemeral drain feeding Island Creek. Vegetative species soft rush, soft nutsedge, fescue, and seedbox (*Ludwigia alternifolia)* were dominant throughout the area. Munsell™ soil colors observed in W4 consisted of a soil matrix of 10YR 5/2 with 10YR 5/8 redox concentrations, which meets the criteria of a depleted matrix. Primary indicators of hydrology included high water table, saturation, and drift deposits. This wetland is located in the floodplain of the wet weather conveyance, which has a surface water connection to an UNT of Island Creek. Island Creek flows into the Little Tennessee River, a TNW. Due to this connection, it is anticipated the USACE would consider this wetland to be a WOTUS.

W5 is a forested wetland located along the southern border of the Project Area in the floodplain of Island Creek. W5 is approximately 0.02 acres; dominant plant species include green ash, sycamore, Nepalese stilt grass (*Microstegium vimineum*), and poison ivy (*Toxicodendron radicans*). Munsell™ soil colors observed in W5 consisted of a soil matrix of 10YR 5/2 with 7.6YR 4/6 redox concentrations, which meets the criteria of a depleted matrix. Primary indicators of hydrology included high water table and saturation. This wetland is located in the floodplain of an UNT to Island Creek. Island Creek flows into the Little Tennessee River, a TNW. Due to this connection, it is anticipated the USACE would consider this wetland to be a WOTUS.

W6 is an emergent wetland located along the southern border of the Project Area in the floodplain of Island Creek. W6 is approximately 0.08 acres in size; dominant vegetation includes soft rush, late boneset (*Eupatorium serotinum*), slimpod rush (*Juncus diffusissimus*),

seedbox, spikerush (*Eleocharis palustris*), and soft nutsedge. Munsell™ soil colors observed in W6 consisted of a soil matrix of 10YR 5/2 with 10YR 4/6 redox concentrations, which meets the criteria of a depleted matrix. Primary indicators of hydrology included surface water, high water table, and saturation. This wetland is located in the floodplain of an UNT to Island Creek. Island Creek flows into the Little Tennessee River, a TNW. Due to this connection, it is anticipated the USACE would consider this wetland to be a WOTUS.

W7 is an emergent wetland located in the southeast corner of the Project Area and is approximately 0.08 acres in size. Common plant species include curly dock (*Rumex crispus*), flat nutsedge, and sycamore and red maple seedlings. Munsell™ soil colors observed in W7 consisted of a soil matrix of 10YR 5/2 with 10YR 4/6 redox concentrations, which meets the criteria of a depleted matrix. Primary indicators of hydrology included surface water, high water table, and saturation. This wetland is located in the floodplain of an UNT to Island Creek. Island Creek flows into the Little Tennessee River, a TNW. Due to this connection, it is anticipated the USACE would consider this wetland to be a WOTUS.

The Action Alternative includes tree clearing, site grading including the construction of a 200,000 square foot pad, and construction of a stormwater detention basin and gravel access road. Limiting tree clearing and grading to areas outside of wetlands to the extent practicable would avoid or limit direct impacts to wetlands. The placement of fill material to prepare for future construction of a railroad spur would result in permanent impact to approximately 0.08 acre of emergent wetland (W7). Impacts to this wetland are unavoidable as there are no alternatives locations for the future railroad spur due to site constraints and the location of the railroad track in relation to the Project Area. Potential indirect impacts to wetlands include sedimentation from sediment-laden runoff and minor changes in drainage patterns. TRDA or its contractors would be anticipated to employ applicable BMPs such as installation of sediment and erosion controls (silt fences, sediment traps, etc.) during construction activities, and activities would be accomplished in compliance with applicable stormwater permitting requirements. Therefore, indirect impacts to wetlands resulting from sediment-laden runoff during construction activities would be minimized or avoided.

Regarding wetland impacts in the Project Area, Executive Order 11990 (Protection of Wetlands) requires avoidance, to the greatest extent practicable, of both long and short-term impacts associated with the destruction, modification, or other disturbance of wetland habitats. Section 404 of the Clean Water Act (CWA) of 1972 regulates discharges of dredged and fill materials into WOTUS and is administered by the USACE. The Nashville District of the USACE would make the final determination as to the jurisdictional status of wetlands in the Project Area. Section 401 of the CWA regulates water quality. In Tennessee, TDEC administers Section 401 of the CWA. TDEC relies on the USACE decision regarding wetland determinations and delineations including whether a wetland is isolated or non-isolated. Any dredge or fill activities that would occur in a wetland must comply with the above mentioned regulations. Coordination with the USACE to obtain an approved jurisdictional determination and to confirm the jurisdictional status of the wetlands in the Project Area would be required. Coordination with the USACE would also be required to determine required compensatory mitigation for permanent impacts to jurisdictional wetlands. Because wetland impacts and mitigation are anticipated to be confirmed through coordination with the USACE and TDEC, and avoidance of impacts to WOTUS and WOST is not feasible, consultation and permitting with the USACE Nashville District and TDEC would be required prior to initiation of construction. Impacts to WOTUS

would require a CWA Section 404 permit and a CWA Section 401 Water Quality Certification. Impacts to WOST would require an Aquatic Resource Alteration Permit (ARAP) from the TDEC, which would also serve as the Section 401 Water Quality Certification. Therefore, the Action Alternative would not result in significant adverse impacts to wetlands and would be in compliance with EO 11990.

Under the No Action Alternative, if the TRDA were able to secure the funding for the actions described in this EA, construction of project components would occur, resulting in similar direct and indirect impacts to wetlands as described above for the Action Alternative. If the TRDA 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 unchanged resulting in no impacts to wetlands.

4.2.4 Soil Erosion and Surface Water

To determine the surface water resources potentially present in the Project Area, aerial photographs, site photographs, topographic maps, the USFWS NWI, the USGS National NHD, and the NRCS SSURGO / STATSGO databases were reviewed. In addition, a field survey was conducted in December 2019 to identify and document surface water resources present in the Project Area. Waterbodies were examined to determine if they were classified as WOTUS and thus regulated by the USACE under Section 404 of the CWA and Section 10 of the Rivers and Harbors Act (RHA). Waterbodies were also examined to determine if they were Waters of the State of Tennessee (WOST), regulated by TDEC under the Tennessee Water Quality Control Act of 1977. The field survey documented one stream and one wet weather conveyance in the Project Area, and one stream adjacent to the Project Area.

The Project Area is located in the Lower Little Tennessee (8-digit Hydrologic Unit Code [HUC] 06010204) and in the Tellico Lake-Island Creek Subwatershed (12-digit HUC 060102040502). Island Creek, located approximately 0.1 mile east of the Project Area, is included on the Final 2018 List of Impaired Waters in Tennessee, required by Section 303(d) of the CWA (TDEC 2018). Island Creek is impaired due to *Escherichia coli*. The streams identified in the Project Area drain into Island Creek.

Surface water resources identified in the Project Area comprised approximately 195 linear feet of intermittent stream (S3) and approximately 641 linear feet of wet weather conveyance or ephemeral stream (S2). One additional intermittent stream (S1) was identified adjacent to the eastern site boundary, but outside of the Project Area. The intermittent stream identified in the Project Area is a blue-line stream on the USGS Quadrangle Map (Attachment 1, Figure 1-C). This stream is an UNT to Island Creek. Island Creek flows into the Little Tennessee River, a TNW. Due to this connection and based on field survey observations, this stream is a non-relatively permanent water (non-RPW) and considered a WOTUS and a WOST. Because it is ephemeral in nature, the wet weather conveyance identified in the Project Area is not on the USGS Quadrangle Map (Attachment 1, Figure 1-C). When water is present, this feature flows into the intermittent stream identified in the Project Area. Due to this connection and based on field survey observations, this stream is a non-RPW and would potentially be a WOTUS. Because it is a wet weather conveyance, it is not a WOST.

Implementation of the Action Alternative would result in ground disturbance during construction activities that could result in temporary and minor indirect impacts to surface water resources due to sediment-laden runoff and minor changes in drainage patterns. During construction

activities, it is expected that applicable BMPs such as installation of sediment and erosion controls (silt fences, sediment traps, etc.) would be employed to control sediment-laden runoff, including concentrated stormwater flows, and activities would be accomplished in compliance with applicable stormwater permitting requirements, as described below. Therefore, indirect impacts to surface water resources resulting from sediment-laden runoff during construction activities would be minimal and temporary.

Implementation of the Action Alternative would result in grading most of the Project Area and the removal of the wet weather conveyance feature from the Project Area. Because the conveyance is ephemeral in the Project Area and is dry during portions of the year, it is not likely to provide preferential habitat for aquatic species, and the removal of this feature would not adversely affect water quality. The intermittent stream would not be removed during grading, but would be disturbed during construction of a gravel access road as described below.

Implementation of the Action Alternative would require the construction of a gravel access road, which would cross the intermittent stream and would remove some riparian canopy. Removal of riparian canopy would reduce shading of the stream channel resulting in increased water temperatures (during times of the year when water is present), and would potentially reduce species habitat and increase susceptibility to bank erosion and surface runoff. Construction of the gravel access road would also require installation of one or two permanent culverts at the stream crossing which would result in temporary disturbance of the stream and long-term reduced species habitat in the immediate area of the crossings. However, because the stream is intermittent in the Project Area and is dry during portions of the year, it is not likely to provide preferential habitat for aquatic species and the removal of trees and installation of permanent culverts in this area would not adversely affect water quality.

Because avoidance of impacts to WOTUS and WOST is not feasible, consultation and permitting with the USACE Nashville District and TDEC would be required prior to initiation of construction. Impacts to WOTUS would require a CWA Section 404 permit and a CWA Section 401 Water Quality Certification. Impacts to WOST would require an ARAP from TDEC, which would also serve as the Section 401 Water Quality Certification. In addition, TRDA, or its contractors, would be required to obtain coverage under the 2016 National Pollutant and Discharge Elimination System (NPDES) General Permit for Discharges Associated with Construction Activity (TNR100000). Coverage would require development of a site-specific Stormwater Pollution Prevention Plan (SWPPP), which would detail applicable BMPs to minimize surface water impacts from erosion of sediment, solid waste, chemicals usage, equipment usage and maintenance, dust control, and septic issues. Impacts to WOTUS and WOST would be expected to be conducted and mitigated in accordance with Section 404 and Section 401 permits and would be anticipated to have direct, but minor, impacts to local surface water quality.

Under the No Action Alternative, if the TRDA were able to secure the funding for the proposed TVA-funded actions described in this EA, similar surface water impacts would occur as described above for the Action Alternative. If the TRDA were not able to secure the funding for the actions described in this EA, the proposed disturbances would not occur at this time and existing site conditions would likely be unchanged resulting in no surface water impacts. However, future development opportunities would be a possibility for this area and would have the potential to have similar impacts.

4.2.5 Aquatic Ecology

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

The TVA Regional Natural Heritage database (accessed January 2, 2020) and the USFWS Information for Planning and Consultation (IPaC) database (accessed January 2, 2020) indicate that two federally endangered and one federally threatened aquatic animals are currently known from within the 10-digit HUC watershed encompassing the Project Area (**Table 4-2**). A species of snail, the Anthony's riversnail (*Athearnia Anthonyi*), was documented as a non-essential experimental population.

Table 4-2: Records of Federal and State-Listed Aquatic Species in the Lower Tellico Lake (0601020405) 10-digit HUC Watershed (TVA Request ID 35608).[1]

Common Name	Scientific Name	Global Rank[2]	Federal Status[3]	State Status (rank)[4]
FISH				
Duskytail Darter[1]	*Etheostoma percnurum*	G1	E	NL
Snail Darter[1]	*Percina tanasi*	G1	T	T (S2S3)
MUSSELS				
Cumberland bean[1]	*Villosa trabalis*	G1	NL	NL (S1)

[1] Sources: TVA Regional Natural Heritage Database, USFWS IPaC Database, queried on 01/02/2020 and Tennessee Department of Environment and Conservation, queried on 01/28/2020

[2] Global Rank: G1 = Extremely Rare and Critically Imperiled; G2 = Very rare and Imperiled; G3 = Rare and Uncommon

[3] Status Codes: E = Listed Endangered; T = Listed Threatened; Not Listed

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

A brief description of species potentially occurring in the Project Area is provided below. Habitat requirements are as described in NatureServe (2010); snails, Etnier and Starnes (1993); fish, and Parmalee and Bogan (1998); mussels.

<u>Fish</u>

Duskytail darter (*Etheostoma percnurum*) habitat includes gravel, rubble, and slabrock pools and runs of small to medium rivers. Adults occur primarily in pools, and much less frequently in swift runs, and are associated with relatively clean gravel, cobble, and boulders. The range of habitats includes slack water, detritus, slightly silted stones, and bedrock.

Snail darter (*Percina tanasi*) habitat includes gravel and sand runs of medium-sized rivers. Adults and spawning individuals typically inhabit sand and gravel shoals of moderately flowing, vegetated, large creeks and river. They also occur in deeper portions of rivers and reservoirs

where current is present. Young occur in slackwater habitats, including the deeper portions of rivers and reservoirs.

Mussels

Cumberland bean (*Villosa trabalis*) is found in sand, gravel, and cobble substrates in waters with moderate to swift currents and depths less than one meter. They are typically found buried in shallow riffle and shoal areas, and are often located under large rocks that must be removed by hand to inspect the habitat underneath.

The December 2019 field survey documented one stream and one wet weather conveyance in the Project Area and one stream adjacent to the Project Area. No aquatic species or communities were identified in the Project Area. Based on the characteristics of the stream and wet weather conveyance in the Project Area, these features do not provide preferred habitat for aquatic species, including the threatened and endangered aquatic species identified in **Table 4-2**. As such, no direct or indirect impacts to aquatic species or their habitats, including threatened and endangered aquatic species are anticipated as a result of the Action Alternative.

Under the No Action Alternative, if the TRDA were able to secure the funding for the proposed TVA-funded actions described in this EA, or if the TRDA were not able to secure funding for the actions described in this EA, the proposed disturbances would not occur and there would be no direct or indirect impacts on aquatic species.

