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HOPE SOLAR AND STORAGE PROJECT
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Clay County, Mississippi

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EXECUTIVE SUMMARY

Introduction

Tennessee Valley Authority (TVA) is evaluating the potential purchase of electric power and renewable energy credits generated by the proposed Hope Solar and Storage Project (Project) in Clay County, Mississippi pursuant to a Power Purchase Agreement (PPA) with Hope SB, LLC, (Hope SB), a subsidiary of Origis Energy. Hope SB would construct, or contract for the construction of, the Project, which is expected to generate up to 200 megawatts (MW) of alternating current (AC) power from a solar photovoltaic (PV) facility, coupled with an up to 400 MW, 4-hour duration battery energy storage system (BESS). The Project would encompass approximately 2,419 acres (Project Site) located primarily north of and partially within the City of West Point, Mississippi. The Project Site predominantly comprises cultivated agricultural fields and pastureland. The Proposed Action would generate renewable energy with minor to moderate direct and indirect environmental impacts due to the implementation of best management practices and minimization and mitigation efforts. This environmental impact statement evaluates impacts of the Proposed Action, i.e., the construction, operation, maintenance, and decommissioning of the Project, and the No Action Alternative, under which TVA would not purchase the power from the Project; Hope SB would not develop the solar facility and BESS, and TVA would meet its customer energy demands by other actions.

Purpose and Need for Action

In August 2026, TVA completed an Integrated Resource Plan (IRP) and associated Environmental Impact Statement to evaluate the long-term demand for power in the Valley region, the demand side and supply side resource options available for meeting that demand, and the potential economic, operating, and environmental impacts of those options (TVA 2026a, 2026b). The 2026 IRP identified the various resources that TVA intends to use to meet the energy needs of the TVA region through 2040, consistent with its least-cost planning obligation and continuing to deliver reliable, resilient, and affordable energy while remaining environmentally responsible. The 2026 IRP recommends the expansion of solar generating capacity up to five gigawatts, as well as up to five gigawatts of storage capacity through 2040, depending on the level of load growth and other factors. The PPA with Hope SB would provide cost-effective renewable generating and storage capacity in response to customer demands and aligns with the 2026 IRP.

Alternatives

In this Environmental Impact Statement, TVA assesses a No Action Alternative and a Proposed Action Alternative. Under the Proposed Action Alternative, Hope SB would construct and operate an up to 200-megawatt alternating current single-axis tracking PV solar facility with up to 400 MW/1,600 megawatt hours (MWh) of BESS facilities in Clay County, Mississippi, north of West Point along US Highway 45 Alternate, and TVA would purchase the renewable energy from the Project under a 20-year PPA with Hope SB in accordance with the terms thereunder. The power generated or dispatched by the Project would be delivered to the TVA transmission system at a 161-kilovolt (kV) point of interconnection within the existing TVA West Point Substation via an existing, approximately 2,630-foot long 161-kV generation-tie line (gen-tie line) located within the

Project Site that would be jointly owned and operated by Hope SB and the nearby Optimist Solar and BESS Facility. The Project would occupy portions of 27 individual parcels, which in their entirety encompass approximately 2,419 acres of land that make up the Project Site. Approximately 1,700 acres would be used for the PV arrays, BESS, inverters, transformers, internal site access roads, Project substation, ancillary infrastructure, and construction laydown and parking areas; this area is referred to as the Limits of Disturbance (LOD).

Under the No Action Alternative, TVA would not purchase the power generated by the proposed Project under the 20-year PPA with Hope SB (i.e., TVA would not be involved with the Project). If TVA were to select this alternative and Hope SB elected not to proceed with the Project, then Hope SB would not construct or operate the Project. Existing conditions (land use, natural resources, visual resources, physical resources, and socioeconomics) at the Project Site would remain unchanged.

Land Use, Geology, Soils, and Prime Farmland

Affected Environment

The proposed Project would be located primarily north of and partially within the City of West Point, Mississippi. Most of the Project Site is in the unincorporated portion of Clay County and made up of privately owned properties. The topography is generally characterized by gently rolling hills, with elevations ranging from approximately 220 to approximately 290 feet above mean sea level. State Highway 45A extends north-south to the west of the Project Site. Primary access roads include Payne Field Road, Hazelwood Road, Old Aberdeen Road, and Yokohama Boulevard. Current land use predominantly comprises cultivated agricultural fields and pastureland.

The Project Site is in the Black Belt Prairie physiographic region and is entirely underlain by Selma Chalk formed from Upper Cretaceous marine deposits. The Black Belt Prairie is an important agricultural region with soils rich in organic matter but often thick with clay. The United States Geological Survey places the Project Site in an area of “unconsolidated calcareous or carbonate rocks at or near the land surface” in a region with humid climate. No caves, karst terrain, or other unique geological features (e.g., limestone or chalk outcrops) were observed during 2025 or 2026 ecological field surveys (Appendix D). Approximately 98 percent of the Project Site is composed of soils designated as Prime Farmland (including qualified lands that are protected from flooding or not frequently flooded during the growing season) or Farmland of Statewide Importance.

Environmental Consequences

Minor, temporary direct impacts to land use would occur during construction, and minor, long-term direct impacts to land use would occur during operation due to land use change from agricultural to solar. Conversion of agricultural/pastureland to industrial uses such as solar generation is consistent with West Point’s Comprehensive Plan (West Point 2017a), though land use permitting would be required for construction within the city limits.

Due to potential shallow subsurface disturbances, minor direct impacts to geological resources are anticipated. Minor, direct, adverse impacts to topography and soils within the Project Site would occur, as earth-moving activity would be required during construction. Once stabilized and the facility is operational, impacts on soils would be offset by the beneficial effects to soil health with the use of native and noninvasive vegetation.

Based on soil data obtained from the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) Web Soil Survey, the proposed conversion of approximately 1,645 acres of Prime Farmland and 32 acres of Farmland of Statewide Importance to nonagricultural uses during construction and operation of the solar facility would likely impact these soil designations and would result in moderate adverse impacts to soils.

During ecological field surveys, approximately 1,756 acres within the 2,419-acre Project Site were identified to be actively used for row crop agriculture or pastureland. Approximately 1,429 of these acres fall within the limit of disturbance. The 1,429 acres of farmland removed from row cropping and pasture during the lifetime of the Project represents less than one percent of the 157,471 acres in Clay County identified as “land in farms” in the 2022 Census of Agriculture (USDA 2022). There would be a minor loss of agricultural production over the life of the Project, which is expected to be 40 years total, including the 20-year PPA term and the subsequent 20-year period following expiration of the PPA. Following decommissioning of the solar facility, the Project Site could be returned to agricultural use with little reduction in soil productivity or impacts to Prime Farmland.

Water Resources

Affected Environment

Field delineations of the Project Site surface water features were conducted in 2025 and 2026, which identified 60 palustrine wetlands (80.8 acres); 71 stream reaches (57,458.0 linear feet), including 18,839.2 linear feet of perennial streams, 26,205.8 linear feet of intermittent streams, and 12,413.0 linear feet of ephemeral streams; and 20 open waterbodies (66.6 acres) within the Project Site (Appendix C, Tetra Tech 2026a). Approximately 125.4 acres (5.2 percent of the Project Site) are mapped as Federal Emergency Management Agency (FEMA) Zones A and AE Special Flood Hazard Areas indicating these areas are subject to a 1-percent-annual-chance of flood hazard (100-year flood). No FEMA 500-year floodplains (areas subject to 0.2-percent change of flooding) are mapped within the Project Site. In addition, limited hydrological studies conducted under existing conditions at the Project Site characterized flood depths associated with the 100-year and 500-year, 24-hour storm events. The modeling identified areas with inundation depths exceeding 5 feet during the 100-year event and 10 feet during the 500-year event (Kimley Horn 2026a and 2026b).

Environmental Consequences

Minor direct and indirect impacts to water resources would result from construction and operation of the Project. In accordance with Section 404 and 401 of the Clean Water Act (CWA) appropriate permits from United States Army Corps of Engineers and Mississippi Department of Environmental Quality (MDEQ) would be obtained, and if required, Hope Solar SB would mitigate the impacts.

No direct adverse impacts to groundwater are anticipated. Temporary impacts to surface waters (sedimentation caused by increased erosion and runoff) would be minimized by adhering to approved best management practices and National Pollution Discharge Elimination System (NPDES) permit requirements. Complete avoidance of surface waters is not feasible, and the construction and operation of the Project would result in permanent impacts to nine perennial/intermittent streams (totaling 408.0 linear feet) and one ephemeral stream (40.0 linear feet). All permanent impacts to the aquatic resources listed above would be the result of culvert installations associated with construction and maintenance of access roads. Once construction is complete, the ongoing operation of the Project would not result in additional impacts to surface waters based on the current layout. No panels or other above-ground structures are expected to impact state or federal jurisdictional surface waters within the Project Site or extend within the MDEQ-required buffer surrounding these features. During operation, the Project is expected to provide water quality benefits to streams and wetlands on the site by replacing annual agricultural activities, reducing pesticide and fertilizer applications and eliminating livestock grazing near stream banks.

Most facilities, structures, and activities required for the Proposed Action would be located outside of the FEMA 100-year floodplain, with the exception of certain internal roads, and select solar panels occupying approximately 50 acres. For all photovoltaic facilities, inverter pad elevations and the lowest module elevation at maximum tilt (with trackers in their lowest operating position) will be designed to maintain a minimum of one foot of freeboard above the modeled 100-year water surface elevation, as shown in the hydrology study (Kimley Horn 2026a).

Project-specific hydrologic and hydraulic modeling will be used to determine the modeled 500-year water surface elevations at the proposed BESS locations. The proposed BESS designs are preliminary, therefore final BESS equipment location will be designed such that the equipment is maintained at a minimum of one foot above the modeled 500-year water surface elevation, as shown in the hydrology study (Kimley Horn 2026b). Minor direct and indirect impacts are anticipated due to construction activities and installation of Project fences, utility transmission structures, and access roads. If the facility were to be decommissioned or closed, a Decommissioning and Closure Plan would be developed; the plan would detail procedures to control erosion and sedimentation to comply with NPDES requirements and permits.

Biological Resources

Affected Environment

Field surveys were conducted in 2025 and 2026, to characterize the Project Site's plant and animal communities and identify habitats that might support sensitive and special-status species. No rare or protected species were observed during the 2025 or 2026 assessments (Appendix D). Suitable habitat for protected species and/or species of concern, including the bald eagle, osprey, various bats and migratory birds, the monarch butterfly, the Alabama map turtle, and the alligator snapping turtle is present within the Project Site. No suitable habitat for protected plant species was observed, including the federally listed Price's potato-bean (*Apios priceana*) and whorled sunflower (*Helianthus verticillatus*). Project biologists identified approximately 235 acres of potentially suitable summer roosting habitat within the Project Site for the proposed federally endangered tricolored bat (TCB) (*Perimyotis subflavus*), and Rafinesque's big-eared bat (RBEB) (*Corynorhinus rafinesquii*), which is designated as a vulnerable species in Mississippi. Approximately 78 acres of high-quality summer roosting habitat, 69 acres of moderate-quality summer roosting habitat, and 88 acres of low-quality summer roosting habitat were identified. A presence/absence survey for the TCB was conducted in suitable forest habitat within the Project Site in July 2025 (MES 2025; Appendix D). A total of 15 bats representing four species were captured: big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), southeastern myotis (*Myotis austroriparius*), and evening bat (*Nycticeius humeralis*). Acoustic detectors identified calls of nine bat species: eastern red bat, TCB, evening bat, big brown bat, southeastern myotis, Mexican free-tailed bat (*Tadarida brasiliensis*), northern long-eared bat (*Myotis septentrionalis*), RBEB, and silver-haired bat (*Lasionycteris noctivagans*). Statistical analyses indicated significant probabilities of presence ($p<0.05$) for eastern red bats, TCBs, evening bats, and big brown bats. There was insufficient evidence for probable presence of the other five species. Study results indicated that bats use the site for foraging and commuting (traveling from roosting areas to foraging areas and back). No evidence of roosting, hibernation, or maternity use was observed in man-made structures or natural habitat features.

Environmental Consequences

Minor direct impacts to vegetation would occur by clearing approximately 113 acres of forest within the portion of the Project Site proposed for development and revegetation of this portion of the Project Site. Minor direct and indirect adverse impacts to migratory birds and other wildlife are expected due to habitat removal, particularly forest clearing. During construction, mobile species would be able to avoid construction activities by moving offsite. Once construction is completed, displaced species that can use industrialized/urbanized landscapes could move back onsite. Bat species may be affected due to removal of up to 106 acres of summer roosting habitat and 372.5 acres of foraging habitat made up of forested and herbaceous vegetation communities. If the facility is decommissioned or closed, a Decommissioning and Closure Plan would be developed, and the Project Site would be restored to a tillable state and revegetated where necessary.

Natural Areas, Parks, and Recreation, Visual Resources, and Noise

Affected Environment

No natural areas, developed parks, or designated outdoor recreation sites occur within the Project Site. Various recreational resources exist within a five-mile radius, including municipal parks and trails, golf courses, and a private hunting club. Informal or dispersed recreational use may occur on private property within five miles of the Project, particularly along Tibbee Creek, Chuquatonchee Creek, and the Tennessee–Tombigbee River.

The Project Site's Visual Study Area (VSA) is the geographic one-mile buffer around the Project Site within which visual resource impacts are studied. The landscape within the VSA is mostly consistent with the rural and agricultural land uses typical of the outskirts of cities and community centers in eastern Mississippi, while also including some areas of regional energy and industrial land use.

Rural-residential noise-sensitive receptors occur around the perimeter of the Project Site, with greater concentrations along Hazelwood Road and Payne Field Road. One place of worship and one nursing home fall within 0.5 mile of the Project Site.

Environmental Consequences

The Project would have minor impacts to recreation through the elimination of dispersed outdoor recreational activities over the lifetime of the Project. If the facility were to be decommissioned or closed, a Decommissioning and Closure Plan would be developed and implemented. Details in Section 2.2.5.

The Project would result in the visual alteration of an existing rural/agricultural and industrial/energy landscape, increasing the presence of energy related infrastructure in foreground and middle ground views in areas previously used in agriculture. Most of the Project would be sited within currently cleared areas, preserving existing vegetation patterns throughout the Project Site that would help to screen Project views from some areas of the VSA. Targeted vegetative or screening mitigation would help to further reduce Project visibility from areas where sensitive viewers are concentrated. Construction, operation, maintenance, and decommissioning of the Project would be expected to have no more than a moderate visual impact on the landscape and viewers within the VSA.

Minor temporary noise impacts would be experienced during construction; nearby residents would experience elevated noise levels from the operation of construction equipment during daytime hours (typically 8am to 7pm) as well as an increase in traffic during peak morning and evening commutes. During operations, the Project's inverters would emit continuous sound while operating. The inverters would operate only during daylight hours when the PV panels are producing electricity. The sound levels experienced offsite would be consistent with existing conditions of agricultural operations and road noise and noise impacts from operations would be negligible.

Air Quality

Affected Environment
The Project Site is in a rural area where the land use is mostly agricultural. Urban areas in the vicinity are West Point and Columbus. Pollutants emitted in the Project Area (Project Site and surrounding area) would be reflective of an agricultural setting, traffic between the urban areas, and a nearby industrial site.

Environmental Consequences
With implementation of fugitive dust control measures, proper maintenance of construction equipment, and adherence to open burning regulations, any temporary air quality impacts due to construction would be minimized. An emergency diesel generator may be installed to provide on-site emergency power to the BESS and substation in the event of a disruption of the primary power supply if local distribution service cannot be reasonably secured. The emergency generator would not require an air permit to operate based on Mississippi State Regulation 11 Mississippi Administrative Code Part 2, R.2.13. However, Hope SB would be required to submit a true minor determination permit application to the MDEQ. The operation of the Project would generate electricity without greenhouse gas (GHG) emissions in contrast to electricity generation from fossil fuel-fired power plants. The nearly emissions-free power generated by the Project would have little noticeable effect at regional or larger scales. The construction and operation of the Project is not anticipated to have any long-term adverse impacts on air quality or GHG emissions.

