Document Type: EA-Administrative Record
Index Field: Environmental Assessment
Project Name: Economic Development Grant
Marshall County, MS (Holly Springs)
Project Number: 2021-7

ECONOMIC DEVELOPMENT GRANT PROPOSAL FOR THE SPRINGS INDUSTRIAL PARK

ENVIRONMENTAL ASSESSMENT

Marshall County, Mississippi (Holly Springs)

Prepared by:

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March 2021

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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 Marshall County Industrial Development Authority (MCIDA) to assist with the development of the Springs Industrial Park. The area of TVA's proposed action (herein referred to as the Project Area) comprises 103.3 acres of the total 1,200-acre Springs Industrial Park located 0.5 mile east of the intersection of United States (U.S.) Highway 78 and Landfill Road and 3.3 miles northwest of Holly Springs, Mississippi (MS) (see Figure 1-1 below and Attachment 1, Figure 1-A). TVA funds would be used for the purchasing of the 103.3-acre Project Area, clearing of 16.7 acres of trees, and grading of a dirt building pad. Work associated with the dirt building pad would require 27.6 acres of earth disturbance to create a 20.0-acre dirt building pad. The Appalachian Regional Commission (ARC) is funding an access road and other activities outside the Project Area that would be under construction or built prior to TVA issuing a Notice to Proceed (NTP). The access road would be built between the two (2) areas of earth work for the proposed dirt building pad. The Springs Industrial Park is located in Marshall County, MS.

The primary purpose of the Proposed Action is to enable the MCIDA to continue development of the Springs Industrial Park. MCIDA has identified the development of the Project Area, located at the entrance to the Springs Industrial Park, as a jumpstart to further development of the overall site. MCIDA has seen significant project activity in the area over the last five (5) years, but has determined these opportunities have not been realized at the Springs Industrial Park due to the lack of a large, publicly-owned, shovel-ready site. The proposed grant to the MCIDA would assist with site preparation activities to put the Springs Industrial Park in a more marketable position. Proposed improvements would lead to an increased probability of achieving TVA's core mission of job creation and capital investment. Target industries for the Springs Industrial Park include light manufacturers and advanced manufacturers. This Environmental Assessment (EA) assesses the environmental resources that would potentially be affected by TVA's Proposed Action. TVA's decision is whether or not to provide the requested funding to the MCIDA.

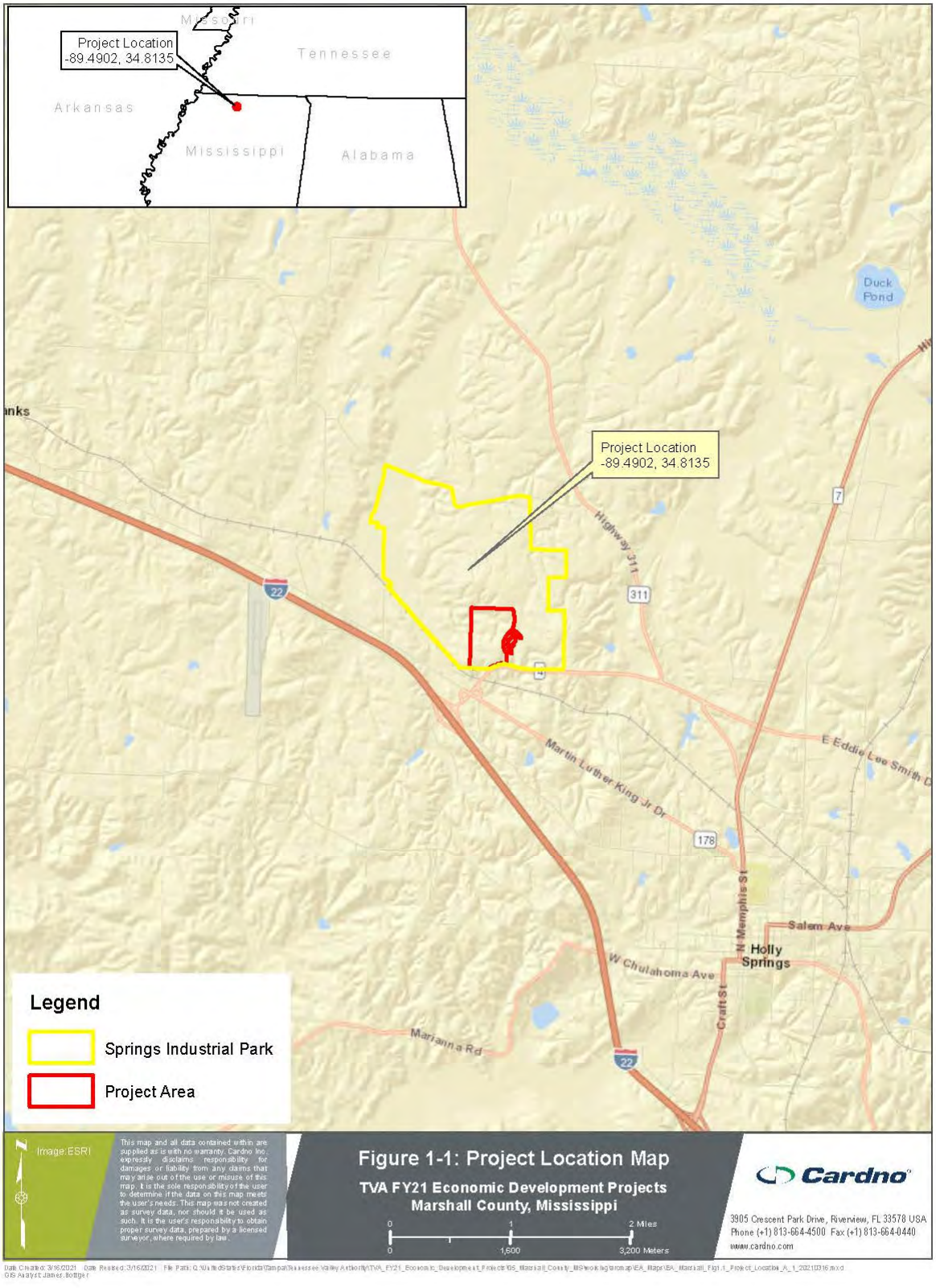

Figure 1-1 Project Location Map

2.0 OTHER ENVIRONMENTAL REVIEWS AND DOCUMENTATION

A Phase I Environmental Site Assessment of the Project Area was performed consistent with the procedures included in ASTM E 1527-13 (Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process) by Headwaters, Inc. (Headwaters) in April 2018 (Headwaters 2018a). Headwaters also conducted a wetland assessment in February 2018 to identify wetlands and waterbodies jurisdictional to the United States Army Corps of Engineers (USACE) within the Springs Industrial Park (Headwaters 2018b). Headwaters' wetland assessment was the basis for a Jurisdictional Determination issued by the USACE on October 3, 2018 (USACE 2018). In 2018, Headwaters coordinated with the United States Fish and Wildlife Service (USFWS) to identify federally threatened and endangered species issues that were associated with the Springs Industrial Park (Headwaters 2018c) and as a result, the USFWS provided recommendations for the Indiana bat (*Myotis sodalist*), northern long-eared bat (*Myotis septentrionalis*), and wood stork (*Mycteria americana*) (USFWS 2018). In October 2018, TerraX produced a Phase I Cultural Resources Survey for the Springs Industrial Park (TerraX 2018), which was reviewed by the Mississippi Department of Archives and History (MDAH), the State Historic Preservation Office, in June 2019 (MDAH 2019). The MDAH provided comments and recommendations to protect and preserve cultural resources identified within the Springs Industrial Park (MDAH 2019). These reports and associated agency correspondences were used in the preparation of this EA.

3.0 ALTERNATIVES

Based on internal scoping, TVA has determined that there are two (2) reasonable alternatives to assess under the National Environmental Policy Act (NEPA): the No Action Alternative and the Action Alternative.

3.1 The No Action Alternative

Under the No Action Alternative, TVA would not provide InvestPrep funds to the MCIDA. 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 MCIDA were to obtain alternate funding and proceed with its current plans, the overall environmental consequences would be similar to those expected from implementing the Action Alterative. In the event the project is postponed, any environmental effects would be delayed for the duration of the postponement. If the project were cancelled, no direct environmental effects are anticipated, as environmental conditions on the site would remain essentially unchanged from the current conditions for the foreseeable future.

3.2 The Action Alternative

Under the Action Alterative, TVA would provide InvestPrep funds to the MCIDA for purchase of 103.3 acres of land and site improvements to the Springs Industrial Park. These improvements would include clearing of approximately 16.7 acres of trees and ground disturbance of 27.6 acres to construct a 20.0-acre dirt building pad within the Springs Industrial Park. Final site elevation is expected to be 549 feet above Mean Seal Level (MSL) once grading activities are complete. The Project Area is divided into two (2) distinct sections (Attachment 1, Figures 1-A and 1-B) totaling 27.6 acres to allow for development of the dirt building pad. The dirt building pad will be constructed in the western section and the eastern section will provide fill material.

An access road and other activities, funded by ARC, would be under construction or constructed between the two (2) sections of the Project Area prior to TVA issuing a NTP. Site activities required for the Action Alternative would occur over a short period of time, approximately eight (8) months, and would involve operation of an excavator, bulldozer, dump truck, or similar vehicles and heavy machinery. Cleared trees, stumps, vegetation, and debris would be cut and burned onsite. TVA's preferred alternative is the Action Alternative.

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

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

4.0 AFFECTED ENVIRONMENT AND ANTICIPATED IMPACTS

4.1 Site Description

The 103.3-acre Area of Potential Effect (APE), herein referred to as the Project Area, is located within the 1,200-acre Springs Industrial Park in Marshall County, MS, approximately 0.5 mile east of the intersection of U.S. Highway 78 and Landfill Road and 3.3 miles northwest of Holly Springs. The Project Area consists of pasture grasses with stands of mixed-deciduous and coniferous forest. No wetlands are located within the Project Area. Access is provided along the southern border of the Project Area from Landfill Road, approximately 0.5 mile east of the intersection with U.S. Highway 78 (Attachment 1, Figure 1-A). The Project Area is bordered by similar habitats consisting of a mix of agricultural fields of mainly pasture grasses and woodlands with localized areas of single-family residential, commercial, industrial, and public/semi-public uses.

The current land use within the Project Area consists of agricultural farmland (pasture/hay) with areas of mixed-deciduous and coniferous forest and is currently zoned as Industrial 1 and a Designated Opportunity Zone (MCIDA 2021). Access to the Springs Industrial Park is provided from State Highways 4, 7, 78, and 311 as well as Interstate 22 and there is a Burlington Northern-Santa Fe (BNSF) rail line outside the Project Area but onsite (MCIDA 2021). Direct access is provided from Landfill Road (also known as State Highway 4) along the southern boundary of the Project Area (Attachment 1, Figure 1-A). A wood framed barn is the only structure in the Project Area (TerraX 2018).

The Project Area is gently sloping with elevations varying between 515 feet to 580 feet. The area of the proposed building pad is relatively flat and currently at 550 feet. One stream with ephemeral and intermittent reaches (hereafter referred to as Stream-1), one ephemeral stream (hereafter referred to as Stream-2) and five (5) ponds (hereafter referred to as Pond-1, Pond-2, Pond-3, Pond-4, and Pond-5) are within the Project Area. Stormwater from the Project Area flows to the southwest towards unnamed tributaries that eventually flow into Dawson Creek. The five (5) man-made ponds do not have any surficial hydrologic inflows or outflows and are

isolated. Three (3) of the ponds (Pond-1, Pond-2, and Pond-3) are within the area proposed for earth disturbance activities related to the dirt building pad.

4.2 Impacts Evaluated

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

The Phase I Environmental Site Assessment did not identify any current or historical chemical, petroleum, or hazardous substance operations or storage areas or locations within the Project Area that would indicate the presence of solid or hazardous wastes (Headwaters 2018a). Therefore, the Proposed Action is not expected to result in significant impacts from the creation or disposal of solid and hazardous wastes.

The Federal Emergency Management Agency (FEMA) flood insurance rate map for Marshall County, Mississippi (panel number 28093C0165C, effective 7/4/2011) and the United States Geological Survey (USGS) 1:24,000 topographic map for Holly Springs, MS indicate the Project Area would be located outside identified 100-year floodplains, which would be consistent with Executive Order (EO) 11988. The Proposed Action would therefore have no significant impact on floodplains and their natural and beneficial values.

There would be no impact to land use and prime farmland as the Project Area is located within a property zoned as Industrial 1 and the Proposed Action would not result in a change to the zoned land use.