4.2.6 Terrestrial Zoology

Terrestrial Wildlife

A field survey conducted in December 2019 included a habitat assessment for terrestrial animal species in the Project Area. The Project Area is comprised of early successional habitat and fragmented forest. The fragmented forest consists of mature, deciduous, mixed evergreen-deciduous, and evergreen trees. One stream and one wet weather conveyance were identified in the Project Area and one stream was identified adjacent to the Project Area. Forest fragments, industrial sites, 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 herbaceous land, 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*), indigo bunting (*Passerina cyanea*), killdeer (*Charadrius vociferus*), and mourning dove (*Zenaida macroura*) (National Geographic 2002, Sibley 2003). Bobcat (*Lynx rufus*), coyote (*Canis latrans*), eastern cottontail (*Sylvilagus floridanus*), groundhog (*Marmota monax*), red fox (*Vulpes vulpes*), and white-tailed deer (*Odocoileus virginianus*) are mammals typical of fields and cultivated land (Kays and Wilson 2002, Whitaker 1996). Amphibians such as eastern narrow-mouthed toad (*Gastrophryne carolinensis*) and reptiles including black racer (*Coluber constrictor priapus*) and ring-necked snake (*Diadophis punctatus*) 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*), Kentucky warbler (*Oporornis formosus*), pileated woodpecker (*Dryocopus pileatus*), red-bellied woodpecker (*Melanerpes carolinus*), red-eyed vireo (*Vireo olivaceus*), red-tailed hawk (*Buteo jamaicensis*), scarlet tanager (*Piranga olivacea*), summer tanager (*Piranga rubra*), wild turkey (*Meleagris gallopavo*), and wood thrush (*Hylocichla mustelina*) (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 smooth earth snake (*Virginia valeriae*) 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*), dusky salamander (*lungless salamanders*), 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 (Bailey et al. 2006). Reptiles potentially present include eastern fence lizard (*Sceloporus undulatus*) and red-bellied snake (*Pseudechis porphyriacus*) (Conant and Collins 1998, Dorcas and Gibbons 2005).

Review of the TVA Regional Natural Heritage Database performed in November 2019 resulted in one cave record within three miles of the Project Area, approximately 2.41 miles from the Project Area. The field survey on December 19, 2019, 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. Review of the USFWS's IPaC website resulted in the identification of no migratory bird species of conservation concern with the potential to occur in the Project Area.

The Action Alternative includes clearing of vegetation and trees (approximately 3.7 acres) in the Project Area and grading over most of the Project Area to construct the stormwater detention basin 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. 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, the previous disturbance, 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.

The USFWS did not identify migratory bird species of conservation concern as having the potential to occur in the Project Area, and no wading bird colonies or raptor nests occur in the Project Area. Should any migratory bird species be present in the Project Area during the proposed construction activities, mobile individuals would likely flush to adjacent suitable habitats. Forested habitat would be permanently removed and unavailable to migratory bird populations in future years. Due to the relative abundance of similarly suitable habitat nearby and the small size of the Project Area, adverse impacts to populations of migratory birds are not anticipated.

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

Threatened and Endangered Species

A review of the TVA Regional Natural Heritage Database in November 2019 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 (Carolina northern flying squirrel [*Glaucomys sabrinus coloratus*], Indiana bat [*Myotis sodalis*], northern long-eared bat [NLEB] [*Myotis septentrionalis*], and rusty-patched bumblebee [*Bombus affinis*]) and one federally protected species (bald eagle [*Haliaeetus leucocephalus*]) exist in Monroe County, Tennessee. 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 Monroe 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]
INVERTIBRATES			
Rusty-patched bumble bee[4]	*Bombus affinis*	E	NL (S1)
BIRDS			

Table 4-3: Federal and State-Listed Terrestrial Species in Monroe 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]
Bald eagle	*Haliaeetus leucocephalus*	NL	D (S3)
MAMMALS			
Carolina northern flying squirrel[4]	*Glaucomys sabrinus coloratus*	E	E (S1S2)
Gray bat[5]	*Myotis grisescens*	E	E (S2)
Indiana bat[4]	*Myotis sodalis*	E	E (S1)
Northern long-eared bat[4]	*Myotis septentrionalis*	T	E (S1S2)

[1] Source: TVA Regional Natural Heritage Database / USFWS IPaC database (https://ecos.fws.gov/ipac/), extracted 12/18/2019.

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

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

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

[5] Federally listed species with the potential to occur in the Project Area, though no records currently exist from Monroe 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 Monroe 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.

The Bald and Golden Eagle Protection Act (USFWS 2013) provides protection for bald eagles. Bald eagles are associated with larger mature trees capable of supporting its massive nests and are usually found near larger waterways where the eagles forage (USFWS 2007). Three bald eagle records are known from Monroe County, the nearest is approximately four miles from the Project Area. No bald eagles or nests where observed during the field survey of the Project Area on December 19, 2019. Foraging habitat for bald eagle is not present in the Project Area.

Carolina northern flying squirrel inhabits high-elevation forests, typically greater than 4,000 feet. They occur in cool, moist, mixed spruce-fir forest and spruce-hardwood forests with an abundance of standing and downed snags (USFWS 1990; 2019b). One record of Carolina northern flying squirrel is present in Monroe County, approximately 23 miles from the Project Area. Though snags suitable for this species are present in the Project Area, the forest type is not suitable and the elevation of the Project Area is too low to support this species. Habitat for Carolina northern flying squirrel is not present in the Project Area.

Gray bats roost in caves year-round and migrate between summer and winter roosts during spring and fall (Brady et al. 1982, Tuttle 1976a). Bats disperse over bodies of water at dusk where they forage for insects emerging from the surface of the water (Tuttle 1976b). There are no records of gray bat known from Monroe County; however, the USFWS has determined that

the Project Area is in the range of this species. One cave record occurs 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 during the field survey. One small intermittent stream and one wet weather conveyance occur in the Project Area and one intermittent stream occurs adjacent to 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). There are 10 recorded Indiana bat roost trees and 40 Indiana bat mist net captures recorded within 10 miles of the Project Area, the nearest of which is approximately five miles from the Project Area.

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). There are records of NLEB from eight mist net sites in Monroe County, the closest of which is approximately 10.1 miles from the Project Area.

Assessment of the Project Area for presence of summer roosting habitat for Indiana bat and NLEB followed federal guidance (USFWS 2019a). Field surveys resulted in the identification of 1.08 acres of suitable summer roosting habitat for Indiana bat and NLEB in the forested habitat in the Project Area. The 1.08 acres of suitable habitat was comprised of forest fragments and isolated trees including nine snags, one live red maple, and two live hackberry trees. An additional 12 suitable snags were documented outside of the Project Area and would not be impacted by the Action Alternative. The quality of the summer roosting habitat was moderate, based on the quantity of the trees with exfoliating bark or crevices in proximity to water. One cave is documented within three miles of the Project Area. 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 and over the intermittent stream and wet weather conveyance in the Project Area.

Under the Action Alternative, the TRDA would conduct tree clearing, site grading including the construction of a 200,000 square foot pad, and construction of a stormwater detention basin and gravel access road. Approximately 3.7 acres of trees would be cleared in the Project Area and grading would occur over most of the Project Area to construct the stormwater detention basin and building pad. Cleared trees, stumps, and vegetation would be burned on-site.

Six federally listed or protected species have the potential to occur in the Project Area (bald eagle, Carolina northern flying squirrel, 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. The Action Alternative would not affect bald eagles or bald eagle nests as no nests are known within three miles of the Project Area, no birds were observed in the Project Area, and no foraging habitat occurs in the Project Area. The Action Alternative complies with the National Bald Eagle Management Guidelines. The range of the Carolina northern flying squirrel is restricted to high elevation forests and typically does not extend to lower elevations where the Project Area occurs. In addition, the forest type in the Project Area is not suitable for Carolina northern flying squirrel. Finally, based on guidance provided by the USFWS (https://www.fws.gov/midwest/endangered/insects/rpbb/ProjectProponent.html) the Action Alternative is in the Historical Range of the rusty-patched bumblebee, and Section 7 consultation would not be required. The rusty-patched bumblebee is not present in the Project Area. Bald eagles, Carolina northern flying squirrel and 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 the one intermittent stream and one wet weather conveyance in the Project Area, both of which would be impacted by the Action Alternative, though impacts would be minimized by the use of BMPs. Tree removal would remove suitable foraging habitat for Indiana bat and NLEB. Approximately 1.08 acres of suitable summer roosting habitat for Indiana bat and NLEB occurs in the Project Area and of this area, approximately 0.21 acres would be removed during construction. Clearing of suitable bat roosting trees would occur during spring and fall months when Indiana and NLEBs could be roosting in trees in the Project Area. However, these proposed clearing times avoid the most sensitive tree-roosting timeframe (June and July) when these species are having pups in trees and when young are unable to fly.

Several activities associated with the Action Alternative (including burning and tree removal 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, the TRDA could secure the funding for the proposed TVA-funded actions described in this EA from outside sources. Therefore, similar direct and indirect impacts to threatened and endangered terrestrial species could occur as described above for the Action Alternative. If the TRDA were not able to secure the funding for the actions described in this EA, the proposed disturbances would not occur and existing site conditions would likely be unchanged resulting in no impacts to threatened and endangered species.

4.2.7 Botany

Vegetation

The Project Area is in the Southern Shale Valleys ecoregion, a subdivision of the Ridge and Valley Ecoregion. The Ridge and Valley occurs between the Blue Ridge Mountains on the east and the Cumberland Plateau on the west and is a relatively low-lying area made up of roughly parallel ridges and valleys formed through extreme folding and faulting events in past geologic time (Griffith et al. 1998). The Southern Shale Valleys consist of lowlands, rolling valleys, and slopes dominated by shale materials. Landforms are mostly undulating valleys and rounded ridges and hills. Soils vary in their productivity and land cover includes oak-hickory and oak-pine forests, pastures, intensive agriculture, and urban and industrial areas (Griffith et al. 1998).

Field surveys of the Project Area were conducted in December 2019. The focus of these surveys was to document plant communities, presence of invasive plants, and to search for populations of threatened and endangered plant species. Using the National Vegetation Classification System (Grossman et al. 1998), plant community types observed during field surveys include a combination of herbaceous and forest. About 90 percent (35 acres) of vegetated areas in the Project Area are herbaceous vegetation compared to about 10 percent (4 acres) forest. No forested areas in the proposed Project Area had structural characteristics indicative of old growth forest stands (Leverett 1996).

Herbaceous vegetation, which is greater than 75 percent cover of forbs and grasses and less than 25 percent cover of other types of vegetation (Grossman et al. 1998), occurs in the open, early-successional fields found across the Project Area. Much of this land was cleared in 2017 and is now dominated by herbaceous species indicative of early successional habitats. Common plant species include broomsedge (*Andropogon virginicus*), crabgrass (*Digitaria* sp.), foxtail (*Setaria* sp.), gray goldenrod (*Solidago nemoralis*), greasy grass (*Tridens flavus*), little bluestem (*Schizachyrium scoparium*), showy goldenrod (*Solidago erecta*), and tall goldenrod (*Solidago altissima*).

The fragmented forest found across the Project Area is a mixture of deciduous, mixed evergreen-deciduous, and evergreen forest. Overstory trees average less than 6-inch diameter at breast height, though sporadic larger trees occur across the parcel. Common tree species include the early successional species such as Virginia pine (*Pinus virginiana*), eastern redcedar (*Juniperus virginiana*), and sycamore (*Platanus occidentalis*), along with several species of oaks (*Quercus* spp.). The forest is even-aged and shows numerous signs of previous disturbance.

The Action Alternative would result in clearing of 3.7 acres of disturbed forest and grading of most of the Project Area. Nearly the entire area has been heavily disturbed by previous actions and does not support intact native plant communities. These areas are dominated by low diversity forest and non-native, invasive species and possess little conservation value. The forest within the Project Area does not represent a unique or rare plant community and the habitat is common and well represented throughout the region.

Impacts to vegetation may be permanent, but the vegetation found on much of the site is comprised of non-native weeds and early successional plants that have little conservation value. The permanent conversion of these habitats to developed areas and low-diversity herbaceous vegetation would not result in appreciable changes to the terrestrial ecology of the region.

Adoption of the Action Alternative would not have appreciable direct or indirect impacts to vegetation of the region.

Under the No Action Alternative, the TRDA could secure the funding for the proposed TVA-funded actions described in this EA from outside sources. Therefore, similar direct and indirect impacts to vegetation could occur as described above for the Action Alternative. If the TRDA were not able to secure the funding for the actions described in this EA, the proposed disturbances would not occur and existing site conditions would likely be unchanged resulting in no impacts to vegetation.

Invasive Species

EO 13112 directs TVA and other federal agencies to prevent the introduction of invasive species (both plants and animals), control their populations, restore invaded ecosystems and take other related actions. EO 13751 amends EO 13112 and directs actions by federal agencies to continue coordinated federal prevention and control efforts related to invasive species.

Some invasive plants have been introduced accidentally in the United States, but most were brought here as ornamentals or for livestock forage. Because these robust plants arrived without their natural predators (insects and diseases), their populations spread quickly across the landscape. No federal-noxious weeds were observed in the Project Area. Therefore, implementation of the Action Alternative is not anticipated to result in the spread of federal-noxious weeds. Five non-native invasive plant species characterized by the Tennessee Invasive Plant Council as an Established Threat were observed in both herbaceous and forested habitats. These species included Chinese lespedeza (*Lespedeza cuneata*), Chinese privet (*Ligustrum sinense*), Japanese honeysuckle (*Lonicera japonica*), Japanese stilitgrass (*Microstegium vimineum*), and Johnson grass (*Sorghum halepense*). It is exptected that the TRDA or its contractors would implement appropriate measures to remove soil and propagules from machinery and vehicles leaving the site to prevent the spread of non-native invasive plant species during construction activities.