Cultural Resources

Affected Environment
New South Associates, Inc. (NSA) conducted a Phase I cultural resources field survey within the Project Area of Potential Effects (APE) in 2025 and 2026. The Project's APE has been defined as the area of direct ground disturbance and the viewshed within 0.5-mile buffer surrounding the Project Site.

The Phase I survey identified 16 previously unidentified archaeological sites and 23 isolated finds. NSA recommended 13 of the 16 newly identified archaeological resources and 14 of the 16 re-visited archaeological resources as not eligible for listing in the National Register of Historic Places (NRHP). Three newly identified resources (22CL1124, 22CL1131, and 22CL1139) were recommended as NRHP eligible. Site 22CL1124 is a Mississippian site containing sensitive resources, Site 22CL1131 is the 1917-1920 U.S. Signal Corps Payne Field Advanced Aviation School and the 1937 Civilian Conservation Corps Camp at Payne Field, and Site 22CL1139 is a Mississippian house site with a historic artifact scatter component. All are recommended to be avoided. Of the re-visited resources, the Mobile & Ohio Railroad (22CL0102) and the Canton, Aberdeen & Nashville Division of the Illinois Central Railroad (22CL0103) were recommended as NRHP eligible. Following the Phase I historic architectural survey of the APE, NSA recommended that none of the 32 newly recorded architectural resources possessed the necessary significance

and/or integrity to be considered NRHP eligible. Five previously recorded architectural resources have been recommended NRHP eligible.

Environmental Consequences

The Project is designed to avoid and minimize adverse effects and impacts to NRHP-listed, eligible, undetermined, or potentially sensitive cultural resources. TVA is consulting with the Mississippi Department of Archives and History and federally recognized Tribes regarding TVA's NRHP-eligibility determinations, findings of effect, and development of avoidance and minimization measures. Project components would avoid impacts to potentially NRHP-eligible archaeological sites 22CL1124, 22CL1131, and 22CL1139 and will have no effect to them. The Mobile & Ohio Railroad (22CL0102) and the Canton, Aberdeen & Nashville Division of the Illinois Central Railroad (22CL0103) were recommended as NRHP eligible. These resources would be avoided through the installation of overhead utility segments. In addition, no adverse effects to architectural resources are anticipated due to the Proposed Action.

Transportation, Utilities, Waste Management, Public Health and Safety, and Socioeconomics

Affected Environment

The Project Site is accessible from various local roads including Hazelwood Road, Yokohama Boulevard, East Industrial Access Road, Eshman Avenue, Old Aberdeen Road, Johnny Thomas Road, and Payne Field Road, as well as US Highway 45 Alternate, enabling transportation for construction, operation and decommissioning. Interior roads would be constructed and maintained within the Project Site. Utilities, waste management, and public health and safety measures are all established in the Project Area. Clay County is part of the three-county "Golden Triangle" region (Clay, Lowndes, and Oktibbeha counties). Clay County and West Point contain higher percentages of minority and low-income residents than surrounding counties and Mississippi overall.

Environmental Consequences

Due to increases from workers commuting to and from the Project Site during construction, a minimal impact on traffic flow would be anticipated during construction. Negligible direct impacts and no indirect impacts on transportation would occur during operation and maintenance. The Project would have no adverse impacts to waste management. Minor, temporary impacts to health and safety are expected during construction and decommissioning but would be minimized with adherence to Occupational Safety and Health Act regulations and health and safety plans. Operational design, including perimeter fencing and monitoring to prohibit public entry, and adherence to safety measures would result in minimal impacts to public health and safety.

Short-term beneficial economic impacts would result from construction, including the purchase of materials, equipment, and services and a temporary increase in employment, income, and population. Positive, long-term, direct impacts on economics and population

from Project operation would occur. The local tax base would increase from construction of the Project, which would benefit Clay County, the City of West Point, and the Golden Triangle region of eastern Mississippi. If the facility were to be decommissioned or closed, a Decommissioning and Closure Plan would be developed and implemented. Details in Section 2.2.5.

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CHAPTER 1 - PURPOSE AND NEED FOR ACTION

1.1 Introduction and Background

Tennessee Valley Authority (TVA) is evaluating the potential purchase of electric power and renewable energy credits generated by the proposed Hope Solar and Storage Project (Project) in Clay County, Mississippi, pursuant to a Power Purchase Agreement (PPA) with Hope SB, LLC, (Hope SB), a subsidiary of Origis Energy. Hope SB would construct, or contract for the construction of, the Project, which is expected to generate up to 200 megawatts (MW) of alternating current (AC) power from a solar photovoltaic (PV) facility, coupled with an up to 400 MW, 4-hour duration battery energy storage system (BESS), for a total instantaneous injection power capacity of up to 400 MW and a total BESS capacity of 1,600-megawatt hours (MWh). TVA would purchase the electric power and renewable energy credits generated by the proposed Project for a term of 20 years, commencing upon commercial operation, and subject to satisfactory completion of all applicable environmental reviews.

The Project Site is located primarily north of and partially within the City of West Point, Mississippi (Figure 1-1). The proposed Project would occupy portions of 27 individual parcels, which in their entirety encompass approximately 2,419 acres of land that Hope SB would purchase for the facility. The Project Area, defined as the Project Site and the surrounding land, consists predominantly of agriculture and pastureland, with some forested and low-density residential areas. The Project would consist of multiple parallel rows containing approximately 535,500 solar PV panels on single-axis tracking structures, along with direct current (DC) to AC inverters, transformers, combiner boxes, switchgear, internal site access roads, collection lines, substation, generation-tie line (gen-tie line), BESS, and other ancillary infrastructure and facilities occupying approximately 1,700 acres (LOD). The BESS portion of the Project would have the capability of being charged either from the PV facility or directly from the TVA grid.

The power generated or dispatched by the Project would be delivered to the TVA transmission system at a 161-kilovolt (kV) Point of Interconnection (POI) within the existing TVA West Point Substation via an existing, approximately 2,630-foot long 161-kV gen-tie line located within the Project Site that would be jointly owned and operated by Hope SB and the nearby Optimist Solar and BESS Facility (Optimist Solar). The Point of Change of Ownership with TVA is located at a transmission structure along the gen-tie line. All interconnection work would occur either within the existing TVA West Point Substation or on the Project Site.

1.2 Purpose and Need for Action

The TVA is a corporate agency of the United States (U.S.) that serves a region comprising most of Tennessee and portions of Alabama, Georgia, Kentucky, Mississippi, North Carolina, and Virginia. As a public power entity, TVA has no shareholders and receives no appropriated funding. Under the TVA Act of 1933, as amended, Congress charged TVA with advancing the social and economic well-being of the residents of the Tennessee Valley region.

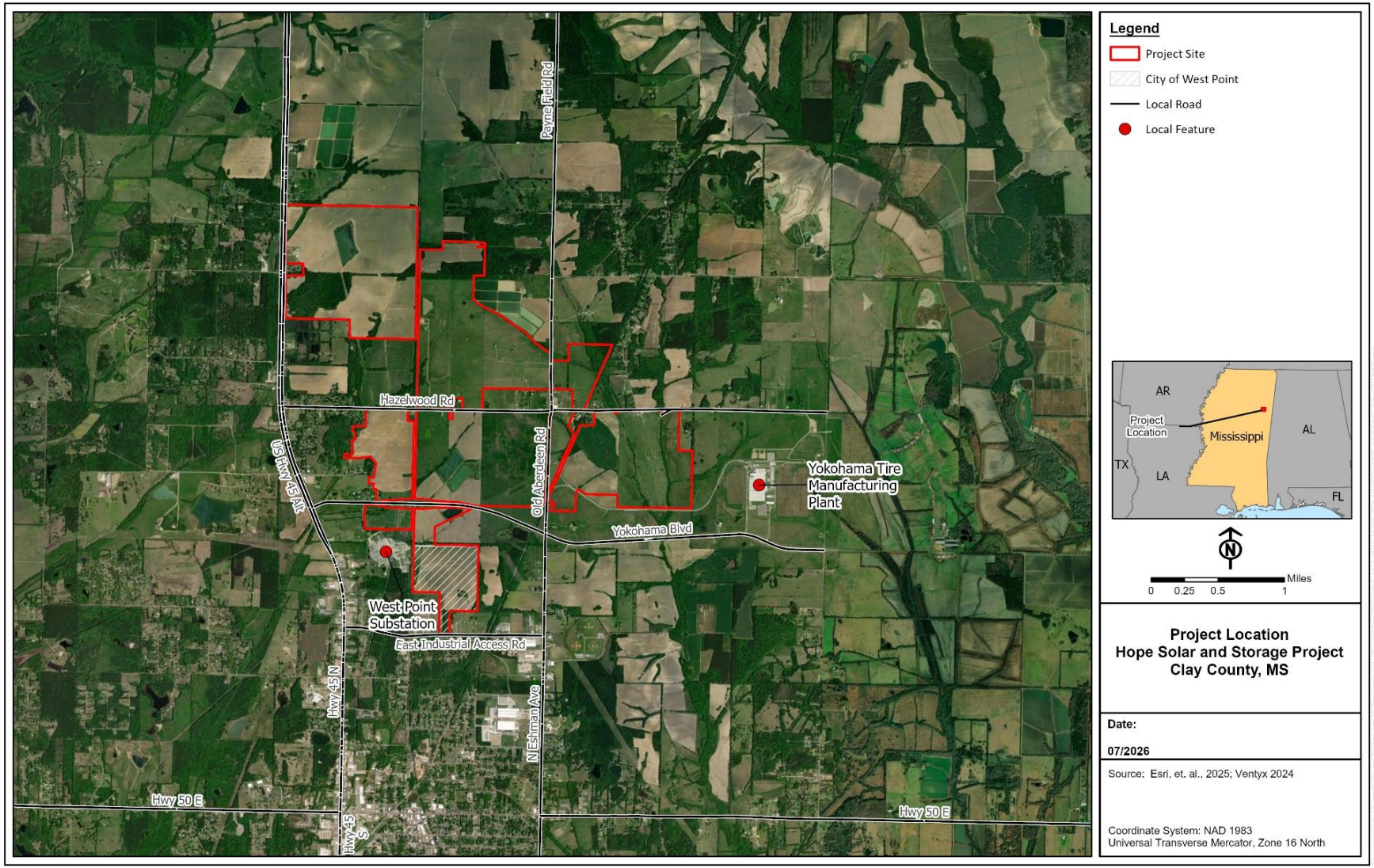

Figure 1-1. Project Location

As part of its diversified energy strategy, TVA produces or obtains electricity from a diverse portfolio of energy sources, including solar, hydroelectric, wind, battery storage, fossil fuel, and nuclear. TVA is working to bring new generation online while maintaining reliability and affordability for the 10 million people within the TVA Power Service Area (PSA). In August 2026, TVA completed an Integrated Resource Plan (IRP) and associated Environmental Impact Statement to evaluate the long-term demand for power in the Valley region, the demand and supply side resource options available for meeting that demand, and the potential economic, operating, and environmental impacts of these options (TVA 2026a, 2026b). The 2026 IRP identified various resources that TVA intends to use to meet the energy needs of the TVA region through 2040 consistent with its least-cost planning obligation and continuing to deliver affordable, reliable, and resilient, energy while remaining environmentally responsible (TVA 2026a). The 2026 IRP anticipates growth of solar generating capacity in all scenarios analyzed, and supports the expansion of solar generating capacity up to five gigawatts, as well as up to five gigawatts of storage capacity through 2040, depending on the level of load growth and other factors a (TVA 2026a and 2026b). This Project would help TVA provide cost-effective renewable energy in response to customer demands and consistent with the 2026 IRP.

1.3 Scoping and Public Involvement

On March 13, 2025, a Notice of Intent (NOI) was published in the Federal Register announcing TVA's intent to prepare an Environmental Impact Statement (EIS) for the purchase of electricity generated by the Project in Clay County, Mississippi. The NOI initiated a 30-day public scoping period, which concluded on April 14, 2025. The NOI solicited public input on both the scope of the EIS and the environmental issues that should be considered in the EIS. The NOI also requested data, information, and analyses relevant to the proposed action. In addition to the NOI in the Federal Register, TVA sent notification of the NOI to local and state government entities and federal agencies; issued a Project news release via local media serving the Clay County area, including *Daily Times Leader* newspaper, and posted the news release on TVA's website. TVA sent the scoping notice via email to agencies and organizations. TVA notified landowners within a 1-mile radius of the Project Site with postcards describing the public scoping period.

During the extent of the public scoping period, TVA received comments from the U.S. Environmental Protection Agency (USEPA) and one private individual. Comments were related to economic development; energy efficiency; decommissioning and waste management; water resources; soil resources; socioeconomics; and human health. The comments and responses are included as Appendix A. If a comment is specifically addressed within this EIS, the EIS section is identified in the response in Appendix A.

Based on internal and public scoping, identification of applicable laws, regulations, Executive Orders (EOs), and policies, TVA identified that potential effects to the resource areas listed below are relevant to the decision being made:

- Land Use

- Geology, Soils, and Prime Farmland
- Water Resources (Groundwater, Surface Water, Floodplains, Water Quality)
- Biological Resources (Vegetation, Wildlife, Migratory Birds, Aquatic Life, Threatened and Endangered species)
- Natural Areas, Parks, and Recreation
- Visual Resources
- Noise
- Air Quality and GHG Emissions
- Cultural Resources
- Utilities
- Waste Management
- Public and Occupational Health and Safety
- Transportation
- Socioeconomics and Demographics.

1.4 Necessary Permits, Licenses, and Consultations

This EIS is prepared in accordance with NEPA (42 United States Code [U.S.C.] 4321 *et seq*.) and with TVA's procedures for implementing NEPA (18 Code of Federal Regulations [CFR] Part 1318).

Other laws and EOs are relevant to the Proposed Action (Table 1-1). These laws and orders may affect the environmental consequences of the Project and associated Project components or represent measures to implement during Project construction, operation, maintenance, and/or decommissioning.

Table 1-1. Laws and Executive Orders relevant to the Proposed Action

Environmental Resource Area	Law/Executive Order
Prime Farmland	Farmland Protection Policy Act
Water Resources	Clean Water Act, Sections 401, 402, and 404 EO 11988 – Floodplain Management EO 11990 – Protection of Wetlands Safe Drinking Water Act Mississippi Air and Water Pollution Control Act (Miss. Code Ann. § 49-17-1 et seq.)
Biological Resources	Bald and Golden Eagle Protection Act Endangered Species Act, Section 7 EO 13112 – Invasive Species EO 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds Migratory Bird Treaty Act Mississippi Nongame and Endangered Species Conservation Act (Miss. Code Ann. § 49-5-101 et seq.)

Environmental Resource Area	Law/Executive Order
Air Quality and GHG Emissions	Clean Air Act Mississippi Air and Water Pollution Control Act (Miss. Code Ann. § 49-17-1 et seq.)
Cultural Resources	Archaeological Resources Protection Act EO 11593 - Protection and Enhancement of Cultural Environment EO 13175 - Consultation and Coordination with Indian Tribal Governments National Historic Preservation Act, Section 106 Native American Graves Protection and Repatriation Act
Waste Management	Comprehensive Environmental Response, Compensation, and Liability Act Emergency Planning and Community Right-to-Know Act EO 12088 - Federal Compliance with Pollution Control Standards Resource Conservation and Recovery Act Solid Waste Disposal Act Toxic Substances Control Act Mississippi Solid Waste Disposal Law (Miss. Code Ann. § 17-17-1 et seq.)
Public Health and Safety	Occupational Safety and Health Act Safe, Efficient Use, and Preservation of the Navigable Airspace (14 Code of Federal Regulations 77)

Notes
EO = Executive Order
Miss. Code Ann. = Mississippi Code Annotated

The Proposed Action would also require permits, consultation and/or coordination through federal, state, tribal and local agencies, as well as certification for the proper installation of some Project components. Adherence to permit or certification conditions helps to avoid, minimize, or mitigate environmental impacts associated with the Proposed Action, as discussed in relation to specific resource areas in Chapter 3.

