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**ECONOMIC DEVELOPMENT GRANT PROPOSAL FOR THE
HENDERSON INTERSTATE INDUSTRIAL PARK
(LOTS 8 AND 9)
ENVIRONMENTAL ASSESSMENT
Simpson County, Kentucky (Franklin)**

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1.0 PROPOSED ACTION AND NEED

An integral part of Tennessee Valley Authority's (TVA) mission is to promote economic development within the TVA service area. TVA provides financial assistance to help bring to market new/improved sites and facilities within the TVA service area and position communities to compete successfully for new jobs and capital investment. TVA proposes to provide an economic development grant through InvestPrep funds to the Franklin-Simpson Industrial Authority (FSIA) to assist with the development of Henderson Interstate Industrial Park (Lots 8 and 9). The area of TVA's proposed action (herein referred to as the Project Area) comprises approximately 29.8 acres within the existing 350.0-acre Henderson Interstate Industrial Park located along Interstate 65 (I-65) and adjacent to Scottsville Road in the City of Franklin, Simpson County, Kentucky (KY) (see Figure 1-1 below and Attachment 1, Figure 1-A). TVA funds would be used to assist with due diligence studies (including geotechnical soil borings) on Lots 8 and 9, clearing and grubbing, construction of a gravel access road, construction of a 104,000 square foot compacted dirt pad (expandable to 208,000 square feet) on Lot 8, draining and mucking of an existing depression pond, and construction of a new stormwater retention pond.

The primary purpose of the Proposed Action is to reduce both time and risk to prospective clients by completing initial site preparation activities, increasing the likelihood of recruiting a new industry to the Henderson Interstate Industrial Park (Lots 8 and 9). Proposed improvements will lead to an increased probability of achieving TVA's core mission of job creation and capital investment. Target industries for the Henderson Interstate Industrial Park (Lots 8 and 9) include automotive suppliers and industries seeking interstate frontage along I-65. This Environmental Assessment (EA) assesses the environmental impacts that would potentially be affected by TVA's Proposed Action. TVA's decision is whether or not to provide the requested funding to the FSIA.

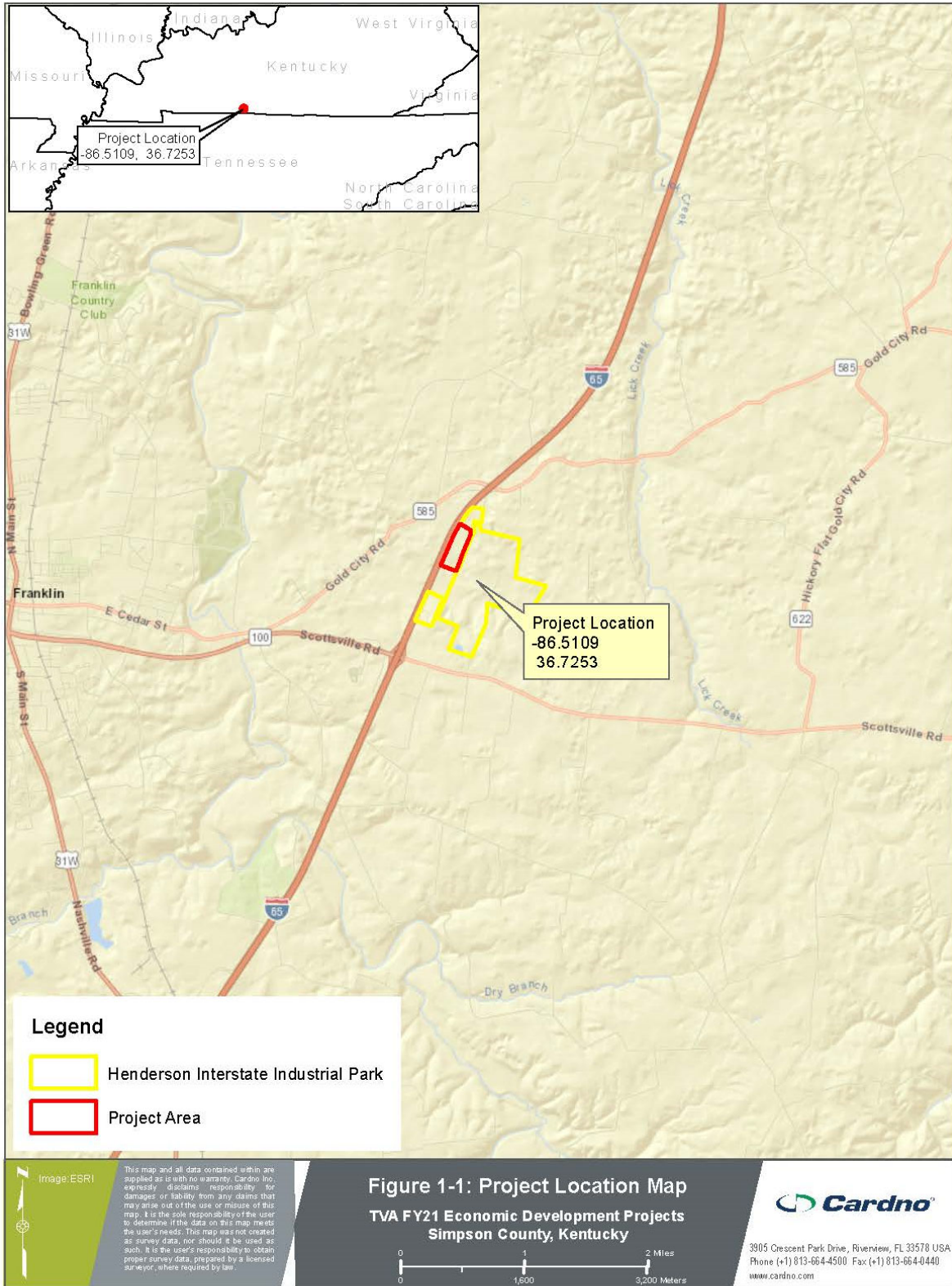


Figure 1-1. Project Location Map

2.0 OTHER ENVIRONMENTAL REVIEWS AND DOCUMENTATION

A Phase I Environmental Site Assessment of the industrial park, including the 29.8 acre Project Area along with a broader area, was performed consistent with the procedures included in ASTM E 1527-05 (Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process) by American Engineers, Inc. in January 2012 (American Engineers Inc. 2012). The primary purpose of the Phase I Environmental Site Assessment was to identify the presence of Recognized Environmental Conditions or other environmental liabilities within the Project Area. The Phase I Environmental Site Assessment did not indicate the presence of Recognized Environmental Conditions at the property. Additionally, no off-site regulatory issues potentially affecting the site were documented. A Geotechnical Engineering Investigation of the Project Area, along with additional soil borings and an evaluation of drainage patterns, was performed by Arnold Consulting Engineering Services, Inc. (ACES) in June 2019 (ACES 2019). The primary purpose of the Geotechnical Engineering Investigation was to document the general site and subsurface conditions within the Project Area pertinent to the site development, foundation design, and construction. The Geotechnical Engineering Investigation report noted that soft soils and drainage issues were encountered at the site potentially requiring removal and replacement via on-site cut and fill without the need for importing soil to or exporting soil from the Project Area. NSG Innovations, LLC conducted an electrical resistivity survey east of the Project Area Lot 11) in June 2019 to characterize subsurface anomalies related to development of karst features and to identify potential impacts of the anomalies to site infrastructure at the broader Henderson Interstate Industrial Park (NSG Innovations LLC 2019). The electrical resistivity survey noted the presence of internally drained basins, soft soils, and karst features in the area to the east of Lots 8 and 9 outside of the Project Area.

Reports for a Phase I Archaeological Resources Investigation, Cultural Historic Survey, and an Environmental Report assessing jurisdictional waters, hydrologic determinations, and rare, threatened and endangered species were prepared by Cardno, Inc. (Cardno) in January 2021.

The Phase I Environmental Site Assessment, Geotechnical Engineering Investigation Report, Electrical Resistivity Survey Report, Phase I Archaeological Resources Investigation, Cultural Historic Survey, and Environmental Report were used in the preparation of this EA.

3.0 ALTERNATIVES

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

The No Action Alternative

Under the No Action Alternative, TVA would not provide InvestPrep funds to the FSIA. TVA would not be furthering its mission of promoting economic development by assisting the local community to compete successfully for new jobs and capital investment through the Proposed Action. If the FSIA were to obtain alternate funding and proceed with its current plans, the overall environmental consequences would be similar to those anticipated from implementing the Action Alternative. If the project is postponed, environmental effects would be delayed for the duration of the postponement. If the project were cancelled, no direct environmental effects are anticipated, as environmental conditions on the site would remain essentially unchanged from the current conditions for the foreseeable future.

The Action Alternative

Under the Action Alternative, TVA would provide InvestPrep funds to the FSIA to assist with due diligence studies (including geotechnical soil borings) on Lots 8 and 9 of the Henderson Interstate Industrial Park, clearing and grubbing, construction of a gravel access road, construction of a 104,000 square foot compacted dirt pad (expandable to 208,000 square feet) on Lot 8, draining and mucking of an existing depression pond, and construction of a new stormwater retention pond (Attachment 1, Figures 1-A and 1-B). Site activities required for the Action Alternative would occur over a short period, approximately 5 months, and would involve operation of an excavator, bulldozer, dump truck, or similar vehicles and heavy machinery. Cleared trees, stumps, vegetation, and debris would be cut and burned on-site. TVA's preferred alternative is the Action Alternative.

It is expected that the FSIA would obtain all required permits and authorizations, and in compliance with those permits take appropriate feasible measures, such as implementing best management practices (BMPs) and best construction practices, to minimize or reduce the potential environmental effects of the proposed project to insignificant levels. These practices would include installation of sediment and erosion controls (silt fences, sediment traps, etc.), management of fugitive dust, and daytime work hours.

The Action Alternative does not include assessment of activities that may be directly or indirectly associated with adjacent lots already developed or under construction or the eventual build-out, occupation, and future use of the Project Area. It would be speculative to do so because the future use of the site has not been defined.

4.0 AFFECTED ENVIRONMENT AND ANTICIPATED IMPACTS

4.1 Site Description

The 29.8-acre (Lots 8 and 9) Project Area of Potential Effect (APE) is located within the existing 350.0-acre Henderson Interstate Industrial Park along I-65 and adjacent to KY Highway 100 / Scottsville Road and Garvin Lane in the City of Franklin, Simpson County, KY.

The Henderson Interstate Industrial Park was created six years ago with the purchase of 350.0 acres. The site containing Lots 8 and 9 was formerly and is currently being utilized for agriculture as row crops (soybeans). The area also contains open land use with few scattered trees (mixed-deciduous and coniferous).

The Henderson Interstate Industrial Park has multiple existing tenants. Lots 8 and 9 already have industrial grade utility service including water, sewer, overhead electric, and natural gas. Access to these lots is provided by Garvin Lane, a paved road connecting to KY Highway 100.

Lots 8 and 9 are bordered to the west by I-65, to the north by agricultural fields and a residence, to the east by agricultural fields, and to the south by industrial and commercial development and open land. Forested areas are located in the central and southeastern portion of the Project Area (Attachment 1, Figure 1-A). Topography at the site is gently rolling to flat with elevations ranging between approximately 640 feet to 665 feet mean sea level (MSL) (site topography is depicted on Attachment 1, Figure 1-C). There are no floodplains in the Project Area (Attachment 1, Figure 1-D). The central portion of the site contains two ephemeral streams and a pond (Attachment 1, Figures 1-E and 1-F). An ephemeral stream, SSNO2, flows west then turns north in the east-central portion of the site. A pond, waterbody WBSNO1, is approximately 100 feet wide by 80 feet long and approximately 5 feet deep. The pond is located in the west-central portion of the site without defined inflow or outflow, with another ephemeral stream, SSNO1, located just to the east and flowing south before going underground. A wetland, WSNO1, is located at the northern edge of the site and is isolated since it has no connections to streams. No permanent structures are located within the Project Area. Soil types are depicted in Attachment 1, Figure 1-G.

4.2 Impacts Evaluated

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

As noted above, the Phase I Environmental Site Assessment did not indicate the presence of Recognized Environmental Conditions at the property and no solid or hazardous wastes were identified. The InvestPrep grant would have no impact on solid or hazardous wastes.

Based on Simpson County, Kentucky, flood insurance rate map panel number 21213C0185C, effective March 2011, and the Franklin, Kentucky, 1:24,000 topographic map, the proposed activities would be located outside identified 100-year floodplains, which would be consistent with Executive Order (EO) 11988. The Proposed Action would therefore have no impact on floodplains and their natural and beneficial values.

Natural areas include ecologically significant sites; federal, state, or local park lands; national or state forests; wilderness areas; scenic areas; wildlife management areas; recreational areas; greenways; trails; United States National Park Service (USNPS) Nationwide Rivers Inventory (NRI) segments; and Wild and Scenic Rivers. Managed areas include lands held in public ownership that are managed by an entity (e.g., TVA, United States Department of Agriculture [USDA], United States Forest Service [USFS], State of Kentucky) to protect and maintain certain ecological and/or recreational features. A review of data from the TVA Regional Natural Heritage Database, USNPS NRI database (USNPS 2021), and WSR database (WSR 2021)

indicates that there are no natural or managed areas within three miles of the Project Area. The Project Area is zoned as heavy industrial, therefore there will be no impacts to land use, prime farmland, or farmland of statewide importance. In addition, there are no developed parks or outdoor recreation areas in the immediate vicinity of the Project Area. The Jim Roberts Community Park is located about one mile away, but there would not be any effects to park facilities or park users. The Proposed Action would have no impact on natural or managed areas or recreation sites and their beneficial values.

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

4.2.1 Air Quality and Climate Change

Federal and state regulations protect ambient air quality. With authority granted by the Clean Air Act (CAA) 42 U.S.C. 7401 et seq. as amended in 1977 and 1990, the United States Environmental Protection Agency (USEPA) established National Ambient Air Quality Standards (NAAQS) to protect human health and public welfare. The USEPA codified NAAQS in 40 CFR 50 for the following “criteria pollutants:” nitrogen dioxide (NO₂), carbon monoxide (CO), ozone, sulfur dioxide (SO₂), lead, particulate matter (PM) with an aerodynamic diameter equal to or less than 10 microns (PM₁₀), and PM with an aerodynamic diameter equal to or less than 2.5 microns (PM_{2.5}). The NAAQS 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 Simpson County, KY, meets the ambient air quality standards and is in attainment with respect to the criteria pollutants (USEPA 2021).

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

GHGs are gases that trap heat in the atmosphere. They are non-toxic and non-hazardous at normal ambient concentrations. At this time, there are no applicable ambient air quality standards or emission limits for GHGs under the CAA. GHGs occur in the atmosphere both naturally and resulting from human activities, such as the burning of fossil fuels. GHG emissions due to human activity are the main cause of increased atmospheric concentration of GHGs since the industrial age and are the primary contributor to climate change. The principal GHGs are carbon dioxide (CO₂), 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, SO₂, PM₁₀, PM_{2.5}, GHGs, and small amounts of HAPs. Gasoline and diesel engines used as a result of the Action Alternative would comply with the USEPA mobile source regulations in 40 CFR Part 85 for on-road engines and 40 CFR Part 89 for non-road engines. These regulations are designed to minimize emissions and require a maximum sulfur content in diesel fuel of 15 parts per million (ppm).

Fugitive dust is a source of respirable airborne PM, including PM₁₀ and PM_{2.5}, which could result from ground disturbances such as land clearing, grading, excavation, and travel on unpaved roads. The amount of dust generated is a function of the activity, silt and moisture content of the soil, wind speed, frequency of precipitation, vehicle traffic, vehicle types, and roadway characteristics. The FSIA and its contractors would be expected to comply with Title 401 Kentucky Administrative Regulations (KAR) 63:010 regarding fugitive emissions, which require 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, PM₁₀, PM_{2.5}, GHGs, and HAPs. The FSIA and its contractors would be subject to local burn permits and the requirements in Title 401 KAR 63:005, 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 CO₂ into sugar, cellulose, and other carbon-containing carbohydrates that they use for food and growth. Carbon sequestration is the process by which carbon sinks remove CO₂ from the atmosphere. Although forests do release some CO₂ from natural processes such as decay and respiration, a healthy forest typically stores carbon at a greater rate than it releases carbon. The clearing of approximately 4.2 acres of land containing trees for the Action Alternative would result in a minor loss of carbon sequestration capacity in the area since evergreen and deciduous forest habitat is common and well represented throughout the region and in the immediate vicinity of the Project Area.