Under the No Action Alternative, the TRDA could secure the funding for the proposed TVA-funded actions described in this EA from outside sources. Therefore, similar potential for the spread of non-native invasive plant species could occur as described above for the Action Alternative. If the TRDA were not able to secure the funding for the actions described in this EA, the proposed disturbances would not occur and existing site conditions would likely be unchanged resulting in no potential for the spread of non-native invasive plant species.

Threatened and Endangered Species

A December 2019 query of the TVA Regional Natural Heritage Database indicates that no federally listed and two state-listed plant species are known to occur within five miles of the proposed Project Area. One federally listed plant has been reported from Monroe County, Tennessee (**Table 4-4**).

Table 4-4: Plant Species of Conservation Concern in Monroe 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]
Spreading false-foxglove	*Aureolaria patula*	NL	S (S3)
Alabama snow-wreath	*Neviusia alabamensis*	NL	T (S2)
White fringeless orchid[4]	*Platanthera integrilabia*	T	T (S2S3)

[1] Source: TVA Regional Natural Heritage Database, accessed January 2020.

[2] Status Codes: T = Threatened; S = Special Concern

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

[4] Federally listed species occurring in the county where work would occur, but not within five miles of the Project Area

Field surveys indicate that no habitat for federal or state-listed plant species occurs in the Project Area. Much of the habitat in the Project Area is severely degraded and is populated primarily with non-native species. The site supports some forested areas, but these areas do not contain habitat for state or federally listed plants. No designated critical habitat for plants occurs in the Project Area. As such, direct or indirect impacts to state and federally listed threatened and endangered plant species are not anticipated as a result of implementation of the Action Alternative.

Similar to the Action Alternative, under the No Action Alternative, if the TRDA 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 TRDA 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

Two separate Phase I archaeological surveys conducted in 2000 and 2020 covered the Project Area. TRC Garrow Associates, Inc. in February 2000 surveyed a large parcel in which the majority of the current Project Area (approximately 38.6 acres) is contained (Stanyard 2000). Cardno, Inc. surveyed the remaining approximately 0.8 acres of the Project Area in January 2020 (Donaldson et al. 2020).

A literature review completed in December 2019, revealed 51 previously identified archaeological resources within 1.6 kilometer (km) (1.0 mile [mi]) buffer of the Project Area. The archaeological resources included twenty-five archaeological sites (twenty-one sites and four resource areas) and twenty-six isolated finds. Of the 51 archaeological resources, four isolated finds, one resource area, and one previously recorded archaeological site (40MR315) were identified within the Project Area. The isolated finds and resource areas were not found to be eligible for listing on the National Register of Historic Places (NRHP), and site 40MR315 was not assessed. The site was located within the extreme southern edge of the Project Area and was investigated during the most current survey (Donaldson et al. 2020).

The Donaldson et al. (2020) survey found most of the approximately 0.8-acre study area to be disturbed by previous construction activities. The six shovel tests excavated during the survey did not produce artifacts or intact buried deposits. The failure to identify site 40MR315 may be a result of inconsistent mapping or destruction of the site within the survey area due to previous construction activities. Neither the Stanyard (2000) nor the Donaldson et al. (2020) identified any archaeological sites within the Project Area. A few isolated finds were identified during the Stanyard survey, but these were considered too ephemeral to be defined as archaeological sites, and as such would be considered ineligible for the NRHP. TVA has therefore determined that the Action Alternative would result in no effect to NRHP-eligible resources.

TVA consulted with the Tennessee Historical Commission (THC) or Tennessee SHPO in a letter dated March 4, 2020 regarding TVA's findings and recommendations. In a letter dated March 9, 2020 the Tennessee SHPO concurred with TVA's findings that the Action Alternative would result in no effect to NRHP-eligible resources (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 no responses from the federally recognized Indian tribes regarding the Action Alternative.

Similar to the Action Alternative, under the No Action Alternative, if the TRDA were able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, there would be no effect to NRHP-eligible resources. If the TRDA 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 effect to NRHP-eligible resources.

4.2.9 Historic Structures and Sites

Pursuant to Section 106 of the National Historic Preservation Act and implementing regulations 36 CFR 800, TVA completed a Phase I architectural survey to identify NRHP listed, eligible, or potentially eligible historic structures and sites within the Project Area. In preparation for the survey, a search of the site survey files and other resources available at the THC was completed. Additionally, TVA completed a review of the local and regional historical literature for the study area showing that the Project Area had been subjected to multiple previous surveys. Based on the results of the background review for historic structures and sites by TVA, there are no historic architectural resources in the Project Area or in the Project Area viewshed. Recent aerial imagery shows vegetative buffers on surrounding parcels forming a barrier that limits visibility of the Project Area from surrounding historic architectural resources. The Project Area has also been subject to documented construction activities and disturbance that has severely altered the landscape, causing erosional issues with subsoil and parent material often visible at the ground surface. Based on the background research and the Phase I architectural survey, and in consultation with the Tennessee SHPO, TVA finds that the Action Alternative would have no effect on properties included in or eligible for inclusion in the NRHP. TVA consulted with the Tennessee SHPO in a letter dated March 4, 2020 regarding TVA's findings and recommendations. In a letter dated March 9, 2020 the Tennessee SHPO concurred with TVA's findings that the Action Alternative would result in no effect to properties included in or eligible for inclusion in the NRHP (Attachment 3).

Similar to the Action Alternative, under the No Action Alternative, if the TRDA 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 properties included in or eligible for inclusion in the NRHP. If the TRDA 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 effect to properties included in or eligible for inclusion in the NRHP.

4.2.10 Natural and Managed Areas

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) streams; and Wild and Scenic Rivers. Managed areas include lands held in public ownership that are managed by an entity (e.g., TVA, U.S. Department of Agriculture, United States Forest Service, State of Tennessee) to protect and maintain certain ecological and/or recreational features. Ecologically significant sites are tracts of privately owned land recognized by resource biologists as having significant environmental resources or identified tracts on TVA lands that are ecologically significant but not specifically managed by TVA's Natural Areas program. USNPS NRI streams are free-flowing segments of rivers recognized by the USNPS as possessing remarkable natural or cultural values.

A review of data from the TVA Regional Natural Heritage Database, USNPS NRI database (USNPS 2020), and Wild and Scenic River database (WSR 2020) indicated there are no natural or managed areas within three miles of the Project Area with the exception of the Tennessee River and Tellico River, which are listed as NPS NRI segments. The Tellico River and Little Tennessee River are NRI segments, and are located approximately 1.5 miles and 2.5 miles to the east, respectively. Island Creek, the nearest named receiving waterbody for the Project Area, flows directly into the Little Tennessee River. Although nearer to the Project Area, the Tellico River is separated from the Project Area by a ridge that generally follows US Highway 411 and would not be impacted by Action Alternative. Due to its proximity to the Project Area and direct connection to the nearest named receiving waterbody for the Project Area, the Little Tennessee River could experience temporary and minor impacts due to sediment laden runoff during construction activities. However, the volume of water present in Island Creek and the Little Tennessee River would dilute sediment-laden runoff such that it would not result in a noticeable change in the water quality of the Little Tennessee River. Additionally, it is expected that during construction activities, applicable BMPs such as installation of sediment and erosion controls (silt fences, sediment traps, etc.) would be employed and activities would be accomplished in compliance with applicable stormwater permitting requirements. Therefore, impacts to the Little Tennessee River resulting from sediment-laden runoff during construction activities would be temporary and minor.

Under the No Action Alternative, if the TRDA were able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, similar impacts would occur as described above for the Action Alternative. If the TRDA were not able to secure the funding for the actions described in this EA, the proposed disturbances would not occur and existing site conditions would likely be unchanged resulting in no impacts to natural or managed areas.

4.2.11 Visual

The Project Area is located in an undeveloped area of the Tellico West Industrial Park, and consists of open herbaceous land with areas of fragmented forest. The visual landscape

surrounding the Project Area consists of gently to moderately sloping residential land, open fields, forested land, and various developments and industry, followed by hills and ridges to the north, south and west and valleys and ravines to the east and northeast. The developed areas of the Tellico West Industrial Park are located adjacent to the northernmost Project Area border and extend to the north and northeast of the Project Area. The Conagra Inc. Distribution Center is located immediately to the northeast of the Project Area and a CSX Railroad spur borders the easternmost boundary of the site. Old Slag Road is located along the southernmost border of the Project Area and an electric transmission line right-of-way is located along the westernmost border. SR 72 is located approximately 175 feet to the west of the Project Area. Commercial and industrial facilities are located along the west side of SR 72, followed by open fields and residential areas. Forest area surrounding the site shield the Project Area from the views of surrounding residences, businesses, and nearby roads, with the exception of the area where the gravel access road entrance would be located along Old Slag Road and the southeast corner of the site where a small area of tree clearing would occur along Old Slag Road.

Construction vehicles and equipment visible during construction activities (an excavator, bulldozer, dump truck, or similar vehicles and heavy machinery) would have minor visual impacts over the temporary construction period and minor permanent impacts due to tree clearing, site grading including the construction of a 200,000 square foot pad, and construction of a stormwater detention basin and gravel access road. Due to the existing forest barriers between the Project Area and surrounding areas, temporary construction activity and permanent changes to the landscape in the Project Area would have only limited visibility to motorists along Old Slag Road. Forest areas obstruct all other views of the site. Views would primarily be impacted from Old Slag Road as clearing of trees from the gravel access road entrance and southeast corner of the site would remove the visual screen between the road and the Project Area. However, the overall visual character of the Project Area following implementation of the Action Alternative would be comparable with other nearby areas that include areas of open fields, scattered trees, and developed/industrial areas. Changes in visual quality resulting from implementation of the Action Alternative would therefore be minor.

Under the No Action Alternative, if the TRDA were able to secure the funding for the actions described in this EA from outside sources, construction of project components would occur, resulting in similar direct and indirect visual quality impacts as described above for the Action Alternative. If the TRDA 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 unchanged resulting in no visual quality impacts.

4.2.12 Noise

Existing ambient noise levels, or background noise levels, are the current sounds from natural and artificial sources at receptors. The magnitude and frequency of background noise at any given location may vary considerably over the course of a day or night and throughout the year. The variations in part are the result of weather conditions, seasonal vegetative cover, and human activity. Existing sources of noise near the Project Area are primarily associated with the adjacent CSX Railroad spur, existing industries in the Tellico West Industrial Park, traffic along SR 72, and surrounding commercial and residential activities.

Noise impacts associated with construction activities under the Action Alternative would be primarily from construction equipment. Construction activities would involve operation of an

excavator, bulldozer, dump truck, or similar vehicles and heavy machinery over the temporary duration of construction. The noise levels of construction equipment are temporary and rarely steady; they fluctuate depending on the number and type of vehicles and equipment in use at any given time. Additionally, construction-related sound levels experienced by a noise sensitive receptor near construction activity would be a function of distance, other noise sources, and the presence and extent of vegetation, structures, and intervening topography between the noise source and receptor.

Primary sensitive noise receptors in the area include residents of homes located within approximately 0.5 mile to the south and west, commercial businesses located within approximately 0.3 mile to the south and west, and industrial businesses located within approximately 0.6 mile to the north and northeast of the Project Area in the Tellico West Industrial Park. Construction related noise would be localized and temporary, and no receptor would be exposed to significant noise levels for an extended period. Forest surrounds the Project Area with the exception of the area where the gravel access road entrance would be located along Old Slag Road and the southeast corner of the site where a small area of tree clearing would occur along Old Slag Road. Surrounding forest areas would provide noise absorption and act as a noise buffer between the Project Area and surrounding noise receptors. Furthermore, the anticipated noise levels resulting from construction equipment would not differ substantially from equipment that is in regular use in the surrounding area from commercial and industrial activities, and it is not anticipated that noise levels would exceed those emitted from trains traveling along the CSX Railroad spur. Further, construction activities would be conducted during daylight hours only, when ambient noise levels are often higher and most individuals are less sensitive to noise. Thus, noise-related impacts resulting from implementation of the Action Alternative are anticipated to be temporary and minor.

Under the No Action Alternative, if the TRDA were able to secure the funding for the actions described in this EA from outside sources, construction of project components would occur, resulting in similar direct and indirect noise-related impacts as described above for the Action Alternative. If the TRDA 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 unchanged resulting in no noise-related impacts.

4.2.13 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 is likely to have a disproportionate and adverse impact on minority and low-income populations.

This analysis focuses on the state, county, and locality in which the Action Alternative would occur. Publically available statistics generated by the United States Census Bureau and the United States Bureau of Labor Statistics were used to characterize socioeconomic conditions in Tennessee, Monroe County, and Sweetwater[1] (**Table 4-5**). Details of the Action Alternative

[1] Sweetwater is located approximately 12.4 miles west of Vonore. For purposes of this socioeconomic analysis, Sweetwater is identified as the host community because by the United States Census Bureau and the United States Bureau of Labor Statistics do not generate statistics for Vonore which, according to online sources, has a population of about 1,500.

were used to evaluate likely effects on existing socioeconomic resources. The demographics and income of Monroe County and Sweetwater were then 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; this evaluation 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	Monroe County	Sweetwater
Population [1]			
April 2010 Population	6,346,105	44,504	5,800
Most Recent Population Estimate (July 2018)	6,770,010	46,357	5,868
Population Change: April 2010 to July 2018	6.7%	4.2%	1.2%
People per Square Mile	153.9	70.0	676.5
Demographics [1]			
White Alone, not Hispanic or Latino	73.7%	90.8%	87.2%
Black or African American Alone	17.1%	2.2%	6.8%
American Indian and Alaska Native Alone	0.5%	0.6%	0.0%
Asian Alone	1.9%	0.5%	1.8%
Native Hawaiian and Other Pacific Islander Alone	0.1%	0.1%	0.0%
Two or More Races	2.0%	1.8%	1.6%
Hispanic or Latino (of any race)	5.6%	4.7%	3.5%
Income [1]			
Median Household Income	$50,972	$38,327	$40,077
Per Capita Income	$28,511	$21,919	$20,659
Percent with Income Below the Poverty Level	15.3%	15.7%	14.3%
Seasonally Adjusted Employment: October 2019 [2]			
Labor Force	3,361,966	20,540	Not Available
Employed	3,247,858	19,854	Not Available
Unemployed	114,108	686	Not Available
Unemployment Rate (%)	3.4%	3.3%	Not Available

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

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

- Relative to the average Tennessee and Monroe County resident, the residents of Sweetwater live at greater densities and have recently experienced less rapid population growth.
- Relative to the average Tennessee resident, the residents of Monroe County and Sweetwater are less likely to self-identify as a minority race or ethnicity.
- Median household income and per capita income are greater in Tennessee than they are in Sweetwater. This is consistent with the observation that the proportion of Tennessee residents living below the poverty level is less than the proportion of Sweetwater residents living below the poverty level.
- While unemployment data is not available for Sweetwater, the unemployment rate in Tennessee is similar to the unemployment rate in Monroe County.