1.4.1 Clean Water Act Section 404 and 401 Permits

Section 404 of the CWA prohibits the discharge of dredged or fill material into Waters of the U.S. (WOTUS, i.e., jurisdictional waters), including wetlands and streams, unless authorized by the U.S. Army Corps of Engineers (USACE). The Project layout was designed to avoid wetlands and streams when practicable, as discussed in greater detail in Section 3.4 of this EIS. The proposed Project impacts are expected to be minimal and occur due to the installation of access roads and/or utility crossings and are anticipated to fall within the threshold of Nationwide Permit (NWP) 14, Linear Transportation Projects and NWP 57, Electric Utility Line and Telecommunications Activities, or NWP 51, Land-Based Renewable Energy Generation Facilities. Section 404 permits require a water quality certification, as set forth in Section 401 of the CWA, prior to discharging fill materials into WOTUS. Section 401 requires any applicant requesting a federal permit or license for activities that may result in discharges to WOTUS to first obtain a certification from the state and that the permitted discharges comply with the state's applicable effluent limitations and water quality standards. The Mississippi Department of Environmental Quality (MDEQ) Stormwater and 401 Water Quality Branch administers the Section 401 water quality certification program in conjunction with the USACE.

1.4.2 National Pollutant Discharge Elimination System Permit

MDEQ administers the National Pollution Discharge Elimination System (NPDES) construction stormwater permitting program in Mississippi. The proposed Project would require coverage under General Permit MSR10 for discharge of stormwater from large construction projects (MDEQ 2022). Hope SB would file an NOI, including a site-specific Storm Water Pollution Prevention Plan (SWPPP).

Any construction by TVA to deliver the output of the PV and BESS from the Project substation to the West Point Substation would either be included within the NOI and the SWPPP for the Project Construction Stormwater General Permit (submitted by Hope SB) or subject to a separate NOI submitted directly by TVA. All other construction associated with the interconnection would take place within the existing West Point Substation. TVA is not proposing any other new or rebuilt above-ground transmission lines associated with the Project.

1.4.3 Other Permits

No ordinances or requirements specific to solar and BESS facilities exist in Clay County or the City of West Point; however, the City has development review processes that would apply to certain parcels that are part of the Project, in accordance with the City of West Point Development Code, as discussed in greater detail in Section 3.2.1 of this EIS. Hope SB would comply with these processes and ensure that any permits required under the City of West Point Development Code are obtained prior to the start of Project. If open burning of debris from tree clearing on the Project Site is planned, the appropriate open burning permits would be obtained from the Mississippi Forestry Commission. Encroachment permits for the construction of driveways and installation of aboveground or below ground installation of utilities within state or county rights-of-way (ROW), as well as permits for vehicles and loads that exceed the established over-dimensional size and weight limitations for traveling on state or local roads and bridges, would be required from either the Mississippi Department of Transportation (MDOT) or Clay County. In addition, the Project would seek permitting of a septic system for the operations and maintenance (O&M) building through the Mississippi Department of Health and a True Minor Determination from MDEQ for the temporary operation of a generator to provide station service to the substation and BESS in the event of a loss of primary power.

A no rise letter issued by the Clay County floodplain administrator would be required for any disturbance within the floodplain. A floodplain development permit from The City of West Point would be required for activities on the Project Site and within the Town Creek and McGee Creek floodplains (West Point 2017b).

In addition, Hope SB would seek a Certificate of Public Convenience and Necessity for the Project from the Mississippi Public Service Commission prior to the start of construction.

1.4.4 Consultation Requirements

In accordance with specific acts, TVA is consulting with federal and state agencies and federally recognized Tribes on the effects of the Proposed Action on particular resource areas.

1.4.4.1 U.S. Fish and Wildlife Service

In accordance with Section 7 of the Endangered Species Act (ESA), TVA would, if necessary, initiate consultation with the U.S. Fish and Wildlife Service (USFWS) regarding the Proposed Action's potential effects on ESA listed species, based on wetland delineations, habitat assessments, and bat presence/absence surveys (acoustic and mist net) of the Project Site.

1.4.4.2 Mississippi Department of Archives and History

In compliance with Section 106 of the National Historic Preservation Act (NHPA), TVA is currently consulting with the Mississippi Department of Archives and History (MDAH), which serves as the Mississippi State Historic Preservation Office (SHPO), regarding the Project and its effect on historic properties. Coordination with MDAH was started early in the planning process due to the proximity of several historic properties, other known cultural resources, and tribal land patents at the Project Site. A research design to conduct a Phase I cultural resources assessment for the Project was submitted to MDAH on January 6, 2025, and approved by MDAH on January 31, 2025 (Appendix B). Additional correspondence with MDAH occurred in February 2025 to reflect Project boundary changes. NHPA Section 106 consultation with MDAH is ongoing.

1.4.4.3 Federally Recognized Tribes

In compliance with Section 106 of NHPA, TVA is currently consulting with federally recognized Tribes regarding the Project and its effect on properties that may have religious and cultural significance to Tribes. Consultation with Tribes was initiated early in the planning process due to the proximity of known tribally significant properties to the Project Site and is ongoing.

1.5 Environmental Impact Statement Overview

Pursuant to NEPA, federal agencies are required to evaluate the potential environmental impacts of their proposed actions. An EIS is prepared for major federal actions that have the potential for significant environmental impacts or public controversy and presents opportunities for public involvement.

This EIS is prepared in accordance with the National Environmental Policy Act (NEPA) (42 United States Code [U.S.C.] 4321 et seq.) and with TVA's procedures for implementing NEPA (18 CFR Part 1318).

This EIS tiers from the TVA IRP EIS (TVA 2026b), which explains TVA's need for additional generating capacity and anticipates growth of solar generating capacity in all scenarios analyzed. The IRP EIS also compares the environmental impacts of solar generation with other types of generation and describes system-wide, non-site-specific impacts of solar generation.

TVA has prepared this Draft EIS to assess the environmental impacts of the Proposed Action. TVA used the input received during the public scoping period in developing this Draft EIS. An electronic version of this Draft EIS has been posted on the TVA website for a 15-day public comment period, which includes an option for the public to submit comments electronically. Comments from the 15-day public review and comment period of the Draft EIS will be reviewed and considered in preparing the Final EIS. TVA will make the completed EIS available on its website and provide notification.

CHAPTER 2 - ALTERNATIVES

TVA has determined that, from the standpoint of NEPA, there are two feasible alternatives available: the No Action Alternative and the Proposed Action Alternative. TVA considered other alternatives but determined that they would not be feasible. Non-feasible alternatives are discussed in Section 2.3.

2.1 No Action Alternative

The No Action Alternative provides a baseline of conditions against which the impacts of the Proposed Action Alternative are measured. Under the No Action Alternative, TVA would not purchase the power generated by the Project (i.e., TVA would not be involved with the Project). If TVA were to select this alternative and Hope SB elected not to proceed with the Project, then Hope SB would not construct or operate the solar and BESS facility. Existing conditions (land use, natural resources, visual resources, physical resources, and socioeconomics) at the Project Site would remain unchanged. TVA would continue to rely on other sources of generation described in the 2026 IRP (TVA 2026a) to ensure an adequate energy supply.

2.2 Proposed Action Alternative

Under the Proposed Action Alternative, Hope SB would construct and operate an up to 200 MW AC single-axis tracking PV solar facility with up to 400 MW/1,600 MWh of BESS in Clay County, Mississippi (referred to as the Project), and TVA would purchase the renewable energy from the facility under the 20-year PPA with Hope SB in accordance with the terms thereunder. The Project would connect to the existing TVA electrical network via TVA's West Point Substation. The power generated or dispatched by the Project would be delivered to the TVA transmission system at a 161-kV POI within the existing TVA West Point Substation via an existing, approximately 2,630-foot long 161-kV gen-tie line located within the Project Site that would be jointly owned and operated by Hope SB and the nearby Optimist Solar facility. Approximately 1,700 acres of the 2,419-acre Project Site would be used for the PV arrays, BESS, inverters, transformers, internal site access roads, Project substation, ancillary infrastructure, and construction laydown and parking areas. Figure 2-1 provides an overview of the Project Site as well as the parcel boundaries of properties that would be affected during construction.

This EIS assesses (1) the impact of TVA's action to enter into the PPA with Hope SB, (2) the associated impacts of the construction, operation, maintenance and decommissioning of the Project by Hope SB, and (3) impacts associated with the interconnection by TVA.

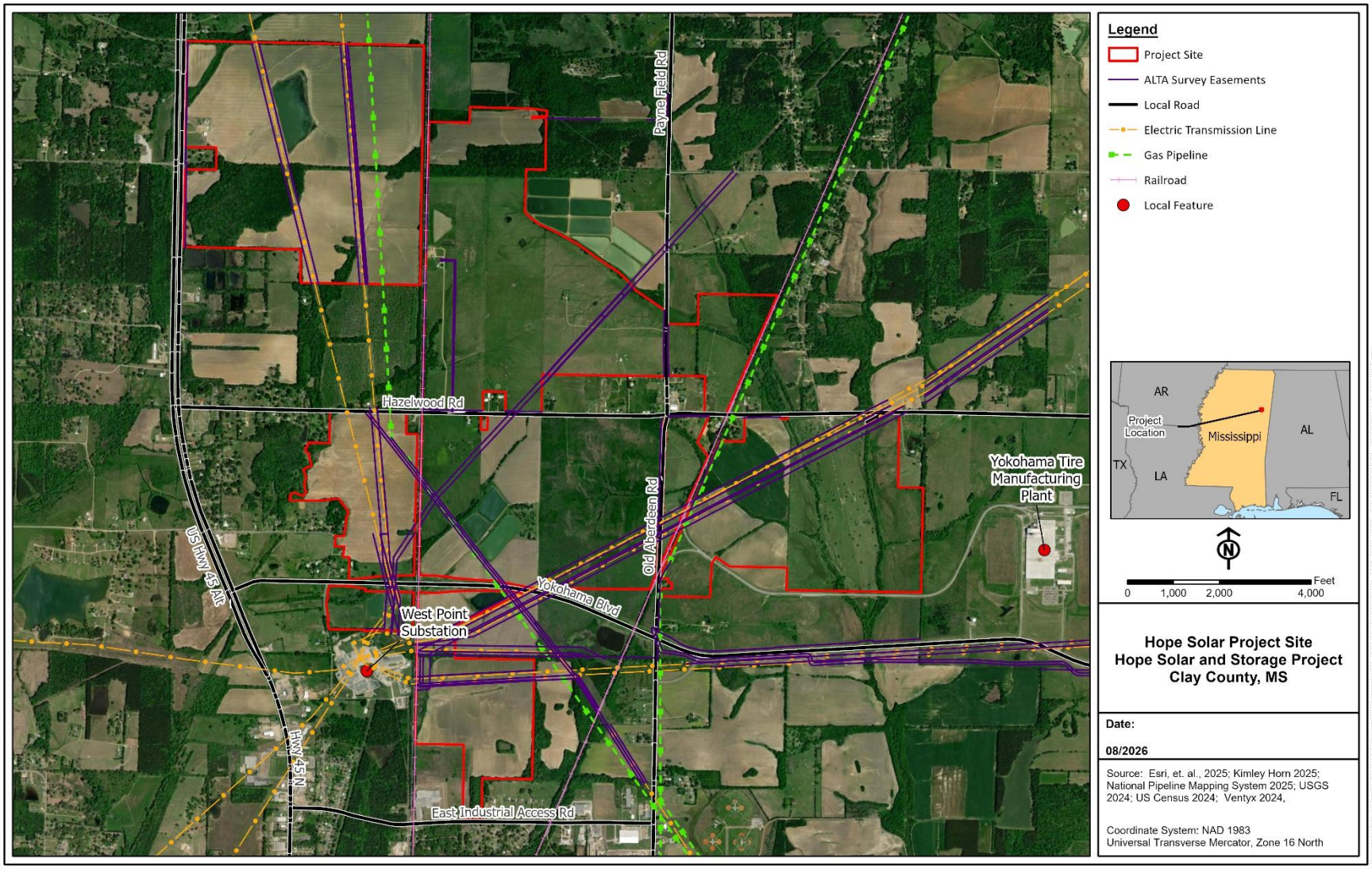

Figure 2-1. Project Site and Existing Utilities

2.2.1 Project Description

The proposed Project and associated TVA interconnection components would occupy portions of the Project Site that predominantly comprise cultivated agricultural fields and pastureland (Figure 2-1). The perimeter of the developed facilities would be enclosed with security fencing. Within the limits of the fenced facility would be the arrays of solar panels, inverters, electrical cabling, combiner boxes, switchgear, Project substation, BESS, and other related infrastructure such as access roads and operations and maintenance building. The remaining portions of the Project Site would support temporary construction laydown and parking areas, structures and access roads associated with the collection lines and interconnection or remain undeveloped. Additional information regarding existing land use conditions is detailed in Chapter 3. Figure 2-2 through Figure 2-5 show the preliminary layout of the Project Site.

The Project would convert sunlight into DC electrical energy within the PV panels (modules) as generally depicted in Figure 2-6. PV power generation is the direct conversion of light into electricity at the atomic level. Some materials exhibit a property known as the photoelectric effect that causes them to absorb energy as photons of light and then release energy as electrons. When the free electrons are captured, an electric current is produced, which can be used as electricity (TVA 2014).

The Project would be composed of PV modules mounted together in arrays. Groups of panels would be connected electrically in series to form “strings” of panels, with the maximum string size chosen to ensure that the maximum inverter input voltage is not exceeded by the string voltage at the Project’s high design temperature. The panels would be configured in blocks consisting of the PV arrays and an inverter station on a concrete pad or steel piles, which converts DC electricity generated by the solar panels into AC electricity. The modules would be attached to single-axis trackers that allow all the panels to pivot along an axis that follows the path of the sun from east to west across the sky. The trackers would be attached to steel pile foundations.

Electrical cables that connect the modules to each other are typically mounted on the back of the modules using cable trays or wire harnesses. Several rows of modules are then collected in a combiner box located at the end of one of the rows, and the output of the combiner boxes is connected by underground DC cabling to central inverters, which convert the DC electricity into AC electricity for delivery to the electrical grid. Depending on final design, the Project may incorporate either a DC-coupled or AC-coupled BESS. The BESS would also be capable of receiving power from the electrical grid via the POI to support grid-charging during periods of low market pricing or when needed for grid-support services.