Onsite wetland determinations were conducted in 2018 for the parcel by Headwaters (Headwaters 2018b). Surveys were performed according to USACE standards (Environmental Laboratory 1987). The USACE wetland standards require documentation of hydrophytic vegetation (Reed 1997), hydric soil, and wetland hydrology. Broader definitions of wetlands, such as the one used by the USFWS (Cowardin et al. 1979), and as defined under 18 Code of Federal Register (CFR) Part 1318.40, were also considered in this review. The field survey concluded there are no wetlands present within the Project Area.

Natural areas include ecologically significant sites; federal, state, or local park lands; national or state forests; wilderness areas; scenic areas; wildlife management areas; recreational areas; greenways; trails; United States National Park Service (USNPS) Nationwide Rivers Inventory (NRI) segments; and Wild and Scenic Rivers (WSRs). Managed areas include lands held in public ownership that are managed by an entity (e.g., TVA, United States Department of Agriculture [USDA], United States Forest Service [USFS], State of Mississippi) to protect and maintain certain ecological and/or recreational features. A review of data from the TVA Regional Natural Heritage Database, USNPS NRI database (USNPS 2021), and WSR database (WSR 2021) indicated there are no natural or managed areas within or immediately adjacent (<0.10-mile) to the Project Area. Two (2) natural areas are located within three (3) miles of the proposed project. The Strawberry Plains Audubon Center is located 1.26 miles northeast of the Project Area and the North Mississippi Branch Experiment Station lies 2.75 miles northeast of the Project Area. Given that both facilities are located more than a mile from the Project Area, the Proposed Action is not expected to result in impacts to these resources.

There are no parks or outdoor recreation areas in the immediate vicinity of the proposed project. Since there are no parks or outdoor recreation areas, the Project Action would have no impact on outdoor recreation.

Resources that could potentially be impacted (negatively or positively) by implementing the Action Alternative include air quality and climate change, groundwater, surface water, 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 issues. Potential impacts to resources and impacts to the human environment resulting from implementation of the Action Alternative are discussed in detail below.

4.2.1 Air Quality and Climate Change

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

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

GHGs are gases that trap heat in the atmosphere. They are non-toxic and non-hazardous at normal ambient concentrations. At this time, there are no applicable ambient air quality standards or emission limits for GHGs under the CAA. GHGs occur in the atmosphere both naturally and resulting from human activities, such as the burning of fossil fuels. GHG emissions due to human activity are the main cause of increased atmospheric concentration of GHGs since the industrial age and are the primary contributor to climate change. The principal GHGs are carbon dioxide (CO_2), methane, and nitrous oxide.

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

Alternative would comply with the USEPA mobile source regulations in 40 CFR Part 85 for on-road engines and 40 CFR Part 89 for non-road engines. These regulations are designed to minimize emissions and require a maximum sulfur content in diesel fuel of 15 parts per million (ppm). In addition, the Action Alternative would comply with Mississippi Department of Environmental Quality (MDEQ) Air Emission Regulations for the Prevention, Abatement, and Control of Air Contaminants, 11 Mississippi Administrative Code, Part 2, Chapter 1. Rule 1.3 (D), (1).

Fugitive dust is a source of respirable airborne PM, including PM_{10} and $PM_{2.5}$, which could result from ground disturbances such as land clearing, grading, excavation, and travel on unpaved roads. The amount of dust generated is a function of the activity, silt and moisture content of the soil, wind speed, frequency of precipitation, vehicle traffic, vehicle types, and roadway characteristics. The MCIDA, or its contractors, would be expected to comply with MDEQ Air Emission Regulations for the Prevention, Abatement, and Control of Air Contaminants, 11 Mississippi Administrative Code, Part 2, Chapter 1. Rule 1.3 (C), (2), which requires reasonable precautions to prevent PM from becoming airborne. Such reasonable precautions include, but are not limited to 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, including wind, ambient temperature, composition and moisture content of the debris burned, and compactness of the pile. In general, the relatively low temperatures associated with open burning increase emissions of NO_X, CO, VOCs, PM_{10}, $PM_{2.5}$, GHGs, and HAPs. The MCIDA, or its contractors, would be subject to local burn permits and the requirements in MDEQ Air Emission Regulations for the Prevention, Abatement, and Control of Air Contaminants, 11 Mississippi Administrative Code, Part 2, Chapter 1. Rule 1.3 (G), which provides open burning prohibitions, exceptions, and certification requirements.

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

Concerning climate change, trees, like other green plants, are carbon sinks that use photosynthesis to convert CO_2 into sugar, cellulose, and other carbon-containing carbohydrates that they use for food and growth. Carbon sequestration is the process by which carbon sinks remove CO_2 from the atmosphere. Although forests do release some CO_2 from natural processes such as decay and respiration, a healthy forest typically stores carbon at a greater rate than it releases carbon. The clearing of approximately 16.7 acres of land containing trees for the Action Alternative would result in a minor loss of carbon sequestration capacity in the area since evergreen and deciduous forest habitat is common and well represented throughout the region and in the immediate vicinity of the Project Area.

Under the No Action Alternative, if the MCIDA were able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, similar emissions associated from equipment, ground disturbances, and burning would occur, resulting in similar air quality and climate change impacts as those described above for the Action Alternative. If the MCIDA 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 East Gulf Coastal Plain Section of the Coastal Plain Province (USNPS 2017). The East Gulf Coastal Plain Section extends from Eastern Louisiana and includes parts of Mississippi, Alabama, western Tennessee, western Georgia and the Florida panhandle. The East Gulf Coastal Plain Section in the vicinity of the Project Area is characterized by poorly unconsolidated to consolidated clastic sedimentary rocks consisting of sands, clay, limestone, chalk and marl. (USGS 1995a, USGS 2021).

In northern Mississippi, the principal aquifers in the Coastal Plain Province consist of sedimentary rocks, sand and clay that are primarily Eocene, Paleocene and Upper Cretaceous in age (USGS 2021). The local aquifer systems underlying the Project Area include: (in descending order) the Pearl River aquifer (that outcrops in this area and may not be really extensive) also referred to as the Claiborne aquifer, Black Warrior River confining unit, intersected by the McNairy Sand Member of the McNairy-Nacatoch aquifer (begins to pinch out in this area) and the Black Warrior River aquifer (USGS 1996). The Pearl River aquifer unit consists of consolidated to unconsolidated sand, gravel, sandstone and limited limestone beds. This unit is part of the larger Mississippi Embayment that extends to Texas (USGS 1996). The Black Warrior River confining unit consists of chalk, shale and clay. The McNairy Sand Member of the McNairy-Nacatoch aquifer consists of sandy limestone, clay and glauconitic sand (USGS 2021). The Black Warrior River aquifer consists of glauconitic quartz sand that is loosely consolidated, and is fine to medium grained (USGS 1996). The Pearl River water quality varies from 0 milligrams per liter (mg/L) to 500 mg/L of dissolved solids (USGS 1995b). Water quality in the McNairy Sand Member ranges from 500 mg/L to 2,000 mg/L for dissolved solid concentrations and the Black Warrior River aquifer contains dissolved solid concentrations of 200 mg/L to 1,000 mg/L (USGS 1995b, USGS 1995c). Recharge in the Pearl River, McNairy Sand Member and the Black Warrior River aquifers occurs primarily along areas where the aquifer outcrops and groundwater flow is generally from topographic highs and westward in the Pearl River and McNairy Sand Member; while flow in the Black Warrior River aquifer migrates down gradient into the confined portions of the aquifer and discharges into rivers that have deeply eroded and exposed the aquifer. (USGS 1995b, USGS 1995c).

Implementation of the Action Alternative would result in ground disturbance during construction activities. Tree clearing would result in minor ground disturbance at shallow depths. Site grading and compaction for development of a dirt building pad would result in greater ground disturbance at moderate depths. Ground disturbances may intercept surficial aquifers but are not anticipated to be at depths that would alter public groundwater supplies (typically 0 to 1,000 feet beneath the land surface [USGS 1996]) or result in significant impacts to groundwater resources. Shallow aquifers could sustain minor impacts from changes in overland water flow and recharge caused by clearing, grading and construction of a dirt building pad 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 MCIDA, or its contractors, would conduct operations involving chemical or fuel

storage or resupply and equipment and vehicle servicing with care to avoid leakage, spillage, and subsequent ground water contamination.

Under the No Action Alternative, if the MCIDA were able to secure the funding for the proposed TVA-funded actions described in this EA, similar ground disturbance would occur, resulting in similar impacts to groundwater resources as those described above for the Action Alternative. If the MCIDA were not able to secure the funding for the actions described in this EA, ground disturbance associated with tree clearing and constructing/compacting of a building pad would not occur and there would be no impacts to groundwater resources.

4.2.3 Soil Erosion and Surface Water

The Project Area is located within the Southeastern Plains ecoregion (USNPS 2017). This Project Area drains to streams within the Upper Coldwater River (0803020401) 10-digit hydrologic unit code (HUC) watershed. A November 2020 field review conducted by qualified wetland and waterbody experts documented two (2) streams (Stream-1 and Stream-2) and five (5) ponds (Pond-1, Pond-2, Pond-3, Pond-4, and Pond-5) in the Project Area (Headwaters 2018b). Additional streams, wetlands, and ponds were found within the Springs Industrial Park (Headwaters 2018b). In 2018, the USACE conducted a jurisdictional determination for the Springs Industrial Park (USACE 2018). The USACE jurisdictional determination noted that Stream-1 and Stream-2 were jurisdictional, while the five (5) ponds were non-jurisdictional stock ponds (USACE 2018). No work is proposed within or adjacent to Stream-1, Stream-2, Pond-4, or Pond-5. The remaining three (3) ponds (Pond-1, Pond-2, and Pond-3) are within the area proposed for earth disturbance activities to support the construction of the dirt-building pad. No other aquatic features are within the area of proposed earth disturbance activities.

Precipitation in the general area of the proposed project averages about 57.5 inches per year. The wettest month is May with approximately 6.1 inches of precipitation, and the driest month is August with 3.3 inches. The average annual air temperature ranges from an annual average of 46 degrees Fahrenheit to 72 degrees Fahrenheit (US Climate Data, 2020). Stream flow varies with rainfall and averages about 18.88 inches of runoff per year, i.e., approximately 1.39 cubic feet per second, per square mile of drainage area (USGS 2008).

The federal Clean Water Act (CWA) requires all states to identify all waters where required pollution controls are not sufficient to attain or maintain applicable water quality standards and to establish priorities for the development of limits based on the severity of the pollution and the sensitivity of the established uses of those waters. States are required to submit reports to the USEPA. The term “303(d) list” refers to the list of impaired and threatened streams and waterbodies identified by the state. There are no streams in the vicinity of the Project Area identified on the most recent 303(d) list. Table 4-1 provides a listing of local streams with their state (MDEQ 2014) designated uses.

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

Streams	Use Classification[1]				
	FW	REC	PWS	SH	ES
Dawson Creek[2]	X				

1 Codes: FW = Fish and Wildlife; REC = Recreation; PWS = Public Water Supply; SH = Shellfish Harvesting; ES = Ephemeral Stream

2 Not in Project Area, shown for river network path

Although streams, wet weather conveyances, and ponds were identified within the Project Area, none are jurisdictional. A dredge and fill authorization from the USACE under Section 404 of the Clean Water Act (CWA) and Section 401 Water Quality Certification from the MDEQ would not be required for the 0.59 acre of impacts to the three (3) ponds (Pond-1, Pond-2, and Pond-3) because they were determined to be non-jurisdictional.

Should the Action Alternative be implemented, construction activities have the potential to temporarily affect surface water via stormwater runoff. Soil erosion and sedimentation can clog small streams and threaten aquatic life. It is expected that MCIDA, or its contractors, would comply with all appropriate federal, state and local permit requirements and would follow all appropriate BMPs. 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. Because the project would disturb greater than five (5) acres, coverage under the MDEQ large construction stormwater general permit would be required. This permit also requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP would identify specific BMPs to address construction-related activities that would be adopted to minimize stormwater impacts. Additionally, as provided for in the permit, BMPs, as described in the Mississippi Handbook for Erosion Control, Sediment Control, and Stormwater Management on Construction Sites and Urban Areas (MDEQ 2011) would be used to avoid contamination of surface water in the Project Area.