The Action Alternative would include tree clearing, site grading including the construction of a 200,000 square foot pad, construction of a stormwater detention basin and creation of a gravel access road. This effort would require a small workforce, likely drawn from existing contractors working on similar projects in the region, for several weeks. Construction may create temporary jobs and capital investment with associated beneficial impacts to the local economy would therefore have a minor, short-term, positive effect on the local economy and workforce that would not be detectable at the county or state level.

There is minimal potential that the Action Alternative would result in a disproportionate and adverse impact on minority and low-income populations. This conclusion is based on two observations. First, the Action Alternative would have a positive effect on the local economy. Second, as described throughout this document, environmental effects associated with the Action Alternative would be minor and would generally be constrained to the Tellico West Industrial Park and adjacent properties.

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

4.2.14 Recreation

The Project Area is located in an undeveloped area of the Tellico West Industrial Park, with no permanent structures present in the Project Area. The current land use in the Project Area is open herbaceous land with areas of fragmented forest (Attachment 1, Figure 1-A). The Project Area is zoned for industrial use. There are two recreational facilities within three miles of the Project Area. The Project Area is located 0.5 mile west of the Little Tennessee River, which is a large lake at this location. The nearest public lake access to the Project Area is Vonore Recreation Area Boat Ramp, located two miles northeast of the Project Area on Fowler Road. The Links at Kahita Golf Course is located approximately two miles southeast of the Project Area with access from Niles Ferry Road. This facility is located on the south side of SR 72 and does not share any access roads with the Project Area.

Because the Project Area is zoned for industrial use and is located in a primarily industrial area, implementation of the Action Alternative is not anticipated to result in significant direct or indirect impacts on recreational opportunities near the Project Area. In addition, access points to both nearby recreational facilities do not share the same roads as the Project Area and access to these facilities would not be affected by implementation of the Action Alternative.

Similar to the Action Alternative, under the No Action Alternative, if the TRDA were able to secure the funding for the proposed TVA-funded actions described in this EA, construction of project components would occur. However, significant direct or indirect impacts on recreational opportunities would not be anticipated as described above for the Action Alternative. If the TRDA 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 unchanged, also resulting in no impacts to recreational opportunities.

4.2.15 Transportation

The primary site entrance would be on the south side of the Project Area, on Old Slag Road, approximately 0.1 mile from the intersection of Old Slag Road and SR 72 (Minor Arterial). Old Slag Road is a narrow, two-lane road defined as a Local Route by Tennessee Department of Transportation (TDOT) mapping (TDOT 2018). This section of the road is orientated east-west providing access to and from downtown Vonore, Tennessee to SR 72. Based on field surveys conducted in December 2019, the road is in good condition, with faded markings. The speed limit for this road is 35 miles per hour. The site entrance would be located approximately 415 feet west of the railroad crossing, with unimpeded visibility from the site entrance in both directions of the roadway. There are no turning lanes in either direction for traffic entering or leaving the site. It is anticipated that workers would take normal care as they enter and exit Old Slag Road. Based on a review of TDOT traffic data (2010 to 2013), there are no traffic count stations along this portion of Old Slag Road and the nearest traffic count station is located on SR 72, roughly 0.34-mile north of its intersection with Old Slag Road. The 2018 annual average daily traffic count (AADT) for this station was 13,670; however, traffic along Old Slag Road is likely considerably less than that of SR 72.

In the context of existing AADT road volumes, a small increase in traffic generated by implementation of the Action Alternative would have a negligible impact on overall traffic volumes and level of service for both Old Slag Road and SR 72. In accordance with Section 2.2.5 of the TDOT Traffic Design Manual (2018), if the proposed development generates less than 50 new peak hour trips and 250 new daily trips, the impacts would be considered insignificant and a waiver may be granted. The increase in traffic generated by implementation of the Action Alternative is anticipated to result in less than 50 new peak hour trips and 250 new daily trips.

Under the No Action Alternative, if the TRDA were able to secure the funding for the actions described in this EA, construction of project components would occur, resulting in negligible direct and indirect impact on overall traffic volumes and level of service as described above for the Action Alternative. If the TRDA 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 unchanged resulting in no traffic-related impacts.

5.0 CUMULATIVE AND REASONABLY FORESEEABLE IMPACTS

Section 4 discusses the potential impacts resulting from the Action Alternative. This section discusses the potential impacts from future development of the Project Area and the remaining available parcels in the Tellico West Industrial Park in combination with the impacts from the Action Alternative.

The entire Tellico West Industrial Park contains approximately 1,000 acres of land available for development with existing connections for electric power, gas, water, and sewage (TRDA, 2020). The Project Area is located in this larger area as shown in **Figure 2**. The additional areas proposed for development beyond the 39.4-acre Project Area include similar habitat types as the Project Area. While it is not anticipated that future industrial development would disturb (grading, vegetation removal, etc.) the entire 1,000 acres of available land, TVA has assumed future disturbance of the entire 1,000 acres of available land as a conservative approach for the purposes of assessing cumulative impacts.

A review of available information from the Monroe County Chamber of Commerce, TRDA, and the Town of Vonore, was conducted to identify other developments that could potentially contribute to cumulative impacts in combination with those from the Action Alternative. This review revealed no additional planned, under construction, or recently completed projects in the immediate vicinity of the Project Area (Monroe County Chamber of Commerce 2020, TRDA 2020, Town of Vonore 2020). A review of the TDOT website revealed two proposed rural access road improvement projects on State Road 322 located 2.5 miles and 4.5 miles, respectively, from the Project Area, that are currently in the preliminary engineering phases of development (TDOT, 2020). The timing of construction of these projects is unknown at this time. These transportation projects are not within one mile of the Project Area and therefore were not included in the evaluation of cumulative impacts.

Resources that could potentially be cumulatively impacted by implementation of the Action Alternative and future development of the remaining available parcels in the Tellico West Industrial Park include air quality and climate change, groundwater, wetlands, surface water, terrestrial zoology, botany, and natural and managed areas (NRI streams and Wild and Scenic Rivers). In addition, implementation of the Action Alternative and future development of the remaining available parcels in the Tellico West Industrial Park could create potential cumulative impacts to the human environment, including visual effects, noise, socioeconomics and environmental justice, and transportation issues. TVA has determined that the Action Alternative would not affect floodplains, land use and prime farmland, aquatic ecology, public recreation opportunities and archaeology and historical structures, nor would it result in significant impacts from the creation or disposal of solid and hazardous wastes as discussed in Section 4. Therefore, an evaluation of cumulative impacts to these resources is not included in this assessment.

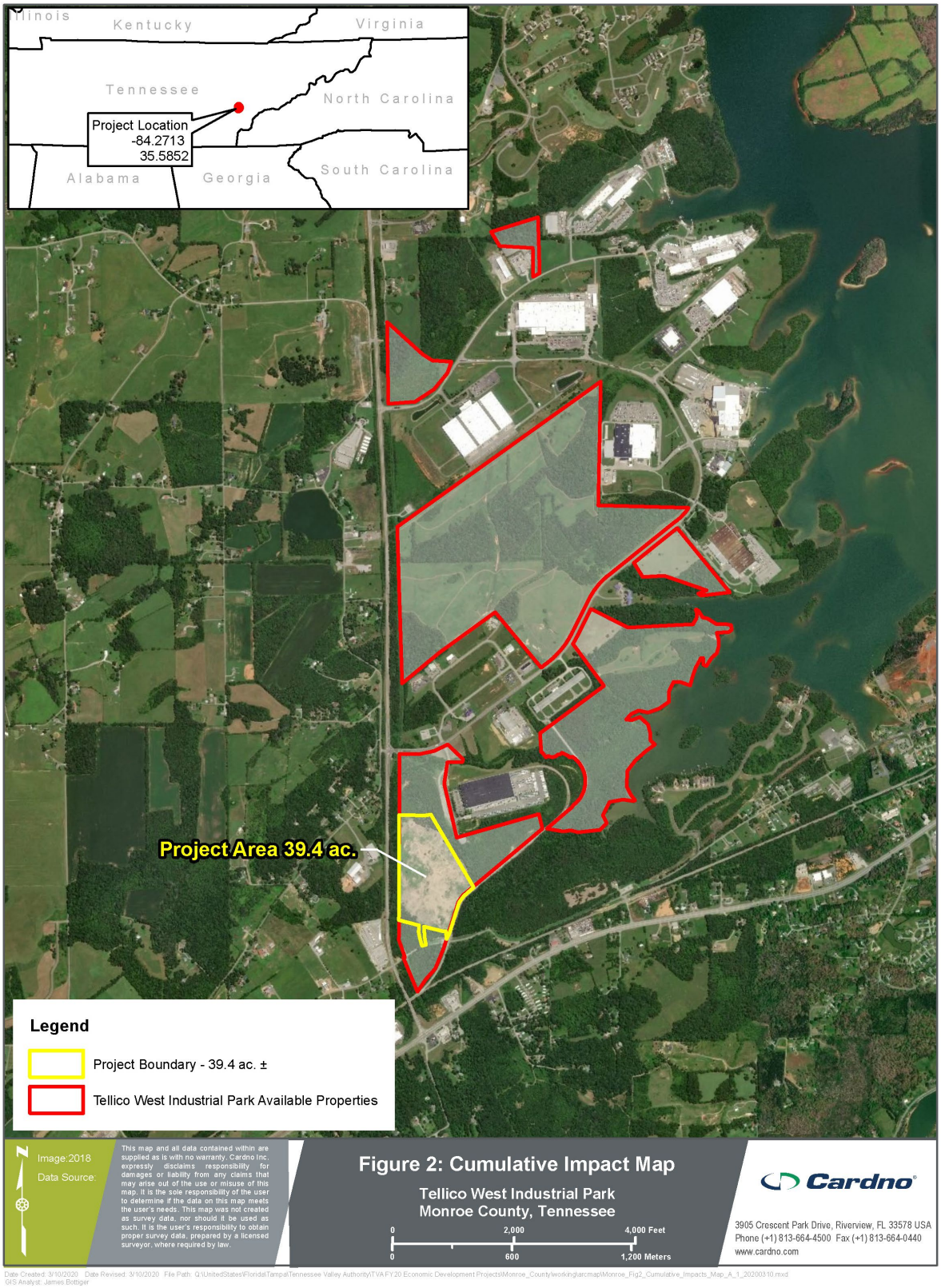


Figure 2: Cumulative Impact Areas

5.1 Air Quality and Climate Change

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

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

Temporary and minor cumulative impacts to air quality and climate change would occur if construction activities associated with the Action Alternative and future development of the Project Area and future development of the remaining available parcels in the Tellico West Industrial Park were to occur during the same time. However, with regulatory measures in place, reasonably foreseeable long-term and cumulative impacts to local air quality and climate change resulting from the Action Alternative and future development of the these properties are anticipated to be temporary and minor. If there were no overlap of construction activities, cumulative impacts would not occur.

5.2 Groundwater

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

Future development of the Project Area and future development of the remaining available parcels in the Tellico West Industrial Park would have the potential to impact groundwater resources. Site preparation associated with future development, including grading, could cause minor changes in drainage patterns. Likewise, the placement of buildings and associated hard surfaces on the site would likely increase the amount of impermeable surface and possibly lead to less infiltration and faster runoff of on-site precipitation. Activities that could affect groundwater resources would be subject to state and federal regulations, and it is anticipated

that these actions would include BMPs (such as sediment and erosion controls) and compliance with applicable stormwater permitting requirements to minimize impacts to groundwater resources. Therefore, cumulative impacts on groundwater resources associated with implementation of the Action Alternative and future development of these properties are anticipated to be temporary and minor.

5.3 Wetlands

The Action Alternative would result in minor potential direct and indirect impacts on wetlands resources as described in Section 4. Future development of the Project Area and the remaining available parcels in the Tellico West Industrial Park would have the potential for impacts to wetland resources. If avoidance of impacts to wetland resources associated with future development were not feasible, consultation and permitting with the USACE Nashville District and TDEC would be required prior to initiation of construction. Impacts would require a Section 404 permit and a Section 401 CWA certification. While potential indirect impacts associated with the Action Alternative and future development in the Cumulative Impact Area would potentially result in cumulative impacts to wetland resources, impacts would be anticipated to be conducted and mitigated in accordance with Section 404 and Section 401 permits and are anticipated to be minor.

5.4 Soil Erosion and Surface Water

The Action Alternative would result in minor direct and potential indirect impacts on water resources as described in Section 4. Future development in the Project Area and the remaining available parcels in the Tellico West Industrial Park would have the potential for impacts to water resources. Site preparation associated with future development, including grading, could cause minor changes in drainage patterns. Likewise, the placement of buildings and associated hard surfaces on the site would likely increase the amount of impermeable surface and possibly lead to faster runoff of on-site precipitation. Impacts to surface water and groundwater resources would be subject to state and federal regulations including consultation and permitting with the USACE Nashville District and TDEC under Section 404 and 401 of the CWA, state Aquatic Resource Alteration Permits, and the 2016 General Permit TNR100000, which requires development of a site-specific SWPPP.