Under the No Action Alternative, if the FSIA were able to secure the funding for the proposed TVA-funded actions described in this EA from other sources, similar emissions associated from equipment, ground disturbances, and burning would occur, resulting in similar air quality and climate change impacts as those described above for the Action Alternative. If the FSIA were not able to secure the funding for the actions described in this EA, emissions associated from equipment, ground disturbances, and burning would not occur and there would be no impacts to air quality and climate change from the No Action Alternative.

4.2.2 Groundwater

The Project Area is located within the Interior Low Plateaus Province (USNPS 2017). The Interior Low Plateaus Province is characterized by Quaternary age unconsolidated sand and gravel deposits and Paleozoic sedimentary rocks consisting of consolidated limestone, dolomite and sandstone. The Interior Low Plateaus Province extends from northern Alabama to southern Indiana and Illinois (United States Geological Survey [USGS] 1995).

The principal aquifers in the Interior Low Plateaus Province consist of carbonate rocks that are primarily Pennsylvanian, Mississippian, Silurian, Devonian, and Ordovician aged rocks (USGS 1995). The primary aquifer that underlies the Project Area is regionally referred to as the Mississippian Plateau aquifer system and consists of limestone (USGS 1995). The Mississippian Plateau aquifer system, is typically overlain by weathered rock material or residuum consisting of clay, silt, sand and pebble of limestone and chert. Water quality in the Mississippian Plateau aquifer system is highly variable and based on water residence time within the aquifer (Kentucky Geological Survey [KGS] 2004). The water quality is characterized as hard and is either calcium magnesium bicarbonate or calcium carbonate based (USGS 1995). Median total dissolved solids and iron concentrations appear to be below USEPA drinking water secondary maximum contaminate standards (USGS 1995). Freshwater in this aquifer can circulate up to depths of 500 feet below land surface; however, the typical extent of freshwater is approximately 300 feet below land surface (USGS 1995). Percolation of rain water infiltrates downward to the water table; the groundwater moves through intergranular spaces in the consolidated materials of the overburden. Groundwater within the limestone bedrock flows through secondary permeability of dissolution features consisting of fractures and enlargement of bedding planes created by slightly acidic water. Water is stored via solution openings and is transmitted through limestone that discharges to wells, springs, and streams (USGS 1995). The regional flow pattern of groundwater within the Mississippian Plateau aquifer system is typically perpendicular to potentiometric contours. Locally, groundwater flows along bedding planes and existing fractures (USGS 1995).

Implementation of the Action Alternative would result in ground disturbance during construction activities. Tree clearing, draining, mucking and grubbing would result in minor ground disturbance at shallow depths. Existing topography ranges from approximately ± 665 feet MSL to ± 640 feet MSL. Site grading for development of the dirt building pad and excavation for the new stormwater retention pond would cause greater ground disturbance at moderate depths. However, ground disturbances are not anticipated to impact availability of freshwater supplies within the Mississippian Plateau aquifer system which extends to depths of approximately 300 feet below land surface or result in significant impacts to groundwater resources (USGS 1995). Shallow aquifers within the overburden could sustain minor impacts from changes in overland water flow and recharge caused by clearing, grading and construction of the new stormwater retention pond within the Project Area. Water infiltration, which is normally enhanced by vegetation, would be reduced until vegetation is re-established. In addition, near-surface soil compaction caused by heavy construction vehicles could reduce the ability of soil to absorb water. These minor impacts would be temporary and would not significantly affect groundwater resources. Furthermore, it is expected that the FSIA or its contractors would conduct operations involving chemical or fuel storage or resupply and equipment and vehicle servicing with care to avoid leakage, spillage, and subsequent ground water contamination. Implementation of the Action Alternative would have insignificant effects upon groundwater.

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

4.2.3 Surface Water

The Project Area is located in Simpson County, KY in the Interior Plateau ecoregion. This Project Area drains to streams within the Barren River (05110002) 8-digit hydrologic unit code (HUC) sub-basin. According to the aquatics field survey conducted in December 2020, a total of three watercourses—including two ephemeral streams (SSN01 and SSN02) and one depression pond (WBSN01)—occur within the Project Area (Cardno 2021). The surface water streams in the Project Area and the vicinity of the Project Area are listed in Table 4-1.

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

Streams	Use Classification ¹					
	WAH	CAH	PCR	SCR	DWS	OSRW
West Fork Drakes Creek and Tributaries ²	X		X	X	X	
Lick Creek ²		X	X	X		X
Dry Branch ²	X		X	X	X	
SSNO1						
SSNO2						
WBSNO1	X					

¹ Codes: DWS = Domestic Water Supply; WAH = Warm Water Aquatic Habitat; CAH = Cold Water Aquatic Habitat; PCR = Primary Contact Recreation; SCR = Secondary Contact Recreation; DWS = Domestic Water Supply, OSRW = Outstanding State Resource Water

² Not in Project Area, shown for connection to other waterbodies in the Drakes Creek (0511000206) 10-digit HUC Watershed

Precipitation in the vicinity of the Project Area averages about 49.7 inches per year. The wettest month is May with approximately 5.6 inches of precipitation, and the driest month is August with 3.3 inches. The average annual air temperature is 58 degrees Fahrenheit, ranging from an annual average of 47 degrees Fahrenheit to 69 degrees Fahrenheit (United States Climate Data 2020). Stream flow varies with rainfall and averages about 19.9 inches of runoff per year, i.e., approximately 1.47 cubic feet per second, per square mile of drainage area (USGS 2008).

The federal Clean Water Act (CWA) requires states to identify all waters where required pollution controls are not sufficient to attain or maintain applicable water quality standards and to establish priorities for the development of limits based on the severity of the pollution and the sensitivity of the established uses of those waters. States are required to submit reports to the USEPA. The term “303(d) list” refers to the list of impaired and threatened streams and water bodies identified by the state. Portions of the West Fork Drakes Creek is listed on the KY 303(d) list for polychlorinated biphenyls (PCB) in fish tissue due to industrial point source and non-point source discharges, pH due to upstream impoundment, and temperature due to loss of riparian habitat and upstream impoundment (Kentucky Department of Water [KDOW] 2016). Lick Creek

is listed as impaired for sedimentation/siltation and total dissolved solids due to post development erosion and sediment stormwater issues. Table 4-1 provides a listing of local streams with their state (KDOW 2013) designated uses and the waterbodies identified via desktop review of the Project vicinity and during the field survey. Streams are also designated as High Quality Waters of the State when they are not listed on the 303d List as impaired or when they are not designated as Outstanding National Resource Waters or Exceptional Waters.

Implementation of the Action Alternative would result in construction activities that would affect surface water via direct disturbance and potential stormwater runoff. Site clearing and grubbing activities, pad development, draining and mucking of an existing depression pond, and construction of a new stormwater retention pond would disturb SSNO1, SSNO2, and WBSNO1. Soil erosion and sedimentation can clog small streams and threaten aquatic life.

The FSIA would comply with all appropriate federal, state and local permit requirements. Appropriate BMPs would be followed, and all proposed project activities would be conducted in a manner to ensure that waste materials are contained, and the introduction of pollution materials to the receiving waters would be minimized. A general construction stormwater permit (KYR100000) would be needed since more than one acre would be disturbed. This permit also requires the development and implementation of a BMP plan. The BMP plan would include erosion prevention measures, sediment control measures, and other site management practices necessary to prevent the discharge of sediment and other pollutants that would result in the degradation to waters of the Commonwealth. Based on the Cardno survey report, both streams and the pond were determined to be non-jurisdictional; however, the United States Army Corps of Engineers (USACE) would make the final jurisdictional determination. No other commitments beyond standard requirements—i.e., compliance with all applicable environmental laws and regulations, proper implementation of BMPs and best engineering practices, and proper containment, treatment, and disposal of wastewater, stormwater runoff, wastes, and potential pollutants, are proposed at this time. A stormwater retention pond would be installed to help control sediment discharges from the site. Equipment washing and dust control discharges would be handled in accordance with BMPs described in the SWPPP for water-only cleaning.

Additionally, BMPs, as described in the *Stormwater Best Management Practices for Controlling Erosion, Sediment and Pollution Runoff from Construction Sites* (KDEP 2009). Should additional depression areas or sinkholes be discovered during site preparation, these areas would be evaluated with the permitting authorities and protected as applicable.

Portable toilets would be provided for the construction workforce as needed. It is expected that these toilets would be pumped out regularly, and the sewage would be transported by tanker truck to a publicly-owned wastewater treatment plant that accepts pump out.

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

Improper use of chemicals to control vegetation could result in runoff to streams and subsequent aquatic impacts. Therefore, any pesticide or herbicide use as part of construction activities would have to comply with the Kentucky Pollutant Discharge Elimination System (KPDES) General Permit for Application of Pesticides. In areas requiring chemical treatment, it

is expected that only USEPA-registered products would be used in accordance with label directions designed in part to restrict applications near receiving waters and to prevent unacceptable aquatic impacts. With proper implementation and application of these products no significant impacts to surface waters would be expected.

Proper implementation of BMPs and other controls for the Action Alternative would be expected to result in only minor impacts to surface waters. Pond WBSN01 would be drained and mucked, then reconfigured into a new stormwater retention pond which would improve water quality by allowing mobilized sediments to settle. Ephemeral streams SSN01 and SSN02 would be directly affected by the compacted dirt pads and/or stormwater retention pond during construction. Since these streams primarily to convey storm water, the project would need to ensure that the new dirt pad construction would not concentrate storm water run-off and would have adequate drainage to mitigate the loss or modification of these streams. Impacts due to the Action Alternative would have direct and indirect impacts, but with proper BMPs and storm water conveyance those impacts would be minor. No formal regulatory mitigation would be expected to be required if these streams are not deemed jurisdictional.

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

4.2.4 Wetlands

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

Wetlands potentially present in the Project Area were identified by reviewing aerial photographs, site photographs, topographic maps, the United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI), USGS National Hydrography Dataset (NHD), and the Natural Resources Conservation Service (NRCS) Soils and Soil Survey Geographic (SSURGO)/State Soil Geographic (STATSGO) databases. Following the desktop review, wetlands were delineated during a December 2020 field survey of the Project Area. The wetland delineation was performed using the routine on-site determination methods described in the USACE Wetlands Delineation Manual and was consistent with the methods, guidelines, and indicators present in the Regional Supplement to the USACE Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Regional Supplement USACE 2012).

One wetland is present within the Project Area. The wetland is a scrub-shrub wetland, comprised of woody vegetation less than 20 feet tall (Table 4-1).

Table 4-1 Wetlands Identified in the Project Area

Wetland ID	Wetland Type	Wetland Acreage
Wetland WSN01	Scrub-Shrub Wetland	0.52

Wetland WSN01 is a scrub-shrub wetland, within a previous agriculture field, located within Lot 9 in the northern-most portion of the Project Area. The majority of the area was saturated and dominated by cattails (*Typha latifolia*) and black willow (*Salix nigra*) shrubs along the border. The wetland occurred where the hydrology was too prevalent for the black willow to become established and the soil was mapped as Baxter gravelly silt loam (BaC). Munsell™ soil colors observed in the soil from 0-18 inches had a matrix soil color of 10yr 5/2 and a texture of clay loam and met the Redox Depressions (F8) hydric soil criterion. The indicators of hydrology observed included Surface Water (A1), Geomorphic Position (D2), and the FAC-Neutral Test (D5).

This wetland is an isolated man-made wetland, and has no connection to other Waters of the United States (WOTUS). Due to the lack of connection, it is anticipated the USACE would not consider this wetland to be a WOTUS, and therefore would consider it to be non-jurisdictional. Section 404 of the CWA of 1972 regulates discharges of dredged and fill materials into WOTUS and is administered by the USACE. The KDOW relies on the USACE decision regarding wetland determinations and delineations including whether a wetland is isolated or non-isolated. KDOW does not regulate or issue permits for ephemeral streams, or isolated streams and wetland impacts. Impacts to WOTUS would require a CWA Section 404 permit and a CWA Section 401 Water Quality Certification. Due to Wetland WSN01's lack of connection to WOTUS, it is anticipated the USACE would not consider this wetland to be a WOTUS or a jurisdictional wetland.

Construction activity associated with the Action Alternative would avoid wetland WSN01. While no direct impacts would occur due to avoidance, there could be indirect impacts associated with changes in hydrology and sedimentation if the Action Alternative is implemented. It is anticipated that FSIA or its contractors would 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.

Executive Order (EO) 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. In accordance with EO 11990, this project would avoid direct impacts to wetland on site, and deter indirect impacts through the use of best management practices. Therefore, the Action Alternative (or if the action were to be funded by non-TVA sources and/or delayed) would not result in significant adverse impacts to wetlands and would comply with EO 11990.

Under the No Action Alternative, TVA would not provide InvestPrep funds to the FSIA and no TVA-related actions would occur within the proposed Project Area. No wetlands would be impacted, as land use and existing conditions would remain the same.

Under the No Action Alternative, if the FSIA were able to secure the funding for the proposed TVA-funded actions described in this EA from other sources, site development would proceed in the same manner only with an alternative funding source. Therefore, avoidance of wetland on site would be anticipated similar to the Action Alternative. If the FSIA were not able to secure the funding for the actions described in this EA, ground disturbance associated with the proposed actions would not occur and there would be no wetland impacts.

4.2.5 Aquatic Ecology

4.2.5.1 Aquatic Resources

A field survey conducted in December 2020 identified two streams (Stream SSN01 and Stream SSN02), and an isolated pond (Waterbody WBSN01) in the Project Area (Table 4-3).

“Waters of the commonwealth” are within the jurisdiction of KDOW. They are generally defined as “any and all rivers, streams, creeks, lakes, ponds, impounding reservoirs, springs, wells, marshes, and all other bodies of surface or underground water, natural or artificial, situated wholly or partly within or bordering upon the Commonwealth or within its jurisdiction.” Kentucky further defines “surface waters” as “those waters having well-defined banks and beds, either constantly or intermittently flowing; lakes and impounded waters; marshes and wetlands; and any subterranean waters flowing in well-defined channels and having a demonstrable hydrologic connection with the surface.” KDOW does not regulate or issue permits for ephemeral streams, or isolated streams and wetland impacts.

Construction activities would directly disturb both ephemeral streams (assuming expansion of the compacted dirt pad to its maximum size) and the pond located on-site. In addition, construction activities have the potential to temporarily affect surface water via stormwater runoff. Appropriate BMPs, as outlined in KPDES, would be followed, and it is expected that all proposed project activities would be conducted in a manner to ensure that waste materials are contained, and the introduction of pollution materials to receiving waters would be minimized. A general construction stormwater permit (KYR100000) would be needed since more than one acre would be disturbed. This permit also requires the development and implementation of a SWPPP. The SWPPP would include erosion prevention measures, sediment control measures, and other site management practices necessary to prevent the discharge of sediment and other pollutants that would result in the degradation to waters of the Commonwealth. These erosion prevention and sediment control measures and other site management practices are required to be properly designed and selected based on site-specific conditions, and installed and maintained to effectively minimize such discharges for storm events up to and including a 2-year, 24-hour event.

As the two streams identified in the Project Area are ephemeral in nature and were dry at the time of survey in December 2020, it is unlikely that there would be any impacts to the aquatic communities in these streams under the Action Alternative. The pond (Waterbody WBSN01) would be drained, mucked, and reconfigured into a stormwater retention pond. The aquatic community within the pond would be directly impacted by the pond’s removal and reconfiguration. However, with proper implementation of BMPs and adherence to permit restrictions, impacts to the aquatic communities within the Project Area would be minor and insignificant.