Impervious buildings and infrastructure prevent rain from percolating through the soil and result in additional runoff of water and pollutants into storm drains, ditches, and streams. The project as currently designed would not be expected to increase impervious flows within or in the vicinity of the Springs Industrial Park. In accordance with the MDEQ large construction stormwater general permit, all flows would need to be properly treated with either implementation of appropriate BMPs or engineering a discharge drainage system that could handle any increased flows prior to discharge into the outfall(s).

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

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

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

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

4.2.4 Aquatic Ecology

4.2.4.1 Aquatic Species

As described above, according to the field survey conducted in November 2020, two (2) streams (Stream-1 and Stream-2) and five (5) Ponds (Pond-1, Pond-2, Pond-3, Pond-4, and Pond-5) were documented within the Project Area (Headwaters 2018b). Temporary effects to surface waters within and near the vicinity of the Project Area because of stormwater runoff during construction activities are described above.

Pond-1, Pond-2, and Pond-3 would be drained and then graded or filled as part of the Action Alternative. The aquatic communities within the ponds would be directly and permanently impacted from their removal. The aquatic communities within the ponds are expected to be lacking in diversity and of low quality due to each pond's isolation from surface water inflows and outflows and lack of littoral or aquatic vegetation. These aquatic ecosystems are not unique to the surrounding area with other similar ponds occurring on the Springs Industrial Park and surrounding properties.

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

4.2.4.2 Threatened and Endangered Species

A query of the TVA Regional Natural Heritage Database, conducted November 16, 2020, for records of listed aquatic animal species did not document any federal or state-listed species within the Upper Coldwater River (0803020401) 10-digit HUC watershed encompassing the proposed Project Area.

The aquatic ecosystem within the ponds designated to be filled do not provide essential habitat for federal or state-listed aquatic species. Removal of Pond-1, Pond-2, and Pond-3 should have no impact on federal or state-listed aquatic species.

Under the No Action Alternative, if the MCIDA were able to secure funding for the proposed TVA-funded actions described in this EA from outside sources, similar impacts to federal or state-listed aquatic species could occur as described above for the Action Alternative. If the MCIDA were not able to secure the funding for the actions described in this EA, the proposed disturbances would not occur and existing site conditions would likely be maintained also resulting in no impacts to federal or state-listed aquatic species.

4.2.5 Terrestrial Zoology

4.2.5.1 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 pastureland habitats and forested areas. The forested areas consist of deciduous and evergreen trees. Each of the varying land cover types offer habitat for species common to the region, both seasonal individuals and permanent residents.

Pastureland habitats consisting of open fields for cattle grazing 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*), eastern towhee (*Piplo erythrophthalmus*), savannah sparrow (*Passerculus sandwichensis*), gray catbird (*Dumetella carolinensis*), eastern meadowlark (*Sturnella magna*), cedar waxwing (*Bonbycilla cedrorum*), and mourning dove (*Zenaida macroura*) (National Geographic 2002, Sibley 2003). Bobcat (*Lynx rufus*), coyote (*Canis latrans*), eastern cottontail (*Sylvilagus floridanus*), cotton mouse (*Peromyscus gossypinus*), 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 American toad (*Bufo* [*Anaxyrus*] *americanus*) 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 long-tailed skipper (*Urbanus proteus*), northern cloudy wing (*Thorybes pylades*), and red-spotted purple (*Limenitis arthemis*) may occur in this region (Brock and Kaufman 2003).

Deciduous forests in the Project Area provide habitat for an array of terrestrial animal species. Birds typical of this habitat include downy woodpecker (*Picoides pubescens*), eastern screech-owl (*Megascops asio*), red-tailed hawk (*Buteo jamaicensis*), white-breasted nuthatch (*Sitta carolinensis*), and yellow-billed cuckoo (*Coccyzus americanus*) (National Geographic 2002). This area also provides foraging and roosting habitat for several species of bat, particularly in areas where the forest understory is more open. Bat species likely found within this habitat are big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), evening bat (*Nycticeius humeralis*), hoary bat (*Lasiurus cinereus*), Rafinesque's big-eared bat (*Corynorhinus rafinesquii*), and silver-haired bat (*Lasionycteris noctivagans*). Coyote (*Canis latrans*), eastern chipmunk (*Tamias striatus*), eastern woodrat (*Neotoma floridana*), North American deer mouse (*Peromyscus maniculatus*), woodland vole (*Microtus pinetorum*), nine-banded armadillo (*Dasypus novemcinctus*) 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 tree frog (*Hyla chrysoscelis*), spotted salamander (*Ambystoma maculatum*), northern slimy salamander (*Plethodon glutinosus*), southern leopard frog (*Rana* [*Lithobates*] *sphenocephala*), and two-lined salamander (*Eurycea cirrigera*) (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 such as spring peeper (*Pseudacris crucifer*) (Bailey et al. 2006). Reptiles potentially present include eastern fence lizard (*Sceloporus undulatus*) and rough green snake (*Opheodrys aestivus*) (Conant and Collins 1998, Dorcas and Gibbons 2005).

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 (3) miles of the Project Area and the field survey did not record new wading bird colonies or osprey nests. Review of the USFWS's Information for Planning and Consultation (IPaC) database resulted in the identification of nine (9) migratory bird species of conservation concern with the potential to occur in the Project Area. The American kestrel (*Falco sparverius paulus*), bald eagle (*Haliaeetus leucocephalus*), Kentucky warbler (*Oporonis formosus*), lesser yellowlegs (*Tringa flavipes*), prairie warbler (*Dendroica discolor*), prothonotary warbler (*Protonotaria citrea*), red-headed woodpecker (*Melanerpes erythrocephalus*), rusty blackbird (*Euphagus carolinus*), and wood thrush.

The Action Alternative includes clearing of vegetation including trees (approximately 16.7 acres) in the Project Area and other earth disturbance activities (approximately 27.6 acres total) to construct the dirt building pad. Proposed actions would remove wildlife habitat, resulting in the displacement of wildlife (primarily common, habituated species) currently using the Project Area. Direct effects to some individuals may occur, particularly if those individuals are immobile during the time of habitat removal. This could be the case if activities took place during winter or breeding/nesting seasons when animals burrow underground and/or are too young to flee. Habitat removal likely would disperse mobile wildlife into surrounding areas in an attempt to find new food sources, shelter sources, and to re-establish territories. Use of applicable BMPs would minimize potential impacts to stream banks and water quality in and adjacent to the Project Area. Due to the relatively small amount of habitat to be impacted, the lower quality of the habitat across most of the Project Area, adherence to BMPs, and the amount of similarly suitable habitat in areas in the surrounding landscape, populations of common wildlife species and populations of migratory birds would not be impacted by the Action Alternative. Following the implementation of the Action Alternative, those species of animal that are able to use developed areas would likely return to the Project Area.

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

4.2.5.2 Threatened and Endangered Species

A review of the TVA Regional Natural Heritage Database in December 2020 indicated that there are no known records of state or federally listed terrestrial species reported within three (3) miles of the Project Area. Based on a review of the USFWS IPaC database, three (3) federally listed species, Indiana bat (*Myotis sodalis*), northern long-eared bat (NLEB) (*Myotis septentrionalis*) and wood stork (*Mycteria americana*) have the potential to exist in Marshall County, MS and in the Project Area (Table 4-2).

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

Common Name	Scientific Name	Federal Status[2]	State Status (Rank)[3]
Birds			
Wood stork[4]	*Mycteria Americana*	T	E (S2N)
Mammals			
Indiana bat[4]	*Myotis sodalis*	E	E (S1B)
Northern long-eared bat[4]	*Myotis septentrionalis*	T	NL (SH)

[1] Source: TVA Regional Natural Heritage Database / Mississippi Natural Heritage Program / USFWS IPaC database (https://ecos.fws.gov/ipac/), extracted 01/12/2021.

[2] Status Codes: E = Endangered; T = Threatened; NL= Not Listed.

[3] State Ranks: S2N = Imperial, Non-Breeding Population; S1B = Critically Imperiled, Breeding Population; SH = Possibly Extirpated

[4] Federally listed species with the potential to occur in Marshall County, though no records are known to date.

Wood storks are highly colonial and require wetland habitat for nesting and foraging. Nests are frequently located in the upper branches of large cypress trees or in mangroves on islands (USFWS 2020b). Wood storks feed on small fish and invertebrates in shallow, fresh waterbodies and wetlands. There are no known records of wood stork within Marshall County, MS. During the December 2020 field review, no wood storks and no wood stork rookeries were documented within the Project Area. Marginal foraging habitat for wood stork exists within the Project Area along the shoreline of the ponds identified in the field study.

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 2020a).

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 (3) inches in diameter). Roost selection by the NLEB is similar to that of Indiana bat; however, NLEBs are thought to be more opportunistic in roost site selection. This species also roosts in abandoned buildings and under bridges. NLEBs emerge at dusk to forage below the canopy of mature forests on hillsides and roads, and occasionally over forest clearings and along riparian areas (USFWS 2014).

Assessment of the Project Area for presence of summer roosting habitat for Indiana bat and NLEB followed federal guidance (USFWS 2020a). All of the 16.7 acres of forest proposed for removal may provide suitable summer roosting habitat for these species. A total of 165 potential roost trees (PRTs) were identified within the Project Area. Of the 165 PRTs identified, 57 are potential primary roost trees that contain moderate or high quality roosting characteristics, while the remaining 108 are potential secondary roost trees. No caves or winter bat habitat was observed within the Project Area. Potential foraging habitat exists within the Project Area. Foraging habitat for bat species occurs over, alongside, and through the forest fragments, above the ponds, above the streams and wet-weather conveyances in the Project Area and throughout the Springs Industrial Park

There are no known records of wood stork in Marshall County, MS and none were observed during field surveys. Habitats favored by wood storks, stream and pond edge communities, would not be impacted by proposed earth disturbance for the dirt building pad. Wood storks would not be impacted by proposed actions.

No caves or other hibernacula for Indiana bat or NLEB exist in the Project Area or would be impacted by the Action Alternative. Foraging habitat for both species occurs over, alongside, and through the forest fragments, above the ponds, above the streams and wet-weather conveyances in the Project Area and throughout the Springs Industrial Park. Tree clearing would remove foraging habitat. Field review determined that the 16.7 acres of forest proposed for removal all offer suitable summer roosting habitat for Indiana bat and NLEB.

Several activities associated with the Action Alternative, including tree clearing, were addressed in TVA's programmatic consultation with the USFWS on routine actions and federally listed bats in accordance with the federal Endangered Species Act (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 beginning 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 Indiana bat or NLEB.

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

4.2.6 Botany

Field surveys of the Project Area were conducted in October 2020 and focused on documenting plant communities, infestations of invasive plants, and possible threatened and endangered

plant populations. Using the National Vegetation Classification System (Grossman et al. 1998), vegetation types observed during field surveys can be categorized as a combination of deciduous forest and herbaceous vegetation. No forested areas in the proposed Project Area had structural characteristics indicative of old growth forest stands (Leverett 1996). All plant communities observed within the project area are common and well represented across Mississippi.

4.2.6.1 Vegetation

Herbaceous vegetation is characterized by greater than 75 percent cover of forbs and grasses and less than 25 percent cover of other types of vegetation. Mowed and unmowed fields and recently grazed pasture account for about a quarter of the vegetation in the Project Area. Most of these areas are dominated by plants indicative of early successional habitats and are comprised of mainly native vegetation. Common herbaceous species include broomsedge (*Andropogon virginicus*), dallis grass (*Paspalum dilatatum*), dog fennel (*Eupatorium capillifolium*), eastern blackberry (*Rubus pensilvanicus*), late flowering thoroughwort (*Eupatorium serotinum*), and tall goldenrod (*Solidago altissima*).

Deciduous forests, stands where deciduous tree species account for more than 75 percent of the canopy cover, predominate in the Project Area. Much of the forested area within the Project Area is mature and yet relatively disturbed, with trees ranging from 6-inches to 3-feet diameter breast height (dbh); average dbh is about 1.5-feet. Common canopy trees include black cherry (*Prunus serotina*), blackjack oak (*Quercus marilandica*), black tupelo (*Nyssa sylvatica*), mockernut hickory (*Carya tomentosa*), osage orange (*Maclura pomifera*), post oak (*Q. stellata*), red maple (*Acer rubrum*), southern red oak (*Q. falcata*), sweetgum (*Liquadambar straciflua*), tulip poplar (*Liriodendron tulipifera*), white oak (*Q. alba*), and winged elm (*Ulmus alata*) along with the scattered evergreens eastern red cedar (*Juniperus virginiana*) and loblolly pine (*Pinus taeda*). The understory consists of American holly (*Ilex opaca*), Chinese privet (*Ligustrum sinense*), farkleberry (*Vaccinium arboreum*), hardy orange (*Poncirus trifoliata*), multiflora rose (*Rosa multiflora*), possum haw (*Ilex decidua* var. *decidua*), and red mulberry (*Morus rubra*). The herbaceous layer is somewhat sparse and includes Christmas fern (*Polystichum acrostichoides*), devil's grandmother (*Elephantopus tomentosa*), dissected grapefern (*Sceptridium dissectum*), Japanese stiltgrass (*Microstegium vimineum*), and longleaf woodoats (*Chasmanthium sessiliflorum*). Woody vines include Japanese honeysuckle (*Lonicera japoniaca*), muscadine (*Muscadinia rotundifolia*), poison ivy (*Toxicodendron radicans*), roundleaf greenbrier (*Smilax rotundifolia*), trumpet vine (*Campsis radicans*), and Virginia creeper (*Parthenocissus quinquefolia*).