In the event that waterbodies are directly impacted, either temporarily or permanently, state and federal regulations would impose special conditions to avoid, minimize, or mitigate impacts to waterbodies. It is anticipated that applicable BMPs such as installation of sediment and erosion controls (silt fences, sediment traps, etc.) would be employed and activities would be accomplished in compliance with the 2016 General Permit TNR100000 requirements. Therefore, cumulative impacts on surface water resources associated with the Action Alternative and future development of these properties are anticipated to be minor.

5.5 Terrestrial Zoology

The Action Alternative would result in minor impacts to wildlife as described in Section 4. Future development of the Project Area and future development the remaining available parcels in the Tellico West Industrial Park would potentially remove trees and grasses for development of individual sites. Mobile wildlife in these habitats would be displaced by habitat removal and noise, and immobile wildlife may be injured or destroyed by heavy machinery and construction, particularly if clearing activities take place during breeding/nesting seasons. However, this

development is not anticipated to impact populations of species common to the area, as similar habitats exist in abundance in the surrounding landscape. Considering that the landscape is highly fragmented and already impacted by human activity (e.g., maintained cattle pastures, agriculture crop lands, and roads), and in consideration of the abundance of similar habitat in the surrounding landscape, cumulative impacts to wildlife associated with implementation of the Action Alternative and future development of these properties are anticipated to be minor.

The Action Alternative would result in impacts to federally and state-listed bat species in the form of habitat removal as described in Section 4. However, with the implementation of the Conservation Measures described in Section 4 and identified in the TVA Bat Strategy Project Screening Form (Attachment 2), impacts to these species would be minor. Future development of the Project Area and the remaining available parcels in the Tellico West Industrial Park could influence federally and state-listed bat species. If future developments cannot avoid impacts to these species, it is assumed that these actions would be conducted in consultation with the USFWS. Development of areas/actions not covered under this EA would be subject to all state and federal laws and likely would require conservation measures to be developed in consultation with the USFWS to minimize impacts to federally and state-listed bat species. Although the Action Alternative and future development of the remaining available parcels in the Tellico West Industrial Park would potentially affect federally and state-listed bat species, impacts would be anticipated to be conducted in consultation with the USFWS and the Action Alternative would involve implementation of the identified Conservation Measures. Therefore, significant cumulative impacts on federally and state-listed bat species are not anticipated to result from the Action Alternative and future development of these properties.

5.6 Botany

Implementation of the Action Alternative would result in the removal of the existing vegetation consisting of early successional plants and trees. While this would result in the conversion of these habitats to developed areas, these areas provide minimal conservation value and the plant communities found there are common and well represented throughout the region.

The future development of the Project Area and the remaining available parcels in the Tellico West Industrial Park would potentially convert vegetated areas containing open land and mixed deciduous and evergreen forest to an industrial setting. Similar to the Project Area, the vegetation types that would be affected by development of these properties are common in the area, resulting in minor cumulative impacts on vegetation in the region. Cumulative impacts to vegetation resulting from the Action Alternative and future development of the Project Area and the remaining available parcels in the Tellico West Industrial Park are anticipated to be minor.

5.7 Natural and Managed Areas

The Action Alternative would result in temporary and minor impacts to natural and managed areas as described in Section 4. Due to the proximity of the Project Area and the Tellico West Industrial Park to the Tellico River and Little Tennessee River, future development of these areas could result in temporary and minor cumulative impacts to these resources due to sediment-laden runoff during construction activities. It is anticipated that applicable BMPs would be employed during construction activities and activities would be accomplished in compliance with applicable stormwater permitting requirements.

Temporary and minor cumulative impacts to natural and managed areas would occur if construction activities associated with the Action Alternative and adjacent properties were to occur during the same time. However, with regulatory measures in place, cumulative impacts resulting from the Action Alternative and adjacent properties are anticipated to be temporary and minor.

5.8 Visual

The Action Alternative would result in temporary and minor visual quality impacts as described in Section 4. Future development of the Project Area and the remaining available parcels in the Tellico West Industrial Park could result in visual quality impacts during operation of construction vehicles and equipment over a temporary period during construction. Future development could also result in permanent visual changes in the landscape as areas are converted from predominantly open and forested lands to industrial areas. However, the development of these areas for industrial uses would be consistent with, and comparable to, the visual character of other nearby areas that include areas of open fields, fragmented forest, and developed/industrial areas. Overall, it is anticipated that future development of the Project Area and the remaining available parcels in the Tellico West Industrial Park would result in minor cumulative impacts to visual quality.

5.9 Noise

The Action Alternative would result in temporary and minor noise quality impacts as described in Section 4. Future development of the Project Area and the remaining available parcels in the Tellico West Industrial Park could generate increased noise from operation of equipment and construction of potential industrial buildings. However, the anticipated noise levels resulting from future operation of equipment and construction of potential industrial buildings would not differ significantly from equipment that is in regular use in the surrounding area from industrial activities. In addition, it is anticipated that construction activities would be conducted during daylight hours only. Thus, noise quality impacts resulting from future development of the Project Area and the remaining available parcels in the Tellico West Industrial Park are anticipated to be minor and temporary. Temporary and minor noise-related cumulative impacts would occur if construction activities associated with the Action Alternative and future development the Project Area and the remaining available parcels in the Tellico West Industrial Park were to occur during the same time. If there were no overlap of construction activities, cumulative impacts would not occur.

5.10 Socioeconomic Conditions and Environmental Justice

Socioeconomic conditions in the Project Area would continue to be influenced by general population increases and development growth in the area. The Action Alternative would have a minor, short-term, positive effect on the local economy and workforce as described in Section 4. Future development of the Project Area and future development of the remaining available parcels in the Tellico West Industrial Park may create additional jobs and capital investment with associated beneficial impacts to the local economy, resulting in minor, long-term beneficial impacts to socioeconomic conditions. Therefore, implementation of the Action Alternative and future development of these properties is anticipated to result in minor positive cumulative impacts to socioeconomic conditions in the area.

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

5.11 Transportation

The Action Alternative would result in temporary impacts to traffic as described in Section 4. Short-term increases in construction traffic would occur during construction periods for the Action Alternative and future development of the Project Area and the remaining available parcels in the Tellico West Industrial Park. It is anticipated that construction traffic associated with the Action Alternative and future development would consist of a small fleet over short time periods, as individual sites are developed. Temporary and minor cumulative traffic impacts would occur if construction activities associated with the Action Alternative and future development of the Project Area and the remaining available parcels in the Tellico West Industrial Park were to occur during the same time. If there were no overlap of construction activities, temporary cumulative impacts resulting from construction traffic would not occur.

Future development of the Project Area and the remaining available parcels in the Tellico West Industrial Park could result in permanent increases in traffic due to new industrial development. The degree of increased traffic would depend on the type and number of industrial facilities potentially constructed. If the potential increase in traffic generated by future development would be significant, consultation with TDOT would be required to develop measure to minimize impacts. Therefore, potential permanent traffic-related cumulative impacts are anticipated to be minor.

6.0 PERMITS, LICENSES, AND APPROVALS

The Action Alternative would result in greater than one acre of earth disturbing activities; therefore, it would be necessary to obtain coverage under the 2016 General Permit TNR100000. Coverage would require submittal of a Notice of Intent (NOI) and development of a site-specific SWPPP. Impacts to WOTUS would require a Section 404 permit and a Section 401 CWA certification. Impacts to WOST would require an ARAP from TDEC, which would also serve as the Section 401 Water Quality Certification. The Action Alternative would result in on-site burning of cleared trees and vegetation. On-site burning activities 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. The TRDA or its contractors would be responsible for obtaining local, state, or federal permits, licenses, and approvals necessary for the project.

7.0 BEST MANAGEMENT PRACTICES AND MITIGATION MEASURES

To minimize or reduce the environmental effects of site activities associated with the Action Alternative, the TRDA or its contractors are expected to ensure all clearing and grading activities conducted comply with stormwater permitting requirements and use applicable BMPs to minimize and control erosion and fugitive dust during these actions. On-site burning activities are to comply with local burn permits, the requirements in TDEC Air Pollution Control Rule 1200-3-2 and any conservation measures identified in TVA’s Bat Strategy Project Screening Form (Attachment 2).

Operations involving chemical or fuel storage or resupply and vehicle servicing are expected to be handled outside of riparian areas and in such a manner as to prevent these items from reaching a watercourse. Earthen berms or other effective means are expected to be installed to protect nearby stream channels from direct surface runoff. Servicing of equipment and vehicles is expected to be done with care to avoid leakage, spillage, and subsequent surface or groundwater contamination. Oil waste, filters, and other litter are expected to be collected and disposed of properly.

Unavoidable impacts to wetlands and streams would require consultation and permitting with the USACE Nashville District and TDEC prior to initiation of construction. Impacts to WOTUS would require a CWA Section 404 permit and CWA Section 401 authorization and impacts to WOST would require a TDEC ARAP. The terms and conditions of these permits and any mitigation measures identified would be implemented per permit requirements.

TRDA or its contractor would complete construction of the gravel access road in such a manner that upstream flood elevations would not be increased by more than one foot.

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

8.0 LIST OF PREPARERS

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

Table 8-1: Environmental Assessment Project Team

Name/Education	Experience	Project Role
TVA		
Kim Pilarski-Hall *MS, Geography, Minor Ecology*	24 years expertise in wetland assessment, wetland monitoring, watershed assessment, wetland mitigation, restoration as well as NEPA and Clean Water Act compliance	Wetlands and Natural Areas
Liz Hamrick *MS, Wildlife and Fisheries Science, University of Tennessee Valley Authority BA, Biology, BA, Anthropology, Grinnell College*	20 years in biological field studies, 8 years in biological compliance, NEPA compliance, and ESA consultation for T&E terrestrial animals.	Terrestrial Zoology, Implementation of ESA Section 7 Programmatic Consultation for federally listed bats and routine actions
Adam Dattilo *MS, Forestry; BS, Natural Resource Conservation Management*	18 years in Ecological Restoration and Plant Ecology; 16 years in Botany	Botany
Kerry Nichols *PhD Anthropology, University of Missouri-Columbia, MA, Anthropology, University of Colorado-Denver, BA, Political Science, University of Northern Colorado*	21 years of experience as a field archaeologist and SHPO project reviewer.	Cultural resources, NHPA Section 106 compliance

Table 8-1: Environmental Assessment Project Team

Name/Education	Experience	Project Role
Craig Phillips *MS, and BS, Wildlife and Fisheries Science*	10 years Sampling and Hydrologic Determinations for Streams and Wet-Weather Conveyances; 9 years in Environmental Reviews.	Aquatic Ecology
Ashley A. Pilakowski *BS, Environmental Management*	9 years in environmental planning and policy and NEPA compliance.	NEPA Compliance
Carrie Williamson, PE, CFM *BS and MS, Civil Engineering*	7 years in floodplains and flood risk	Floodplains
Cardno		
Rachel Bell, PMP *BS, 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 Project Manager Proposed Action and Need, Alternatives, Site Description, Air Quality and Climate Change, Groundwater, Noise and Visual
Amanda Koonjebeharry, PMP *BS, 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.	Cumulative Impacts
Peter Marsey *MA, Geography, University of Toronto* *BA, Geography, University of Delaware*	14 years in civil engineering and environmental consulting including NEPA compliance, wetland and waterbody delineation, NPDES 316b compliance, renewable energy site permitting, construction monitoring, and linear energy permitting.	Socioeconomics and Environmental Justice
Darren Bishop *MS, Soil and Water Science, University of Florida* *BS, Environmental Science, University of South Florida* *BA, English, University of South Florida*	18 years of experience managing and implementing science-based studies, planning, permitting, technical report preparation, and construction support for complex, multi-year projects. Areas of expertise include permitting and regulatory compliance for large-scale energy industry projects in the U.S., Caribbean, South America, and Central America.	QA/QC
Tammy Miller *MS, Natural Resources, University of Wisconsin-Steven's Point* *BS, Terrestrial Ecology-Wildlife Management, University of Vermont*	18 years in biological resource investigations including NEPA compliance, waterway permitting and mitigation, threatened and endangered species surveys and coordination, wetland and stream delineations, and water quality investigation.	Soil Erosion and Surface Water, Recreation, and Transportation
Duane Simpson *MA, Anthropology, University of Arkansas* *BA, Anthropology, Ohio University*	26 years in archaeological consulting including management of projects across the southeast and midatlantic regions. Principal Investigator for over 15 years.	Archaeology

9.0 AGENCIES AND OTHERS CONSULTED

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

- 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
- Kialegee Tribal Town, Shawnee Tribe
- The Muscogee (Creek) Nation
- The Seminole Nation of Oklahoma
- Thlopthlocco Tribal Town
- United Keetoowah Band of Cherokee Indians in Oklahoma
- United States Fish and Wildlife Service

10.0 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.

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.W., V. Carter, F.C. Golet and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, Washington, D.C. FWS/OBS-79/31.

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

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

Kurta, A., S. W. Murray, and D. H. Miller. 2002. Roost selection and movements across the summer landscape. Pages 118-129 *in* A. Kurta and J. Kennedy, editors. The Indiana Bat: Biology and Management of an Endangered Species. Bat Conservation International, Austin, Texas.

Griffith, G. E, J.M. Omernik and S. Azevedo. 1998. Ecoregions of Tennessee (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale1:1,250,000).

Grossman, D. H., D. Faber-Langendoen, A.S. Weakley, M. Anderson, P. Bourgeron, R. Crawford, K. Goodin, S. Landaal, K. Metzler, K.D. Patterson, M. Payne, M. Reid, and L. Sneedon. 1998. International Classification of Ecological Communities, Terrestrial Vegetation of the United States Volume 1: The Natural Vegetation Classification System Development, Status, and Application. The Nature Conservancy, Arlington, Virginia. 126pp.

Leverett, Robert 1996. Definitions and History in Eastern old-growth forests: prospects for rediscovery and recovery. Edited by Mary Byrd Davis. Island Press, Washington D.C. and Covelo, California.

Monroe County Chamber of Commerce. 2020. Available at: http://www.monroecountychamber.org/vonore/. Accessed January 27, 2020.