Table 4-3 Waterbodies Identified in the Project Area

Waterbody ID	Feature Class	OHWM (feet) Width x Depth	Linear Feet/Acreage
Stream SSN01	Ephemeral	1.0 X 0.0	60.9 feet
Stream SSN02	Ephemeral	0.5 X 0.0	587.7 feet
Waterbody WBSN01	Perennial Pond	100 X 5.0	0.85 acre

4.2.5.2 Threatened, Endangered, and Rare Aquatic Species

The Endangered Species Act (ESA) provides broad protection for species of fish, wildlife, and plants listed as threatened or endangered in the United States. 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 Kentucky 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 November 13, 2020) and the USFWS Information for Planning and Consultation (IPaC) database (accessed January 12, 2021) indicate that one federally endangered aquatic animal and three state-listed aquatic animals are currently known from within the 10-digit HUC watershed encompassing the Project Area (Table 4-4).

Table 4-4 Records of Federal and State-Listed Aquatic Species in Drakes Creek (0511000206) 10-digit HUC Watershed

Common Name	Scientific Name	Global Rank ²	Federal Status ³	State Status (rank) ⁴
Crayfish				
Bottlebrush crayfish ¹	<i>Barbicambarus cornutus</i>	G4	NL	S (S2S3)
MUSSELS				
Kentucky creekshell ¹	<i>Villosa ortmanni</i>	G2	NL	E (S1S2)
Mountain creekshell ¹	<i>Villosa vanuxemensis</i>	G4	NL	T (S2)
Snuffbox mussel ¹	<i>Epioblasma triquetra</i>	G3	E	NL
¹ Sources: TVA Regional Natural Heritage Database, USFWS IPaC Database, queried on 01/02/2020 and Kentucky Nature Preserves List, queried on 01/15/2020 ² Global Rank: G1 = Extremely Rare and Critically Imperiled; G2 = Very rare and Imperiled; G3 = Rare and Uncommon; G4= apparently secure ³ Status Codes: E = Listed Endangered; T = Listed Threatened; NL= 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.

Crayfish

Bottlebrush crayfish (*Barbicambarus cornutus*) can be found under large rocks in stream beds, typically under the largest rocks of streams and along creek margins where there is current. Juveniles can be found in similar habitat but they are less dependent on large boulders (NatureServe 2010).

Mussels

Kentucky creekshell (*Villosa ortmanni*) is found in small streams to medium-sized rivers with substrates ranging from cobble and boulder with mixed gravel and sand over bedrock to clayey-

mud (rarely). Many flow permanently, but others sometimes have no flow. Depths range from less than 6 inches to more than 2 meters (Cicerello and Schuster 2003).

Mountain creekshell (*Villosa vanuxemensis*) is most often encountered in small headwater creeks and streams and is found in gravel and sand substrates in riffles and along the edges of water-willow beds. It is found in very clean water at depths of less than three feet. (Natureserve 2010).

Snuffbox mussel (*Epioblasma triquetra*) occur in small to medium-sized creeks in areas with a swift current in mud, sand, or gravel. Adults often burrow deep in sand, gravel or cobble substrates, except when they are spawning or the females are attempting to attract host fish (USFWS 2010).

No suitable habitat for threatened, endangered, or rare aquatic species or communities were identified within the waterbodies in the Project Area during the December 2020 field survey. Based on the characteristics of the ephemeral streams in the Project Area, they do not provide preferred habitat for aquatic species, including the threatened and endangered aquatic species identified in Table 4-4. Impacts to aquatic species living in the pond would occur, but these impacts would be insignificant overall. The Action Alternative would have no effect on the snuffbox mussel. As such, no significant 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 FSIA were able to secure the funding for the proposed TVA-funded actions described in this EA from other sources, similar impacts to aquatic species as those described above for the Action Alternative would occur. If the FSIA were not able to secure the funding for the actions described in this EA, the proposed actions would not occur and there would be no impacts to aquatic resources.

4.2.6 Terrestrial Zoology

4.2.6.1 Terrestrial Wildlife

A field survey conducted in December 2020 included a habitat assessment for terrestrial animal species in the Project Area (Cardno 2021). The Project Area is comprised of agricultural fields and interspersed forested areas. The interspersed forested areas consist of deciduous, mixed evergreen-deciduous, and evergreen trees. Interstate highways, and residential/commercial 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.

Farm land habitats consisting of open active agricultural fields constitute most of the Project Area. Common inhabitants of this type of habitat include red-winged black bird (*Agelaius phoeniceus*), brown-headed cowbird (*Molothrus ater*), savannah sparrow (*Passerculus sandwichensis*), eastern bluebird (*Sialia sialis*), eastern meadowlark (*Sturnella magna*), killdeer (*Charadrius vociferus*), and mourning dove (*Zenaidura macroura*) (National Geographic 2002, Sibley 2003). Bobcat (*Lynx rufus*), coyote (*Canis latrans*), eastern cottontail (*Sylvilagus floridanus*), woodchuck (*Marmota monax*), red fox (*Vulpes vulpes*), and white-tailed deer (*Odocoileus virginianus*) are mammals typical of fields and cultivated land (Kays and Wilson 2002, Whitaker 1996).

Amphibians such as fowler's toad (*Anaxyrus fowleri*) and reptiles including black racer (*Coluber constrictor priapus*) and black rat snake (*Elaphe o. obsoleta*) also occur in this habitat type

(Bailey et al. 2006, Conant and Collins 1998, Dorcas and Gibbons 2005). Pollinators such as eastern tiger swallowtail (*Papilio glaucus*), great spangled fritillary (*Speyeria cybele*), and red-spotted purple (*Limenitis arthemis*) may occur in this region (Brock and Kaufman 2003). A honey bee (*Apis mellifera*) nest was observed in the western part of the Project Area at the depression pond in small brush.

Deciduous and evergreen forests in the Project Area provide habitat for an array of terrestrial animal species. Birds typical of this habitat include pileated woodpecker (*Dryocopus pileatus*), red-bellied woodpecker (*Melanerpes carolinus*), red-eyed vireo (*Vireo olivaceus*), red-tailed hawk (*Buteo jamaicensis*), scarlet tanager (*Piranga olivacea*), wild turkey (*Meleagris gallopavo*), eastern blue bird (*Sialia sialis*), and northern cardinal (*Cardinalis cardinalis*; National Geographic 2002, Sibley 2003).

This area also provides foraging and roosting habitat for several species of bat, particularly in areas where the forest understory is partially open. Bat species likely found in this habitat include big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), and evening bat (*Nycticeius humeralis*). Eastern chipmunk (*Tamias striatus*), eastern woodrat (*Neotoma floridana*), and white-tailed deer are other mammals likely to occur in this forested habitat (Kays and Wilson 2002, Whitaker 1996).

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

Developed areas and areas otherwise previously disturbed by human activity are home to a large number of common species. American crow (*Corvus brachyrhynchos*), American robin (*Turdus migratorius*), black vulture (*Coragyps atratus*), Carolina wren (*Thryothorus ludovicianus*), common nighthawk (*Chordeiles minor*), eastern phoebe (*Sayornis phoebe*), northern cardinal (*Cardinalis cardinalis*), northern mockingbird (*Mimus polyglottos*), and turkey vulture (*Cathartes aura*) are birds commonly found along roads, in industrial complexes, and in residential neighborhoods (National Geographic 2002, Sibley 2003). Mammals found in these locations include eastern common raccoon (*Procyon lotor*), gray squirrel (*Sciurus carolinensis*), striped skunk (*Mephitis mephitis*), and Virginia opossum (*Didelphis virginiana*) (Kays and Wilson 2002, Whitaker 1996). Roadside ditches provide potential habitat for amphibians including American toad (*Anaxyrus americanus*) and spring peeper (Bailey et al. 2006). Reptiles potentially present include eastern fence lizard (*Sceloporus undulatus*) and rough green snake (*Ophedryx aestivus*) (Conant and Collins 1998, Dorcas and Gibbons 2005).

Review of the Project Area performed by the Office of Kentucky Nature Preserves on January 12, 2021, did not result in identification of caves within three miles of the study area. The field survey on December 7, 2020, did not identify caves or other unique or important terrestrial habitats in the Project Area. No osprey (*Pandion haliaetus*) or wading bird colony nest records occur within three miles of the Project Area and 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

two migratory bird species of conservation concern with the potential to occur in the Project Area, the bald eagle (*Haliaeetus leucocephalus*) and lesser yellow legs (*Tringa flavipes*). No suitable habitat for bald eagle exists in the action area. No bald eagle nests are known within one mile of the project. TVA controlled actions are in compliance with the National Bald Eagle Management Guidelines. Suitable habitat for lesser yellow legs does exist around the margins of the pond. This species would only be found in the region during migration. Therefore it is less likely that individuals would be present in the action area at the specific time of the proposed actions. 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 of approximately 4.2 acres would be permanently removed and unavailable to migratory birds 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.

The Action Alternative 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, and to re-establish territories. The FSIA would take appropriate feasible measures, such as implementing BMPs to minimize or reduce the potential environmental effects of the proposed Project to insignificant levels. These practices would include installation of sediment and erosion controls (silt fences, sediment traps, etc.), management of fugitive dust, and daytime work hours. Due to the relatively small amount of habitat to be impacted, the relatively 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 would not be significantly impacted by the Action Alternative. Following the implementation of the Action Alternative, those species that are able to use developed areas would likely return to the Project Area.

Under the No Action Alternative, if the FSIA were able to secure the funding for the proposed TVA-funded actions described in this EA from other sources, similar impacts to terrestrial wildlife species as those described above for the Action Alternative would occur. If the FSIA were not able to secure the funding for the actions described in this EA, the proposed actions would not occur and there would be no impacts to terrestrial wildlife species.

4.2.6.2 Threatened and Endangered Species

A review of the TVA Regional Natural Heritage Database in December 2020 indicated that there have been two observations of state-listed terrestrial species reported within three miles of the Project Area, the common barn-owl (*Tyto alba*) and the tricolored bat (*Perimyotis subflavus*). Review of the Office of Kentucky Nature Preserves database identified one species within three miles of the Project Area, the loggerhead shrike (*Lanius ludovicianus*). The TVA Regional Natural Heritage Database has no records of federally listed terrestrial animal species from Simpson County, KY. Based on a review of the USFWS IPaC database, three federally listed species, Indiana bat (*Myotis sodalis*), the northern long-eared bat (NLEB) (*Myotis septentrionalis*), and gray bat (*Myotis grisescens*) have the potential to occur in Simpson County, KY and potentially in the Project Area (Table 4-5).

Table 4-5 Federal and State-Listed Terrestrial Species in Simpson County, KY and Other Species of Concern Documented within 3 Miles of the Project Area¹

Common Name	Scientific Name	Federal Status ²	State Status (Rank) ³
Birds			
Loggerhead shrike	<i>Lanius ludovicianus</i>	--	S (S4)
Common barn-owl	<i>Tyto alba</i>	--	S (S3)
Mammals			
Gray bat ⁵	<i>Myotis grisescens</i>	E	E (S2)
Indiana bat ⁵	<i>Myotis sodalis</i>	E	E (S1)
Northern long-eared bat ⁵	<i>Myotis septentrionalis</i>	T	E (S1S2)
Tricolored bat	<i>Perimyotis subflavus</i>	--	S (S2)
¹ Source: TVA Regional Natural Heritage Database / Office of Kentucky Nature Preserves / USFWS IPaC database (https://ecos.fws.gov/ipac/), extracted 01/12/2021. ² Status Codes: E = Endangered; T = Threatened; S = Species of Concern; -- = No Status. ³ State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S4 = Apparently Secure. ⁴ Federally listed or protected species known from Simpson 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 Simpson County.			

Common barn owls inhabit dense grasslands, meadows, prairies, and often can be found around human habitation. They prefer to nest in natural cavities as well as human made ones (NatureServe 2010). One record of common barn-owl was documented approximately three miles away from the Project Area south of Gold City in eastern Simpson County, KY. Potential habitat for this species is present in the Project Area in the interspersed forested areas and in a barn found just outside the northeast corner of the Project Area.

The loggerhead shrike prefers open country habitat with scattered trees, shrubs, woodlands and can often be found perching on poles in urban habitats. They nest in shrubs and small trees and will sometimes nest in the same sites in successive years (NatureServe 2010). The Office of Kentucky Nature Preserves identified two records of this species within a one mile buffer of the Project Area. Potential habitat for the loggerhead shrike can be found south of stream SSN01 at a small area of mixed hardwood forest that provides suitable foraging habitat. Based on the small amounts of habitat that would be affected in the Project Area, and the prevalence of other available habitat in the area in the Project's vicinity, there would not be impacts to common barn owl and loggerhead at the population level.

Gray bats roost in caves year-round and migrate between summer and winter roosts during spring and fall (USFWS 2011). Bats disperse over bodies of water at dusk where they forage for insects emerging from the surface of the water (USFWS 2011). There is one record of a gray bat from mist netting known from Simpson County, located along Lick Creek in a thinly forested stream corridor. There are no cave records within three miles of the Project Area. During the field survey, no hibernacula or roosting habitat for gray bat was observed in the Project Area. Two ephemeral streams, both dry at the time of survey in December 2020, and one pond occur in the Project Area. The pond, and possibly the ephemeral streams when flowing, 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 and Murray 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 and Murray 2002; USFWS 2019a). No records of this species are known from Simpson County, KY.

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).

The tricolored bat is found throughout forests of the eastern United States and is often associated with open woods and waterways (USFWS 2019b). Maternity and other summer roosts are mainly in dead or live tree foliage, caves, and mines. Rock crevices may be used as night roosts between foraging forays (NatureServe 2010). Maternity colonies also may utilize human made structures or tree cavities; sometimes these are in open sites that would not be tolerated by most other bats (NatureServe 2010). One mist net sampling site was located in the tree-lined Drakes Creek area just downstream of the culverted bridge crossing approximately two miles from the Project Area. According to the TVA Regional Natural Heritage Database, three tricolored bats were captured in August 2005, two adult males and one adult female. Based on the small amounts of habitat that would be affected in the Project Area, and the prevalence of other available habitat in the area in the Project's vicinity, there would not be impacts to tricolored bat at the population level.

Assessment of the Project Area for presence of summer roosting habitat for bats followed federal guidance (USFWS 2019a). A total of three secondary potential roost trees (PRT) were identified within the 29.8 acre Project Area; none were identified as potential primary roost trees. The three secondary PRT are located in the southeast corner of the Project Area, isolated away from mature forest, and would account for 0.27 acre of habitat lost (0.09 acre each). Construction is scheduled to occur from June to August 2021. These trees would likely will be removed during the Non-Winter Season (Apr 15 – May 31 and Aug 1 – Sept 30). If confirmed, this would result in the use of 0.27 acre of habitat take during the Non-Winter Season. The use of habitat take while bats have the potential to be on the landscape would require a monetary contribution to the Conservation Fund. No winter bat habitat was observed within the Project Area. Potential foraging habitat does exist within the Project Area. No caves or other winter roosting habitat for bats was observed in the Project Area during the field survey. Foraging habitat for bat species occurs over, alongside, and through the forest fragments and two ephemeral streams and one pond in the Project Area. Three federally listed or protected species have the potential to occur in the Project Area and be affected by the Action Alternative

(gray bat, Indiana bat, and NLEB). 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 two ephemeral streams and one pond in the Project Area, and would be impacted by the Action Alternative, though impacts would be minimized by the use of BMPs. Tree removal would remove suitable summer roosting habitat for Indiana bat and NLEB and result in burning of the woody debris on-site.

Several activities associated with the Action Alternative (including tree removal and burning during potentially occupied timeframes) were addressed in TVA's programmatic consultation with the USFWS on routine actions and federally listed bats in accordance with ESA Section 7(a)(2). For those activities with potential to affect bats, TVA committed to implementing specific conservation measures. These activities and associated conservation measures, identified on page 5 of the TVA Bat Strategy Project Screening Form (Attachment 2), would be reviewed/implemented as part of the Action Alternative. With adherence to the identified conservation measures, implementation of the Action Alternative would not significantly affect gray bat, Indiana bat, or NLEB.