Overall, the Project Area does not support high quality plant communities with significant conservation value. Adoption of this alternative would result in complete disturbance across at least 27.6 acres of the site including 16.7 acres of trees that would be removed. The area would be graded and all vegetation would be removed. Impacts to vegetation may be permanent, but the vegetation found on site is comprised of plants that have little conservation value.

Under the No Action Alternative, the Project Area would remain in its current condition and no work would occur unless alternative funding was secured by the MCIDA. The Project Area would continue to be dominated by non-native and early successional species indicative of disturbed habitats. Any changes to vegetation onsite would be the result of other natural or

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

4.2.6.2 Threatened and Endangered Plant Species

An October 2020 query of the TVA Regional Natural Heritage database indicates that four (4) state-listed and no federally listed plant species have been previously reported from within a five-mile vicinity of the Project Area (Table 4-3). One federally endangered plant species, whorled sunflower, has been previously reported from Marshall County, MS.

Table 4-3 Plant Species of Conservation Concern or Federally Listed Previously Reported Within 5 Miles of the Project Area[1]

Common Name	Scientific Name	Federal Status[2]	State Status (Rank)[3]
Plants			
Whorled Sunflower[4]	*Helianthus verticillatus*	E	SLNS (S1)
Butternut	*Juglans cinerea*	NL	SLNS (S2)
Lovage	*Ligusticum canadense*	NL	SLNS (S1)
Purple fringeless orchid	*Platanthera peramoena*	NL	SLNS (S2S3)
Downy yellow violet	*Viola pubescens*	NL	SLNS (S1)

[1] Source: TVA and Tennessee Natural Heritage Database, queried October 2020

[2] Status Codes: E = Endangered; NL = Not Listed

[3] State Ranks: SLNS = State Listed, no status assigned; S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S#S# = Denotes a range of ranks because the exact rarity of the element is uncertain (e.g., S1S2)

[4] Federally listed species previously reported from Marshall County, MS, but not within five (5) miles of the project area.

Field botanical surveys conducted in October 2020 indicate that no habitat for state or federally listed plant species occurs within the Project Area. The majority of the Project Area is forested and is populated primarily with common tree species. No designated critical habitat for plants occurs in the Project Area.

Adoption of the Action Alternative would not impact state or federally listed plant species since no rare species were found during the field survey where work would occur. The Action Alternative would result in clearing of vegetation within the Project Area, but these disturbances would have no impact on state or federally listed plants or designated critical habitat.

Under the No Action Alternative, there would be no impact to state or federally listed plant species because no habitat capable of supporting listed species occurs within the Project Area. Changes to local plant communities resulting from natural ecological processes and human-related disturbance would continue to occur, but the changes would not be the result of the Action Alternative. Implementation of the No Action Alternative would not impact state or federally listed plant species or designated critical habitat.

4.2.7 Archaeology and Historic Structures and Sites

Historic and cultural resources, including archaeological resources, are protected under various federal laws, including: the Archaeological Resources Protection Act, the Native American Graves Protection and Repatriation Act, and the National Historic Preservation Act (NHPA).

Section 106 of the NHPA requires federal agencies to consult with the respective State Historic Preservation Officer (SHPO) when proposed federal actions could affect these resources.

The Project Area (or APE) consists of the 103.3 acres that would be directly impacted by the Action Alternative. The Project Area was completely surveyed as part of the larger (1,174 acre) due-diligence Phase I survey in 2018 (TerraX 2018). Two (2) archaeological sites (22MR724, 22MR725), consisting of a historic artifact scatter, house site, and one isolated find (IF1), consisting of historic brick and stoneware fragments, were recorded inside the Project Area. All three resources were recommended as ineligible for the National Register of Historic Places (NRHP). Although lands within the original 1,174-acre survey area were reported to be associated with a historic Chickasaw presence, neither 22MR724 nor 22MR725 are believed to have this association (TerraX 2018). The architectural survey identified only one extant structure (Structure 1) present in the Project Area: a double crib wood frame barn that appears to show multiple expedient repair episodes. The structure has no association with historic events or persons important in history, and the barn's integrity of setting, materials, workmanship, feeling, and association is compromised because of the replacement materials and the overgrown and abandoned environment. The barn is recommended as not eligible for NRHP. An additional three (3) structures were identified within the 0.5-mile viewshed of the Project Area. All of these structures were found to be ineligible for NRHP due to their abandoned, dilapidated state, multiple episodes of ramshackle repair, and an overall lack of integrity. The survey also identified the Duke-Walker Cemetery.

The Duke-Walker Cemetery is located outside the southwest corner of the Project Area and is a heavily wooded, fenced-in location. There are 18 gravestones but twice that many depressions that may represent burials. The earliest marked headstone is dated 1848 with the remainder dating primarily from the 1930s to 1960s. Based on background research, this appears to be an African-American cemetery. The cemetery was determined not eligible for the NRHP, but should be protected from any future ground-disturbing activities. TVA recommends at least a 50-meter buffer around the known limits of the cemetery for any nearby future projects, with the current project avoiding any ground disturbance within 50 meters of the cemetery boundary and ensuring that the buffer is visible on any project construction plans.

Adjacent to the southwest corner of the Project Area is the BNSF Railroad. This railroad started as the Memphis Selma & Brunswick Railroad and a line between Holly Springs and Memphis was in use by 1885. The railroad is separated from the Project Area by upland landforms and dense foliage. Although part of the railroad is adjacent to a portion of the currently proposed Project, the overall setting of the railroad would not be compromised by the proposed action, and would not prevent the railroad from being eligible for the NRHP under Criterion A. The Action Alternative would therefore have no adverse effect on the railroad.

TVA consulted with the MDAH in a letter dated January 14, 2021 regarding TVA's findings and recommendations. In a letter dated January 25, 2021, the MDAH concurred that no historic resources should be effected within the Project Area, given that the 50 meter buffer around the Duke-Walker Cemetery would be maintained. (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. The Muscogee (Creek) Nation responded on February 23, 2021 and concurred there should be no effects to any known historic properties, but requested work to cease and to be notified (along with other

appropriate agencies) if inadvertent discoveries occur during construction. No other responses from federally recognized Indian tribes have been received.

Similar to the Action Alternative, under the No Action Alternative, if the MCIDA 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 MCIDA 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.

4.2.8 Visual

The Project Area consists mainly of forested land with some open areas. About 16.7 acres of forested land would be cleared and 27.6 acres would be disturbed during construction of the dirt building pad. The Project Area is broadly bordered by forested land to the east, Landfill Road and forested land to the south, forested and open land to the west and forested and open land to the north.

The Project Area is north of Landfill Road. There would be about 90 feet of trees between the Project Area and Landfill Road that would provide a visual screen between the Project Area and the road. The closest residence is about 0.20 mile south of the Project Area and there is a business and several other residences about 0.25 mile southwest of the Project. The land between the Project Area and these residences is dominated by forested land.

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. Drivers along Landfill Road would not have direct views of the Project Area due to the line of trees along the southern portion that would screen their view. Similarly, the residences and businesses within 0.25 mile of the Project Area would be screened by the presence of dense forested land. Implementation of the Action Alternative would result in a minor decrease in visual quality for residents in the viewshed.

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

4.2.9 Noise

Existing ambient noise levels, or background noise levels, are the current sounds from natural and artificial sources at receptors. The magnitude and frequency of background noise at any given location may vary considerably over the course of a day or night and throughout the year. The variations are caused in part by weather conditions, seasonal vegetative cover, and human activity. Existing sources of noise in the vicinity of the Project Area are primarily associated with traffic along Landfill Road, U.S. Highway 78 (0.5 mile west-southwest), 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 and would occur over approximately eight (8) months. Noise levels 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 homes located within 0.25 mile 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 both Landfill Road and U.S. Highway 78. Thus, noise-related impacts resulting from implementation of the Action Alternative are anticipated to be temporary and minor.

Under the No Action Alternative, if the MCIDA were able to secure the funding for the proposed TVA-funded actions described in this EA from outside sources, the proposed actions would occur, resulting in similar noise-related impacts as described above for the Action Alternative. If the MCIDA were not able to secure the funding for the actions described in this EA, the proposed actions would not occur and existing site conditions would likely be maintained resulting in no noise-related impacts.

4.2.10 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 (Mississippi), county (Marshall), and locality (Holly Springs, MS) (Table 4-4). Details of the Action Alternative were then used to evaluate likely effects on existing socioeconomic resources. The demographics and income of the host county and locality were considered, relative to the demographics and income levels at the state level, to identify the potential for a disproportionate and adverse impact on minority and low-income populations, which is commonly referred to as an evaluation of Environmental Justice.

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

	Mississippi	Marshall County	Holly Springs, MS
Population [1]			
April 2010 Population	2,967,297	37,144	7,699
Most Recent Population Estimate (July 2019)	2,976,149	35,294	7,798
Population Change: April 2010 to July 2019	0.3%	-5.0%	-0.3%
Population per Square Mile	63.2	52.6	602.6
Demographics [1]			
White Alone, not Hispanic or Latino	56.4%	47.9%	17.4%
Black or African American Alone	37.8%	47.1%	80.9%
American Indian and Alaska Native Alone	0.6%	0.4%	0.3%
Asian Alone	1.1%	0.3%	0.0%
Native Hawaiian and Other Pacific Islander Alone	0.1%	0.1%	0.0%
Two (2) or More Races	1.3%	1.1%	0.7%
Hispanic or Latino (of any race)	3.4%	4.0%	0.9%
Income [1]			
Median Household Income (2019)	$45,081	$42,233	$27,190
Per Capita Income (2019)	$24,369	$21,853	$13,530
Percent with Income Below the Poverty Level	19.6%	20.3%	31.9%
Not Seasonally Adjusted Employment: November 2020 [2]			
Labor Force	1,276,813	14,602	N/A
Employed	1,201,102	13,758	N/A
Unemployed	75,711	844	N/A
Unemployment Rate (%)	5.9%	5.8%	N/A

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 Mississippi resident, the residents of Marshall County live at a slightly lower population density, and have a negative or declining population growth. Relative to the average Mississippi resident, the residents of Holly Springs, MS live at much greater population density, but have a negative or declining population growth.

- Relative to the average Mississippi resident, the residents of Marshall County are more likely to self-identify as a minority race or ethnicity. Relative to the average Mississippi resident, the residents of Holly Springs, MS are much more likely to self-identify as a minority race or ethnicity.
- Median household income in Mississippi is higher than in Marshall County and much higher than in Holly Springs, MS. Similarly, per capita income in Mississippi is higher than that for Marshall County and much higher than that for Holly Springs, MS. Relative to Mississippi as a whole, the percent of population with income below the poverty line is higher in Marshall County and much higher in Holly Springs, MS.
- The unemployment rate for Marshall County is slightly lower than the statewide unemployment rate for Mississippi.

During review, a subdivision in close proximity to the Project Area was identified (within 0.5 mile to the southwest). Using USEPA's EJScreen Tool, certain demographic characteristics for this area were identified. Relative to the State of Mississippi, this neighborhood has a higher 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 tree clearing and burning along with grading of a dirt-building pad. This effort would require a small workforce, likely drawn from existing contractors working on similar projects in the region. According to MCIDA's preferred timeline, these activities would reach completion in December 2021. Implementation of the Action Alternative is not anticipated to materially impact the local economy or workforce. Only minor and temporary socioeconomic impacts from construction activities 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 potential increase in employment resulting from the Action Alternative.

Under the No Action Alternative, if the MCIDA 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 MCIDA were not able to secure the funding for the action, the economic activity and socioeconomic changes would not occur.