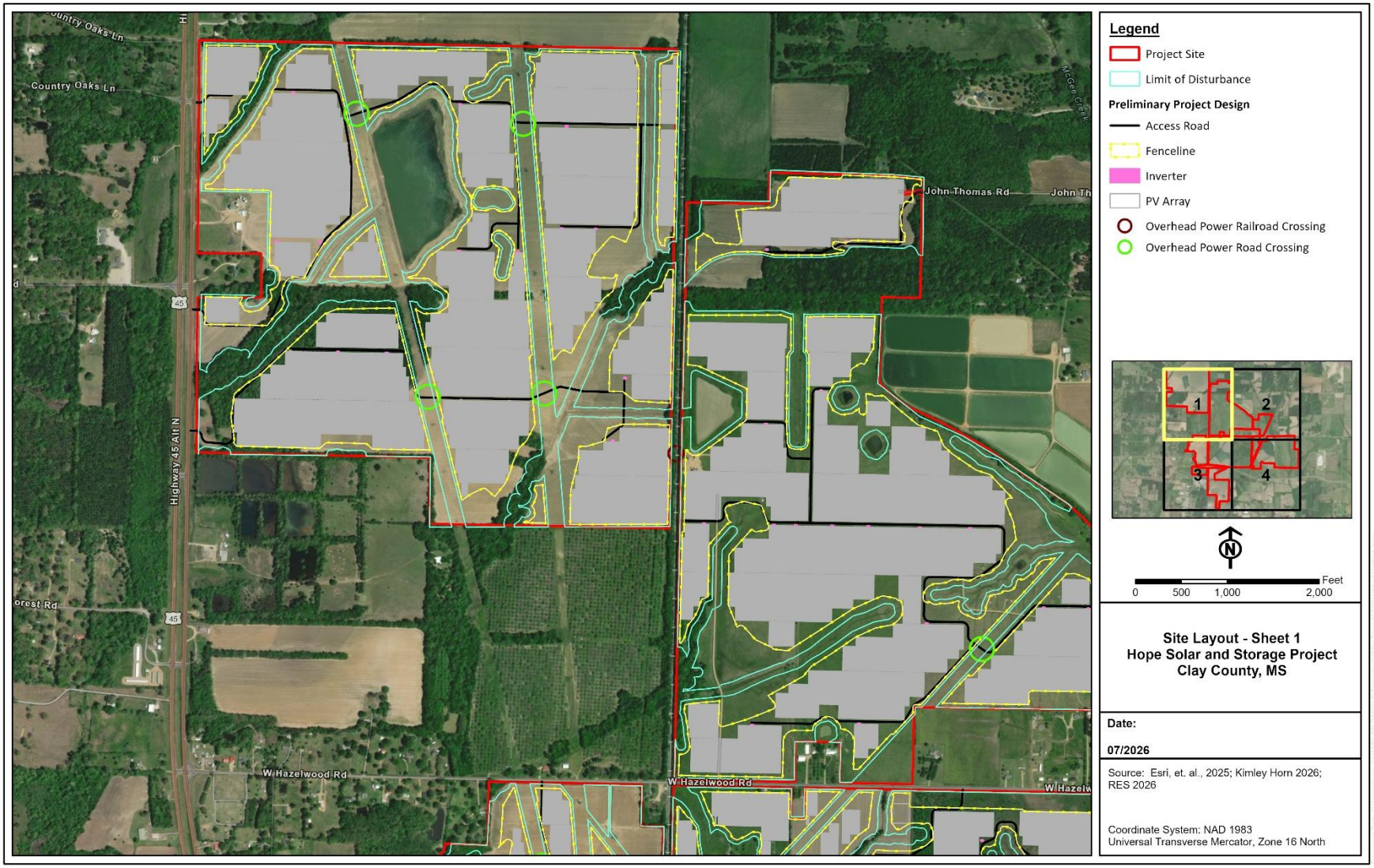

Figure 2-2. Preliminary Project Layout – Sheet 1

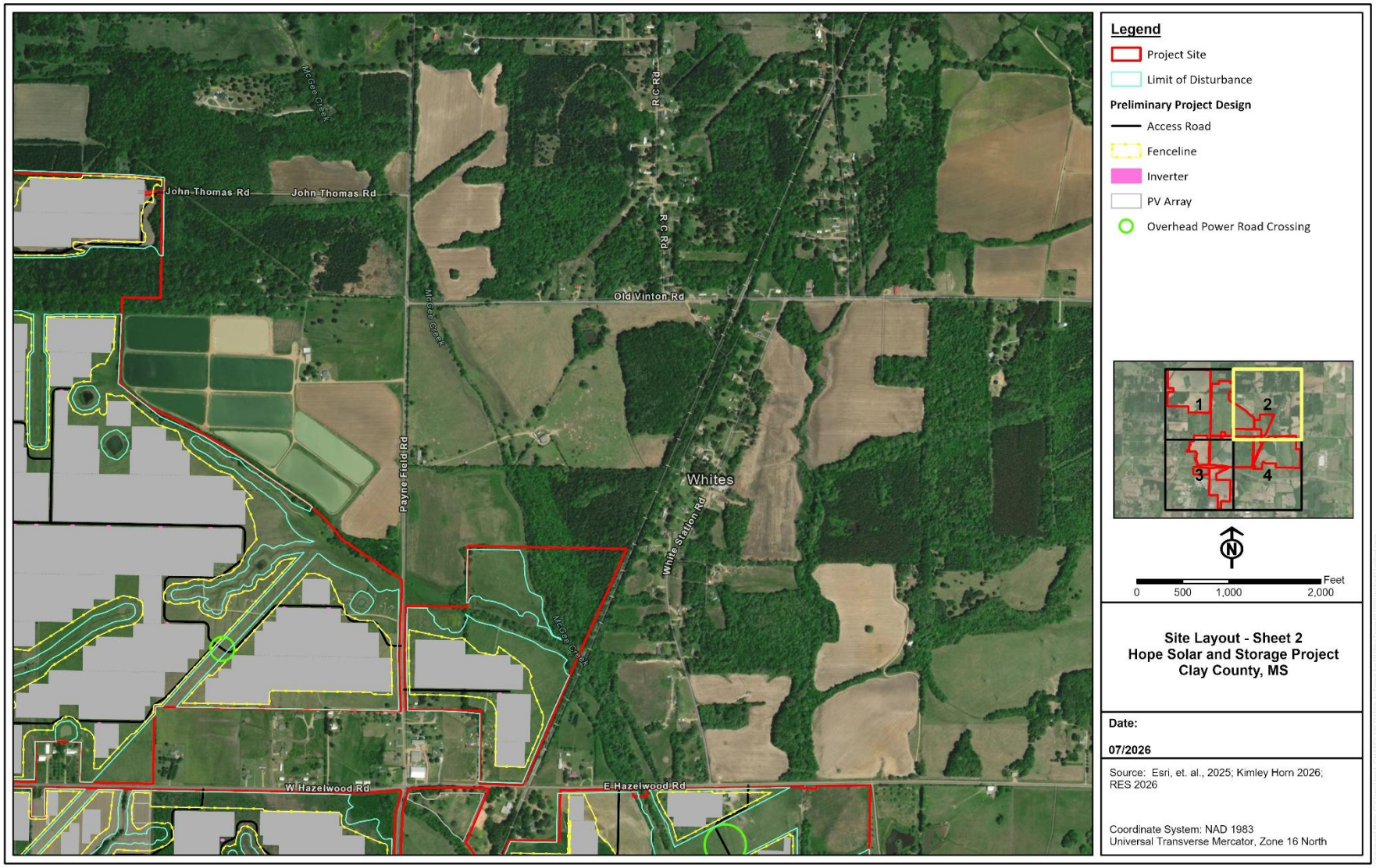

Figure 2-3. Preliminary Project Layout – Sheet 2

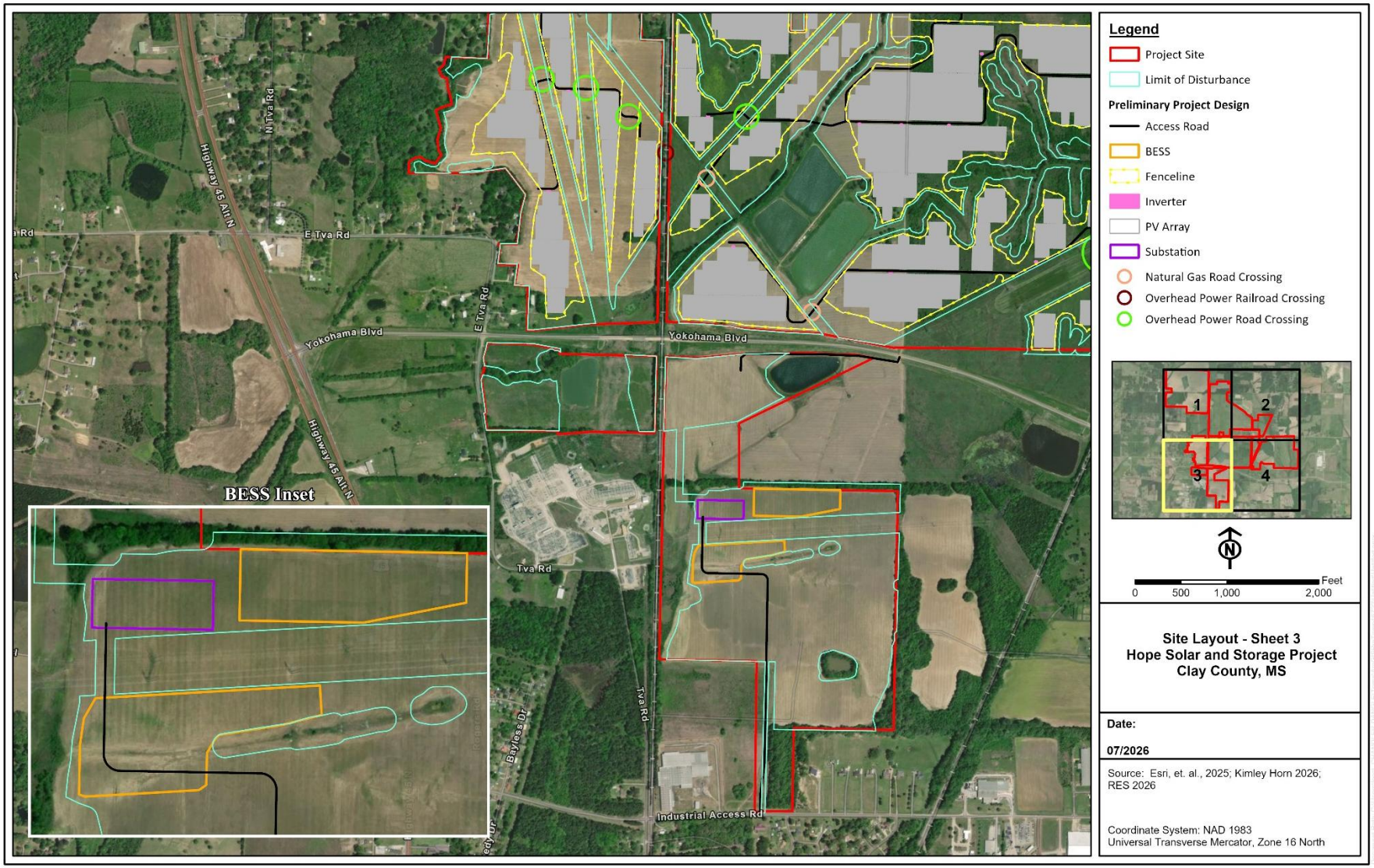

Figure 2-4. Preliminary Project Layout – Sheet 3

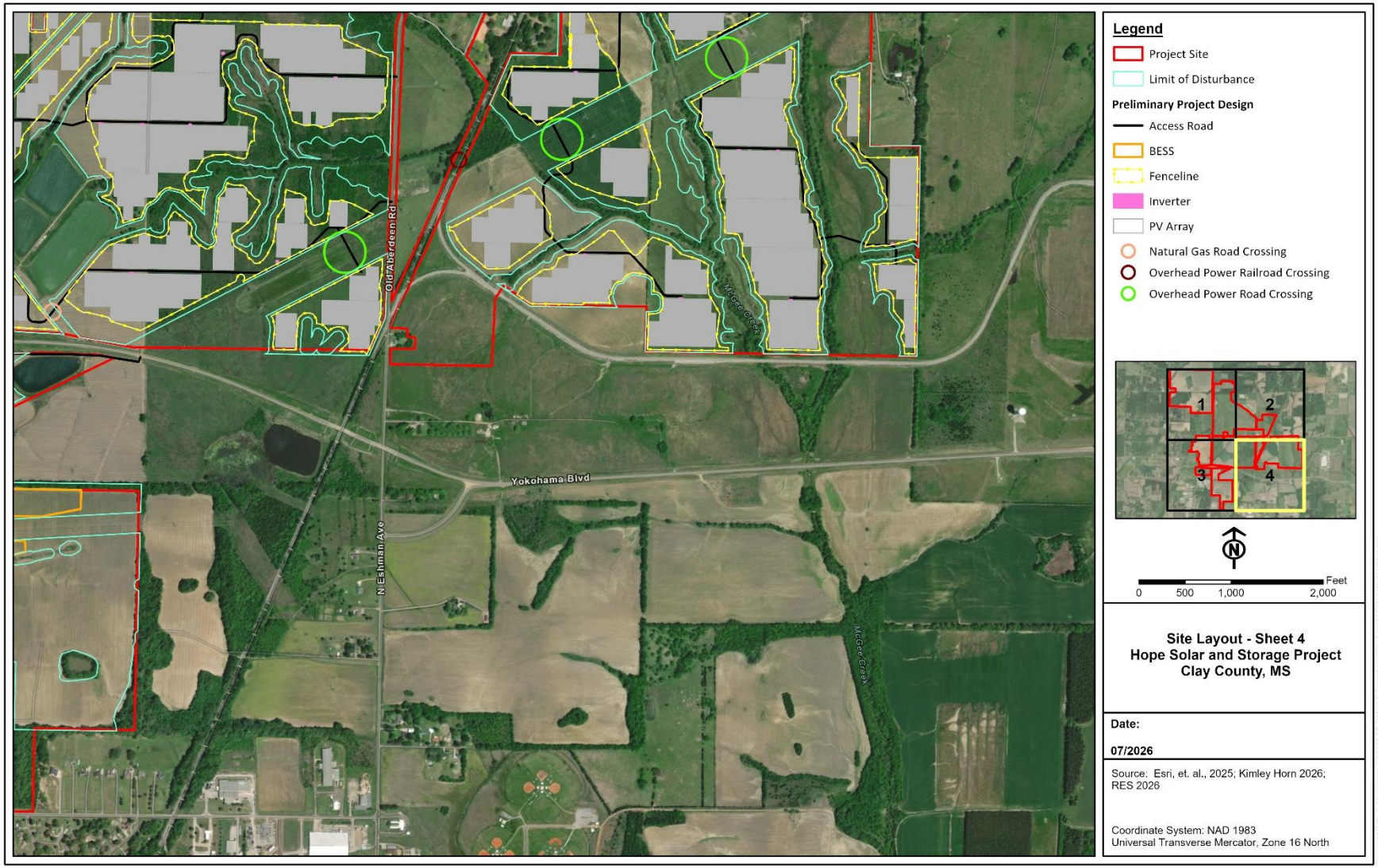

Figure 2-5. Preliminary Project Layout – Sheet 4

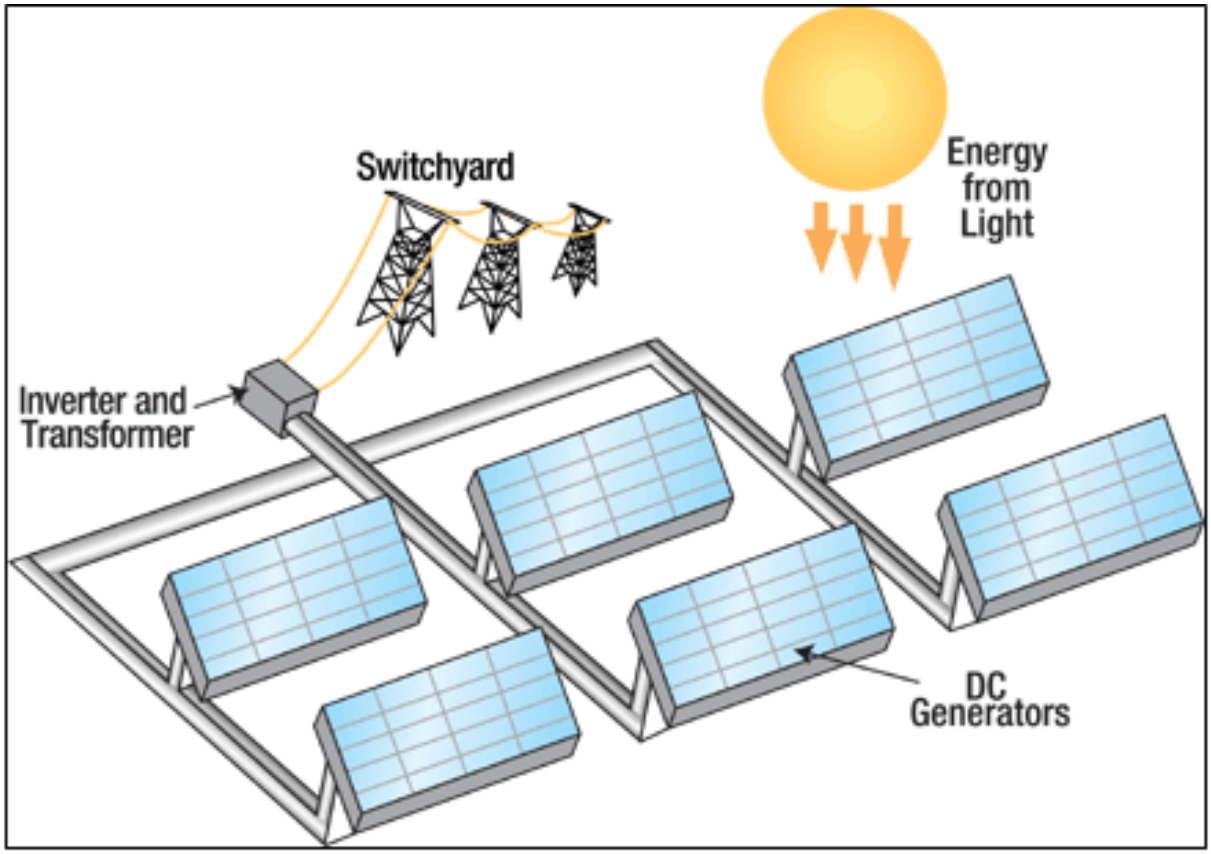

Figure 2-6. PV Solar System Energy Flow Diagram

Each central inverter would have a collocated or onboard medium-voltage transformer that increases the AC voltage to account for standard electrical losses between the inverters and the onsite Project substation. From the inverters (and, for AC-coupled configurations, the BESS inverters), a network of underground AC power cables would connect to a single main power transformer located within the 161-kV Project substation. Cables would be installed in trenches approximately 3 to 5 feet deep and 2 to 15 feet wide.

Other Project components would include a control house; metering equipment; switchgear; heating, ventilation, and cooling (HVAC) equipment; remote monitoring and communications systems; security systems; facility access roads; meteorological stations; an O&M building with a septic system; and, depending on final design, BESS enclosures or containers, associated inverters or DC-DC converters, medium-voltage transformers, and auxiliary power and protection equipment.

Access to the substation, BESS, and O&M building would be from Yokohama Boulevard, East Industrial Access Road, and Eshman Avenue. Earth-compacted roads would provide access to each inverter block for the purposes of operations, maintenance, and repairs. Complete avoidance of surface waters is not feasible, and the construction and operation of the Project would require 10 culvert installations or

improvements within streambeds that intersect proposed or existing access roads within the limit of disturbance footprint.

Collection lines would generally be installed underground within trenches or directional bore to avoid impacts on streams and wetlands within the Project Site. However, three overhead segments are proposed where railroad crossings prevent underground installation. Utility distribution poles required for these overhead crossings would be sited to avoid impacts on streams and wetlands to the extent practicable. In addition, collection lines that cross either public rights-of-way or private utility easements may be installed overhead if required based on final engineering specifications.

2.2.2 Solar and Storage Facility Construction

Construction would take approximately 18 months to complete using construction crews totaling approximately 350-600 workers during the peak phases of construction. Work would generally occur five days a week (Monday through Friday) during daylight hours. Additional hours after dark or on weekends could be necessary to make up schedule slippages or to complete critical construction activities. Night-time construction, if necessary, would require lighting in some areas of the Project Site. Any night-time lighting would be downward facing and timer and/or motion activated to minimize impacts to wildlife and any surrounding receptors, including nearby households.

Site preparation is generally required prior to construction of a solar facility and assembly of the solar arrays. Site preparation typically includes surveying and staking, removal of tall vegetation/small trees, light grading, clearing and grubbing, installation of security fencing around components, installation of erosion and sedimentation control and prevention best management practices (BMPs), and preparation of construction laydown areas. Solar array assembly and construction include driving steel piles into the ground for the tracker support structures, installation of solar panels, and electrical connections and testing/verification.

Construction laydown areas are located within the LOD and would be used for worker assembly, safety briefings, vehicle parking, temporary offices, and material storage during construction. Some of these assembly areas, which would be spread out across the Project parcels, would be staged within the locations proposed for the PV arrays. The laydown areas would be used for the duration of construction. Temporary construction trailers for equipment storage and office space would be parked onsite. Construction materials would be transported by truck and/or rail to the Project Site, where materials would be staged, assembled, and moved into place. Following completion of construction activities, most trailers, unused materials, and construction debris would be removed from the Project Site.

Throughout the entire construction phase, trees and other vegetation would be cleared within the 1,700-acre LOD and the site would be graded, as needed, for construction and placement of the solar panels, gravel access roads, the Project BESS and substation, accompanying electrical components, and other Project components. Clearing of trees (estimated to be approximately 113 acres) and other tall vegetation, as required for either construction or to prevent shading of the solar panels, would be

accomplished with chain saws, skidders, bulldozers, tractors, and/or low ground-pressure feller-bunchers, as appropriate to the terrain or constraints such as avoidance buffers for wetlands and waterways where any clearing or thinning should be accomplished manually, as described in more detail below. Because the area to be cleared is primarily open agricultural land, minimal vegetative waste would accumulate during site preparation. Any vegetative waste that does accumulate onsite would be disposed of offsite or by open burning or chipping/grinding to minimize construction waste. If burning is selected, only vegetation and untreated wood would be burned, and no burning of other construction debris is anticipated. Prior to burning, Hope SB would obtain any necessary permits, as discussed in Section 1.4.3. Single-family homes, barns, and other structures within the Project Site would need to be demolished for construction of the Project in accordance with applicable Clay County and West Point ordinances and regulations. The proposed solar PV array and associated infrastructure would avoid and minimize, to the maximum extent practicable, soil erosion into wetlands and streams. Site grading, excavation, and construction plans would include BMPs to prevent erosion and sediment runoff from the Project Site during and after construction.

In accordance with TVA BMPs, a streamside management zone of 50 feet would be applied on both sides of perennial and intermittent streams, as well as along the margins of permanent bodies of open water (wetlands and ponds) (TVA 2022a). The MDEQ NPDES General Construction Permit also requires minimum 25-foot buffers surrounding streams and wetlands, supplemented with additional erosion and sediment controls, which when combined achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer (MDEQ 2022). Apart from removal of tall vegetation with hand tools and leaving the roots in place, buffer areas would be avoided during construction to the greatest extent practicable. Once the buffer areas are established, construction areas would be cleared and mowed of vegetation and miscellaneous debris. Mowing would continue as needed to contain regrowth during construction.

Hope SB would use the existing landscape, such as slope, drainages, and access roads where feasible, minimizing grading work where practicable. Grading activities would be performed using mobile earthmoving equipment. Construction would be sequenced to minimize the time that bare soil on the disturbed areas is exposed. Prior to any major grading, efforts would be made to preserve native topsoil, which would be removed from the area to be graded and stockpiled on site for redistribution over the disturbed area after the grading is completed. After construction, the disturbed areas would be seeded with a native seed mixture of certified weed-free, low-growing, noninvasive grasses, herbaceous and flowering plants, if available. Erosion control measures (BMPs) would be regularly inspected and maintained until vegetation in the disturbed areas has been established to the extent it meets construction stormwater permit restoration requirements. Water would be used for fugitive dust control and/or soil compaction during construction on an as-needed basis. Water used during construction would either be trucked in from a municipal source or withdrawn from an onsite existing or proposed water well.

To manage stormwater during construction, onsite temporary sedimentation basins, sediment traps, or diversion berms would be constructed within the disturbed area of

the Project Site. If needed, a diversion berm would be constructed along portions of the Project Site perimeter to contain stormwater onsite. Any necessary sedimentation basins and/or traps would be compliant with MDEQ requirements. If necessary, sedimentation basins and traps would be constructed either by impoundment of natural depressions or by excavating the existing soil. The floor and embankments of the basins would be allowed to naturally reestablish native vegetation after construction (or replanted as necessary) to provide natural stabilization and minimize subsequent erosion. Sediment traps would be placed in strategic drainage areas to prevent sediment from entering onsite jurisdictional streams and wetlands. Offsite sediment movement would be minimized by the placement of silt fencing around each area of ground disturbance within the Project Site. These stormwater management measures (BMPs) would minimize the potential for sediment to enter onsite jurisdictional streams and wetlands and minimize sediment migration offsite during construction. Once sufficient revegetation cover is achieved, the Project Site would be considered stabilized and temporary construction BMPs would be discontinued and/or removed.