Under the No Action Alternative, if the FSIA were able to secure the funding for the proposed TVA-funded actions described in this EA from other sources, similar impacts to threatened and endangered terrestrial species as those described above for the Action Alternative would occur. If the FSIA were not able to secure the funding for the actions described in this EA, the proposed actions would not occur and there would be no impacts to threatened and endangered terrestrial species.

4.2.7 Botany

4.2.7.1 Vegetation

The Project Area is in the Western Pennyroyal Karst Plain ecoregion, a subdivision of Interior Plateau Ecoregion. The Interior Plateau is comprised of extensive plains that are interrupted in places by uplands, knobs, incised master streams, and large areas of karst (Griffith et al. 1998). Soils in this ecoregion have developed from residuum and not glacial deposits. The Western Pennyroyal Karst Plain ecoregion originates from Middle Mississippian limestone and is widely farmed. Underground drainage is well developed, stream density is low, and soils are quick to dry. Natural vegetation of the region is a mosaic of bluestem prairie and oak-hickory forest (Griffith et al. 1998).

Field surveys of the Project Area were conducted in October 2020. The focus of these surveys was to document plant communities, invasive plant populations, and to search for threatened and endangered plant species. Using the National Vegetation Classification System (Grossman et al. 1998), plant communities observed during field surveys include a combination of herbaceous vegetation (84 percent) and forest (14 percent). No forested areas in the proposed Project Area have structural characteristics indicative of old growth forest stands (Leverett 1996).

Herbaceous vegetation is defined as a plant community having greater than 75 percent cover of forbs and grasses and less than 25 percent cover of other types of vegetation. Within the At the time of survey, soybeans (*Glycine* sp.) were being harvested. Other areas of upland herbaceous vegetation within the project area include old fields, which are dominated by plants indicative of early successional habitats. These fields are comprised of mainly native vegetation

and early successional weed species. Approximately three percent of the total area of the site (0.85 acre) is a depression pond, a notable habitat in Kentucky (Evans, Yahn, & Hines, 2009). Common herbaceous species found within this habitat type include cattail (*Typha latifolia*), Georgia bulrush (*Scirpus georgianus*), dotted knotweed (*Persicaria punctata*), swamp smartweed (*Persicaria hydropiperoides*), frost aster (*Symphotrichum pilosum*), late goldenrod (*Solidago altissima*), Johnson grass (*Sorghum halapense*), common morning-glory (*Ipomoea purpurea*), late boneset (*Eupatorium serotinum*), broomsedge (*Andropogon virginicus*), and Devil's beggarticks (*Bidens aristosa*). Black willow (*Salix nigra*) is the only common woody species found in this habitat that is otherwise dominated by herbaceous plants.

Deciduous forests, stands where deciduous tree species account for more than 75 percent of the canopy cover, occur across about 14 percent of the site. Common trees in this area include flowering dogwood (*Cornus florida*), eastern red cedar (*Juniperus virginiana*), sugar maple (*Acer saccharum*), southern red oak (*Quercus falcata*), persimmon (*Diospyros virginiana*), common hackberry (*Celtis laevigata*), and Virginia pine (*Pinus virginiana*). The herbaceous layer is not well developed and is comprised of species that thrive in disturbed habitats. These plants include dogfennel (*Eupatorium capillifolium*), Devil's darning needles (*Clematis virginiana*), European blackberry (*Rubus bifrons*), and cat greenbriar (*Smilax glauca*).

Under the Action Alternative the proposed project would not appreciably impact the vegetation of the region because all plant habitats that would be impacted by the proposed work are common throughout the region. Impacts to the disturbed plant communities present on the site would be long-term, but insignificant.

Under the No Action Alternative, TVA would not provide funding for the proposed project. Work may cease on the parcel or FSIA could obtain project funding from non-TVA sources. Either way, there would be no significant impacts to vegetation because no plant communities with conservation value occur on site.

4.2.7.2 Threatened and Endangered Species

An October 2020 query of the TVA Regional Natural Heritage Database indicated that no state or federally listed plant species have been previously reported from within a five-mile vicinity of the Project Area. Based on a review of the USFWS IPaC database, no federally threatened plant species have been reported from Simpson County, KY. No state or federally listed plant species or their habitats were observed during the December 2020 field surveys.

Adoption of the Action Alternative would not impact state or federally listed plant species because no listed species are known to occur and no suitable habitat is present in the Project Area.

Under the No Action Alternative, there would also be no impact to state or federally listed plant species.

4.2.8 Archaeology and Historic Structures and Sites

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

The proposed project consists of the 29.8 acres that would be directly impacted by the Action Alternative. The study area consists of recently farmed (soybeans) and fallow agricultural land and remnant woodlots. The project Areas is located on the Franklin, Kentucky 7.5' USGS Topographic Quadrangle Map. The archaeological APE consisted of the 29.8 acre study area. The architectural APE consisted of the 29.8 acre study area and an unobstructed half-mile viewshed surrounding the study area.

Background research revealed 12 previously identified cultural resources that included six cemeteries, two historic structures, and four archaeological sites within 1.0 mile research area surrounding the 29.8 acre project area. None of these resources is located within the 29.8 acre study area APE or the 0.5 mile half-mile viewshed.

A Phase I cultural resources investigation was performed that included both an assessment of standing structures (Harris et al. 2021) as well as archaeological survey of the study area (Loughlin and Simpson 2021). The architectural survey identified three newly recorded structures of over 50 years in age (Table 4-6). The three newly identified structures include an assortment of types from the twentieth century. None of the three structures display distinctive characterizes of building design, represent notable examples of early-twentieth century rural architecture in Simpson County, or are associated with a significant person or event. Based on this assessment, none of the three structures was recommended to be eligible for listing on the NRHP.

Table 4-6 Cultural Resources Identified during the Archaeological and Built Environment Survey

Cultural Resource Number	Description	Eligibility Recommendation
FS-1 (SI-510)	412 Perdue Farm Road: c1900 one-story, T-plan frame house	Ineligible
FS-2 (SI-511)	1982 S. Edison Road: c1920 transverse frame stock barn	Ineligible
FS-3 (SI-512)	1991 Gold City Road: c1960 one-story, brick veneered, Ranch style house	Ineligible

The archaeological survey excavated a total of 231 shovel tests on a 30 meter (98 feet) grid across the entire breadth of the 29.8 acre Project Area. None of these shovel tests yielded any cultural material. No archaeological artifacts or resources were identified as a result of the Phase I survey. No further archaeological work was recommended for the Project Area.

TVA consulted with the Kentucky SHPO in a letter dated February 16, 2021 regarding TVA's findings and recommendations. In a letter dated March 16, 2021 the Kentucky SHPO concurred with TVA's findings and recommendations (Attachment 3). Pursuant to 36 CFR Part 800.3(f) (2), TVA also consulted with federally recognized Indian tribes regarding properties that may have religious and cultural significance to their tribe and eligible for the NRHP. TVA received no responses from the federally recognized Indian tribes regarding the proposed undertaking.

Adoption of the Action Alternative would not result in any impacts to archaeological resources and historic structures. Similar to the Action Alternative, under the No Action Alternative, if the FSIA were able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, there would be no impacts to archaeological resources and historic structures. If the FSIA were not able to secure the funding for the actions described in this EA,

the proposed disturbances would not occur and existing site conditions would likely be unchanged, also resulting in no impacts to archaeological resources and historic structures.

4.2.9 Visual

The Project Area is situated within 29.8 acres consisting mainly of agricultural land dominated by soybeans with 4.2 acres of forested habitat as described above and depicted in Attachment 1, Figures 1-A and 1-B. The Project Area is directly adjacent (about 78 feet east) of I-65. There are no trees or visual screening between I-65 and the Project Area. There are several residences within proximity of the Project Area. The closest residence is 438 feet northeast of the Project Area. There are a few scattered trees around the home; but generally the land use between the Project Area and the residence is open agricultural land. Several other residences are located west of the Project Area, between 0.25 and 0.3 miles, across I-65 and an adjacent agricultural field. There is a car dealership located approximately 0.2 miles south of the Project Area.

Adoption of the Action Alternative would result in construction vehicles and equipment visible during construction activities (an excavator, bulldozer, dump truck, or similar vehicles and heavy machinery) and would have a minor visual impact over the temporary construction period as well as a minor permanent impact due to tree removal and construction of the dirt building pad. Drivers along I-65 would have direct views of the Project Area. However, there are several other industrial areas located along I-65 within 0.5 miles. Any changes to the views from I-65 adjacent to the Henderson Interstate Industrial Park would be similar to other areas along the interstate highway. The views from the closest residence, 438 feet northeast of the Project Area, would experience a minor, permanent change to visual quality. Current views from those areas would change from agricultural land with sporadic tree cover to developed industrial land. There are no other large industrial areas in view of the impacted residences; however, I-65 is located about 0.1 mile west of the residence. The existence of several trees along the residential property would provide some visual screening from the Project. Residences located west of the Project Area would likely not experience a noticeable change to visual quality given the distance to the site and the presence of I-65 between the Project Area and residential area. Future construction of buildings at the Henderson Interstate Industrial Park, the details of which are not currently known, could add lighting at night visible to adjacent residents. Implementation of the Action Alternative would result in a minor decrease in visual quality for residents that would not be significant.

Under the No Action Alternative, construction of project components would not occur resulting in no visual quality impacts. If Project funding was secured from non-TVA sources, then the visual impacts would be similar to the Action Alternative.

4.2.10 Noise

Existing ambient noise levels, or background noise levels, are the current sounds from natural and artificial sources at receptors. The magnitude and frequency of background noise at any given location may vary considerably over the course of a day or night and throughout the year. The variations are caused in part by weather conditions, seasonal vegetative cover, and human activity. Existing sources of noise in the vicinity of the Project Area are primarily associated with traffic along I-65 and surrounding residential activities.

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

Primary sensitive noise receptors in the area include residents of the home located 438 feet northeast of the Project Area, residents of the homes across I-65 to the west, and the business located 0.2 miles south of the Project Area. The construction noise would be localized and temporary, and no receptor would be exposed to significant noise levels for an extended period. 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. Additionally, there would be a level of continuous ambient noise for the receptors resulting from traffic on I-65. Thus, noise-related impacts resulting from implementation of the Action Alternative are anticipated to be temporary and minor.

Under the No Action Alternative, construction of Project components would not occur and existing site conditions would likely be maintained resulting in no Project-related noise impacts. If funding for the actions described in this EA were secured from other non-TVA sources, construction of project components would occur, resulting in similar noise impacts as described above for the Action Alternative.

4.2.11 Socioeconomics and Environmental Justice

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

This analysis focuses on the state, county, and locality within which the Action Alternative would occur. Publicly available statistics generated by the United States Census Bureau and the United States Bureau of Labor Statistics were used to characterize socioeconomic conditions in the host state (Kentucky), county (Simpson), and locality (Franklin, KY) (Table 4-7). Details of the Action Alternative were then used to evaluate likely effects on existing socioeconomic resources. The demographics and income of the host county and locality were considered, relative to the demographics and wealth levels at the state level, to identify the potential for a disproportionate and adverse impact on minority and low-income populations, which is commonly referred to as an evaluation of Environmental Justice.

Table 4-7 Population, Demographics, Income, and Employment

	Kentucky	Simpson County	Franklin, KY
Population ¹			
April 2010 Population	4,339,333	17,329	8,472
Most Recent Population Estimate (July 2019)	4,467,673	18,572	9,010
Population Change: April 2010 to July 2018	3.0%	7.2%	6.4%
Population per Square Mile	109.9	74.0	759.9
Demographics ¹			
White Alone, not Hispanic or Latino	84.1%	85.0%	77.1%
Black or African American Alone	8.5%	9.6%	17.7%
American Indian and Alaska Native Alone	0.3%	0.4%	0.2%
Asian Alone	1.6%	0.8%	1.2%
Native Hawaiian and Other Pacific Islander Alone	0.1%	0.1%	0.0%
Two or More Races	2.0%	2.1%	3.2%
Hispanic or Latino (of any race)	3.9%	2.6%	2.8%
Income ¹			
Median Household Income	\$50,589	\$48,623	\$42,620
Per Capita Income	\$28,178	\$24,458	\$19,876
Percent with Income Below the Poverty Level	16.3%	12.5%	21.5%
Seasonally Adjusted Employment: October 2020 ²			
Labor Force	1,961,672	8,426	(Not Available)
Employed	1,819,112	7,895	(Not Available)
Unemployed	142,560	531	(Not Available)
Unemployment Rate (%)	7.3%	6.3%	(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 Kentucky resident, the residents of Simpson County live at a moderately lower population density, but higher population growth. Relative to the average Kentucky resident, the residents of Franklin, KY live at much greater population density and higher population growth.

- Relative to the average Kentucky resident, the residents of Simpson County are slightly less likely to self-identify as a minority race or ethnicity. Relative to the average Kentucky resident, the residents of Franklin, KY are more likely to self-identify as a minority race or ethnicity.
- Median household income and per capita income are both greater in Kentucky than in Simpson County and in Franklin, KY. While residents of Simpson County are less likely to live below the poverty level, residents of Franklin, KY are more likely to live below the poverty level.
- The unemployment rate in Simpson County is lower than the statewide unemployment rate in Kentucky.

During Project review, a subdivision in close proximity to the Project Area was identified (approximately 0.5 miles to the northwest). Using USEPA's EJScreen Tool, certain demographic characteristics for this area were identified. Relative to the State of Kentucky, this neighborhood has a lower minority population, is more linguistically isolated, has a lower level of population with less than high school education, and has a lower level of low-income population.

The Action Alternative would include soil borings, tree clearing and grubbing, seeding, draining and mucking of a depression pond, and construction of a gravel access road, dirt pad, and retention pond. This effort would require a small workforce, likely drawn from existing contractors working on similar projects in the region. According to FSIA's preferred timeline, these activities would reach completion in August 2021. Implementation of the Action Alternative is not anticipated to materially impact the local economy or workforce. In addition, no negative socioeconomic impacts are expected from the project, therefore no disproportionate negative impacts are anticipated to minority or economically disadvantaged populations as a result of the Action Alternative. Positive indirect impacts may be noted through the increase in employment because of the Action Alternative.

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

4.2.12 Transportation

The Project Area would be accessed from one local road, Garvin Lane. The primary site entrance would be on the east side of the Project Area, and would require installation of a new entrance to Garvin Lane. There are no turning lanes in either direction for traffic entering or leaving the site. The site entrance location and configuration should consider safe sight distances and other safety concerns for the traffic that would enter Garvin Lane from the property.

Garvin Lane is paved along its length and is sufficiently wide for a single lane of traffic in each direction. Based on preliminary review of Google aerial (conditions recorded April 2018) and street view images (conditions recorded July 2018), the road is in good condition and has wide, grassy verges. Garvin Lane provides access to commercial facilities south of the proposed Project Area entrance. Garvin Lane intersects Scottsville Road (also known as KY Highway 100) to the south.

Scottsville Road is paved along its length, has a center turning lane at the entrance to Gavin Lane, and is sufficiently wide for a single lane of traffic in each direction. Scottsville Road is classified as a Mainline by the Kentucky Transportation Cabinet (KYTC) and provides ready access to I-65.

Based on a review of KYTC historical traffic data (2017 and 2018) the nearest traffic count stations are located on Scottsville Road and the I-65 entrance and exit ramps at the intersection of I-65 and Scottsville Road. Scottsville Road is located approximately 1 mile from the Project Area. The intersection to Garvin Lane and Scottsville Road is approximately 0.2 miles east of I-65. The 2017 and 2018 annual average daily traffic count (AADT) for the relevant stations is presented in Table 4-8 below.