4.2.11 Transportation

The Project Area would be accessed during construction activities from Landfill Road. The site entrances would be located on the southern side of the Project Area, and would require installation of an improved entrance from Landfill Road, funded by ARC.

Landfill Road is a local road that provides access to a water treatment plant and is bounded by rural undeveloped property to the north and south of the Project Area. Landfill Road is paved along its length, is sufficiently wide for a single lane of traffic in each direction, and is defined as a major collector by the Functional Classification System for Marshall County MS (Mississippi Department of Transportation [MDOT] 2015a). Based on preliminary review of Google Streetview images (recorded June 2013), and verified during the December 2020 field review, the road is in good condition with wide grassy verges. The site entrance location and configuration should consider safe sight distances and other safety concerns for the traffic that would enter Landfill Road from the property. Necessary precautions would be taken during

mobilization and de-mobilization such as reduced speed in areas of poor visibility or poor road condition, with other precautions such as a flagman or traffic control to be considered if required. Landfill Road provides access to Mt Pleasant Road (Mississippi Highway 311) to the east, and provides access to Mississippi Highway 178 (MS 178) and U.S. Highway 78/ Interstate 22 (US 78) to the southwest.

MS 311 provides access to multiple commercial and residential properties to the north and south. Based on a review of Google Streetview images (recorded June 2016) and verified during the December 2020 field review, the road is in good condition, has wide vegetated verges, is sufficiently wide for a single lane of traffic in each direction, and provides a dedicated merging lane for access to Landfill Road. MS 311 is defined as a minor arterial by the Functional Classification System for Holly Springs Urban Area Mississippi, Marshall County (MDOT 2015b). It is expected that normal care would be taken by workers entering MS 311 with regards to traffic safety.

MS 178 provides access to multiple commercial and residential properties to the north and south. Based on a review of Google Streetview images (recorded October 2007, June 2013, and March 2014), and verified during the December 2020 field review, the road is in good condition, has wide vegetated verges, is sufficiently wide for a single lane of traffic in each direction, and provides access ramps and center turning lanes for access to Landfill Road. MS 178 is defined as a minor arterial by the Functional Classification System for Holly Springs Urban Area Mississippi, Marshall County (MDOT 2015a). It is expected that normal care would be taken by workers entering MS 178 with regards to traffic safety.

US 78 provides access to multiple commercial and residential properties to the north and south. Based on a review of Google Streetview images (recorded June and November 2019), and verified during the December 2020 field review, the road is in good condition and has wide, vegetated verges. It is expected that normal care would be taken by workers entering US 78 with regards to traffic safety.

Based on a review of MDOT historical traffic data (MDOT 2019) the nearest traffic count stations are located on Landfill Road, MS 178, and the entrance and exit ramps of US 78 and MS 178. The 2019 annual average daily traffic count (AADT) for the relevant stations are presented in Table 4-5 below.

Table 4-5 Mississippi Department of Transportation Traffic Count Data for the Project Area[1]

Route Description	Station ID	Distance from Project Area (miles)	Year	AADT
Landfill Road	470126	0.44	2019	4,300
MS 178	470130	0.56	2019	3,400
MS 178N to Landfill Road	478099	0.29	2019	1,000
MS 178S to Landfill Road	478100	0.43	2019	260
US 78	470125	2.95	2019	29,000
US 78N to Landfill Road	478043	0.68	2019	410

Route Description	Station ID	Distance from Project Area (miles)	Year	AADT
Landfill Road to US 78N	478040	0.68	2019	1,500
US 78S to Landfill Road	478041	0.80	2019	1,700
Landfill Road to US 78S	478042	0.80	2019	530
MS 311	476002	2.48	2019	1,400

[1] Source: Mississippi Department of Transportation / Travel / Traffic Volume (https://mdot.ms.gov/applications/trafficcounters/), extracted 03/01/2021.

In the context of the existing AADT volumes of these roads, the anticipated traffic generated by the proposed activities would be minor. It is anticipated that implementation of the Action Alternative would generate minor traffic associated with construction activities and have a temporary and negligible impact on overall traffic volumes and level of service of either US 78, MS 178 or MS 311.

Under the No Action Alternative, if the MCIDA were able to secure the funding for the actions described in this EA from other sources, or if the MCIDA were to proceed without any supplemental funding, construction of project components would occur, also resulting in temporary and negligible impact on overall traffic volumes and level of service. If the MCIDA were not able to secure any funding for the actions described in this EA, there would be no impact to overall traffic volumes and level of service.

5.0 PERMITS, LICENSES, AND APPROVALS

The Action Alternative would result in greater than five (5) acres of earth disturbing activities; therefore, it would be necessary to obtain coverage under the MDEQ large construction stormwater general permit (Permit Number MSR10). Coverage would require submittal of a Notice of Intent and development of a site-specific SWPPP. The MCIDA, or its contractors, would be responsible for obtaining local, state, or federal permits, licenses, and approvals necessary for the project.

6.0 BEST MANAGEMENT PRACTICES AND MITIGATION MEASURES

To minimize or reduce the environmental effects of site activities associated with the Action Alternative, the MCIDA or its contractors are expected to ensure all clearing and grading activities conducted are in compliance with stormwater permitting requirements and utilize applicable BMPs to minimize and control erosion and fugitive dust during these actions. Onsite burning activities would be conducted in compliance with local burn permits and the requirements in MDEQ Air Emission Regulations for the Prevention, Abatement, and Control of Air Contaminants, 11 Mississippi Administrative Code, Part 2, Chapter 1. Rule 1.3 (G), which provides open burning prohibitions, exceptions, and certification requirements.

Operations involving chemical or fuel storage or resupply and vehicle servicing are expected to be handled outside of riparian areas and in such a manner as to prevent these items from reaching a watercourse. Earthen berms or other effective means are expected to be installed to

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

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 contributions 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., Environmental Management*	10 years in environmental planning and policy and NEPA compliance.	NEPA Compliance, Implementation of ESA Section 7 Programmatic Consultation for federally listed bats and routine actions
Chevales Williams *B.S. Environmental Engineering*	15 years in water quality monitoring and compliance, 14 years in NEPA planning, input and environmental services	Soil Erosion and Surface Water
Kim Pilarski-Hall *M.S., Geography, Minor Ecology*	24 years expertise in wetland assessment, wetland monitoring, watershed assessment, wetland mitigation, restoration as well as NEPA and Clean Water Act compliance	Wetlands & Natural Areas
David Nestor *B.S. Aquaculture, Fisheries, & Wildlife Biology* *M.S. Botany*	25 years of plant identification, 20 years in threatened and endangered plant species and plant ecology	Botany, Threatened and Endangered Species
Kerry Nichols *Ph.D. Anthropology, University of Missouri-Columbia, M.A. Anthropology, University of Colorado-Denver, B.A. Political Science, University of Northern Colorado*	21 years of experience as a field archaeologist and SHPO project reviewer.	Cultural Resources, NHPA Section 106 compliance
Craig Phillips *M.S., and B.S., Wildlife and Fisheries Science*	10 years sampling and hydrologic determinations for streams and wet-weather conveyances; 9 years in environmental reviews	Aquatic Ecology
Aaron Bradner *M.S. Crop and Soil Environmental Science*	25 years of plant identification, 20 years in threatened and endangered plant species and plant ecology	Aquatic Ecology

Name/Education	Experience	Project Role
Carrie Williamson, P.E., CFM *B.S. and M.S., Civil Engineering*	8 years in floodplains and flood risk	Floodplains
Robert A. Marker *B.S. Outdoor Recreation Resources Management*	45 years in outdoor recreation planning and management	Recreation
Cardno		
Rachel Bell, PMP *B.S., Environmental Science, Auburn University*	15 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
Jason Sean Lancaster, CEP, CE, PWS, TN-QHP *MPH, Epidemiology, University of South Florida* *B.S., Environmental Science and Policy; University of South Florida*	24 years in natural resources planning and NEPA compliance, including project management and biological and environmental studies and analysis.	EA Project Manager QA/QC Purpose and Need, Other Environmental Documentation, Alternatives, Site Description, Permits, Licenses and Approvals, Best Management Practices and Mitigation Measures
Duane Simpson *MA, Anthropology, University of Arkansas* *BA, Anthropology, Ohio University*	26 years in archaeological consulting including management of projects across the southeast and mid-Atlantic regions. Principal Investigator for over 15 years.	Archaeology
Amanda Koonjebeharry, PMP *B.S, Zoology and Botany, University of the West Indies*	19 years in environmental resource surveys and permitting, including EIS and EA preparation, compliance monitoring, state and federal wetland and waterbody permitting and mitigation, protected species surveys and coordination, and wetland delineations.	Air Quality and Climate Change
Josh Yates, P.G. *M.S., Geology, University of South Florida* *B.S. Natural Resources Management and Engineering, University of Connecticut*	15 years of hydrogeologic assessments and water resources permitting experience. This experience includes water supply planning, hydrogeologic investigations, groundwater modeling, water use permitting, well construction oversight, EIS and EA preparation, minimum flow and level (MFL) impact analysis, monitoring well network design, aquifer performance tests, and GIS analysis.	Groundwater
Sean Peacock *B.S., Environmental Science, Georgia College & State University*	6 years of experience in the environmental consulting field. He regularly conducts wetland and stream delineation; wildlife surveys and monitoring; gopher tortoise surveys, monitoring, and relocations; NPDES inspections, and water quality sampling.	Terrestrial Zoology

Name/Education	Experience	Project Role
Sam Waltman *B.S., Marine Biology, Texas A&M University*	10 years in natural resource surveys and permitting, including EIS and EA preparation, field sampling, GIS analysis, USACE jurisdictional delineations, T&E species surveys, hydrogeomorphic assessments, NRDA, Phase 1 ESAs, and environmental compliance monitoring.	Prime Farmland
Kimberly Sechrist *M.S., Environmental Science, Towson University* *B.S., Biology, McDaniel College (originally Western Maryland College)*	Over 13 years of professional experience in the environmental consulting field. During this time, she has participated in a wide range of projects and tasks including on data validation, chemistry lab coordination and sample tracking, restoration, wetland delineation, endangered species studies and environmental sampling. She has authored numerous Land Use, Recreation, Visual, Socioeconomic, and Environmental Justice resource sections on a variety of third party EAs/EISs.	Visual and Noise
Yosef Shirazi, Ph.D. *Ph.D., Marine Policy, University of Delaware* *M.S., Marine Science, University of North Carolina at Wilmington* *B.S., Biology, University of Maryland* *B.S., Environmental Science and Policy, University of Maryland*	10 years of experience in the fields of ecology and economics. He has performed extensive work implementing and interpreting surveys and survey results, valuing ecosystem services, and evaluating the socioeconomic impacts of infrastructure projects. His areas of technical knowledge include welfare economics, biophysical relationships in coastal environments, and regional economics modeling.	Socioeconomics and Environmental Justice
Brenton Jenkins, P.E. *B.S. Environmental Engineering, Louisiana State University*	8 years in environmental consulting for various private and public sector clients, including project management, engineering design, permitting, and assessments, primarily in the oil and gas sector.	Transportation

8.0 AGENCIES AND OTHERS CONSULTED

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

- Mississippi Department of Archives and History
- Tribes - Absentee Shawnee Tribe of Indians of Oklahoma, Alabama-Coushatta Tribe of Texas, The Chickasaw Nation, The Choctaw Nation of Oklahoma, Coushatta Tribe of Louisiana, Eastern Shawnee Tribe of Oklahoma, Jena Band of Choctaw Indians, Kialegee Tribal Town, The Muscogee (Creek) Nation, Shawnee Tribe, and Thlopthlocco Tribal Town