Construction activities would be sequenced to minimize the time that bare soil in disturbed areas is exposed. In addition to the silt fencing described above, other appropriate controls, such as temporary cover, would be used as needed to minimize exposure of soil and eroded soil from leaving the work area. Disturbed areas, including road shoulders, construction office and laydown areas, ditches, and other Project-specific locations, would be seeded post-construction. If conditions require, soil may be further stabilized by mulch or sprayable fiber mat. As part of NPDES permit authorization (see Section 1.4.2), the site-specific SWPPP would be finalized with the final grading and civil design and would address all construction-related activities prior to initiating construction.

The design of the tracker support structures could vary depending on the final PV technology and vendor selected. Pending completion of the final geotechnical survey for the Project Site, the trackers are assumed to be attached to driven steel pile foundations. The steel pile foundations are typically galvanized and used where high load-bearing capacities are required. The pile is driven with a hydraulic ram. Soil disturbance is restricted to the pile insertion location to a depth typically less than 10 feet below grade; there is also potential for temporary soil disturbance from the hydraulic ram machinery, which is about the size of a small tractor. The tracker design and pile foundation design would be sealed by a registered Professional Engineer and Structural Engineer, respectively. Screw piles are another option for PV foundations which are drilled into the ground with a truck-mounted auger, although typically reserved for use in specific soil conditions. Screw piles create a similar soil disturbance footprint as driven piles.

Solar panels would be manufactured offsite and shipped to the Project Site ready for installation. Electricians and installation crews would run the electrical cabling throughout the solar facility, with panel-to-panel connections made using cables mounted on the back of the modules in cable trays or wire harnesses. Several rows of modules would be connected to a combiner box located at the end of each row. From the combiner boxes, electrical collection cables would be installed underground and

routed to the inverters. Trenches for these underground cables would typically be 3 to 5 feet deep and 2 to 15 feet wide, depending on the number of circuits and engineering considerations such as soil thermal resistivity. Trenches would be backfilled with native material and compacted following installation. Where collection lines cross streams, wetlands, or floodplains, they would be installed using directional boring or other trenchless methods to avoid direct impacts, where practicable. Overhead installation may be required where collection lines must cross railroad corridors or public rights-of-way, consistent with final engineering design. Hope SB is proposing using many pre-engineered metal structure enclosures on concrete foundations to house the BESS facility. The exact size and specifications of the enclosure would be contingent on the battery chemistry and other parameters, although each enclosure is anticipated to be similar to a shipping container, measuring approximately 8 feet wide by 40 feet long and generating approximately 1–2 MW/4–5 MWh of storage capacity. The facility would include inverters and be furnished with a fire suppression system, ventilation and air conditioning system, and supporting electrical equipment. The BESS enclosures would be designed and installed in conformance with all applicable standards and electrical codes. Chemical fire suppression systems are typically utilized for BESS installations. The BESS would be located adjacent or proximate to the Project substation and occupy approximately 12.5 acres within the parcel east of the West Point Substation. TVA has designated BESS facilities as critical infrastructure. Consistent with Executive Order 11988, critical infrastructure should avoid the 500-year floodplain where practicable. No FEMA 500-year floodplains have been identified on the Project Site. Project-specific hydrologic and hydraulic modeling will be used to determine the modeled 500-year water surface elevations at the proposed BESS locations. The proposed BESS designs are preliminary, therefore final BESS equipment locations will be designed such that the equipment is maintained at a minimum of one foot above the modeled 500-year water surface elevation.

Lithium ion (Li-ion) batteries are most commonly used for utility-scale energy storage, accounting for more than 90 percent of such installations. Li-ion batteries use the exchange of lithium ions between electrodes to charge and discharge the battery. Li-ion batteries are typically characterized as power devices capable of short durations or stacked to form longer durations of power. It should be noted that the battery component of the BESS has not yet been finalized, and Hope SB is also considering battery technology other than Li-ion batteries.

After the equipment is electrically connected, electrical service would be tested, motors would be checked, and control logic would be verified. As the solar arrays are installed, the balance of the facility would continue to be constructed and installed, and instrumentation would be installed. Following the testing of all the individual systems, integrated testing of the Project would occur.

2.2.3 Tennessee Valley Authority Electrical Interconnection

Under the Proposed Action, TVA would construct the POI within the existing TVA West Point Substation. The proposed Project substation would be located adjacent to the BESS and occupy approximately 2.3 acres within the parcel east of the West Point Substation (Figure 2-4, Sheet 3).

2.2.4 Operations and Maintenance

Operation of the Project would require 6 to 12 full-time employees to manage the facility, conduct regular inspections, and control vegetation. Inspections would include identifying any physical damage of panels, wiring, inverters, transformers, and interconnection equipment, and drawing transformer oil samples. Vegetation on developed portions of the Project Site would be maintained to control growth and prevent overshadowing or shading of the PV panels. Trimming and mowing would likely be performed several times per year, depending on growth rate, to maintain an appropriate ground cover height of no more than approximately 12 to 18 inches. During operation of the Project, selective use of USEPA-approved spot herbicides may also be employed around structures to control invasive weeds.

The proposed Project would be monitored remotely from Origis Energy's (Hope SB's parent company) Control Center in Austin, Texas, 24 hours a day, seven days a week to identify security or operational issues. In the event a problem is discovered during non-working hours, a repair crew or emergency response personnel would be contacted if an immediate response is warranted.

Moving parts of the solar facility would be restricted to the east-to-west tracking motion of the single-axis solar modules, which amounts to a movement of less than a one degree angle every few minutes. This movement is barely perceptible. In the late afternoon, module rotation would start to move from west-to-east in a similar slow motion to minimize row-to-row shading. At sunset, the modules would track to a flat or angled stow position. Otherwise, the PV modules would simply collect solar energy and transmit it to the TVA power grid. With the exception of fence repair, vegetation control, periodic array inspection, equipment repairs, and maintenance, the Project would have relatively little human activity during operation. No significant physical disturbances would occur during operation.

Permanent lighting is anticipated as a potential onsite need during facility operations. Permanent lighting would be downward-facing and timer- and/or motion-activated to minimize impacts to surrounding areas. The lighting would be fully shielded or would have internal low glare optics, such that no light is emitted from the fixtures at angles above the horizontal plane to minimize impacts to surrounding areas, as described in TVA's Substation Lighting Guidelines (TVA 2017).

The onsite O&M building or trailer would be located proximate to the solar arrays in one of the proposed laydown and construction yards. It would require a water source and a septic system.

Rainfall in the region should be adequate to remove dust and other debris from the PV panels while maintaining acceptable energy production; therefore, manual panel washing is not anticipated unless a site-specific issue is identified. If necessary, module washing would occur no more than twice a year and would comply with appropriate BMPs.