Table 4-8 Kentucky Transportation Cabinet Traffic Count Data for the Project Area¹

Route Description	Station ID	Year	AADT
Scottsville Rd/KY 100 Milepost 12.956 to 19.123	107273	2017	3,904
I-65N to KY 100	107299	2018	4,041
I-65N from KY 100	107298	2018	4,768
I-65S to KY 100	107300	2018	5,645
I-65S from KY 100	107301	2018	4,183

¹ Source: Kentucky Transportation Cabinet / Maps and Resources / KYTC Traffic Counts (<https://maps.kytc.ky.gov/trafficcounts/>), extracted 01/22/2021.

In the context of existing AADT road volumes, the anticipated traffic generated by development of the Project Area would be manageable. It is anticipated that implementation of the Action Alternative would generate minor traffic associated with construction activities and have a temporary negligible impact on overall traffic volumes and level of service for Gavin Lane, Scottsville Road, and I-65.

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

5.0 PERMITS, LICENSES, AND APPROVALS

The Action Alternative would result in greater than one acre of earth disturbing activities; therefore, it would be necessary to obtain coverage under the general construction storm water permit (KYR100000). Coverage would require submittal of a Notice of Intent (NOI) and development of a site-specific BMP plan. Impacts to WOTUS, if any of the two ephemeral streams, pond, or wetland is determined to be jurisdictional, would require a CWA Section 404 permit and a CWA Section 401 Water Quality Certification. At this time, it is assumed that all three waterbodies and the wetland are non-jurisdictional and impacts to WOTUS are not proposed as part of the Action Alternative. Onsite burning activities would be conducted in compliance with local burn permits and the requirements in Title 401 KAR 63:005. The FSIA or

its contractors would be responsible for obtaining local, state, or federal permits, licenses, and approvals necessary for the project.

6.0 BEST MANAGEMENT PRACTICES AND MITIGATION MEASURES

To minimize or reduce the environmental effects of site activities associated with the Proposed Action, the FSIA or its contractors is expected to ensure that clearing and grading activities conducted comply with storm water permitting requirements and to utilize applicable BMPs to minimize and control erosion and fugitive dust during these actions. These practices would include installation of sediment and erosion controls (silt fences, sediment traps, etc.). Potential impacts from noise would be minimized by utilizing daytime work hours. Should onsite burning activities occur, these would be conducted in compliance with local burn permits and the requirements in Title 401 KAR 63:005.

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

Unavoidable impacts to the two ephemeral streams, pond, or wetland would require consultation and permitting with the USACE if determined to be jurisdictional. If determined jurisdictional, impacts to the resources may require a CWA Section 404 permit and a CWA Section 401 Water Quality Certification, which would include mitigation measures and possibly compensatory mitigation (e.g., purchase of mitigation credits or implementation of a permittee responsible mitigation plan).

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

7.0 LIST OF PREPARERS

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

Table 7-1 Environmental Assessment Project Team

Name/Education	Experience	Project Role
TVA		
Ruth M. Horton B.A. History	25 years NEPA, Environmental Compliance and policy.	Environmental Program Manager
Ashley A. Pilakowski B.S., <i>Environmental Management</i>	10 years in environmental planning and policy and NEPA compliance	NEPA Compliance, Implementation of ESA Section 7 Programmatic Consultation for federally listed bats and routine actions

Name/Education	Experience	Project Role
Elizabeth B. Hamrick <i>M.S., Wildlife and Fisheries Science, University of Tennessee B.A. Biology, B.A. Anthropology, Grinnell College</i>	21 years in biological field studies, 8 years in biological compliance, NEPA compliance, and ESA consultation for T&E terrestrial animals.	Terrestrial zoology, threatened and endangered species
Chevales Williams B.S. Environmental Engineering	15 years in water quality monitoring and compliance, 14 years in NEPA planning, input and environmental services	Soil Erosion and Surface Water
Britta Lees <i>M.S. Botany, B.A. Biology</i>	15 years experience in wetland assessment, wetland monitoring, watershed assessment, wetland mitigation, restoration as well as NEPA and Clean Water Act compliance	Wetlands
Kerry Nichols <i>Ph.D. Anthropology, University of Missouri-Columbia, M.A. Anthropology, University of Colorado-Denver, B.A. Political Science, University of Northern Colorado</i>	21 years of experience as a field archaeologist and SHPO project reviewer	Cultural resources, NHPA Section 106 compliance
Craig Phillips <i>M.S., and B.S., Wildlife and Fisheries Science</i>	10 years Sampling and Hydrologic Determinations for Streams and Wet-Weather Conveyances; 9 years in Environmental Reviews	Aquatic Ecology
Carrie Williamson, P.E., CFM <i>B.S. and M.S., Civil Engineering</i>	7 years in floodplains and flood risk	Floodplains
John Shelton B.S. Biology M.S. Environmental Science	7 years in field biology, 2 years in NEPA and ESA compliance	Terrestrial Ecology (Vegetation, Threatened and Endangered Species)
Robert A. Marker B.S. Outdoor Recreation Resources Management	45 years in outdoor Recreation planning and management	Recreation
Kenny Gardner B.S. & M.S. Wildlife and Fisheries Science	9 years in aquatic ecology, 4 years in NEPA input, 16 years in database management	Natural Areas
Cardno		
Rachel Bell, PMP <i>B.S., Environmental Science, Auburn University</i>	14 years in natural resources planning and NEPA compliance, including project management, preparation of EAs and Environmental Impact Statements (EISs), state and federal permitting, and biological and environmental studies and analysis	EA Program Manager QA/QC

Name/Education	Experience	Project Role
<p>Doug Mooneyhan <i>M.S., Biology, Tennessee Technological University</i> <i>B.S., Wildlife and Fisheries Science; University of Tennessee</i></p>	<p>31 years in natural resources and NEPA compliance, including project management and biological and environmental studies and analysis, compliance monitoring during construction, aquatic ecology.</p>	<p>EA Project Manager QA/QC Purpose and Need, Other Environmental Documentation, Alternatives, Site Description, Permits, Licenses and Approvals, Best Management Practices and Mitigation Measures</p>
<p>Duane Simpson <i>MA, Anthropology, University of Arkansas</i> <i>BA, Anthropology, Ohio University</i></p>	<p>26 years in archaeological consulting including management of projects across the southeast and midatlantic regions. Principal Investigator for over 15 years.</p>	<p>Archaeology</p>
<p>Amanda Koonjebharry, PMP <i>B.S, Zoology and Botany, University of the West Indies</i></p>	<p>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</p>	<p>Air Quality and Climate Change</p>
<p>Josh Yates, P.G. <i>M.S., Geology, University of South Florida</i> <i>B.S. Natural Resources Management and Engineering, University of Connecticut</i></p>	<p>15 years of hydrogeologic assessments and water resources permitting experience. This experience includes water supply planning, hydrogeologic investigations, groundwater modeling, water use permitting, well construction oversight, EIS and EA preparation, minimum flow and level (MFL) impact analysis, monitoring well network design, aquifer performance tests, and GIS analysis.</p>	<p>Groundwater</p>
<p>Sean Peacock <i>B.S., Environmental Science, Georgia College & State University</i></p>	<p>6 years of experience in the environmental consulting field. He regularly conducts wetland and stream delineation; wildlife surveys and monitoring; gopher tortoise surveys, monitoring, and relocations; NPDES inspections, and water quality sampling</p>	<p>Terrestrial Zoology, Aquatic Ecology, Wetlands</p>
<p>Sam Waltman <i>B.S., Marine Biology, Texas A&M University</i></p>	<p>10 years in natural resource surveys and permitting, including EIS and EA preparation, field sampling, GIS analysis, USACE jurisdictional delineations, T&E species surveys, hydrogeomorphic assessments, NRDA, Phase 1 ESAs, and environmental compliance monitoring.</p>	<p>Prime Farmland</p>

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

8.0 AGENCIES AND OTHERS CONSULTED

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

- Kentucky Heritage Council / State Historic Preservation Office
- Tribes - Absentee Shawnee Tribe of Indians of Oklahoma, Cherokee Nation, Eastern Band of Cherokee Indians, Eastern Shawnee Tribe of Oklahoma, Shawnee Tribe, and United Keetoowah Band of Cherokee Indians in Oklahoma

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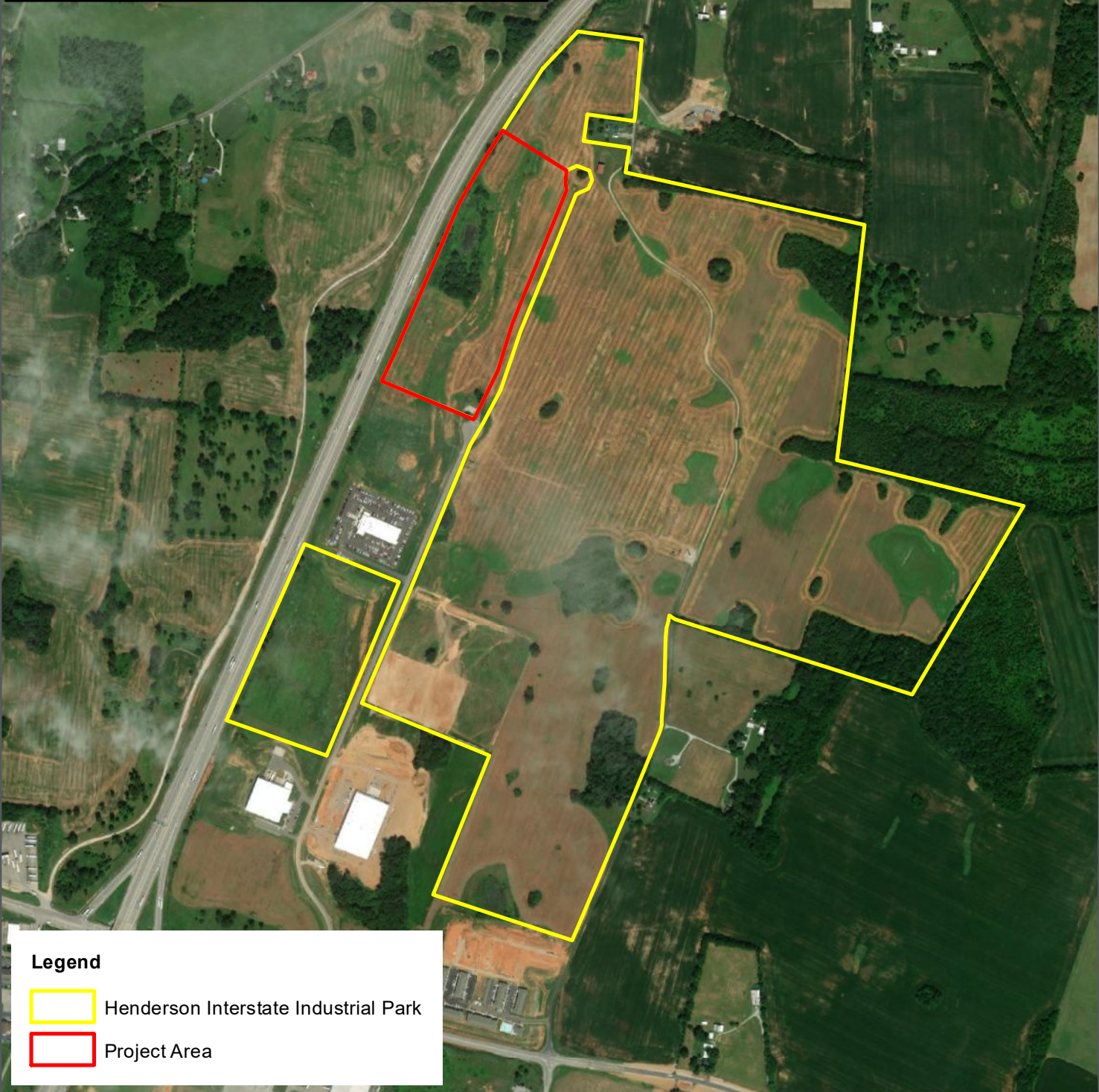
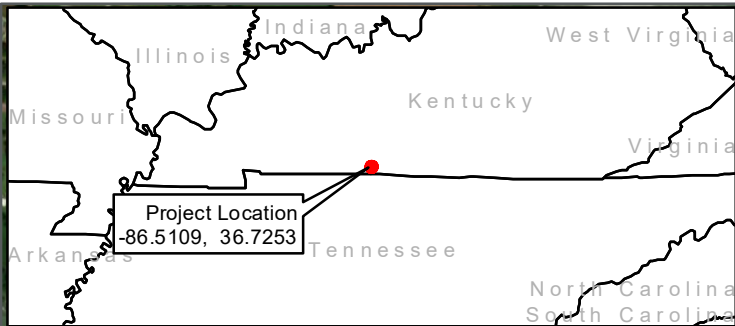
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ATTACHMENT 1
PROJECT FIGURES

Figure 1-A

Aerial



Legend

- Henderson Interstate Industrial Park
- Project Area



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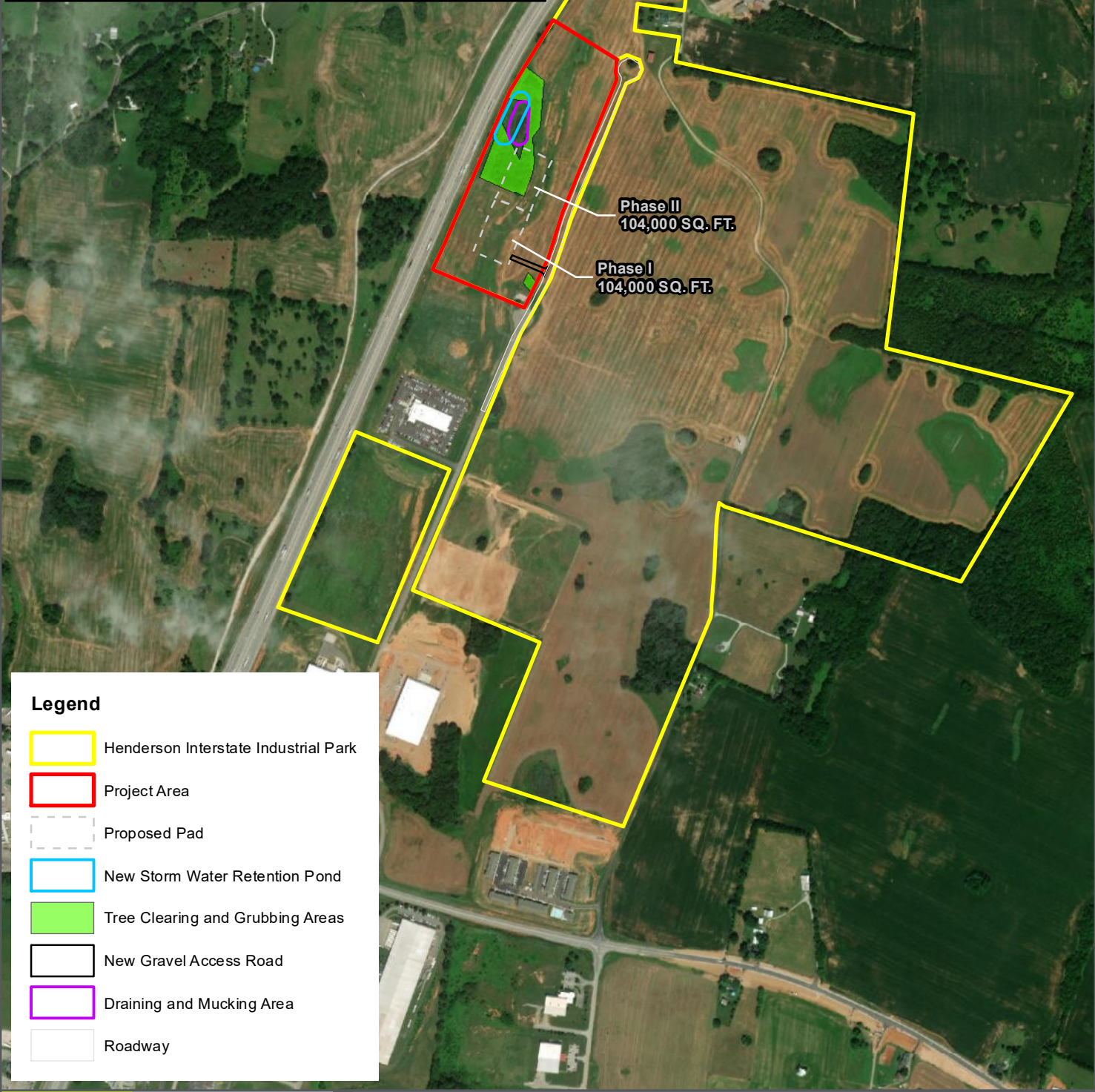
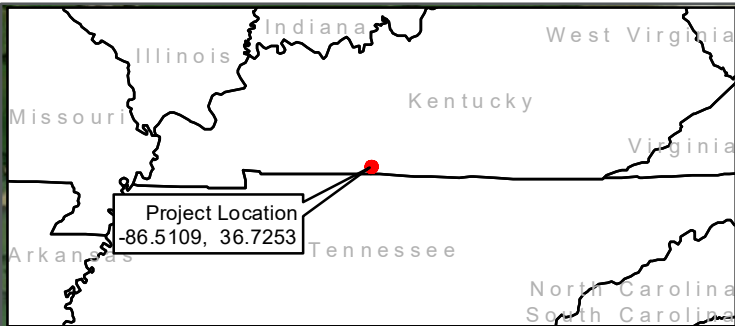
Figure 1-A: Aerial Map
TVA FY21 Economic Development Projects
Simpson County, Kentucky