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ATTACHMENT 1

PROJECT FIGURES

Figure 1-A

Aerial

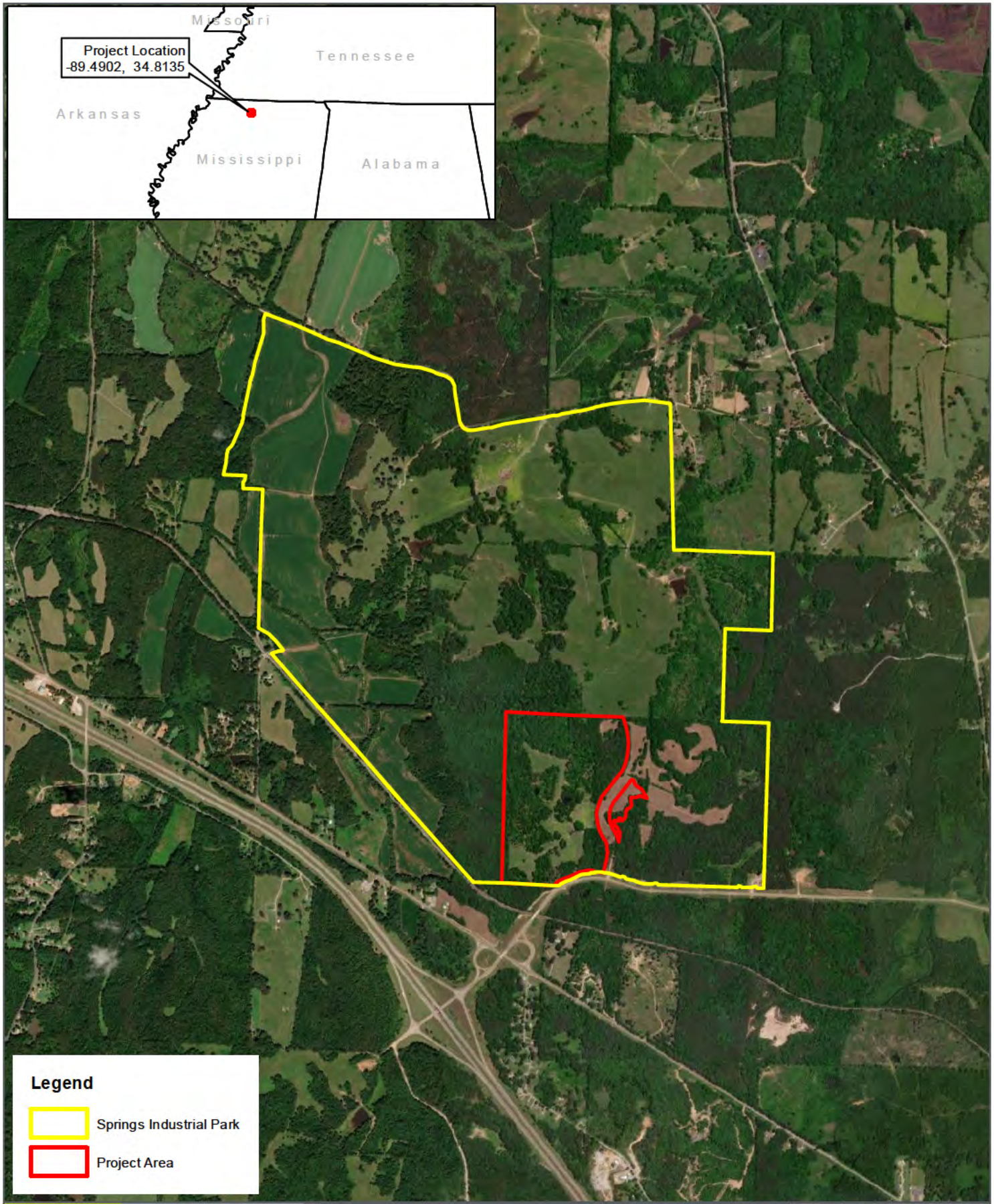

Figure 1-A: Aerial Map

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GIS Analyst James.Bottiger

Figure 1-B

Proposed Activities

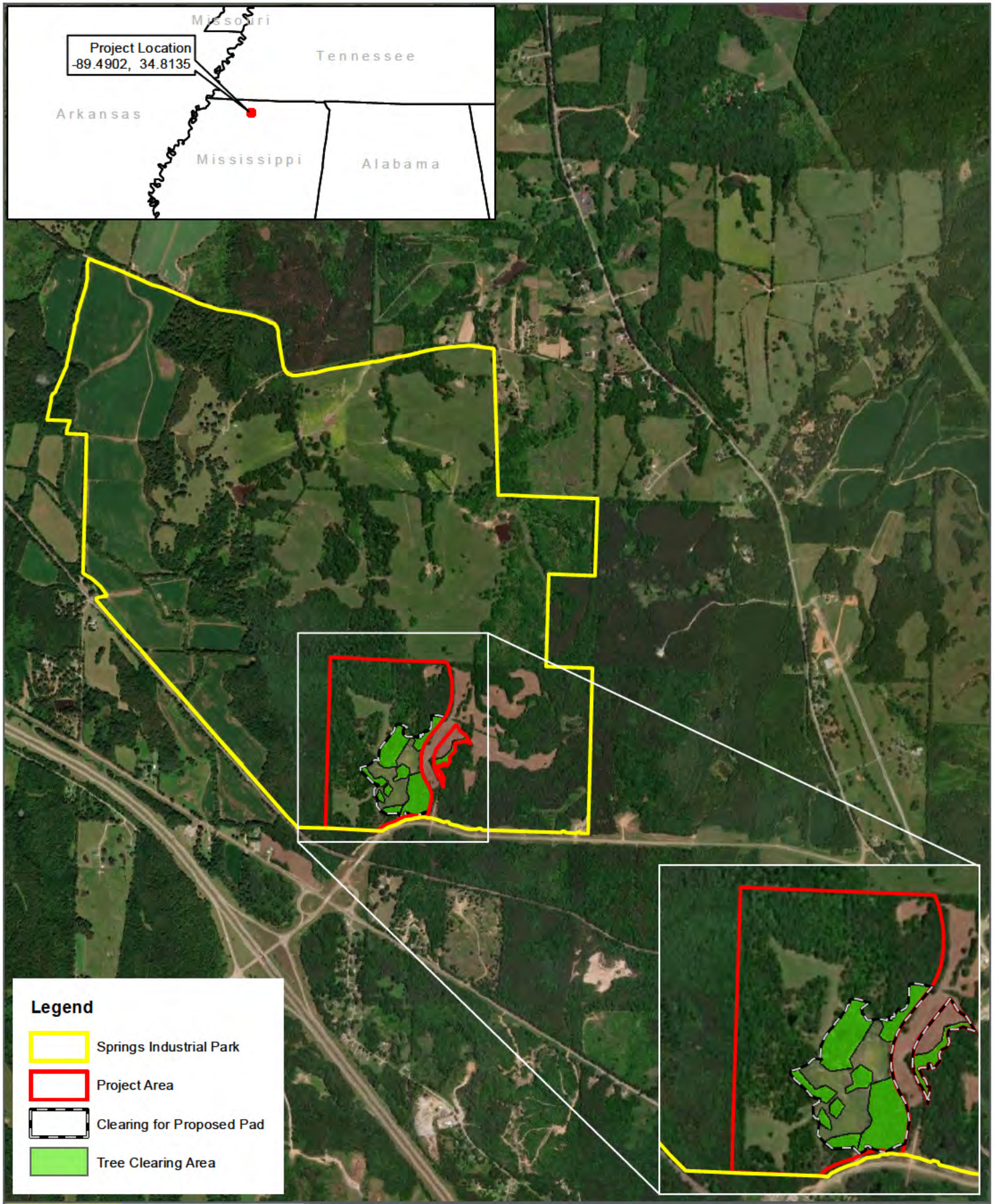

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Figure 1-B: Proposed Activities Map

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GIS Analyst James.Bottiger

Figure 1-C

USGS Quadrangle

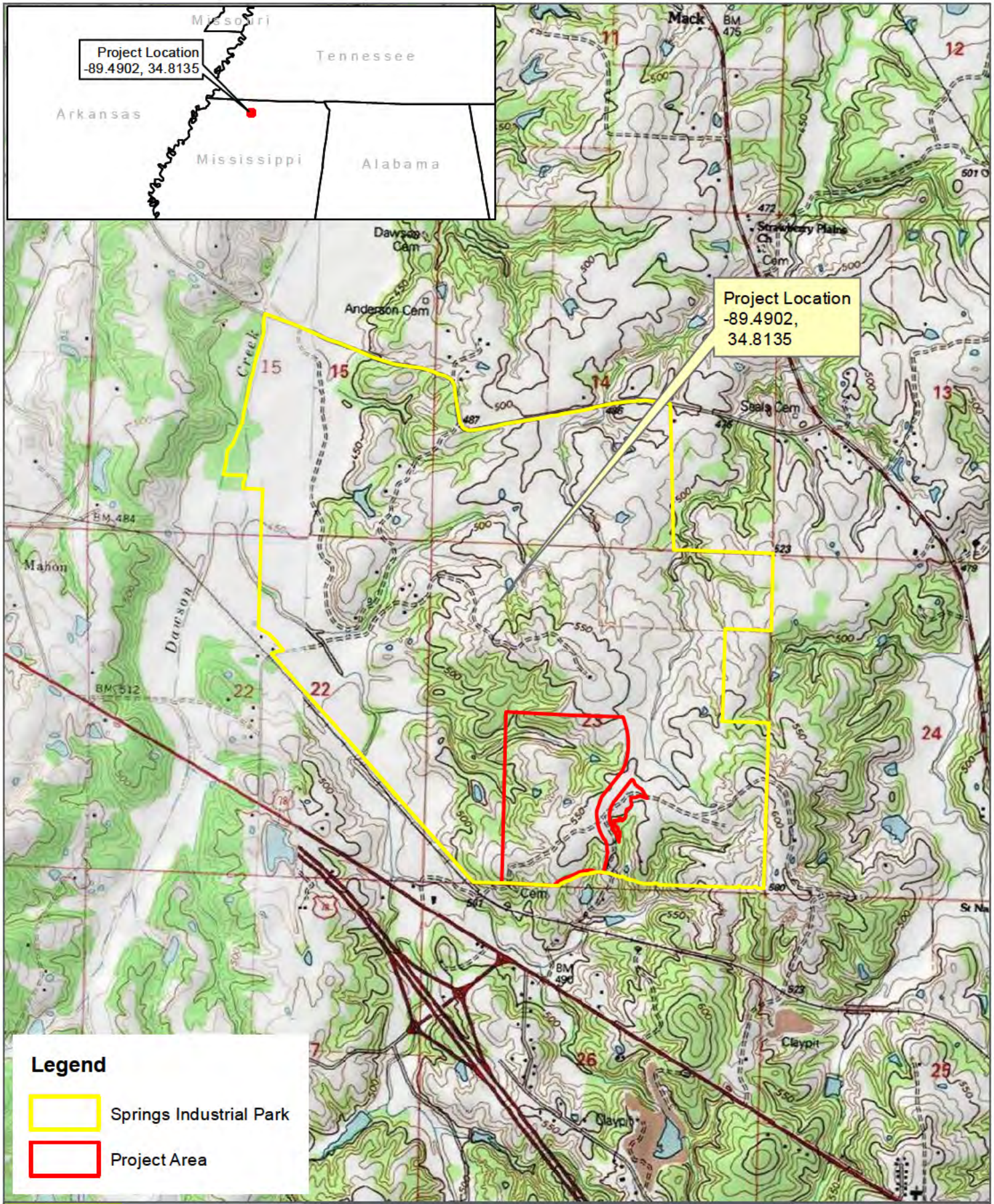

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Figure 1-C: USGS Quadrangle Map