2.2.5 Decommissioning and Reclamation

Hope SB would operate the Project and sell power to TVA under the terms of the PPA for the first 20 years of its life. At the end of the term of the PPA, Hope SB would assess whether to cease operations of the Project or to replace equipment and attempt to enter into a new PPA or make some other arrangement to sell the power. If operations cease, the facility would be decommissioned and dismantled, and the Project Site would be restored to a tillable state and revegetated. In general, most decommissioned equipment and materials would be recycled. Materials that could not be recycled would be disposed of at an approved facility in accordance with federal, state, and local laws and regulations. As Hope SB would purchase the land required for the Project from the landowners, site control would be maintained for longer than the 20-year PPA period, and Hope SB may attempt to renegotiate further PPA terms with TVA. At the end of the 20-year contract period, TVA may also choose to purchase and operate the facility. If additional PPA terms are arranged or if TVA chooses to operate the facility, these activities would be evaluated through separate NEPA processes.

2.3 Alternatives Considered but Eliminated from Further Discussion

In determining the suitability for development of a site within TVA's service area that would meet customer needs and TVA's renewable energy portfolio, multiple factors were considered. This process involved screening potential locations and ultimately eliminating those sites that did not have the needed attributes. This process of review and refinement ultimately led to the consideration of the current proposed Project Site. The site screening process involves several iterations beginning with the general solar resource (the amount of insolation [solar energy received within a certain area over a period of time]) and the availability of nearby appropriately sized electric infrastructure for interconnection with sufficient available transmission capacity for the proposed solar and storage facility. This is followed by screening for suitable large-scale landscape features that would allow for utility-scale solar development including:

- Generally flat landscape with minimal slope, with preference given to disturbed contiguous land with no onsite infrastructure or existing tall infrastructure in the immediate vicinity;
- Land having sound geology for construction suitability, with minimal and/or avoidable floodplains or large forested or wetland areas;
- Large contiguous parcels of land with compatible local zoning and located away from densely populated areas; and
- Ability to avoid and/or minimize impacts to known sensitive biological, visual, and cultural resources.

In addition, as part of the process, TVA considers multiple factors such as cost, schedule, developer's experience, environmental and cultural resources, transmission, and economic development. The Project was chosen for further evaluation after it was considered alongside TVA's 2022 Carbon-Free Request for Proposal. TVA considered other solar proposals, prior to selecting the Project for further evaluation. Part of the screening process included a review of transmission options, including key connection

points to TVA's transmission system. The Project Site stood out as a viable option for connectivity to TVA's existing West Point Substation.

2.4 Comparison of Alternatives

This EIS evaluates the potential environmental effects that could result from implementation of the No Action Alternative or the Proposed Action Alternative at the proposed Project Site in Clay County, Mississippi. The analysis of impacts described in this EIS are based on current conditions as well as potential future conditions on the parcels associated with the Project and the surrounding area.

Impacts evaluated may be beneficial or adverse and may apply to the full range of natural, aesthetic, historic, cultural, and socioeconomic resources within the Project Site of each alternative and within the surrounding areas. Impacts may also be direct or indirect. Direct impacts are caused by the action and occur at the same time and place. Indirect impacts are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable. Impact severity is dependent upon their relative magnitude and intensity and resource sensitivity. In this document, four descriptors are used to characterize the level of impacts in a manner that is consistent with TVA's current practice.

In order of degree of impact, the descriptors are as follows:

- No Impact (or negligible) - resource is not present or, if present, would not be affected by project alternatives under consideration.
- Minor – Environmental effects are not detectable or are so minor that they would not noticeably alter any important attribute of the resource.
- Moderate – Environmental effects are sufficient to alter noticeably, but not to destabilize, important attributes of the resource.
- Large – Environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

A comparison of potential impacts from each alternative is summarized in Table 2-1.

Table 2-1. Summary and Comparison of Alternatives by Resource Area

Resource Area	Impacts from the No Action Alternative	Potential Impacts from the Proposed Action Alternative
Land Use	No direct or indirect impacts anticipated.	Minor, temporary direct impacts during construction. Minor, long-term direct impacts during operation due to land use change from agricultural to solar. Conversion of agricultural/pastureland to industrial uses such as solar generation is consistent with West Point's local ordinances and regulations.
Geology, Soils, and	No direct or indirect changes anticipated.	Geology: Minor direct impacts on potential shallowsubsurface geological resources.

Resource Area	Impacts from the No Action Alternative	Potential Impacts from the Proposed Action Alternative
Prime Farmlands		Soils: Minor, direct, adverse impacts on 1,700 acres of soils from potential minimal increases in erosion and sedimentation during construction. Once stabilized and facility is operational, impacts on soils would be offset by the beneficial effects to soil health with the use of native and noninvasive vegetation. Prime Farmlands: Moderate, direct adverse impacts from the removal of approximately 1,645 acres of Prime Farmland and 32 acres of Farmland of Statewide Importance from potential agricultural use for the duration of the Project. Following decommissioning, the Project Site could be returned to agricultural use with little reduction in soil productivity or long-term impacts to Prime Farmland.
Water Resources	No direct or indirect changes to current conditions anticipated.	Groundwater: Negligible direct impacts on the supply from use of a new water well during construction and operation of Hope Solar and Storage Project (Project). Minor beneficial effects are anticipated from the reduction in fertilizer and pesticide use and restoration of native vegetation. Surface water: Minor temporary and permanent impacts on surface waters. Proposed placement of permanent structures (i.e., culverts, road improvements) in streams along new and existing access roads would impact approximately 408.0 linear feet of perennial/intermittent streams and 40.0 feet of ephemeral stream. Minor beneficial impacts on surface water due to the reduction in fertilizer and pesticide use once agricultural operations have ceased. Minor short-term impacts from erosion and sedimentation during construction (until Site is stabilized). Wetlands: Minor short-term impacts from erosion and sedimentation during construction (until Site is stabilized). Direct impacts to wetlands would be avoided as all permanent structures are sited outside of existing wetlands.

Resource Area	Impacts from the No Action Alternative	Potential Impacts from the Proposed Action Alternative
		Floodplains: There are approximately 116 acres of FEMA designated Special Flood Hazard Areas (Zones A and AE) within the Project Site. Most facilities, structures, and activities required for the Proposed Action would be located outside of the 100-year floodplain, except for certain internal access roads and select solar panels occupying approximately 50 acres. In addition to areas outside the FEMA-designated floodplain, any flood damageable development will be elevated to maintain a minimum of one foot of freeboard in the 100-year or 500-year water surface elevations identified in the Project Site hydrology studies, Minor direct and indirect impacts due to construction activities and installation of Project fences, utility poles, and access roads.
Biological Resources	No direct or indirect impacts anticipated.	Vegetation: Minor direct impacts to vegetation by clearing approximately 113 acres of forest for development and revegetating this portion of the Project Site. Wildlife: Minor direct and indirect adverse impacts to migratory birds and other wildlife due to habitat removal, particularly forest clearing. During construction, mobile species would be able to avoid construction activities by moving offsite. Once construction is completed, displaced species that can use industrialized/urbanized landscapes could move back onsite. Aquatic Life: Minor impacts to aquatic life from erosion and sedimentation during site prep and facility construction. Minor beneficial impacts from reduction (or elimination) of herbicide, pesticide, and fertilizer runoff. Federally Listed and State Protected Species: Tree removal in suitable bat habitat would occur without seasonal restrictions. The proposed clearing of up to 106 acres of summer roosting habitat and 372.5 acres of foraging habitat, may result in direct impacts to bat individuals and local bat use of the area. Based on the anticipated scale and nature of the activity, the Project is not expected to jeopardize the continued existence of any proposed federally or state-listed species. No effect on federally or state-listed species is anticipated.
Natural Areas, Parks, and Recreation	No direct or indirect impacts anticipated.	Minor impacts to recreation through the elimination of dispersed outdoor recreational activities over the lifetime of the Project.

Resource Area	Impacts from the No Action Alternative	Potential Impacts from the Proposed Action Alternative
Visual Resources	No direct or indirect impacts anticipated	The Project would result in the visual alteration of an existing rural/agricultural and industrial/energy landscape, increasing the presence of energy related infrastructure in foreground and middle ground views in areas previously used in agriculture. Most of the Project would be sited within currently cleared areas, preserving existing vegetation patterns throughout the Project Site that would help to screen Project views from some areas of the VSA. Targeted vegetative or screening mitigation would help to further reduce Project visibility from areas where sensitive viewers are concentrated. Construction, operation, and maintenance phases of the Project would be expected to have no more than a moderate visual impact on the landscape and viewers within the VSA.
Noise	No direct or indirect impacts anticipated.	Minor temporary noise impacts would be experienced during construction. Negligible adverse impacts from noise associated with operation and maintenance.
Air Quality and Greenhouse Gas Emissions	No direct or indirect impacts anticipated.	Air Quality: Minor direct impacts on air quality could occur during site preparation involving heavy, earth moving construction equipment (temporary emissions). No adverse impacts on air quality from operations, except for minor, temporary impacts associated with the potential operation of a generator to provide station service to the substation and BESS in the event of a loss of primary power. Greenhouse gases: Temporary and minor increases in greenhouse gas emissions would be expected during construction from operation of equipment. However, a net positive impact would occur from operation of nearly emissions-free power generation by the Project, reducing the need for power that would otherwise be generated by the combustion of fossil fuels.
Cultural Resources	No direct or indirect impacts anticipated.	Archaeological Resources: No impacts on any National Register of Historic Places (NRHP)-listed or eligible archaeological sites. Three newly identified resources (22CL1124, 22CL1131, and 22CL1139) were recommended NRHP-eligible. These three resources would be avoided with appropriate buffers as determined in consultation with the Mississippi Department of Archives and History. No adverse effects to archaeological resources are anticipated. Architectural Resources: No adverse effects to architectural resources are anticipated.
Utilities	No direct or indirect impacts anticipated.	No direct or indirect adverse impacts are anticipated to utilities. Long-term beneficial impact to electrical services across the region.

Resource Area	Impacts from the No Action Alternative	Potential Impacts from the Proposed Action Alternative
Waste Management	No direct or indirect impacts anticipated.	No adverse impacts to waste management are anticipated with the use of best management practices for waste generated during construction, operation and decommissioning.
Public and Occupational Health & Safety	No direct or indirect impacts anticipated.	Minor, temporary impacts during construction and decommissioning. Operational design, including perimeter fencing and monitoring to prohibit public entry, and adherence to safety measures would result in minimal impacts to public health and safety during operation.
Transportation	No direct or indirect impacts anticipated.	Due to increases from workers commuting to and from the Project Site during construction, a minor impact on traffic flow would be anticipated during construction. Negligible direct impacts and no indirect impacts on transportation would occur during operation.
Socioeconomics	No direct or indirect impacts anticipated.	Short-term beneficial economic impacts would result from construction, including the purchase of materials, equipment, and services and a temporary increase in employment, income, and population. Positive, long-term, direct impacts on economy and population from Project operation. The local tax base would increase from construction of the Project which would benefit Clay County, the City of West Point, and the Golden Triangle region of eastern Mississippi.

2.5 Identification of Mitigation Measures

TVA and Hope SB would implement minimization and mitigation measures for resources potentially affected by the Project. These measures would be developed in conjunction with industry-proven BMPs, requirements of regulatory permits, and adherence to the following plans:

- SWPPP;
- Spill Prevention, Control, and Countermeasures (SPCC) Plan; and
- Unanticipated Discovery Plan for Cultural Resources.

2.5.1 Potentially Affected Resources by the Project

Hope SB would implement the following minimization and mitigation measures in relation to potentially affected resources.

2.5.1.1 Geology and Soils

- Install silt fencing along the perimeter of areas that would be cleared, consistent with local and state stormwater regulations;
- Implement other soil stabilization and vegetation management measures to reduce the potential for soil erosion during site operations;
- Make an effort to balance cut-and-fill quantities to alleviate the transportation of soils off-site during construction; and

- Consult the Paleontology Curator at the Mississippi Museum of Natural Sciences should paleontological resources be exposed during site construction or operation activities to evaluate the nature of the paleontological resources, recover these resources, analyze the potential for additional impacts, and assist in the development and implementation of a recovery plan/mitigation strategy.

2.5.1.2 Water resources

- Use BMPs for controlling soil erosion and stormwater runoff, e.g., the use of 50-foot streamside management zones surrounding intermittent and perennial streams and wetlands according to the TVA BMP Manual (TVA 2022a): Standard Stream Protection (Category A), *Protection of Important Streams, Springs, and Sinkholes* (Category B), or *Protection of Unique Habitat* (Category C);
- Avoid direct impacts to the maximum extent practicable on perennial and intermittent streams by maintaining a 25-foot riparian buffer around perennial and intermittent streams and wetlands in accordance with MDEQ NPDES General Construction Permit conditions;
- Regarding revegetation and restoration following site disturbance, maintain stormwater BMPs in each area according to the TVA BMP Manual (TVA 2022a) until stabilization (adequate vegetation regrowth) has been achieved;
- Use only USEPA-registered and TVA-approved herbicides in accordance with label directions designed;
- Avoid installation of permanent structures within floodplains where feasible; In addition to areas outside the FEMA-designated floodplain, inverter pad elevations and the lowest module elevation at maximum tilt (with trackers in their lowest operating position) will be designed to maintain a minimum of one foot of freeboard above the modeled 100-year water surface elevation.
- BESS equipment locations will be designed such that the equipment is maintained at a minimum of one foot above the modeled 500-year water surface elevation. Waterproofing and other additional mitigation measures recommended by the National Electrical Manufacturers Association will be considered.
- Implement road improvements in such a manner that upstream flood elevations would not be increased by more than 1.0 foot; and
- Ensure that construction would adhere to the TVA subclass review criteria for transmission line location in floodplains.

2.5.1.3 Biological resources

- Plant or seed with noninvasive vegetation and include native and naturalized plant species to create beneficial habitat, reduce erosion, and limit the spread of invasive species;
- Install timer- and/or motion-activated downward facing security lighting to limit impacts to wildlife, such as migratory birds and bats.

2.5.1.4 Land use and visual resources

- Use timer- and/or motion-activated downward-facing, fully shielded, and/or low-glare lighting to limit visual effects at night; and
- Apply 100 to 150-foot buffers from adjoining residential parcels in order to shield adjoining residences from the Project.

2.5.1.5 Noise

- Limit construction activities primarily to daytime hours and ensure that heavy equipment, machinery, and vehicles utilized at the Project Site meet all federal, state, and local noise requirements;
- Inverter placement for the Project is planned for more than 200 feet from the closest residence with most inverters placement planned for more than 400 feet from the nearest residence; and
- Schedule piledriving within 5,000 feet of the nearest residences and churches during daylight hours Monday through Friday and occasionally on Saturdays when the schedule requires and outside of church services to minimize impacts to the residences and churches.

2.5.1.6 Air Quality

- Comply with local ordinances or burn permits and avoid burning on days air quality alerts have been issued, as much as feasible, if burning of vegetative debris is required; and
- Use BMPs such as periodic watering, covering open-body trucks, and establishing a speed limit to mitigate fugitive dust and maintain equipment in good condition.

2.5.1.7 Cultural Resources

- Adhere to setbacks from certain NRHP-eligible and listed cultural resources, as discussed in Section 3.10, and other avoidance, minimization, and mitigation measures in consultation with MDAH and federally recognized Tribes.

2.5.1.8 Waste Management

- Develop and implement a variety of plans and programs (e.g., SPCC Plan) to ensure safe handling, storage, and use of hazardous materials.

2.5.1.9 Public and occupational health and safety

- Emphasize BMPs for site safety management to minimize potential risks to workers; and
- Use dust mitigation activities such as watering dry exposed soils, covering open-body trucks, and establishing a speed limit to minimize fugitive dust.

2.5.1.10 Transportation

- Should traffic flow become a problem, consider implementation of staggered worker shifts during construction and a flag person along the roadside during deliveries that may coincide with heavy commute times to manage the flow of traffic near the Project Site.