0 1,000 2,000 Feet

0 300 600 Meters

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Figure 1-B
Proposed Activities



Legend

-  Henderson Interstate Industrial Park
-  Project Area
-  Proposed Pad
-  New Storm Water Retention Pond
-  Tree Clearing and Grubbing Areas
-  New Gravel Access Road
-  Draining and Mucking Area
-  Roadway



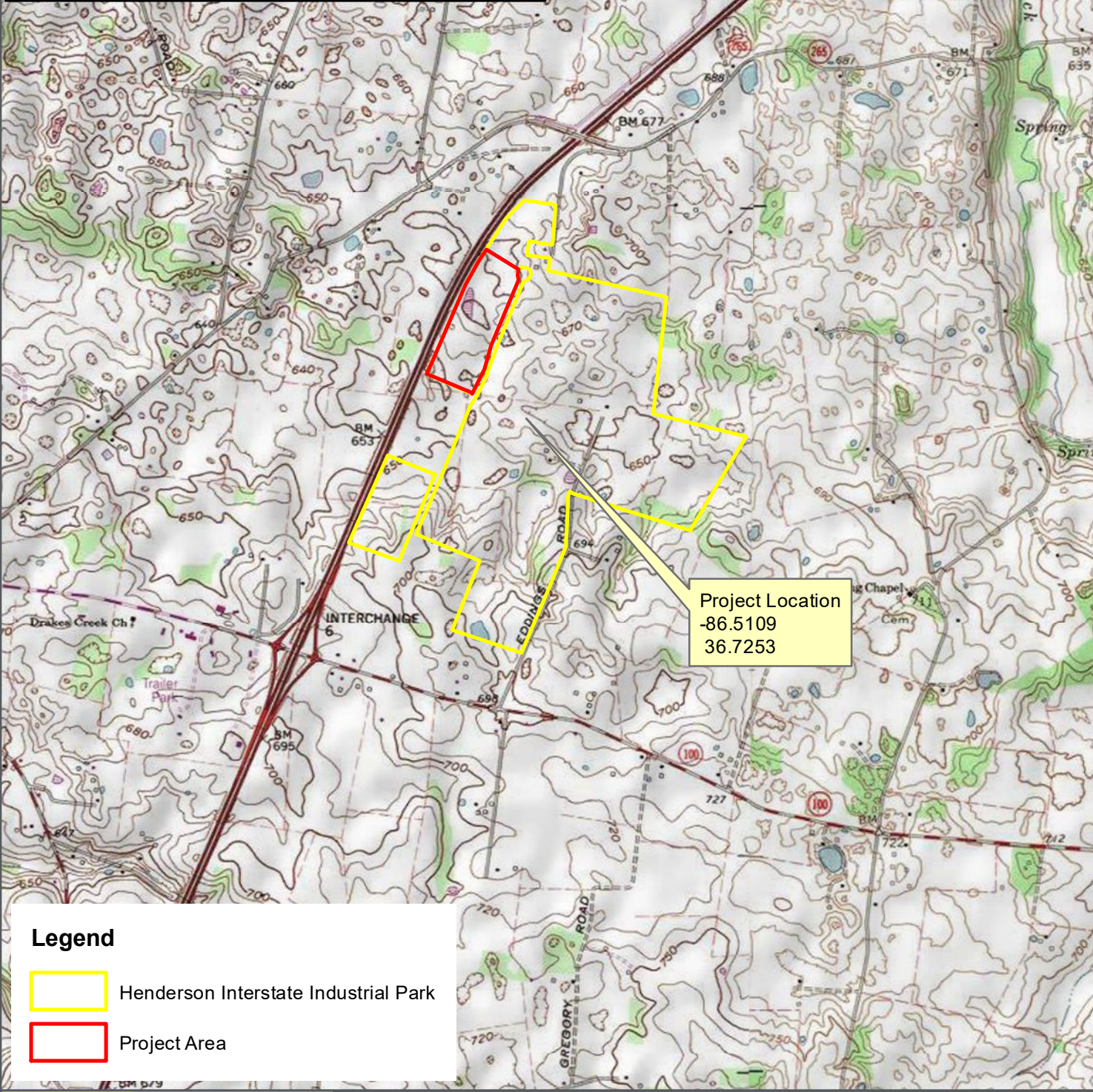
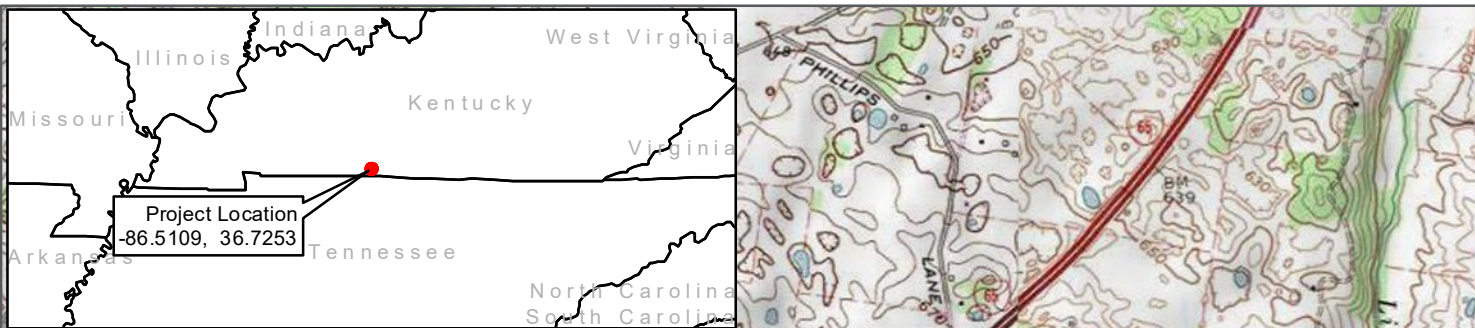
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Figure 1-B: Proposed Activities Map
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Figure 1-C
USGS Quadrangle



Legend

- Henderson Interstate Industrial Park
- Project Area

Image:ESRI
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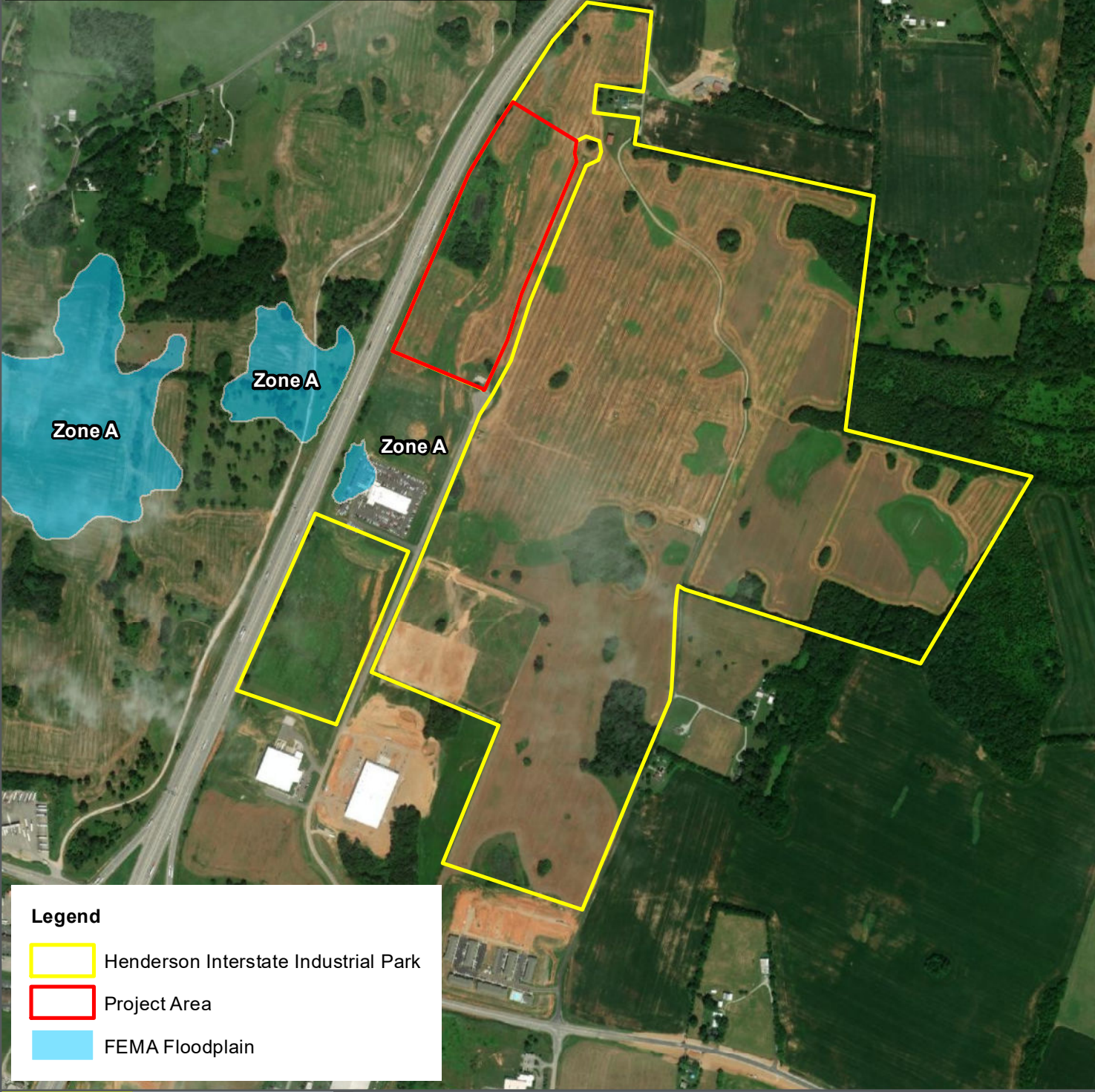
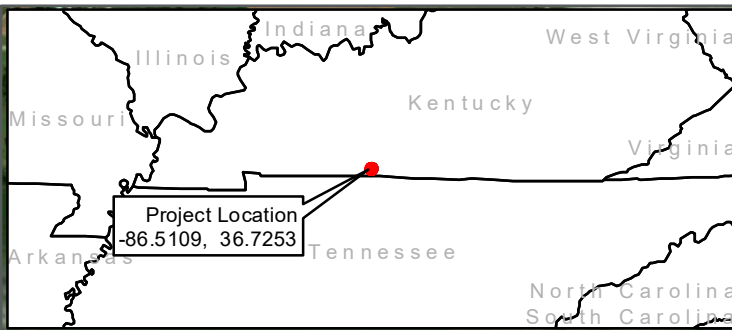
Figure 1-C: USGS Quadrangle Map
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Figure 1-D

FEMA Floodplain



Legend

- Henderson Interstate Industrial Park
- Project Area
- FEMA Floodplain



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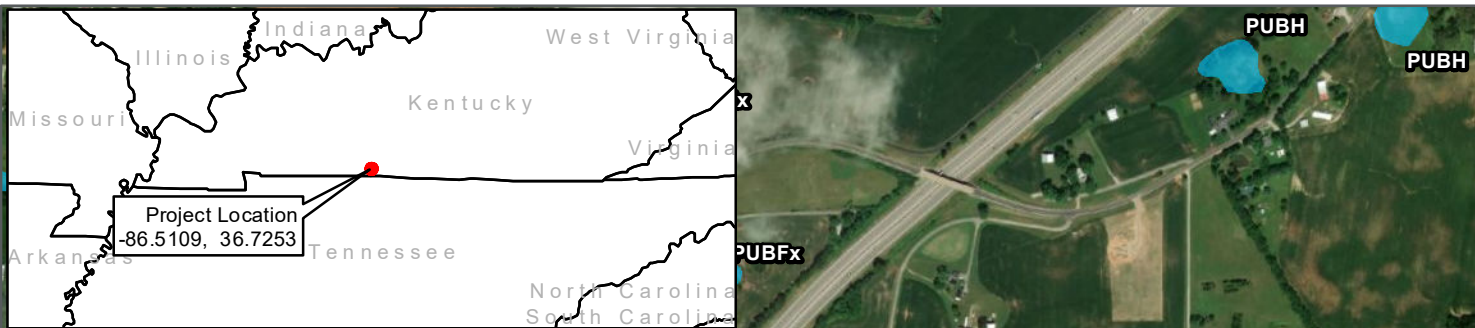
Figure 1-D: FEMA Floodplain Map
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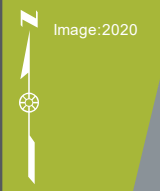
Figure 1-E