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GIS Analyst: James.Bottiger

Figure 1-D

FEMA Floodplain

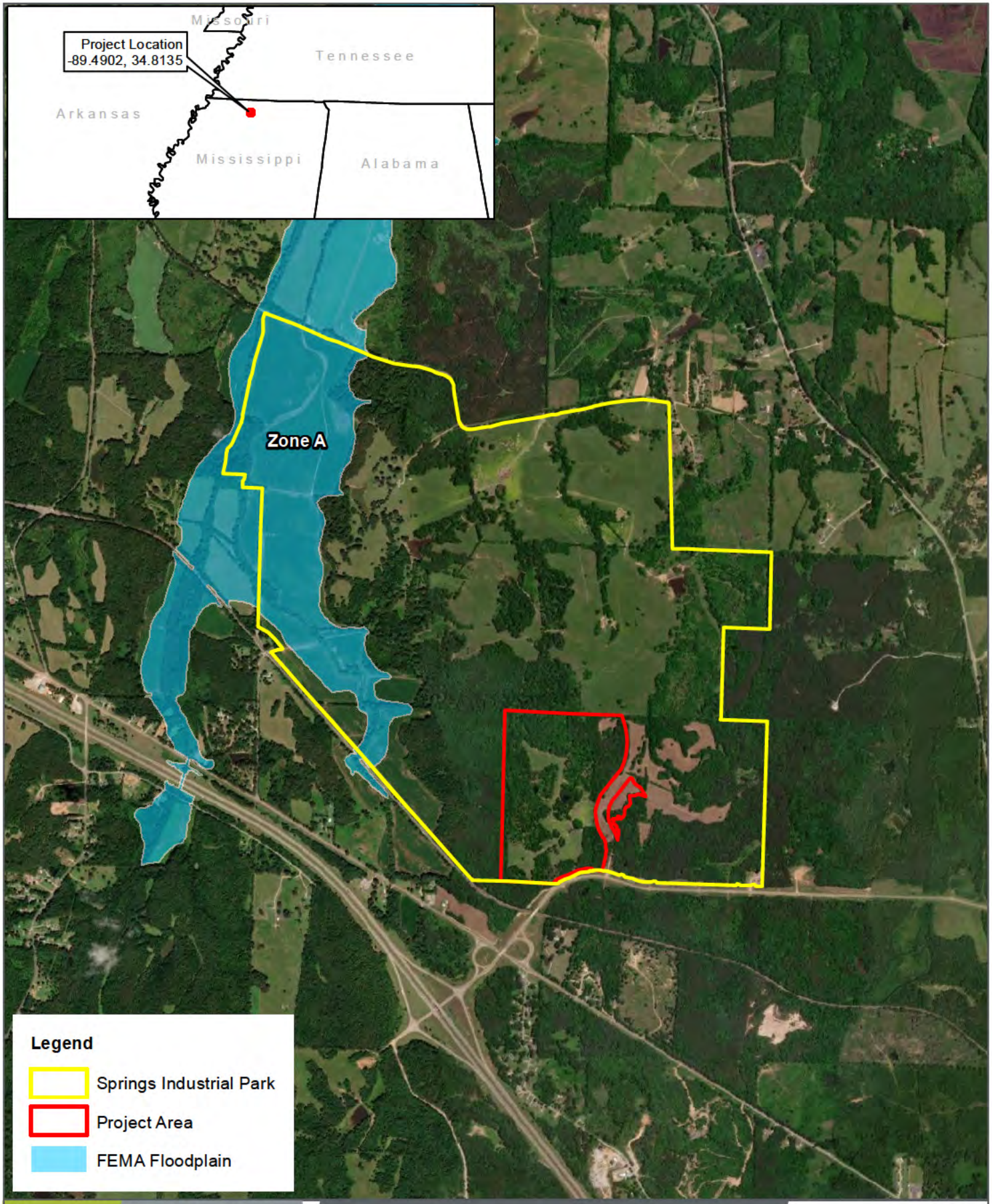

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Figure 1-D: FEMA Floodplain Map

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GIS Analyst James.Bottiger

Figure 1-E

USFWS NWI and Water Resources Inventory Map

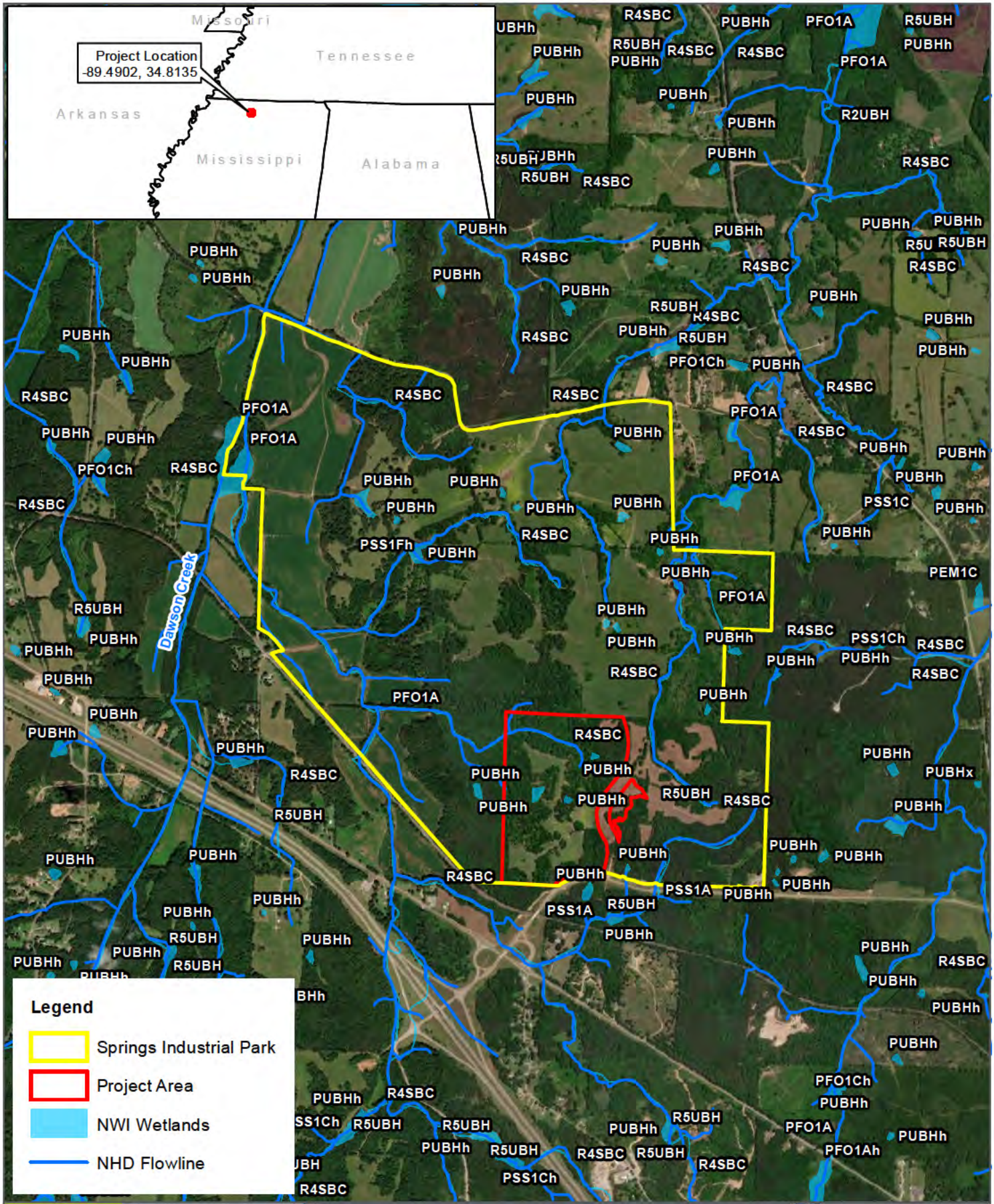

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Figure 1-E: USFWS NWI and Water Inventory Map

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GIS Analyst James.Bottiger

Figure 1-F

USACE Wetlands and Waterbodies Map

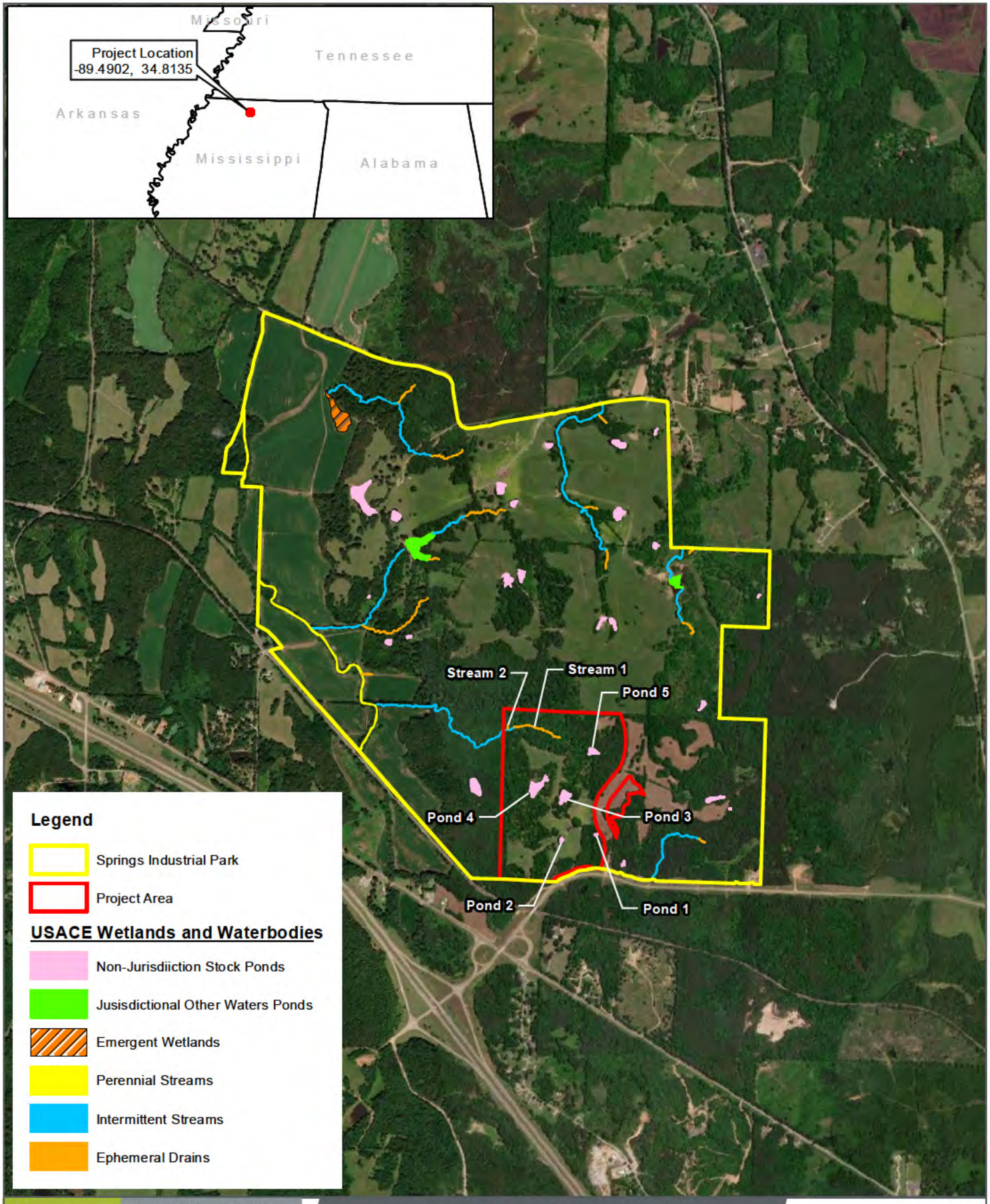

Figure 1-F: USACE Wetlands and Waterbodies Map

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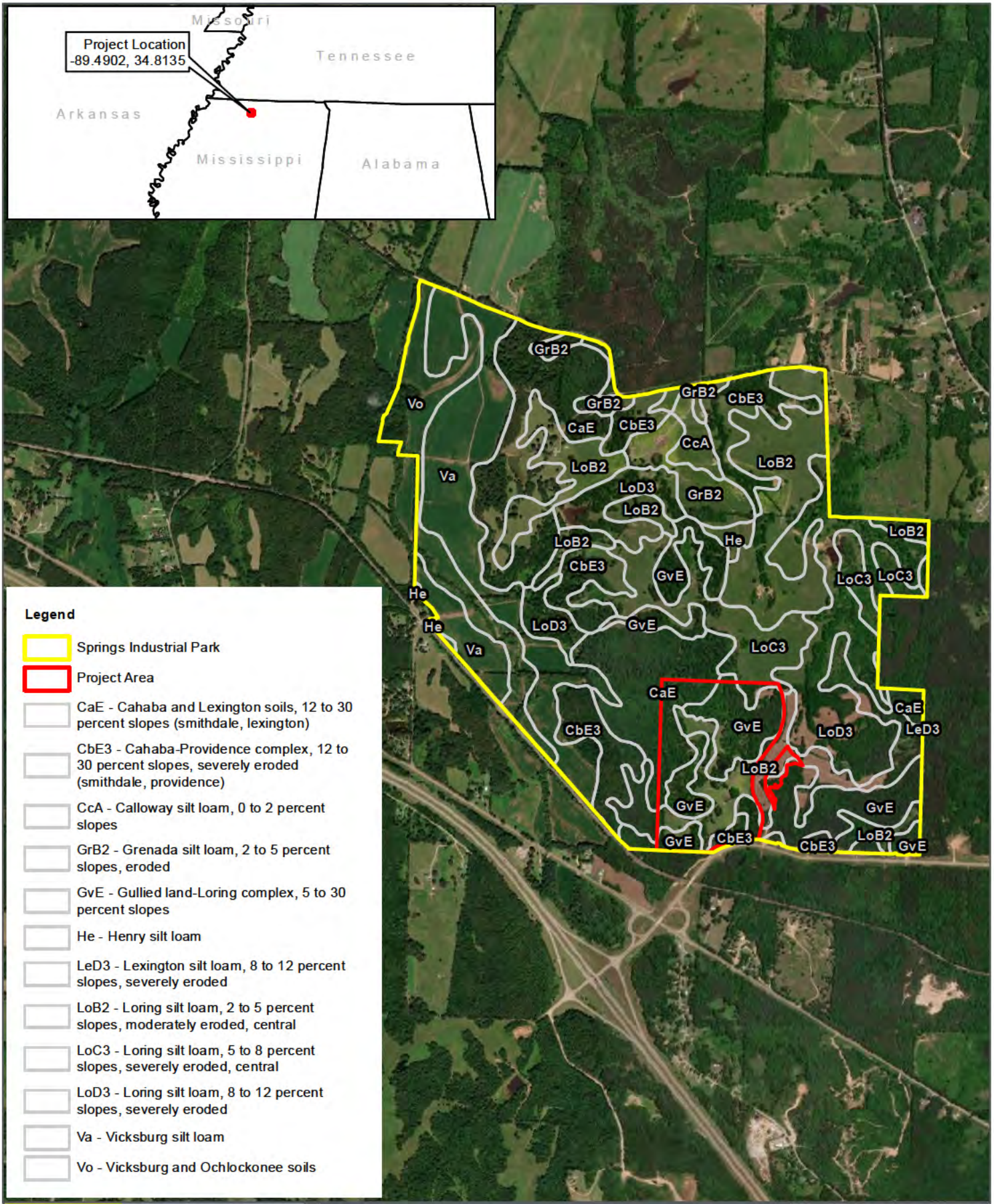
GIS Analyst James.Bottiger