2.5.2 Tennessee Valley Authority Electrical Interconnection

TVA employs standard Good Utility Practices when constructing, operating, and maintaining transmission lines, structures, and the associated right of way (ROW) and access roads. Some of the more specific routine measures that would be taken by TVA to reduce the potential for adverse environmental effects during the construction, operation, and maintenance of the proposed interconnection to the West Point Substation are as follows:

- TVA would employee standard BMPs, as described in TVA's BMP manual (TVA 2022a), to minimize erosion during construction, operation, and maintenance activities;
- TVA would utilize BMPs for clearing and construction activities and for lighting for substations and similar facilities (TVA 2017, TVA 2022b);
- To minimize the introduction and spread of invasive species at the Project Site, access roads, and adjacent areas, TVA would follow standard operating procedures consistent with EO 13112 (Invasive Species) for revegetating the areas with noninvasive plant species as defined by TVA (2022a); and
- In areas requiring chemical treatment, only USEPA-registered and TVA-approved herbicides would be used in accordance with label directions designed, in part, to restrict applications near receiving waters and to prevent impacts to aquatic resources.

2.6 The Preferred Alternative

TVA's preferred alternative is the Proposed Action Alternative. This alternative would generate renewable energy with only minor to moderate direct and indirect environmental impacts due to the implementation of BMPs and minimization and mitigation efforts, as described in Section 2.5.1 and Section 2.5.2. Implementation of the Project is consistent with TVA's 2026 IRP and would help TVA meet customer-driven energy demands on the TVA system.

CHAPTER 3 - AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the existing environmental, social, and economic conditions of the Project Area, as defined for each resource area, and the potential effects on those resource areas that would result from implementing the No Action Alternative or the Proposed Action Alternative. The surveys conducted for the resource areas extended beyond the Project Site boundary. Due to subsequent design refinements, the Project Site and resource area acreage used for NEPA analysis in this EIS are smaller than the acreages presented in Appendices B, C, and D.

3.1 Identification of Other Actions

In addition to the No Action and Proposed Action alternatives identified in Chapter 2, this analysis also considers the past, present, and reasonably foreseeable future actions (RFFAs) listed in Table 3-1. RFFAs are other projects or actions planned or implemented by other entities within the vicinity of the Project that could have additional effects to resources described in this EIS. Desktop research to identify potential past, present, and future actions within approximately 15 miles of the Project Site included:

- Local and regional news sources;
- City of West Point and Clay County website records, including city meeting minutes and public notices;
- Golden Triangle Development LINK website records and discussions;
- Federal agency websites: Columbus Air Force Base, USACE Mobile District, and TVA;
- MDOT website; and
- Canadian Pacific-Kansas City (CPKC) railway website

Table 3-1. Summary of other Past, Present, or Reasonably Foreseeable Future Actions within approximately 15-mile Radius of the Project Site

Action	Description	Distance from Project Site	Project Type
Federal Projects			
Columbus Air Force Base Operations	Air Force pilot training	7 miles	Ongoing
Columbus Air Force Base T-7A Recapitalization Project	Replace T-38C aircraft with T-7A aircraft; add nighttime operations; on-base construction to modernize facilities and add aircraft support infrastructure	7 miles	Reasonably Foreseeable
TVA-Related Projects			
Golden Triangle I and II Solar and Battery Energy Storage Projects (Origis)	Solar and BESS project construction and operation	10 miles	Past

Action	Description	Distance from Project Site	Project Type
Optimist Solar and Battery Energy Storage System Project (Origis)	Solar and BESS project construction and operation	Adjacent	Past/Present
New Caledonia Gas Plant (TVA)	Construction of a new natural gas power plant	16.5 miles	Present/Reasonably Foreseeable
Artesia-West Columbus Power System Improvements (TVA)	New transmission line installation and improvements	12 miles	Past/Present
Belmont Stage 2, Mississippi Transmission Line (TVA)	New transmission line from Artesia Substation to West Point Substation	Adjacent	Reasonably Foreseeable
State (MDOT) Projects			
Pile/ Encasement Bridge Repair	Repair of pile/ encasement structures at up to 24 bridges in the region	Varies	Present/Reasonably Foreseeable (2026)
SR-373 Bridge Removal	Removal of a bridge on SR-373 over Buttahatchee Creek	10 miles	Present/Reasonably Foreseeable (2026)
Old West Point Road Bridge and Approach Raise	Raise bridge and approaches on Old West Point Road over US-82	13 miles	Present/Reasonably Foreseeable (2026)
SR-50 Mill and Overlay Work	Mill and overlay work on SR-50 from Old Highway 10 to west of US-45ALT	2 miles	Reasonably Foreseeable (2027)
US-82 Mill and Overlay Work	Mill and overlay work on US-82 from 1 mile east of Military Road to Alabama State Line	15 miles	Reasonably Foreseeable (2027)
SR-50 Bridge Replacement	Bridge replacement on SR-50 west of Holly Hills Rd.	10.5 miles	Reasonably Foreseeable (2028)
MS-8 Road Maintenance	Road maintenance on MS-8 from Chickasaw County Line to end of state maintenance	12 miles	Reasonably Foreseeable (2028)
Local Projects			
Local agricultural activities	Seasonal planting and harvesting	Regionally	Past/Present/ Reasonably Foreseeable
Golden Triangle LINK Prairie Belt Powersite	Construction at industrial site	Adjacent	Past/Present/ Reasonably Foreseeable
CPKC Railway track maintenance	Track maintenance such as vegetation removal	Adjacent	Past/Present/ Reasonably Foreseeable

The proposed Project would result in minor to moderate, direct impacts to land use, geological resources, water resources, biological resources, recreation, visual resources, noise, air quality, public health and safety, and transportation, and beneficial effects to socioeconomics. This section identifies the RFFAs located within an approximately 15-mile radius of the Project Site and evaluates the potential to, in aggregate, result in larger and potentially adverse effects to the resources of concern.

Potential impacts for resources in which adverse impacts from the proposed Project are anticipated are discussed in each resource section.

3.2 Land Use

Land use is defined as the way people use and develop land, including leaving land undeveloped or using land for agricultural, residential, commercial, and industrial purposes.

3.2.1 Affected Environment

The proposed Project is within northeast Mississippi, primarily north of and partially within the City of West Point, in Clay County. The unincorporated town of Whites (also known as Whites Station) is located northeast of the Project.

The properties that make up the Project Site (2,419 acres) are mostly privately owned (approximately 2,383 acres). However, the Clay County Economic District owns one parcel (approximately 28 acres), and an additional 8 acres are accounted for by the Clay County ROW within the Project Site. In Mississippi, mineral rights can be owned separately (or "severed") from surface rights (MSU Extension 2023), and mineral rights are considered the dominant estate (Douglas v. Denbury Onshore LLC 2011). Subsurface mineral rights (oil and gas) within the Project Site are owned by Black Stone Minerals and Matagorda Drilling Company.

The topography is generally characterized by gently rolling hills, with elevations ranging from approximately 220 to 290 feet above mean sea level (amsl). The western boundary of the Project Site is near the north-south running US-45ALT. Primary access roads include Payne Field Road, Hazelwood Road, Old Aberdeen Road, and Yokohama Boulevard.

Most of the Project Site is in the unincorporated portion of Clay County (Clay County 2025a). Clay County does not have a land use plan for unincorporated areas, nor are the unincorporated areas subject to zoning restrictions.

Portions of the Project Site are within the corporate limits of West Point. West Point has adopted a zoning and land development ordinance (West Point 2000) and established zoning districts (West Point 2004). Portions of the Project Site within West Point are currently zoned A-O, Agricultural Open District, and allow development of a utility substation and BESS as a minor conditional use (West Point 2026).

West Point has developed a Comprehensive Plan (West Point 2017a). Chapter 4 of the land development ordinance (West Point 2000) requires all development within West Point to be in accordance with the applicable provisions of the Comprehensive Plan. The Comprehensive Plan's Future Land Use map designates much of the Project Site as Heavy Industrial (I-2). Portions of the Project Site are also designated as A-O, Large Lot Residential (R-1-L), Medium Lot Residential (R-1-M), and Residential Estate (R-1-E).

Initial desktop data collected from the National Land Cover Database showed that landcover within the Project Site is primarily pasture/hay (1,182 acres; 49 percent) and cultivated crops (1,020 acres; 42 percent) (USGS 2023). Areas surrounding the Project are also primarily pastureland and cropland and contain some forest and low-density residential areas (Figure 3-1). The major infrastructure elements, such as US Highway 45 (US-45), US Highway 45 Alternate (US-45 ALT), SR-50, the TVA's West Point Substation and associated transmission lines were present by 1953 except for the addition of several transmission lines by the 1980s. The Yokohama Tire plant was constructed between 2013 and 2015 on more than 500 acres of land east of the Project Site (Yokohama Tire 2015). Construction of Yokohama Boulevard was also completed at that time.

The Optimist Solar Project, constructed in 2025, is adjacent to, and partially overlaps the Project Site. The Optimist Solar Project covers 2,952 acres and generates 200 MW of AC output and includes a 50 MW BESS.

3.2.2 Environmental Consequences

3.2.2.1 No Action Alternative

Under the No Action Alternative, the proposed Project would not be constructed; therefore, no Project-related impacts to land use would be expected. Agriculture would likely continue to be the primary activity and land use within the Project Site.

3.2.2.2 Proposed Action Alternative

Under the Proposed Action, approximately 1,700 acres of land would be converted to renewable energy production, 84 percent (1,429 acres) of which are agricultural in nature (cultivated crops/pasture). In planning and designing the Project, Hope SB has limited development to cropland and pastureland to the extent practicable, thus minimizing tree clearing and avoiding significant impacts to wetlands.

Five parcels within the Project Site have areas set aside for Black Stone Minerals and Matagorda Drilling Company in the event that they decide to conduct future subsurface mineral exploration development. The Project has been configured to avoid these areas in exchange for waivers whereby Black Stone Minerals and Matagorda Drilling Company agree to not disturb the Project while exploring for sub-surface minerals (Nathan Rogers, Origis Energy, personal communication, December 2025). The Project would not interfere with the incidental right to enter, occupy, and make use of the surface lands within these areas as is reasonably necessary to conduct subsurface mineral extraction (Gulf Refining Co. v. Davis 1955).

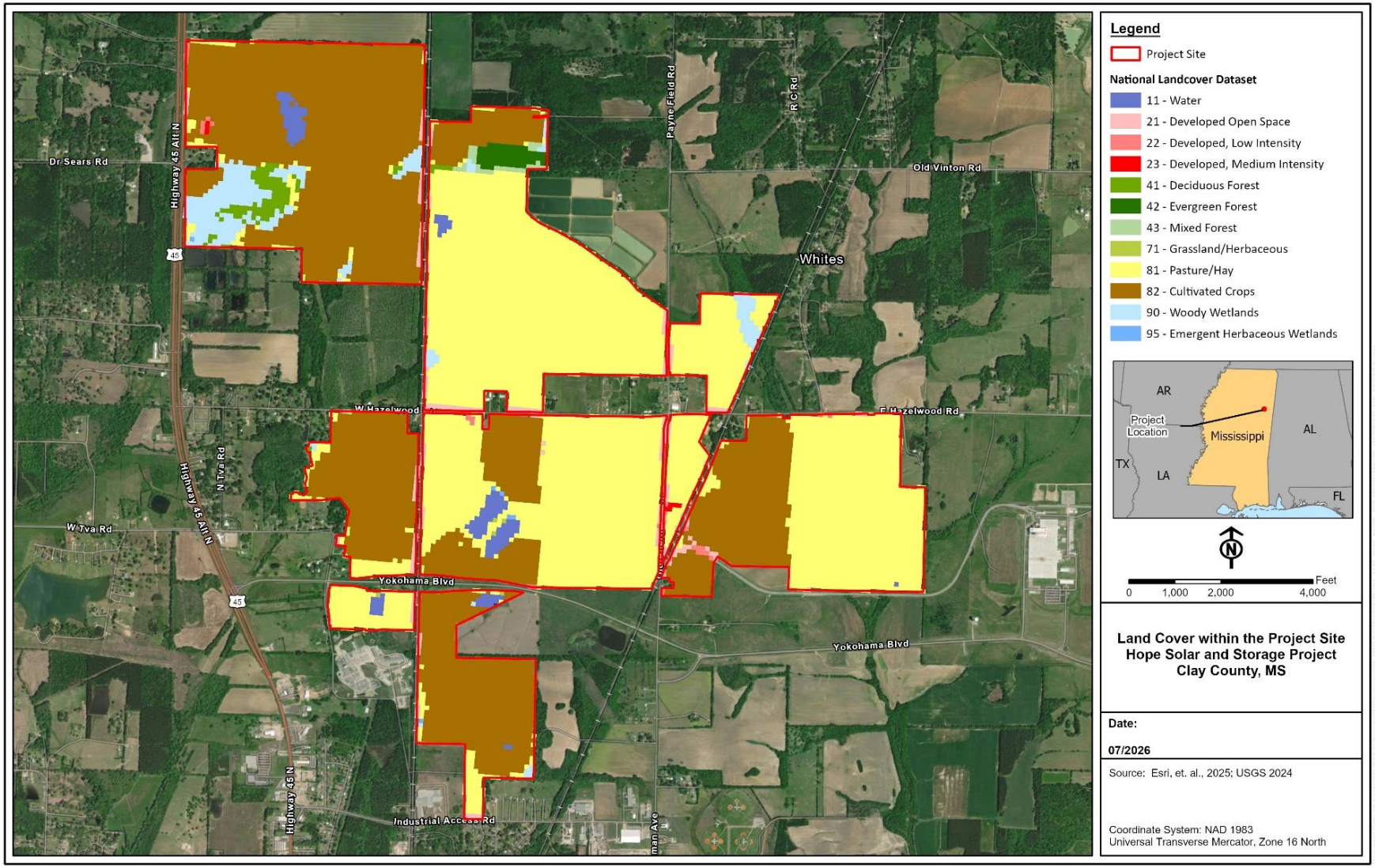

Figure 3-1. Land Cover within the Project Site

Most of the Project Site is rural with no zoning restrictions. A minor conditional use permit would be needed for development of the utility substation and BESS in the portion of the Project Site within West Point. The development of the Project Site for industrial purposes is compatible with future land use plans for the areas along Yokohama Boulevard as identified in West Point's Comprehensive Plan. There are existing industrial land uses in the area directly south and east of the Project Site. Portions of the west and north sides of the Project overlap areas designated for residences (medium, large, and estate-sized) and agriculture. Solar development in these areas would not be compatible with future land use plans as identified in West Point's Comprehensive Plan, and the development of the Project may discourage residential development in the adjacent areas. However, because these areas are unincorporated portions of Clay County, they are not subject to any zoning restrictions. The addition of the Project would result in an expansion of industrial land use in Clay County in the area northeast of West Point where agricultural use currently dominates.

There are no protected lands within the vicinity of the Project Site. Development of the Project would not impact the access to or use of public recreational activities or facilities. Other impacts to recreation are discussed in Section 3.6.

The Project would be compatible with surrounding land use. Development within the Project Site would be consistent with local land use planning and zoning. If operations cease, the facility would be decommissioned and dismantled, and the Project Site restored (see Section 2.2.5). Some of the Project Site could be returned to agricultural use or used for other development purposes in compliance with local zoning regulations and land use plans. In summary, implementation of the Proposed Action would have minor to moderate impacts on land use, locally and regionally.

3.2.2.3 Reasonably Foreseeable Future Actions

Development of this Project, in addition to the Golden Triangle I and II Solar and BESS, Optimist Solar and BESS, New Caledonia gas plant projects, and the Prairie Belt Powersite industrial projects in the vicinity, would contribute to a loss of farmland in the region by converting agricultural land to non-agricultural use. However, once the solar and BESS facilities are decommissioned, the sites could be returned to their pre-construction/ pre-operation uses. Therefore, the combined impacts to agriculture from these energy generation facilities and development in the Prairie Belt Powersite would be minor.