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

NatureServe. 2010. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available at: http://www.natureserve.org/explorer. Accessed 2020.

Pruitt, L., and L. TeWinkel, editors. 2007. Indiana Bat (Myotis sodalis) Draft Recovery Plan: First Revision. U.S. Fish and Wildlife Service, Fort Snelling, Minnesota. 260 pgs. Available at: http://www.fws.gov/midwest/endangered/mammals/inba/pdf/inba_fnldrftrecpln_apr07.pdf Accessed December 6, 2016.

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

Stanyard, William F. 2000. Archaeological Survey of the Tellico West Industrial Park, Monroe County, Tennessee. TRC Garrow Associates, Inc. Submitted to the Tennessee Valley Authority.

Tellico Reservoir Development Agency (TRDA). 2020. Available at: https://www.tellico.com/. Accessed January 27, 2020.

Tennessee Department of Environment and Conservation (TDEC). 2018. Final 2018 EPA Approved List of Impaired Waters. Available at: https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/water-quality-reports---publications.html. Accessed January 29, 2019.

Tennessee Department of Transportation (TDOT). 2018. Monroe County Traffic Map. Available at: https://www.tn.gov/content/dam/tn/tdot/maps/2019-traffic-maps-with-aadt/Monroe%20Combined.pdf. Accessed January 29, 2019.

TDOT. 2020. Available at: https://www.tdot.tn.gov/projectneeds/spot#/. Accessed January 27, 2020.

Tennessee Valley Authority (TVA). 1981. Class Review of Repetitive Actions in the 100-Year Floodplain, FR Vol. 46, No. 76—Tuesday, April 21, 1981. pp. 22845-22846.

TVA. 2000. Tellico Reservoir Land Management Plan. June 2000. Available at: https://www.tva.gov/file_source/TVA/Site%20Content/Environment/Environmental%20Stewardship/Land%20Management/Land%20Plans/Tellico%20Reservoir%20Land%20Mgmt%20Plan.pdf. Accessed March 3, 2020.

Town of Vonore. 2020. Available at: https://www.town-of-vonore.com/. Accessed January 27, 2020.

United States Environmental Protection Agency (USEPA). 2020. Green Book; Alabama 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 9, 2020.

U.S. Fish and Wildlife Service (USFWS). 1990. Appalachian Northern Flying Squirrels (*Glaucomys sabrinus fuscus* and *Glaucomys sabrinus coloratus*) Recovery Plan. Newton Corner, Massachusetts. 53 pp.

USFWS. 2007. National Bald Eagle Management Guidelines. Available at: http://www.fws.gov/northeast/ecologicalservices/pdf/NationalBaldEagleManagementGuidelines.pdf. Accessed: August 23, 2019.

USFWS. 2013. Bald and Golden Eagle Protection Act. Available at: http://www.fws.gov/northeast/ecologicalservices/eagleact.html. Accessed August 23, 2019.

USFWS. 2014. Northern Long-eared Bat Interim Conference and Planning. Available at: https://www.fws.gov/northeast/virginiafield/pdf/NLEBinterimGuidance6Jan2014.pdf. Accessed August 23, 2019.

USFWS. 2016. Rusty-patched Bumblebee (*Bombis affinis*) Species Status Assessment. Available at: https://www.fws.gov/midwest/endangered/insects/rpbb/pdf/SSAReportRPBBwAdd.pdf. Accessed December 30, 2019).

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 December, 30 2019.

USFWS. 2019b. Carolina Northern Flying Squirrel. Available at: https://www.fws.gov/southeast/wildlife/mammals/carolina-northern-flying-squirrel/. Accessed January 2, 2020.

United States National Park Service (USNPS) 2020. Nationwide Rivers Inventory. Available online: https://www.nps.gov/subjects/rivers/nationwide-rivers-inventory.htm. Accessed January 10, 2020.

United States Geological Survey (USGS). 2016. Groundwater Quality in the Valley and Ridge and Piedmont and Blue Ridge Carbonate-Rock Aquifers, Eastern United States. 2016. Available online: hhttps://pubs.usgs.gov/fs/2016/3079/fs20163079.pdf. Accessed January 27, 2020.

USGS. 2003. Aquifers: Map of the Principal Aquifers of the United States. 2003. Available online: https://water.usgs.gov/ogw/aquifer/map.html. Accessed January 27, 2020.

USGS. 1995. Ground Water Atlas of the United States, Illinois, Indiana, Kentucky, Ohio, Tennessee, HA 730-k. 1995. Available online: https://pubs.usgs.gov/ha/ha730/ch_g/G-text10.html. Accessed January 27, 2020.

Wild & Scenic Rivers (WSR). 2020. National Wild and Scenic Rivers System. Available online: https://www.rivers.gov/. Accessed January 10, 2020.

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

ATTACHMENT 1

PROJECT FIGURES

Figure 1-A

Aerial

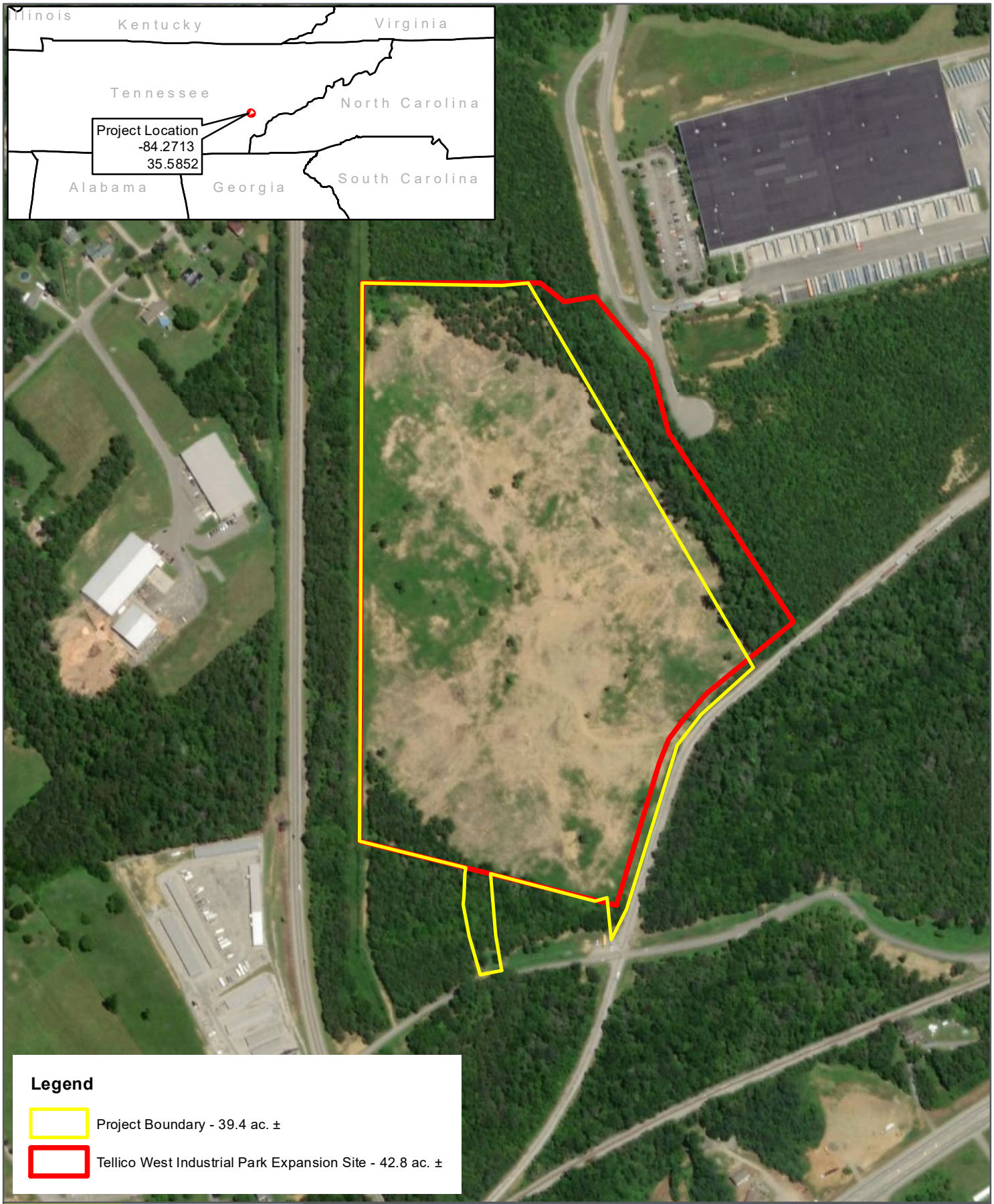


Image:2018

Data Source:

Figure 1-A: Aerial

Tellico West Industrial Park
Monroe County, Tennessee

0 400 800 Feet

0 120 240 Meters

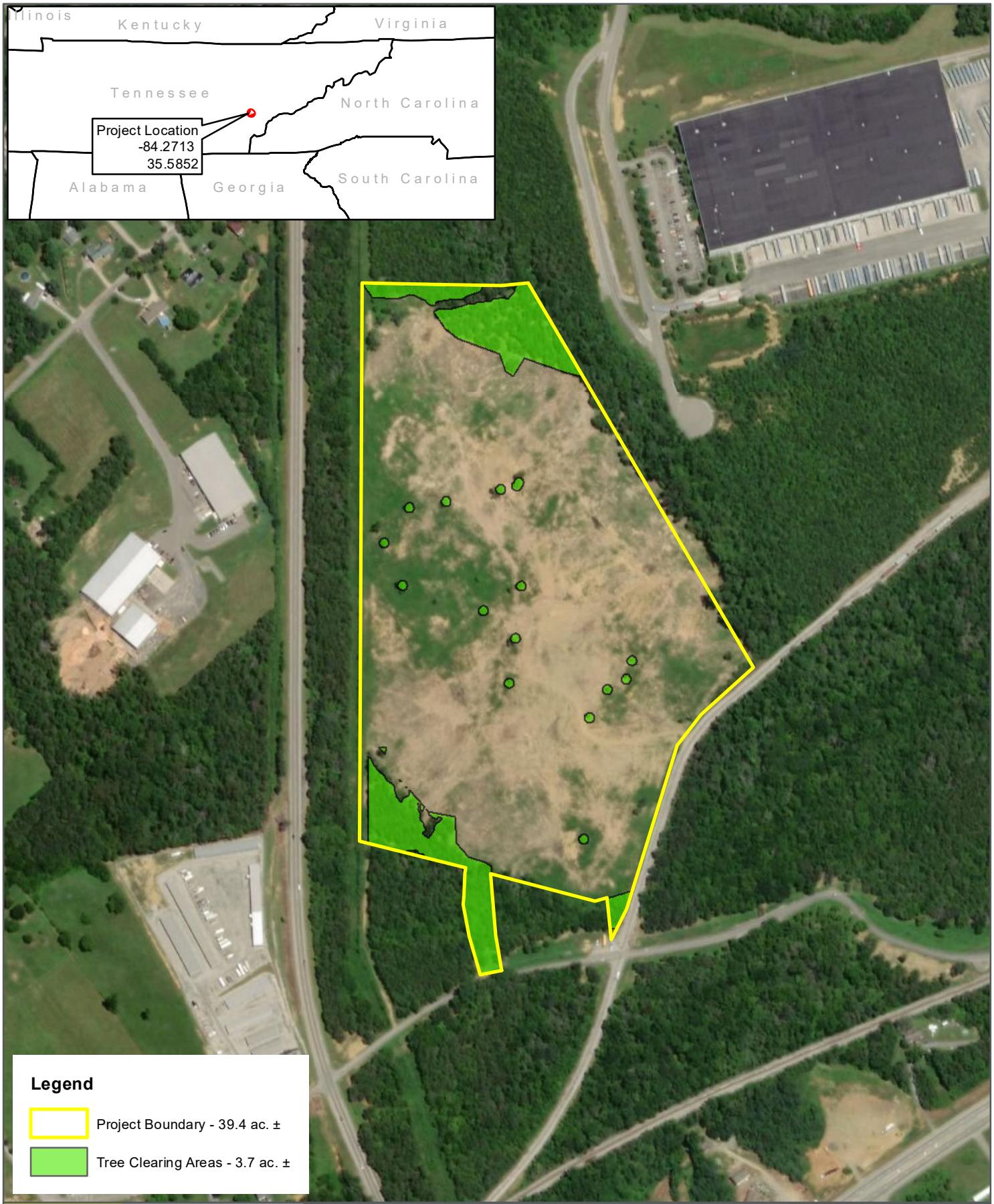
Cardno

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

Date Created: 2/14/2020 Date Revised: 2/14/2020 File Path: Q:\UnitedStates\Florida\Tampa\Tennessee Valley Authority\TVA FY20 Economic Development Projects\Monroe_County\working\arcmap\Monroe_Fig1A_Aerial_A_1_20200214.mxd
GIS Analyst: James.Bottiger

Figure 1-B

Tree Clearing Areas



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Data Source:

Figure 1-B: Tree Clearing Areas

Tellico West Industrial Park
Monroe County, Tennessee

0 400 800 Feet

0 120 240 Meters

Cardno

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GIS Analyst: James.Bottiger

Figure 1-C

USGS Quadrangle

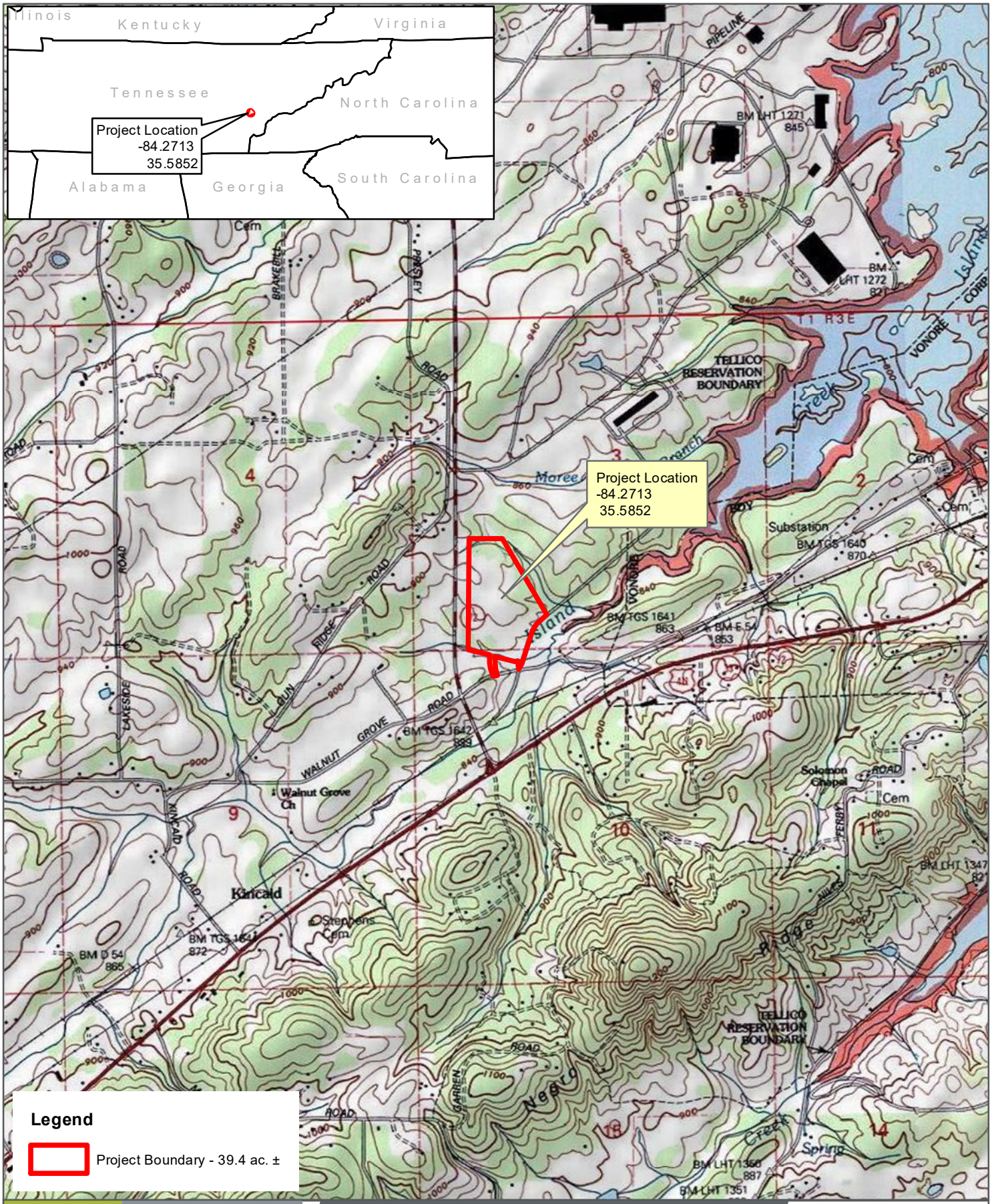

Image:2018

Data Source:

Figure 1-C: USGS Quadrangle

Tellico West Industrial Park
Monroe County, Tennessee

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

Cardno
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Date Created: 2/14/2020 Date Revised: 2/14/2020 File Path: Q:\UnitedStates\Florida\Tampa\Tennessee Valley Authority\TVA FY20 Economic Development Projects\Monroe_County\working\arcmap\Monroe_Fig1C_USGS_Quadrangle_A_1_20200214.mxd
GIS Analyst: James.Bottiger

Figure 1-D

FEMA Floodplain

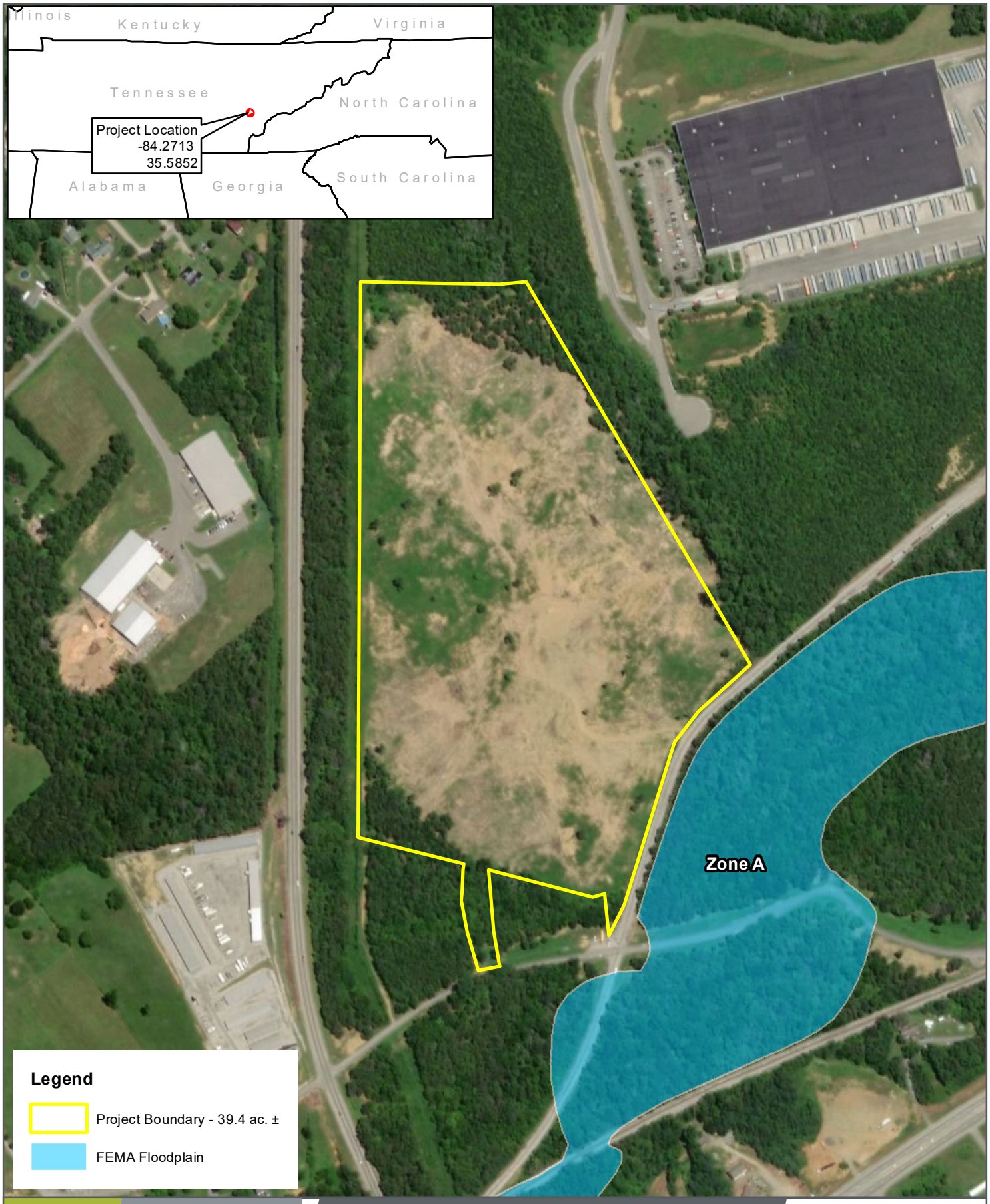

Image:2018

Data Source:

Figure 1-D: FEMA Floodplain

Tellico West Industrial Park
Monroe County, Tennessee

0 400 800 Feet
0 120 240 Meters

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GIS Analyst: James.Bottiger

Figure 1-E

USFWS NWI

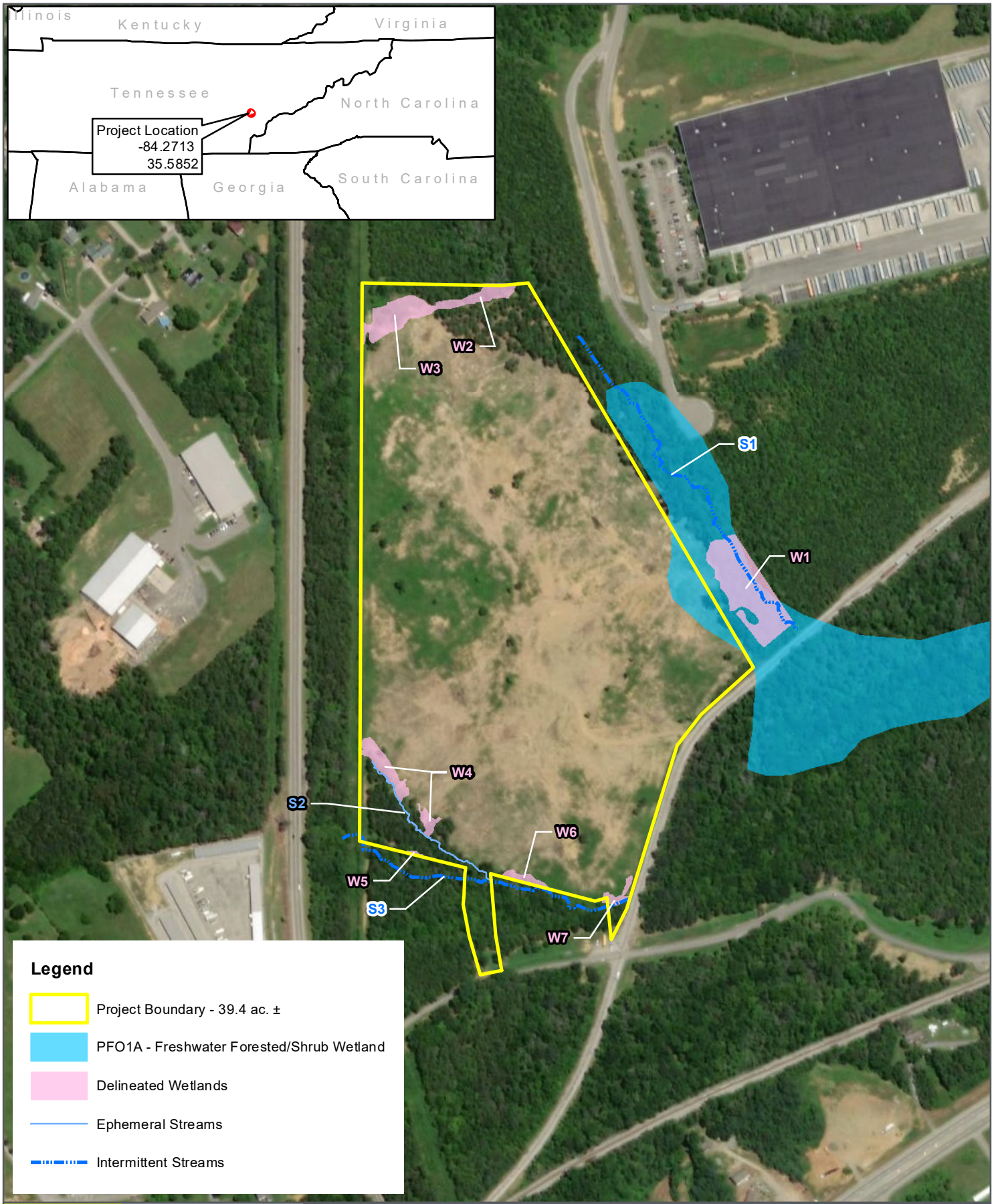

Image:2018

Data Source:

Figure 1-E: USFWS NWI

Tellico West Industrial Park
Monroe County, Tennessee

0 400 800 Feet

0 120 240 Meters

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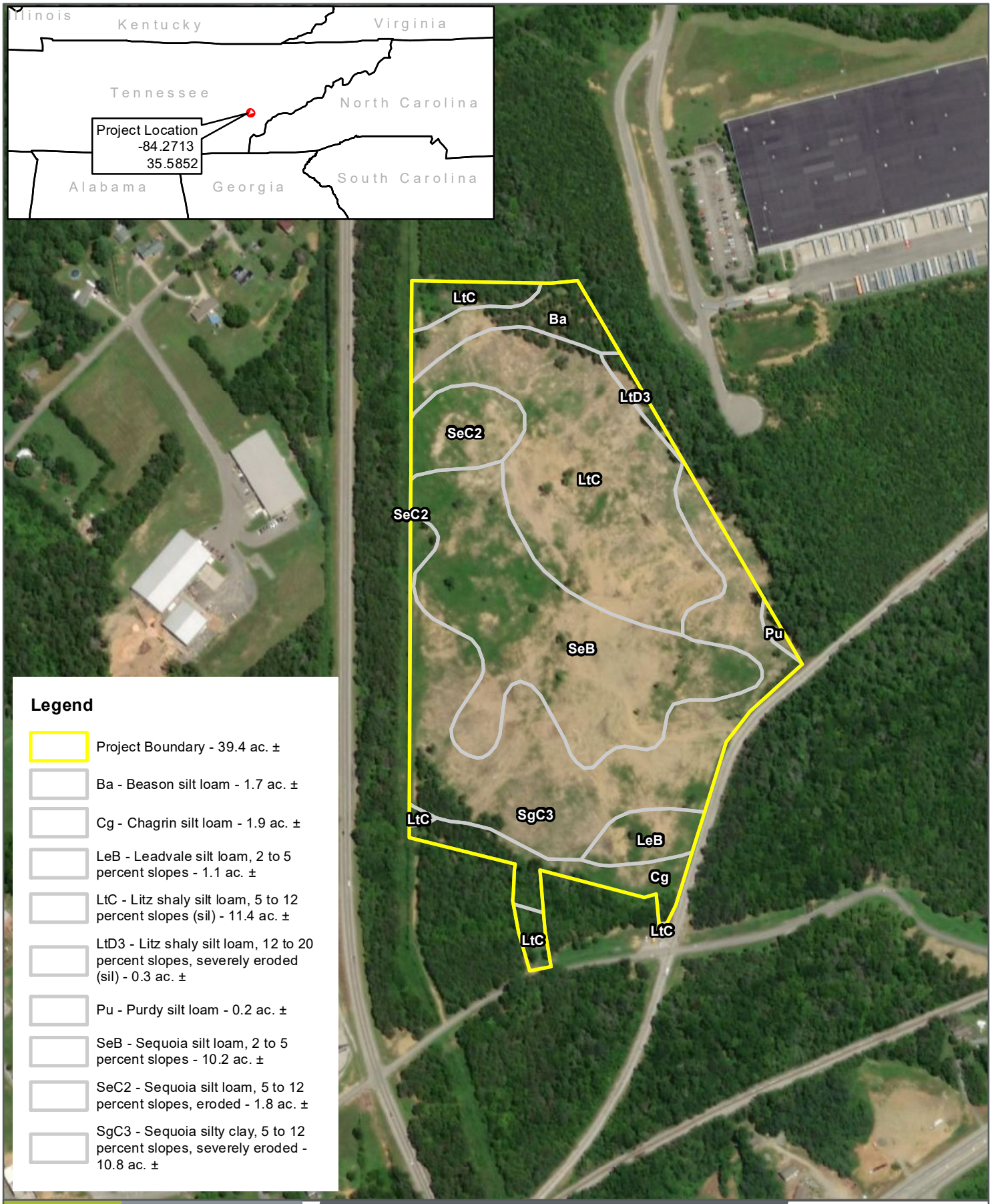
GIS Analyst: James.Bottiger