Figure 1-G

NRCS Soils Map



Legend

- Springs Industrial Park
- Project Area
- CaE - Cahaba and Lexington soils, 12 to 30 percent slopes (smithdale, lexington)
- CbE3 - Cahaba-Providence complex, 12 to 30 percent slopes, severely eroded (smithdale, providence)
- CcA - Calloway silt loam, 0 to 2 percent slopes
- GrB2 - Grenada silt loam, 2 to 5 percent slopes, eroded
- GvE - Gullied land-Loring complex, 5 to 30 percent slopes
- He - Henry silt loam
- LeD3 - Lexington silt loam, 8 to 12 percent slopes, severely eroded
- LoB2 - Loring silt loam, 2 to 5 percent slopes, moderately eroded, central
- LoC3 - Loring silt loam, 5 to 8 percent slopes, severely eroded, central
- LoD3 - Loring silt loam, 8 to 12 percent slopes, severely eroded
- Va - Vicksburg silt loam
- Vo - Vicksburg and Ochlockonee soils

Image:2020

Data Source:

Figure 1-G: NRCS Soils

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Date Created 3/16/2021 Date Revised 3/16/2021 File Path Q:\UnitedStates\Florida\Tampa\Tennessee Valley Authority\TVA_FY21_Economic_Development_Projects\05_Marshall_County_MS\working\arcmap\EA_Maps\EA_Marshall_Fig1G_NRCS_Soils_A_1_20210316.mxd
GIS Analyst James.Bottiger

ATTACHMENT 2

TVA Bat Strategy Project Screening Form

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

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

Project Name: InvestPrep - Marshall County, MS **Date:** Oct 2, 2020

Contact(s): Bess Hubbard **CEC#:** **Project ID:** 37274

Project Location (City, County, State): Holly Springs, Marshall County, MS

Project Description:

TVA funding to assist with the purchase of 103.3 acres, tree clearing, and construction of a dirt building pad.

SECTION 1: PROJECT INFORMATION - ACTION AND ACTIVITIES

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

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

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

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

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

TABLE 2. Activities not likely to adversely affect bats with implementation of conservation measures. Conservation measures and completion of bat strategy project review form REQUIRED; review of bat records in proximity to project NOT required.		
■ 18. Erosion control, minor	☐ 57. Water intake - non-industrial	☐ 79. Swimming pools/associated equipment
☐ 24. Tree planting	☐ 58. Wastewater outfalls	☐ 81. Water intakes – industrial
☐ 30. Dredging and excavation; recessed harbor areas	☐ 59. Marine fueling facilities	☐ 84. On-site/off-site public utility relocation or construction or extension
☐ 39. Berm development	☐ 60. Commercial water-use facilities (e.g., marinas)	☐ 85. Playground equipment - land-based
☐ 40. Closed loop heat exchangers (heat pumps)	☐ 61. Septic fields	☐ 87. Aboveground storage tanks
☐ 45. Stream monitoring equipment - placement and use	☐ 66. Private, residential docks, piers, boathouses	☐ 88. Underground storage tanks
☐ 46. Floating boat slips within approved harbor limits	☐ 67. Siting of temporary office trailers	☐ 90. Pond closure
☐ 48. Laydown areas	☐ 68. Financing for speculative building construction	☐ 93. Standard License
☐ 50. Minor land based structures	☐ 72. Ferry landings/service operations	☐ 94. Special Use License
☐ 51. Signage installation	☐ 74. Recreational vehicle campsites	☐ 95. Recreation License
☐ 53. Mooring buoys or posts	☐ 75. Utility lines/light poles	☐ 96. Land Use Permit
☐ 56. Culverts	☐ 76. Concrete sidewalks	

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

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

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

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

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

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

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

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

e) If **tree removal (activity 33 or 34)**, estimated amount: [16.7] (•) **ac** ( ) **trees** ( ) **N/A**

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

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

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

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

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

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

Info below completed by:				
☐ **Heritage Reviewer**	(name)		Date	
☐ **OSAR Reviewer**	(name)		Date	
■ **Terrestrial Zoologist**	(name)	Elizabeth Hamrick	Date	Mar 10, 2021

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

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

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

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

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

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

Amount of SUITABLE habitat to be removed/burned (may differ from STEP 4e): [16.7] (•) **ac** ( ) **trees)*** ( ) **N/A**

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

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

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 16.7 ◉ **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 Mar 12, 2021

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

STEP 12) Amount contributed to TVA's Bat Conservation Fund upon activity completion: $ 8,350 OR ○ **N/A**

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

SECTION 3: REQUIRED CONSERVATION MEASURES

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

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

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

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

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

Manual Override

Name: Elizabeth Hamrick

Check if Applies to Project	Activities Subject To Conservation Measure	Conservation Measure Description
		NV1 - Noise will be short-term, transient, and not significantly different from urban interface or natural events (i.e., thunderstorms) that bats are frequently exposed to when present on the landscape.
		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.
		TR9 - If removal of suitable summer roosting habitat occurs when bats are present on the landscape, a funding contribution (based on amount of habitat removed) towards future conservation and recovery efforts for federally listed bats would be carried out. Project can consider seasonal bat presence/absence surveys (mist netting or emergence counts) that allow for positive detections without resulting in increased constraints in cost and project schedule. This will enable TVA to contribute to increased knowledge of bat presence on the landscape while carrying out TVA's broad mission and responsibilities.
		SSPC2 - Operations involving chemical/fuel storage or resupply and vehicle servicing will be handled outside of riparian zones (streamside management zones) in a manner to prevent these items from reaching a watercourse. Earthen berms or other effective means are installed to protect stream channel from direct surface runoff. Servicing will be done with care to avoid leakage, spillage, and subsequent stream, wetland, or ground water contamination. Oil waste, filters, other litter will be collected and disposed of properly. Equipment servicing and chemical/fuel storage will be limited to locations greater than 300-ft from sinkholes, fissures, or areas draining into known sinkholes, fissures, or other karst features.
		SSPC5 (26a, Solar, Economic Development only) - Section 26a permits and contracts associated with solar projects, economic development projects or land use projects include standards and conditions that include standard BMPs for sediment and contaminants as well as measures to avoid or minimize impacts to sensitive species or other resources consistent with applicable laws and Executive Orders.
		L1 - Direct temporary lighting away from suitable habitat during the active season.
		L2 - Evaluate the use of outdoor lighting during the active season and seek to minimize light pollution when installing new or replacing existing permanent lights by angling lights downward or via other light minimization measures (e.g., dimming, directed lighting, motion-sensitive lighting).

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

(listed in 2015), and Virginia big-eared bat (listed in 1979).

Hide All Unchecked Conservation Measures

- (•) HIDE
- ( ) UNHIDE

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

- (•) HIDE
- ( ) UNHIDE

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

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

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

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

For Use by Terrestrial Zoologist Only

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

☒ For projects that require use of Take and/or contribution to TVA's Bat Conservation Fund, Terrestrial Zoologist acknowledges that Project Lead/Contact has been informed that project will result in use of Incidental Take 16.7 (•) ac ( ) trees and that use of Take will require $ 8,350 contribution to TVA's Conservation Fund upon completion of activity (amount entered should be $0 if cleared in winter).

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

ATTACHMENT 3

Agency Correspondence

3-A

Mississippi Department of Archives and History

MDAH
MISSISSIPPI DEPARTMENT OF
ARCHIVES & HISTORY

P. O. Box 571
Jackson, MS 39205-0571
601-576-6850
mdah.ms.gov

January 25, 2021

Mr. Clinton E. Jones
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902

RE: Proposed TVA Investprep Springs Industrial Park Dirt Building Pad in the Holly Springs Industrial Park, (TVA) MDAH Project Log #01-054-21, Marshall County

Dear Mr. Jones:

We have reviewed the October 29, 2018, cultural resources survey, by Paul D. Jackson, Principal Investigator, with TerraXplorations, received on January 14, 2021, for the above referenced undertaking, pursuant to our responsibilities under Section 106 of the National Historic Preservation Act and 36 CFR Part 800. After reviewing the information provided, we concur that no historic resources should be effected within the APE (Area of Potential Effect), given that the buffer around the Duke-Walker Cemetery be avoid. Additionally, we concur with the findings that Site 22Mr730 is eligible for the National Register of Historic Places (NRHP) under Criterion D. It should be noted that structures S2-S7, which constitute part of this site, should be avoided because the site retains its research potential. We found that all other resources are ineligible for listing on NRHP. Given this, we have no reservations with the undertaking.

There remains the possibility that unrecorded cultural resources may be encountered during the project. Should this occur, we would appreciate your contacting this office immediately in order that we may offer appropriate comments under 36 CFR 800.13.

Please provide a copy of this letter to Mr. Jackson. If you need further information, please let me know.

Sincerely,

Lauren Harmon

Lauren Harmon
Review and Compliance Assistant

FOR: Katie Blount
State Historic Preservation Officer

3-B

Federally Recognized Indian Tribes

Subject: FW: INCOMING: TVA-Investprep-Springs Industrial Park-MarshallCoMS-TRIBAL-CID79334-15Jan2021

From: Shuler, Marianne M <mmshuler@tva.gov>
Sent: Tuesday, February 23, 2021 2:44 PM
To: McCampbell, Amy Boardman <aboardma@tva.gov>; Nichols, Kerry David <kdnichols0@tva.gov>
Subject: INCOMING: TVA-Investprep-Springs Industrial Park-MarshallCoMS-TRIBAL-CID79334-15Jan2021

From: Section106 <Section106@mcn-nsn.gov>
Sent: Tuesday, February 23, 2021 1:31 PM
To: Shuler, Marianne M <mmshuler@tva.gov>
Subject: Re: TVA-Investprep-Springs Industrial Park-MarshallCoMS-TRIBAL-CID79334-15Jan2021

Good afternoon Ms. Shuler,

Thank you for sending the correspondence regarding the proposed onsite cutting and burning of approximately 16.7 acres of trees as well as the construction of a 20-acre dirt building pad located within the Holly Springs Industrial Park, Marshall County, Mississippi. Marshall County is located within the Muscogee (Creek) Nation's historic area of interest and is of importance to us. After review, the Muscogee Nation is unaware of any Muscogee (Creek) sacred sites, burial grounds, or significant cultural resources located within the immediate project footprint. The Muscogee Nation agrees with MDAH and TVA's recommendation of at least a 50-ft buffer around the known limits of the Duke-Walker Cemetery. The Muscogee Nation concurs that there should be **no effects to any known historic properties** and that work should continue as planned. However, due to the historic presence of Muscogee people in the project area, inadvertent discoveries of cultural resources, human remains and related NAGPRA items may occur, even in areas of existing or prior development. Should this occur, the Muscogee (Creek) Nation requests that all work cease and our office as well as other appropriate agencies be notified immediately. Please feel free to contact me if there are any questions or concerns.

Thank you,

Robin Soweka Jr.
Historic and Cultural Preservation Department | Cultural Resource Specialist
Muscogee (Creek) Nation
[redacted]