USFWS NWI and Water Resources Inventory Map



Legend

- Henderson Interstate Industrial Park
- Project Area
- NWI Wetlands



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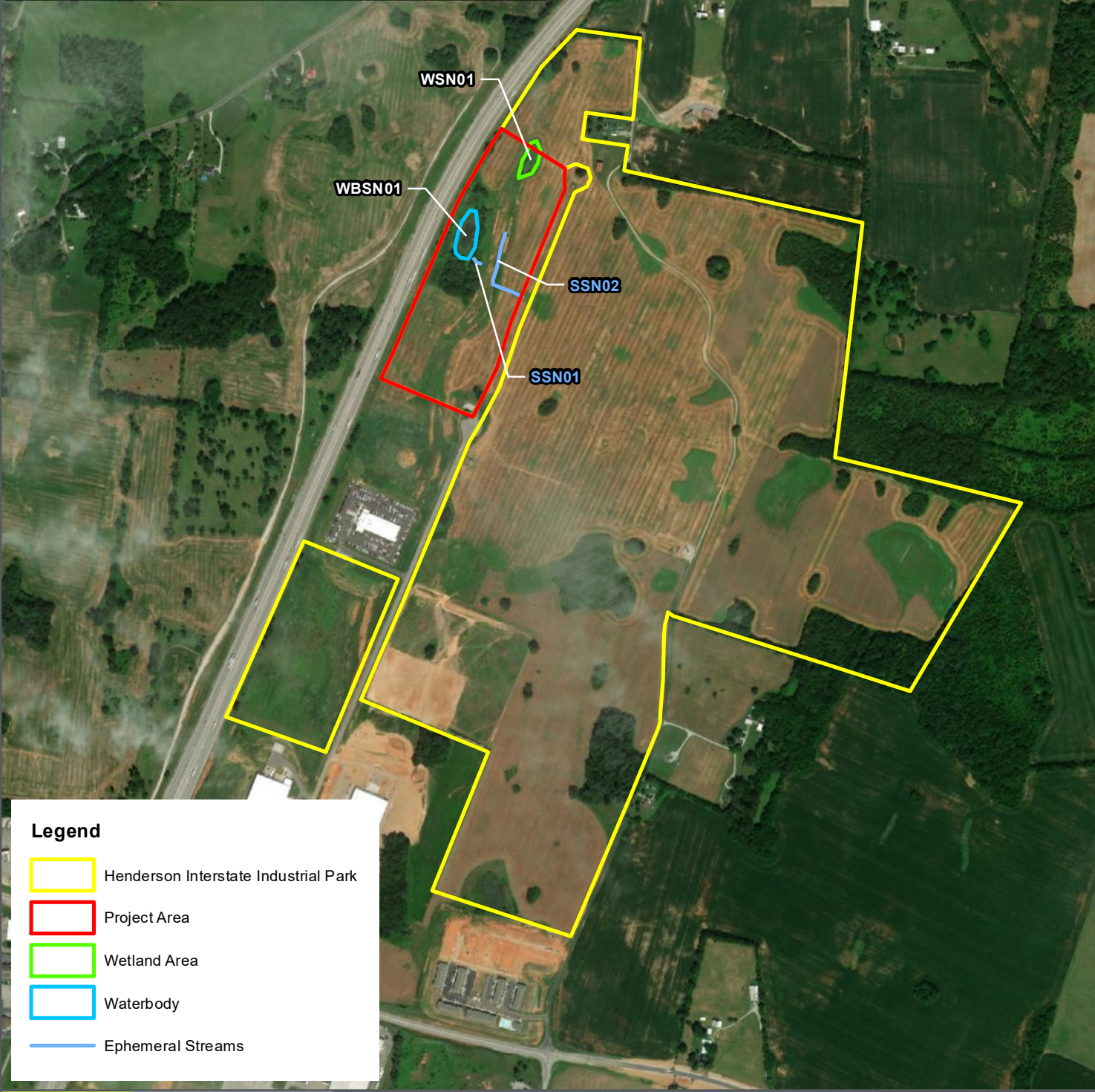
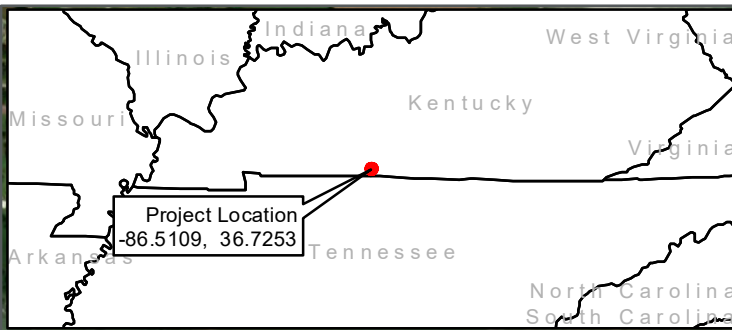
Figure 1-E: USFWS NWI and Water Inventory Map
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Figure 1-F

Wetlands and Waterbodies Map



Legend

- Henderson Interstate Industrial Park
- Project Area
- Wetland Area
- Waterbody
- Ephemeral Streams



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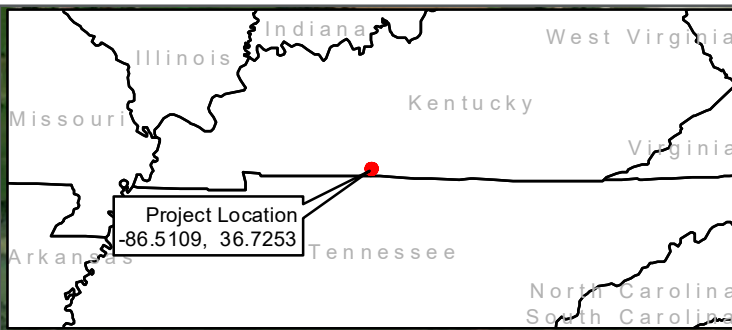
Figure 1-F: Wetlands and Waterbodies Map

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Figure 1-G
NRCS Soils Map



Legend

- Henderson Interstate Industrial Park
- Project Area
- BaB - Baxter gravelly silt loam, 2 to 6 percent slopes
- BaC - Baxter gravelly silt loam, 6 to 12 percent slopes
- BaD - Baxter gravelly silt loam, 12 to 20 percent slopes
- MoB - Mountview silt loam, 2 to 6 percent slopes
- No - Nolin silt loam
- W - Water

Image: 2020
Data Source:

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Figure 1-G: NRCS Soils

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ATTACHMENT 2

TVA Bat Strategy Project Screening Form

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

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

Project Name: InvestPrep - Simpson County, KY **Date:** Oct 1, 2020
Contact(s): Bess Hubbard **CEC#:** **Project ID:** 37116
Project Location (City, County, State): Franklin, Simpson County, KY

Project Description:

TVA funding to assist with due diligence studies (including geotechnical soil borings) on Lots 8 and 9, clearing and grubbing, construction of a gravel access road, construction of a 104,000 SF compacted dirt pad (expandable to 208,000 SF) on Lot 8, draining and mucking of an existing low-lying area, and construction of a new storm water retention pond.

SECTION 1: PROJECT INFORMATION - ACTION AND ACTIVITIES

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

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

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

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

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

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

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

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

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

STEP 3) Project includes one or more activities in Table 3?

YES (Go to Step 4)

NO (Go to Step 13)

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

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

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

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

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

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

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

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

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

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

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

Info below completed by: **Heritage Reviewer** (name) Date

OSAR Reviewer (name) Date

Terrestrial Zoologist (name) Date

- Gray bat records: None Within 3 miles* Within a cave* Within the County
- Indiana bat records: None Within 10 miles* Within a cave* Capture/roost tree* Within the County
- Northern long-eared bat records: None Within 5 miles* Within a cave* Capture/roost tree* Within the County
- Virginia big-eared bat records: None Within 6 miles* Within the County
- Caves: None within 3 mi Within 3 miles but > 0.5 mi Within 0.5 mi but > 0.25 mi* Within 0.25 mi but > 200 feet* Within 200 feet*

- Bat Habitat Inspection Sheet completed?** **NO** **YES**

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

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

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

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

STEP 7) Project will involve:

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

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

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

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

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

TVA Action	Total 20-year	Winter	Volant Season	Non-Volant Season
9 Promote Economic Development				

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

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

SECTION 3: REQUIRED CONSERVATION MEASURES

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

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

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

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

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

Manual Override

Check if Applies to Project	Activities Subject To Conservation Measure	Conservation Measure Description
<input checked="" type="checkbox"/>	15, 16, 17, 18, 22, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 45, 47, 48, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 90, 91, 92, 93, 94, 95, 96	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.
<input checked="" type="checkbox"/>	16, 25, 26, 37, 47, 52, 62, 63, 64, 65, 70, 71, 73, 78, 80, 82, 83, 86, 91	NV2 - Drilling, blasting, or any other activity that involves continuous noise (i.e., longer than 24 hours) disturbances greater than 75 decibels measured on the A scale (e.g., loud machinery) within a 0.5 mile radius of documented winter and/or summer roosts (caves, trees, unconventional roosts) will be conducted when bats are absent from roost sites.
<input checked="" type="checkbox"/>	16, 26, 62	NV3 - Drilling or blasting within a 0.5 mile radius of documented cave (or unconventional) roosts will be conducted in a manner that will not compromise the structural integrity or alter the karst hydrology of the roost site.
<input checked="" type="checkbox"/>	16, 26, 62	NV4 - Drilling or blasting within 0.5 miles of a documented roost site (cave, tree, unconventional roost) that needs to occur when bats are present will first involve development of project-specific avoidance or minimization measures in coordination with the USFWS.
<input type="checkbox"/>	15, 26, 92	HP1 - Site-specific cases in which potential impact of human presence is heightened (e.g., conducting environmental or cultural surveys within a roost) will be closely coordinated with staff bat biologists to avoid/minimize impacts below any potential adverse effect. Any take from these activities would be covered by TVA's Section 10 permit.
<input type="checkbox"/>	15, 26, 92	HP2 - Entry into roosts known to be occupied by federally listed bats will be communicated to the USFWS when impacts to bats may occur if not otherwise communicated (i.e., via annual monitoring reports per TVA's Section 10 permit). Any take from these activities would be covered by TVA's section 10 permit.
<input type="checkbox"/>	23	SHF1 - Fire breaks will be used to define and limit burn scope.
<input checked="" type="checkbox"/>	17, 23, 34	SHF2 - Site-specific conditions (e.g., acres burned, transport wind speed, mixing heights) will be considered to ensure smoke is limited and adequately dispersed away from caves so that smoke does not enter cave or cave-like structures.
<input type="checkbox"/>	23	SHF3 - Acreage will be divided into smaller units to keep amount of smoke at any one time or location to a minimum and reduce risk for smoke to enter caves.
<input checked="" type="checkbox"/>	17, 23, 34	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.
<input type="checkbox"/>	23	SHF5 - Fire breaks will be plowed immediately prior to burning, will be plowed as shallow as possible, and will be kept to minimum to minimize sediment.
<input type="checkbox"/>	23	SHF6 - Tractor-constructed fire lines will be established greater than 200 feet from cave entrances . Existing logging roads and skid trails will be used where feasible to minimize ground disturbance and generation of loose sediment.
<input checked="" type="checkbox"/>	17, 22, 23, 32, 33, 34, 35, 36	SHF7 - Burning will only occur if site specific conditions (e.g. acres burned, transport wind speed, mixing heights) can be modified to ensure that smoke is adequately dispersed away from caves or cave-like structures. This applies to prescribed burns and burn piles of woody vegetation.
<input checked="" type="checkbox"/>	17, 22, 23, 32, 33, 34, 35, 36	SHF8 - Brush piles will be burned a minimum of 0.25 mile from documented, known, or obvious caves or cave entrances and otherwise in the center of newly established ROW when proximity to caves on private land is unknown.

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

■	17, 23, 34	SHF9 - A 0.25 mile buffer of undisturbed forest will be maintained around documented or known gray bat maternity and hibernation colony sites, documented or known Virginia big-eared bat maternity, bachelor, or winter colony sites, Indiana bat hibernation sites, and northern long-eared bat hibernation sites. Prohibited activities within this buffer include cutting of overstory vegetation, construction of roads, trails or wildlife openings, and prescribed burning. Exceptions may be made for maintenance of existing roads and existing ROW, or where it is determined that the activity is compatible with species conservation and recovery (e.g., removal of invasive species).
■	33, 34	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.
■	33, 34	TR2 - Removal of suitable summer roosting habitat within 0.5 mile of Priority 1/Priority 2 Indiana bat hibernacula, or 0.25 mile of Priority 3/Priority 4 Indiana bat hibernacula or any northern long-eared bat hibernacula will be prohibited, regardless of season, with very few exceptions (e.g., vegetation maintenance of TL ROW immediately adjacent to a known cave).
■	33, 34	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.
■	33, 34	TR4* - Removal of suitable summer roosting habitat within potential habitat for Indiana bat or northern long-eared bat will be tracked, documented, and included in annual reporting. Project will therefore communicate completion of tree removal to appropriate TVA staff.
■	33, 34	TR5 - Removal of any trees within 150 feet of a documented Indiana bat or northern long-eared bat maternity summer roost tree during non-winter season, range-wide pup season or swarming season (if site is within known swarming habitat), will first require a site-specific review and assessment. If pups are present in trees to be removed (determined either by mist netting and assessment of adult females, or by visual assessment of trees following evening emergence counts), TVA will coordinate with the USFWS to determine how to minimize impacts to pups to the extent possible. May include establishment of artificial roosts before removal of roost tree(s).
■	33, 34	TR6 - Removal of a documented Indiana bat or northern long-eared bat roost tree that is still suitable and that needs to occur during non-winter season, range-wide pup season, or swarming season (if site is within known swarming habitat) will first require a site-specific review and assessment. If pups are present in trees to be removed (determined either by mist netting and assessment of adult females, or by visual assessment of trees following evening emergence counts), TVA will coordinate with USFWS to determine how to minimize impacts to pups to the extent possible. This may include establishment of artificial roosts before removal of roost tree(s).
■	33, 34	TR7 (Existing Transmission ROW only) - Tree removal within 100 feet of existing transmission ROWs will be limited to hazard trees. On or adjacent to TLs, a hazard tree is a tree that is tall enough to fall within an unsafe distance of TLs under maximum sag and blowout conditions and/or are also dead, diseased, dying, and/or leaning. Hazard tree removal includes removal of trees that 1) currently are tall enough to threaten the integrity of operation and maintenance of a TL or 2) have the ability in the future to threaten the integrity of operation and maintenance of a TL.
■	33, 34	TR8 (TVA Reservoir Land only) - Requests for removal of hazard trees on or adjacent to TVA reservoir land will be inspected by staff knowledgeable in identifying hazard trees per International Society of Arboriculture and TVA's checklist for hazard trees. Approval will be limited to trees with a defined target.
■	33, 34	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.

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

<input type="checkbox"/>	<p>69, 77, 89, 91</p>	<p>AR1 - Projects that involve structural modification or demolition of buildings, bridges, and potentially suitable box culverts, will require assessment to determine if structure has characteristics that make it a potentially suitable unconventional bat roost. If so a survey to determine if bats may be present will be conducted. Structural assessment will include:</p> <ul style="list-style-type: none"> ○ Visual check that includes an exhaustive internal/external inspection of building to look for evidence of bats (e.g., bat droppings, roost entrance/exit holes); this can be done at any time of year, preferably when bats are active. ○ Where accessible and health and safety considerations allow, a survey of roof space for evidence of bats (e.g., droppings, scratch marks, staining, sightings), noting relevant characteristics of internal features that provide potential access points and roosting opportunities. Suitable characteristic may include: gaps between tiles and roof lining, access points via eaves, gaps between timbers or around mortise joints, gaps around top and gable end walls, gaps within roof walling or around tops of chimney breasts, and clean ridge beams. ○ Features with high-medium likelihood of harboring bats but cannot be checked visually include soffits, cavity walls, space between roof covering and roof lining. ○ Applies to box culverts that are at least 5 feet (1.5 meters) tall and with one or more of the following characteristics. Suitable culverts for bat day roosts have the following characteristics: <ul style="list-style-type: none"> ● Location in relatively warm areas ● Between 5-10 feet (1.5-3 meters) tall and 300 ft (100 m) or more long ● Openings protected from high winds ● Not susceptible to flooding ● Inner areas relatively dark with roughened walls or ceilings ● Crevices, imperfections, or swallow nests ○ Bridge survey protocols will be adapted from the Programmatic Biological Opinion for the Federal Highway Administration (Appendix D of USFWS 2016c, which includes a Bridge Structure Assessment Guidance and a Bridge Structure Assessment Form). ○ Bat surveys usually are NOT needed in the following circumstances: <ul style="list-style-type: none"> ● Domestic garages /sheds with no enclosed roof space (with no ceiling) ● Modern flat-roofed buildings ● Metal framed and roofed buildings ● Buildings where roof space is regularly used (e.g., attic space converted to living space, living space open to rafters) or where all roof space is lit from skylights or windows. Large/tall roof spaces may be dark enough at apex to provide roost space
<input type="checkbox"/>	<p>69, 77, 89, 91</p>	<p>AR2 - Additional bat P/A surveys (e.g., emergence counts) conducted if warranted (i.e., when AR1 indicates that bats may be present).</p>
<input type="checkbox"/>	<p>91</p>	<p>AR3 - Bridge survey protocols will be implemented, either by permittee (e.g., state DOT biologists) or qualified personnel. If a bridge is determined to be in use as an unconventional roost, subsequent protocols will be implemented.</p>
<input type="checkbox"/>	<p>69, 89</p>	<p>AR4 - Removal of buildings with suitable roost characteristics within six miles of known or presumed occupied roosts for Virginia big-eared bat would occur between Nov 16 and Mar 31. Buildings may be removed other times of the year once a bat biologist evaluates a buildings' potential to serve as roosting habitat and determines that this species is not present and/or is not using structure(s).</p>