Figure 1-F

NRCS Soils



Legend

- Project Boundary - 39.4 ac. ±
- Ba - Beason silt loam - 1.7 ac. ±
- Cg - Chagrin silt loam - 1.9 ac. ±
- LeB - Leadvale silt loam, 2 to 5 percent slopes - 1.1 ac. ±
- LtC - Litz shaly silt loam, 5 to 12 percent slopes (sil) - 11.4 ac. ±
- LtD3 - Litz shaly silt loam, 12 to 20 percent slopes, severely eroded (sil) - 0.3 ac. ±
- Pu - Purdy silt loam - 0.2 ac. ±
- SeB - Sequoia silt loam, 2 to 5 percent slopes - 10.2 ac. ±
- SeC2 - Sequoia silt loam, 5 to 12 percent slopes, eroded - 1.8 ac. ±
- SgC3 - Sequoia silty clay, 5 to 12 percent slopes, severely eroded - 10.8 ac. ±

Image:2018

Data Source:

Figure 1-F: NRCS Soils

Tellico West Industrial Park
Monroe County, Tennessee

0 400 800 Feet
0 120 240 Meters

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GIS Analyst: James.Bottiger

ATTACHMENT 2

TVA BAT STRATEGY PROJECT SCREENING FORM

From:	Hamrick, Elizabeth Burton
To:	robbie_sykes@fws.gov; ross_shaw@fws.gov
Subject:	Notification in accordance with TVA Programmatic Consultation for Routine Actions and Federally listed bats
Date:	Thursday, January 02, 2020 11:39:00 PM
Attachments:	Completed_InvestPrep-MonroeCo_EcoDev_TVA-Bat-Strategy.01.02.2020.pdf image001.png image002.png image003.png image004.png image005.png image006.png image007.png image008.png

---

Good evening,

TVA's programmatic ESA consultation on routine actions and bats was completed in April 2018. For projects with NLAA or LAA determinations, TVA is providing project-specific notification to relevant Ecological Service Field Offices. This notification also will be stored in the project administrative record. For projects that utilize Take issued through the Biological Opinion, that Take will be tracked and reported in TVA's annual report to the USFWS by March of the following year.

The attached form is serving at TVA's mechanism to determine if project-specific activities are within the scope of TVA's bat programmatic consultation and if there is project-specific potential for impact to covered bat species, necessitating conservation measures, which are identified for the project on page 5. The form also is serving as the primary means of notification to the USFWS and others as needed.

***Project*: Economic Development InvestPrep Grant for Monroe County, Tennessee. The project proposes to utilize TVA InvestPrep™ funding to assist with due diligence studies (Phase I ESA and boundary survey), tree clearing, site grading including the construction of a 200,000 SF pad, a storm water detention basin, and a gravel access road in Monroe County, TN for a proposed industrial development site. Removal of up to 1.08 acres of potentially suitable summer roosting bat trees would occur between April 1-May 31 or July 1-Oct 15. The project area is near Cherokee National Forest with nine recorded Indiana bat roost trees and 40 mist net captures within 10 miles of the project footprint. All of these records are greater than 5 miles from the project.**

Liz Hamrick
Terrestrial Zoologist
Biological Compliance

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

865-632-4011 (w)
ecburton@tva.gov

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

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

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

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

Project Location (City, County, State): Monroe County, TN

Project Description:

Utilize TVA InvestPrep™ funding to assist with due diligence studies (Phase I ESA and boundary survey), tree clearing, site grading including the construction of a 200,000 SF pad, a storm water detention basin, and a gravel access road in Monroe County, TN

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: [5.88] (•)**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)	Joshua Argo	Date	Jan 2, 2020

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): [1.08] **(**( )**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 1.08 ◉ **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 Jan 2, 2020

TVA Action	Total 20-year	Winter	Volant Season	Non-Volant Season
9 Promote Economic Development	7,501.57	6,759.73	741.84	0

STEP 12) Amount contributed to TVA's Bat Conservation Fund upon activity completion: $ 540 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.
		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.
		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.
		TR3* - Removal of suitable summer roosting habitat within documented bat habitat (i.e., within 10 miles of documented Indiana bat hibernacula, within 5 miles of documented northern long-eared bat hibernacula, within 2.5 miles of documented Indiana bat summer roost trees, within 5 miles of Indiana bat capture sites, within 1 mile of documented northern long-eared bat summer roost trees, within 3 miles of northern long-eared bat capture sites) 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.

[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) Ashley Pilakowski 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 1.08 (•) ac ( ) trees and that use of Take will require $ 540 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 Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902

March 4, 2020

Mr. E. Patrick McIntyre, Jr.
Executive Director
and State Historic Preservation Officer
Tennessee Historical Commission
2941 Lebanon Pike
Nashville, Tennessee 37243-0442

Dear Mr. McIntyre:

TENNESSEE VALLEY AUTHORITY (TVA)-INVESTPREP CULTURAL RESOURCE SURVEY FOR TELLICO WEST INDUSTRIAL PARK, BUILDING PAD, ACCESS ROAD AND TREE CLEARING AREA, MONROE COUNTY, TENNESSEE (35.5821, -84.2718)

TVA proposes to provide funds to Tellico Reservoir Development Agency (TRDA) for the clearing of approximately 2.6 acres of trees, site grading and construction of a 200,000 square foot building pad, construction of a storm water detention basin and a gravel access road within a project footprint of 39.6 acres. The Tellico West Industrial Park property is located near the town of Vonore in Monroe County, Tennessee (Figure 1). The property was purchased by TRDA in 1982 as a portion of a much larger land purchase for industrial development. TVA has determined that this project is an undertaking (as defined at 36 CFR § 800.16(y)) that has the potential to cause effects on historic properties. We are initiating consultation under Section 106 of the National Historic Preservation Act for this undertaking.

TVA determined the area of potential effects (APE) to be the area of proposed ground-disturbance (39.6 acres), where physical effects could occur, as well as areas within a half-mile radius of the project within which the industrial development would be visible, where visual effects on above-ground resources could occur. In this case, the APE is limited to the project footprint due to surrounding heavy vegetation that severely restricts viewshed.

TVA contracted with Cardno, Inc. to carry out a Phase I Archaeological survey on a 0.76-acre portion of the 39.6-acre project footprint where the possibility of intact archaeological sites remained. This Phase I survey was conducted on January 6, 2020. Please find two copies of the draft report entitled *Phase I Cultural Resources Investigation Tellico West Industrial Park, Building Pad, Access Road and Tree Clearing Area, Monroe County, Tennessee,* enclosed. The survey and writing of the report were consistent with the *Secretary of Interior's Standards and Guidelines for Identification* (National Park Service [NPS](1983).

Background research conducted prior to the field survey indicated that the project footprint was included in an archaeological survey by University of Tennessee (UT) in 1980, covering the

project footprint (Davis 1980), followed by another UT survey in 1986 (Jefferson 1986), an intensive Phase I survey of the project footprint in 2000 by TRC, Inc. (Stanyard 2000) and finally, a transmission line survey that traversed an area near the project footprint in 2018 (Rosenwinkle 2018). Cardno's background review of the archaeological site files at the Tennessee Division of Archaeology (TDOA) in December 2019 indicates that 25 archaeological sites (21 sites and four resource areas) are located within one mile (1.6 km) of the current survey area and there are five archaeological and no architectural resources documented in the project footprint by previous surveys (Figure 2). The archaeological resources include three NRHP-ineligible isolated occurrences, an NRHP-ineligible lithic scatter (AR-2) and site 40MR315, a very dense multi-component lithic scatter of undetermined NRHP eligibility (Stanyard 2000; Rosenwinkle 2018). TVA can find no SHPO correspondence from the Stanyard (2000) survey of the project footprint.

The project footprint is part of the zoned-industrial Tellico West Industrial Park and has been subject to documented clear-cutting and construction activities that have severely altered the landscape, causing erosional issues with subsoil and parent material often visible at the ground surface (Stanyard 2000:4; Donaldson et al. 2020). Recent aerial imagery (2018) further indicates that soils in the project footprint exhibit a high level of erosional disturbance with large areas of clear-cutting and denuded soils (Figure 3). Based on this documentation of past disturbance, TVA determined that nearly all of the APE, with the exception of a 0.76-acre portion in the southern extremity, has low probability for intact archaeological sites. The archaeological survey was limited to this 0.76-acre portion that has some potential for archaeological sites.

Archaeological site 40MR315 is located in the survey area. This site is a multi-component lithic scatter first recorded in 1980 by D. McMahan; its eligibility for inclusion in the National Register of Historic Places (NRHP) has not been evaluated previously. The most recent investigation of the area in 2018 did not actually visit the site, but based on the University of Tennessee, Tellico Reservoir Survey, described the site as containing materials diagnostic of the Early to Late Archaic Periods, with some materials consistent with the Mississippian Period (Rosenwinkel et. al. 2018). Due to lack of information about the present condition and NRHP eligibility of 40MR315, the portion of project footprint where TVA determined archaeological survey was needed consists of two lobes of land along the southern extent of the footprint totaling 0.76 acres that may intersect the known boundaries of 40MR315 (Figure 4).

The survey area has been heavily affected by erosion due to terraforming activities and sheet washing. During the survey efforts described in this report, site 40MR315 was not identified. The failure to identify site 40MR315 may be a result of inconsistent mapping, obliteration of the site with the construction of the transmission corridor, or erosional events over time. No previously-recorded archaeological sites were identified during this Phase I survey. Based on this survey, TVA has determined that the proposed undertaking would not adversely affect any archaeological sites that are included, or eligible for inclusion, in the NRHP.

Based TVA's in-house background review for structures, there are no historic architectural resources within the viewshed of the proposed project. Aerial imagery (ESRI 2018) shows thick

vegetation on surrounding parcels forming a barrier that severely limits viewshed (Figure 3). The Tennessee Historical Commission Viewer (Figure 5) and the NRHP do not show any historic properties within the APE. Thus, TVA determined that no architectural field survey is required. Based on these findings, TVA finds that the proposed undertaking would affect no historic architectural resources included, or eligible for inclusion, in the NRHP.

TVA finds that the proposed activities will have no adverse effects on site 40MR315. Pursuant to 36 CFR Part 800.4(d)(2) we are notifying you of TVA's finding of no adverse effect, providing the documentation specified in § 800.11(e); and inviting you to review the finding. Also, we are seeking your agreement with TVA's eligibility determinations and finding that the undertaking as currently planned will have no adverse effects on historic properties.

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

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

Sincerely,

Clinton E. Jones
Manager
Cultural Compliance

KDN:ABM
Enclosures
cc (Enclosures):
Ms. Jennifer Barnett
Tennessee Division of Archaeology
1216 Foster Avenue, Cole Bldg. #3
Nashville, Tennessee 37210

References Cited

Davis, R.P. Stephen Jr.
1980 A Preliminary Report of Probabilistic and Non-probabilistic Archaeological Sampling in Industrial area II, Tellico Reservoir Tennessee. University of Tennessee Dept. of Anthropology.

Donaldson, Tyler et al.
2020 Phase I Cultural Resources Investigation Tellico West Industrial Park, Building Pad, Access Road and Tree Clearing Area, Monroe County. Cardno, Inc. for Tennessee Valley Authority.

Jefferson, Norman Dean
1986 The TRDA Vonore Tract: An Uplands Archaeological Survey and Assessment. Submitted to Tennessee Valley Authority. University of Tennessee, Dept. of Anthropology.

Rosenwinkle, Heidi, Ted Karpynec, Meghan Weaver, Cassandra Medeiros, and Elinor Crook
2018 *A Phase I Cultural Resources Survey for the Tennessee Valley Authority's Planned Ft. Loudon-Vonore Transmission Line Retirement Project in Monroe County, Tennessee*. Tennessee Valley Archaeological Research. Submitted to the Tennessee Valley Authority

Stanyard, William F.
2000 Archaeological Survey of the Tellico West Industrial Park, Monroe County, Tennessee TRC Garrow Associates Inc. for Tennessee Valley Authority.

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

March 9, 2020

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

RE: TVA / Tennessee Valley Authority, Tellico West Industrial Park Building Pad, Access Road, and Tree Clearing Area, Monroe County, TN

Dear Mr. Jones:

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

Considering the information provided, we concur that no historic properties eligible for listing in the National Register of Historic Places will be affected by this undertaking. If project plans are changed or archaeological remains are discovered during project construction, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act. Questions or comments may be directed to Jennifer Barnett (615) 687-4780.

Your cooperation is appreciated.

Sincerely,

E Patrick McIntyre Jr

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

EPM/jmb

3-B

Federally Recognized Indian Tribes

3-C

United States Fish and Wildlife Service