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

<p align="center">■</p>	<p>16, 17, 18, 21, 22, 24, 25, 26, 27, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 39, 48, 50, 51, 56, 61, 62, 63, 64, 65, 67, 69, 84, 89</p>	<p>SSPC1 (Transmission only) - Transmission actions and activities will continue to Implement A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities. This focuses on control of sediment and pollutants, including herbicides. Following are key measures:</p> <ul style="list-style-type: none"> ○ BMPs minimize erosion and prevent/control water pollution in accordance with state-specific construction storm water permits. BMPs are designed to keep soil in place and aid in reducing risk of other pollutants reaching surface waters, wetlands and ground water. BMPs will undertake the following principles: <ul style="list-style-type: none"> ● Plan clearing, grading, and construction to minimize area and duration of soil exposure. ● Maintain existing vegetation wherever and whenever possible. ● Minimize disturbance of natural contours and drains. ● As much as practicable, operate on dry soils when they are least susceptible to structural damage and erosion. ● Limit vehicular and equipment traffic in disturbed areas. Keep equipment paths dispersed or designate single traffic flow paths with appropriate road BMPs to manage runoff. ● Divert runoff away from disturbed areas. ● Provide for dispersal of surface flow that carries sediment into undisturbed surface zones with high infiltration capacity and ground cover conditions. ● Prepare drainage ways and outlets to handle concentrated/increased runoff. ● Minimize length and steepness of slopes. Interrupt long slopes frequently. ● Keep runoff velocities low and/or check flows. ● Trap sediment on-site. ● Inspect/maintain control measures regularly & after significant rain. ● Re-vegetate and mulch disturbed areas as soon as practical. ○ Specific guidelines regarding sensitive resources and buffer zones: <ul style="list-style-type: none"> ● Extra precaution (wider buffers) within SMZs is taken to protect stream banks and water quality for streams, springs, sinkholes, and surrounding habitat. ● BMPs are implemented to protect and enhance wetlands. Select use of equipment and seasonal clearing is conducted when needed for rare plants; construction activities are restricted in areas with identified rare plants. ● Standard requirements exist to avoid adverse impacts to caves, protected animals, unique/important habitat (e.g., cave buffers, restricted herbicide use, seasonal clearing of suitable habitat).
<p align="center">■</p>	<p>16, 17, 18, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 48, 50, 51, 52, 53, 54, 55, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 70, 71, 73, 76, 77, 78, 80, 81, 82, 83, 86, 87, 88, 89, 90</p>	<p>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.</p>

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

<p align="center">■</p>	<p>16, 17, 18, 21, 22, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 48, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 61, 62, 63, 64, 65, 66, 67, 69, 70, 71, 73, 76, 77, 80, 81, 82, 83, 84, 86, 87, 88, 89, 90, 91</p>	<p>SSPC3 (Power Plants only) - Power Plant actions and activities will continue to implement standard environmental practices. These include:</p> <ul style="list-style-type: none"> ○ Best Management Practices (BMPs) in accordance with regulations: <ul style="list-style-type: none"> ● Ensure proper disposal of waste, ex: used rags, used oil, empty containers, general trash, dependent on plant policy ● Maintain every site with well-equipped spill response kits, included in some heavy equipment ● Conduct Quarterly Internal Environmental Field Assessments at each sight ● Every project must have an approved work package that contains an environmental checklist that is approved by sight Environmental Health & Safety consultant. ● When refueling, vehicle is positioned as close to pump as possible to prevent drips, and overfilling of tank. Hose and nozzle are held in a vertical position to prevent spillage ○ Construction Site Protection Methods <ul style="list-style-type: none"> ● Sediment basin for runoff - used to trap sediments and temporarily detain runoff on larger construction sites ● Storm drain protection device ● Check dam to help slow down silt flow ● Silt fencing to reduce sediment movement ○ Storm Water Pollution Prevention (SWPP) Pollution Control Strategies <ul style="list-style-type: none"> ● Minimize storm water contact with disturbed soils at construction site ● Protect disturbed soil areas from erosion ● Minimize sediment in storm water before discharge ● Prevent storm water contact with other pollutants ● Construction sites also may be required to have a storm water permit, depending on size of land disturbance (>1ac) ○ Every site has a Spill Prevention and Control Countermeasures (SPCC) Plan and requires training. Several hundred pieces of equipment often managed at the same time on power generation properties. Goal is to <ul style="list-style-type: none"> ● Minimize fuel and chemical use Ensure proper disposal of waste, ex: used rags, used oil, empty containers, general trash, dependent on plant policy ● Maintain every site with well-equipped spill response kits, included in some heavy equipment ● Conduct Quarterly Internal Environmental Field Assessments at each sight ● Every project must have an approved work package that contains an environmental checklist that is approved by sight Environmental Health & Safety consultant. ● When refueling, vehicle is positioned as close to pump as possible to prevent drips, and overfilling of tank. Hose and nozzle are held in a vertical position to prevent spillage ○ Construction Site Protection Methods <ul style="list-style-type: none"> ● Sediment basin for runoff - used to trap sediments and temporarily detain runoff on larger construction sites ● Storm drain protection device ● Check dam to help slow down silt flow ● Silt fencing to reduce sediment movement ○ Storm Water Pollution Prevention (SWPP) Pollution Control Strategies <ul style="list-style-type: none"> ● Minimize storm water contact with disturbed soils at construction site ● Protect disturbed soil areas from erosion ● Minimize sediment in storm water before discharge ● Prevent storm water contact with other pollutants ● Construction sites also may be required to have a storm water permit, depending on size of land disturbance (>1ac) ○ Every site has a Spill Prevention and Control Countermeasures (SPCC) Plan and requires training. Several hundred pieces of equipment often managed at the same time on power generation properties. Goal is to minimize fuel and chemical use
<p align="center">■</p>	<p>17, 22, 32, 33, 34, 35, 36</p>	<p>SSPC4 (Transmission only) - Woody vegetation burn piles associated with transmission construction will be placed in the center of newly established ROWs to minimize wash into any nearby undocumented caves that might be on adjacent private property and thus outside the scope of field survey for confirmation. Brush piles will be burned a minimum of 0.25 miles from documented caves and otherwise in the center of newly established ROW when proximity to caves on private land is unknown.</p>

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

<input checked="" type="checkbox"/>	17, 18, 21, 22, 24, 25, 26, 30, 31, 33, 34, 35, 36, 40, 46, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 66, 67, 68, 69, 70, 72, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 87, 88, 91, 93, 95, 96	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.
<input type="checkbox"/>	21, 54	SSPC6 - Herbicide use will be avoided within 200 ft of portals associated with caves, cave collapse areas, mines and sinkholes are capable of supporting cave-associated species. Herbicides are not applied to surface water or wetlands unless specifically labeled for aquatic use. Filter and buffer strips will conform at least to federal and state regulations and label requirements.
<input checked="" type="checkbox"/>	17, 21, 25, 26, 27, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 54, 55	SSPC7 - Clearing of vegetation within a 200-ft radius of documented caves will be limited to hand or small machinery clearing only (e.g., chainsaws, bush-hog, mowers). This will protect potential recharge areas of cave streams and other karst features that are connected hydrologically to caves.
<input checked="" type="checkbox"/>	16, 26, 36, 37, 38, 39, 48, 50, 52, 59, 60, 62, 66, 67, 69, 72, 75, 77, 78, 79, 86	L1 - Direct temporary lighting away from suitable habitat during the active season.
<input checked="" type="checkbox"/>	16, 26, 36, 37, 38, 39, 48, 50, 52, 59, 60, 62, 66, 67, 69, 72, 75, 77, 78, 79, 86	L2 - Evaluate the use of outdoor lighting during the active season and seek to minimize light pollution when installing new or replacing existing permanent lights by angling lights downward or via other light minimization measures (e.g., dimming, directed lighting, motion-sensitive lighting).

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

Hide All Unchecked Conservation Measures

- HIDE
- UNHIDE

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

- HIDE
- UNHIDE

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

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

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

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

For Use by Terrestrial Zoologist Only

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

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

ATTACHMENT 3

Agency Correspondence

3-A

Kentucky Heritage Council



400 West Summit Hill Drive, Knoxville, Tennessee 37902

February 16, 2021

Mr. Craig Potts
State Historic Preservation Officer
and Executive Director
Kentucky Heritage Council
300 Washington Street
Frankfort, Kentucky 40601

Dear Mr. Potts:

TENNESSEE VALLEY AUTHORITY (TVA), HENDERSON INTERSTATE INDUSTRIAL PARK (LOTS 8 AND 9), SIMPSON COUNTY, KENTUCKY (36.728967, -86.513184), STATE HISTORIC PRESERVATION OFFICE PROJECT REGISTRATION NUMBER FY21-11109 (TVA TRACKING NUMBER – CID 79654)

TVA proposes to provide funds to the Franklin Simpson Industrial Authority to assist in the development of Lots 8 and 9 within the previously zoned for heavy industrial Henderson Interstate Industrial Park in Simpson County, Kentucky. TVA funding would be used for geotechnical soil boring and site preparation activities including clearing and grubbing, construction of a gravel access road, construction of a 104,000 square foot compacted dirt pad (expandable to 208,000 square feet) on Lot 8, draining and mucking of an existing low-lying area, and construction of a new storm water retention pond. TVA finds that the proposed project constitutes an undertaking (as defined at 36 CFR § 800.16 (y)) that has the potential to cause effects to historic properties.

For this project, TVA recommends the area of potential effects (APE) to be the footprint of the proposed ground-disturbance (29.8 acres), where physical effects could occur, and those areas within a half-mile radius and within the viewshed the proposed project. This APE includes the areas where visual effects on historic architectural resources could occur.

TVA contracted with Cardno, Inc. (Cardno) to conduct a Phase I Cultural Resources survey and a Cultural Historic Resources survey for this project. The resulting reports, titled *Phase I Archaeological Resources Investigation for the Henderson Interstate Industrial Park, Simpson County, Kentucky* and *Cultural Historic Survey InvestPrep Round 8: Simpson County KY (Franklin) Franklin County, KY* are attached.

Cardno's background research for the archaeological survey focused on a 2.0 kilometer (1.24 mile) radius around the project APE (Project Registration No. FY21-11109). Results of the literature review indicate that no previously identified archaeological sites were located within the APE.

Mr. Craig Potts
Page 2
February 16, 2021

Because the project footprint had not been previously surveyed for archaeological resources, Cardno investigated the 29.8 ac (12.06 ha) APE for cultural resources by shovel testing and visual inspection. Cardno did not identify any cultural resources within the project footprint and recommended that the proposed project will have no effect on archaeological sites.

Cardno also surveyed the project APE and recorded three new cultural historic resources. There are no previously recorded cultural historic properties within the project APE. Based on the historic context developed and field survey results, Cardno recommended no properties eligible for the National Register of Historical Places (NHRP) within the APE for this project. As a result, Cardno recommended this project will affect no historic architectural/cultural historic resources.

TVA has read the above referenced reports and agrees with the recommendations of the authors. Therefore, TVA finds that the proposed undertaking would have no effects on historic properties.

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

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

Please contact Kerry Nichols by email, knichols@tva.gov with your comments.

Sincerely,



Clinton E. Jones
Manager
Cultural Compliance

KMA:ABM
Enclosures



ANDY BESHEAR
GOVERNOR

TOURISM, ARTS AND HERITAGE CABINET
KENTUCKY HERITAGE COUNCIL
THE STATE HISTORIC PRESERVATION OFFICE

MICHAEL E. BERRY
SECRETARY

JACQUELINE COLEMAN
LT. GOVERNOR

410 HIGH STREET
FRANKFORT, KENTUCKY 40601
(502) 564-7005
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CRAIG A. POTTS
EXECUTIVE DIRECTOR &
STATE HISTORIC
PRESERVATION OFFICER

March 16, 2021

Kerry Nichols
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, TN 37902

Re: TENNESSEE VALLEY AUTHORITY (TVA), HENDERSON INTERSTATE INDUSTRIAL PARK (LOTS 8 AND 9), SIMPSON COUNTY, KENTUCKY (36.728967, -86.513184)

and

Cultural Historic Survey, InvestPrep Round 8, Henderson Interstate Industrial Park, Simpson County, KY, report prepared by Christopher Harris, Hannah Kopf, and Rachel Kennedy of Cardno, Inc., report dated January 2021.

and

Phase I Archaeological Resources Investigation for the Henderson Interstate Industrial Park Simpson County, Kentucky prepared by Michael Loughlin and Duane Simpson of Cardno. Report dated February 9, 2021.

Dear Mr. Nichols:

Thank you for your digital submission including a transmittal letter with TVA's official determinations of National Register eligibility and effect for the above undertaking as well as digital versions of the above-cited archaeological and cultural historic survey reports. We understand from your transmittal letter that TVA proposes to provide funds to the Franklin Simpson Industrial Authority for geotechnical soil boring and site preparation activities including clearing and grubbing, construction of a gravel access road, construction of a 104,000 square foot compacted dirt pad (expandable to 208,000 square feet) on Lot 8, draining and mucking of an existing low-lying area, and construction of a new storm water retention pond on Lots 8 and 9 within Henderson Interstate Industrial Park in Simpson County, Kentucky. We understand that TVA has defined the area of potential effects (APE) to be the footprint of the proposed ground-disturbance (29.8 acres), where physical effects could occur, and those areas within a half-mile radius and within the viewshed the proposed project. This APE includes the areas where visual effects on historic architectural resources could occur.

(Continued on Next Page)



An Equal Opportunity Employer

Section 106 Review

Re: TENNESSEE VALLEY AUTHORITY (TVA), HENDERSON INTERSTATE INDUSTRIAL PARK (LOTS 8 AND 9), SIMPSON COUNTY, KENTUCKY (36.728967, -86.513184)

March 16, 2021

Based on our review of the above-cited cultural historic survey report, we understand that the authors of the report documented three newly-identified historic resources within the APE defined for this project including SI-510/412 Perdue Farm Road, SI-511/Barn at 36.734818/-86.511702, and SI-512/1644 Gold City Road. We understand that the authors of the report recommend that none of these sites retained sufficient historic integrity or significance and, as a result, they were all recommended Not Eligible for listing on the NRHP.

Based on our review of the cultural historic survey report, we concur with the authors of the report and with TVA's official determination that SI-510 through SI-512 do not appear to retain sufficient historic integrity or significance and, as a result, appear to be Not Eligible for listing on the National Register of Historic Places. *We reviewed a digital version of this report. For archival purposes, please submit (1) printed, bound hard copy of the cultural historic survey report as well as (1) unbound printed set of the three KHC survey forms to our office.*

The archaeological report describes the intensive pedestrian reconnaissance, supplemented by screened shovel tests, of the proposed project area. During the survey, the investigators identified no archaeological sites or artifacts. Based on these findings, the investigators recommended no additional archaeological assessment of the project area.

After review of the archaeological report, we accept its findings and recommendations. We accept this report as final. We reviewed a digital draft of this report. Please ensure that we received two printed and bound archival copies of the report.

Based on the results of the cultural resources identifications efforts, we **concur** with TVA's determination that the proposed project will result in **No Effect to Historic Properties**.

In the event of the unanticipated discovery of an archaeological site or object of antiquity, the discovery should be reported to the Kentucky Heritage Council and to the Kentucky Office of State Archaeology in the Anthropology Department at the University of Kentucky in accordance with KRS 164.730. In the event that human remains are encountered during project activities, all work should be immediately stopped in the area and the area cordoned off, and in accordance with KRS 72.020 the county coroner and local law enforcement must be contacted immediately. Upon confirmation that the human remains are not of forensic interest, the unanticipated discovery must be reported to the Kentucky Heritage Council.

Should you have any questions concerning archaeological resources, feel free to contact Chris Gunn of my staff at (502) 892-3615 or chris.gunn@ky.gov. Questions concerning above-ground resources can be directed to Jennifer Ryall at (502) 892-3619 or jennifer.ryall@ky.gov.

Sincerely,



Craig A. Potts,
Executive Director and State Historic Preservation Officer

CP:, jr, cmg KHC # 60892,61171
cc: George Crothers (OSA)