3.3 Geology, Soils, and Prime Farmland

3.3.1 Affected Environment

3.3.1.1 Geology

The Project Site lies within the Black Belt Prairie physiographic region of Mississippi (MSU 2006). The entire region is underlain by Selma Chalk formed from Upper Cretaceous marine deposits. The Black Belt Prairie is an important agricultural region with soils rich in organic matter but often thick with clay, hindering tree growth (Mississippi University 1943). The bedrock underlying the Project Site consists of marly

chalk and calcareous clay of the Mooreville Chalk geologic unit in the Selma Group and Demopolis Chalk, which contains less clay than the Mooreville unit (Horton 2017).

3.3.1.2 Paleontology

Paleontological resources are the fossilized remains of once-living organisms such as plants, animals, and fungi. In Mississippi, fossils are found only in sedimentary deposits laid down over the last four hundred million years. In the general vicinity of the Project Site (Columbus-Aberdeen area), Late Cretaceous age deposits and fossils are most common (Phillips 2018). During this period, most of Mississippi lay under a shallow inland sea called the Western Interior Seaway that stretched from the prehistoric Gulf of Mexico to the Arctic Ocean (PRI n.d.). The sea floor supported a variety of bottom-dwelling invertebrates, including bivalves, gastropods, and echinoderms (sea urchins, starfish, crinoids). The most conspicuous fossils of the Cretaceous chalks of northeastern Mississippi are large, thick-shelled oysters (Phillips 2018). Fish teeth and bones are also found in these late-Cretaceous marine deposits, including teeth of extinct crow sharks (*Squalicorax*) and goblin sharks (*Scapanorhynchus*). Fragments of sea turtle shells and backbones of giant, lizard-like marine reptiles called mosasaurs are also occasionally discovered (Phillips 2018; MSU 2025).

3.3.1.3 Geological Hazards

The United States Geological Survey (USGS) places the Project Site in an area of "unconsolidated calcareous or carbonate rocks at or near the land surface" in a region with humid climate. In the humid parts of the United States (areas receiving more than 30 inches of mean annual precipitation), most karst features such as caves and sinkholes occur in carbonate (limestone and dolomite) rocks (Weary and Doctor 2014), such as the geologic units described above. No caves, karst terrain, or other unique geological features (e.g., limestone or chalk outcrops) were observed during 2025 or 2026 ecological field surveys (Appendix D, Tetra Tech 2026b).

Earthquakes and ground failures are uncommon in Mississippi; however, these events can pose threats to human life and property. The greatest risk to Mississippi from earthquakes is located in the New Madrid Seismic Zone, the southern end of which is approximately 40 miles from the northwest corner of Mississippi and 175 miles from the Project Site (Bograd and Yassin 2025). The USGS Earthquake Hazards Program publishes seismic hazard map data layers that display the peak ground acceleration with 2 percent probability of exceedance in 50 years (Petersen et al. 2023); the potential ground motion for the Project Site is 0.19 to 0.20 acceleration of gravity (g). A 0.2 g earthquake would have a perceived light shaking with a low potential for structural damage (USGS 2000).

3.3.1.4 Soils

The Project Site is located within Major Land Resource Area-135A (Alabama and Mississippi Blackland Prairie), which is characterized by young soils without an illuvial "B" horizon (inceptisols) and soils with high clay content that shrink and swell depending on moisture content (vertisols) (NRCS 2025a) (Figure 3-2). The major soil resource concerns are water erosion, maintaining productivity of the soils, conserving organic matter content, and management of soil moisture.

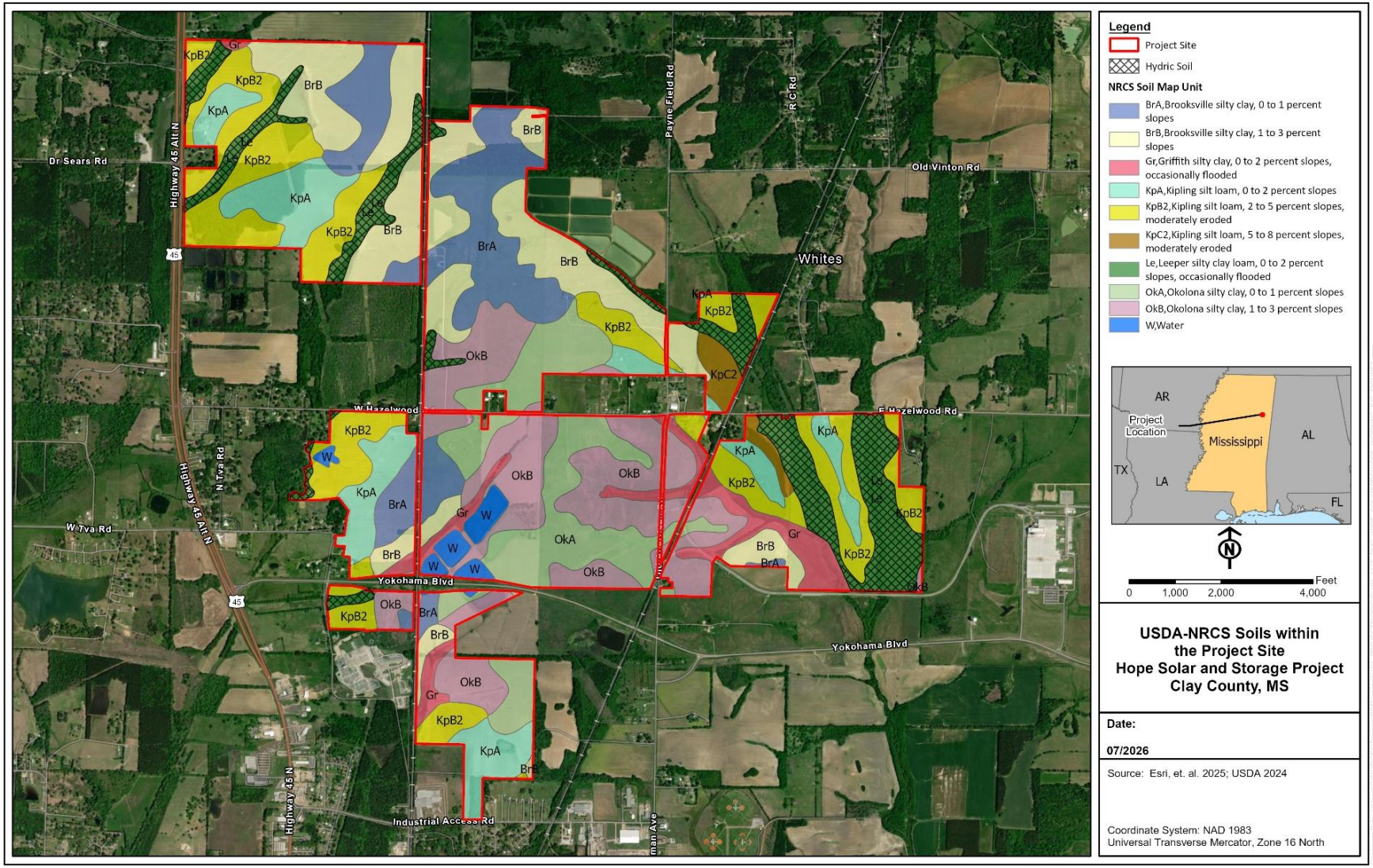

Figure 3-2. Natural Resources Conservation Service Soils within the Project Site

According to data from the NRCS Web Soil Survey, the Project Site contains 9 soil types and one water unit (Figure 3-2). Dominant soil types include Kipling silt loam (2 to 5 percent slopes, moderately eroded), Brooksville silty clay 91 to 3 percent slopes), and Okolona silty clay (1 to 3 percent slopes), which when combined, account for 1,204.5 acres (50 percent) of the total Project Site. Hydric soils are formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. The only hydric soil type present, Leeper silty clay loam, accounts for approximately 9.8 percent of the Project Site (238.0 acres) (NRCS 2025b).

3.3.1.5 Prime Farmland

Prime Farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, and oil seed crops and is available for these uses [7 CFR 657.5(a)(1)]. Farmlands of statewide importance include those that are nearly Prime Farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods [7 CFR 657.5(c)]. The purpose of the Farmland Protection Policy Act (7 U.S.C. § 4201 et seq.) is "to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses," and requires federal agencies to consider the adverse effects of their actions on prime or unique farmlands. Since federal funds from TVA would not be used to construct the solar facility, the Project is not covered by the Farmland Protection Policy Act.

Based on soils data obtained from the NRCS Web Soil Survey, approximately 1,998.8 acres of the Project Site are classified as Prime Farmland, 238.0 acres are Prime Farmland if drained, 110.0 acres are Prime Farmland if drained and either protected from flooding or not frequently flooded during the growing season, and 34.6 acres are Farmland of Statewide Importance, as illustrated in Figure 3-3. Table 3-2 describes the soil types, including farmland classifications.

3.3.2 Environmental Consequences

3.3.2.1 No Action Alternative

Under the No Action Alternative, the proposed Project would not be constructed; therefore, no direct or indirect Project-related impacts on geological or paleontological resources, soils, or Prime Farmlands would result. Existing land use would likely remain primarily agricultural land for the foreseeable future.

3.3.2.2 Proposed Action Alternative

Under the Proposed Action Alternative, direct impacts to geology, soils, and Prime Farmland resources would occur as a result of construction and operation of the Project. Approximately 70 percent (1,700 acres) of the 2,419-acre Project Site would be cleared and/or graded for the Project.

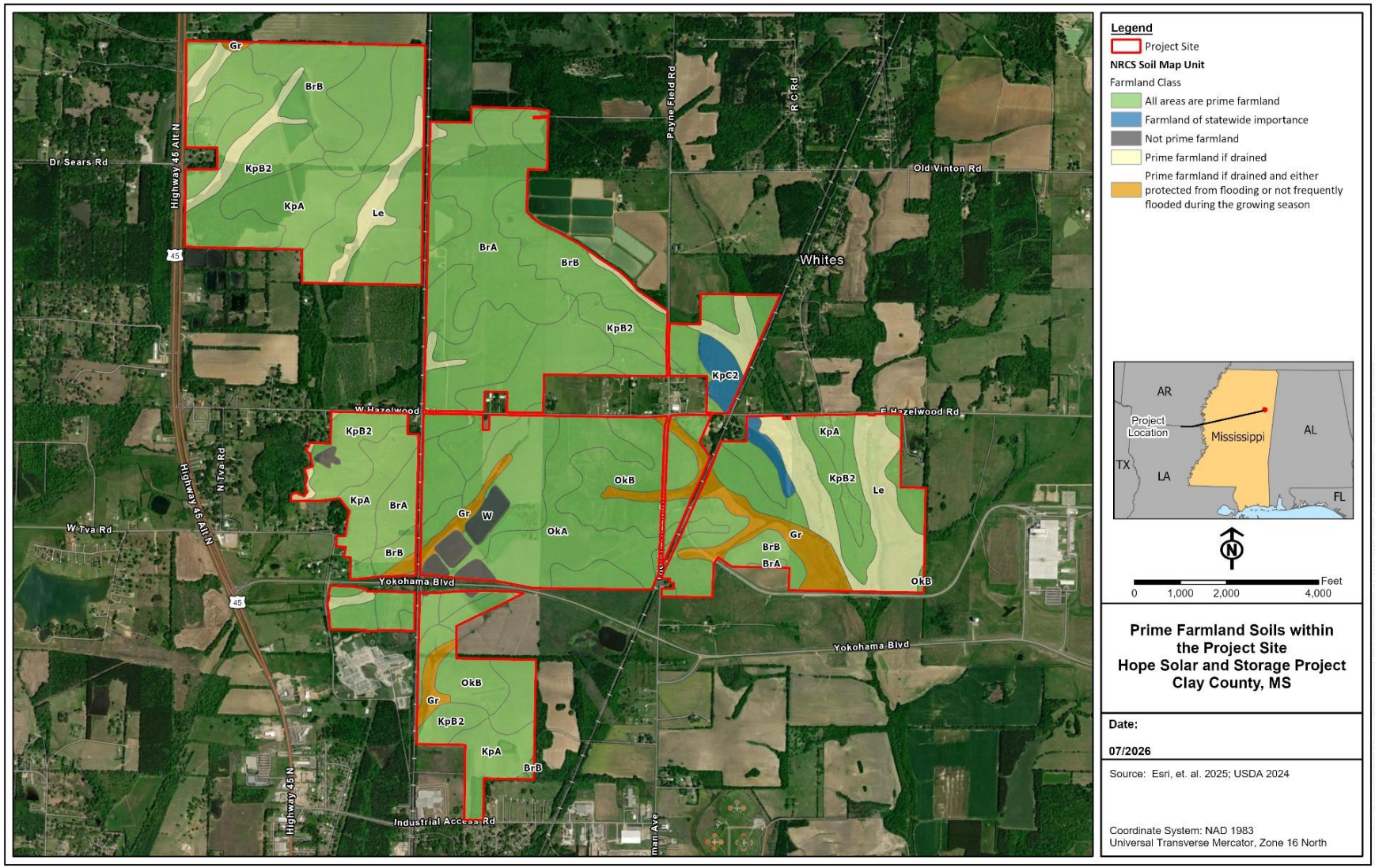

Figure 3-3. Prime Farmland Soils within the Project Site

Table 3-2. Soils in the Project Site

Map Unit Name	Farmland Classification	Drainage Class	Hydric Soil1/	Acreage	Percent of Project Site
Brooksville silty clay, 0 to 1 percent slopes	All areas are Prime Farmland	Somewhat poorly drained	No	283.1	11.7
Brooksville silty clay, 1 to 3 percent slopes	All areas are Prime Farmland	Somewhat poorly drained	No	406	16.8
Griffith silty clay, 0 to 2 percent slopes, occasionally flooded	Prime Farmland if drained and either protected from flooding or not frequently flooded during the growing season	Moderately well drained	No	110.0	4.5
Kipling silt loam, 0 to 2 percent slopes	All areas are Prime Farmland	Somewhat poorly drained	No	237.6	9.8
Kipling silt loam, 2 to 5 percent slopes, moderately eroded	All areas are Prime Farmland	Somewhat poorly drained	No	414.1	17.1
Kipling silt loam, 5 to 8 percent slopes, moderately eroded	Farmland of Statewide Importance	Somewhat poorly drained	No	34.6	1.4
Leeper silty clay loam, 0 to 2 percent slopes, occasionally flooded	Prime Farmland if drained	Somewhat poorly drained	Yes	238.0	9.8
Okolona silty clay, 0 to 1 percent slopes	All areas are Prime Farmland	Well drained	No	273.6	11.3
Okolona silty clay, 1 to 3 percent slopes	All areas are Prime Farmland	Well drained	No	384.4	15.9
Water	N/A	N/A	N/A	38.2	1.6
			Total	**2,419.3**	**100**

*Totals may not sum exactly due to rounding.

Geology

Under the Proposed Action, minor excavations may occur for construction of the Project substation, BESS, gen-tie/collector lines, and stormwater retention areas. Pilings to support the solar arrays would be driven or screwed to a typical depth of less than 10 feet. Trenching up to approximately 3- to 5-feet deep and 2- to 15-feet wide for underground wiring connections between solar panels would also be required. These depths are dependent upon geotechnical investigations and structural and electrical engineering. Streams and wetlands would be crossed using horizontal directional drilling, when practicable. Due to potential shallow subsurface disturbances, minor direct impacts to geological resources are anticipated.

Paleontology

Should paleontological resources be exposed during site construction or operation activities, the Paleontology Curator at the Mississippi Museum of Natural Sciences

would be consulted to evaluate the nature of the paleontological resources, recover these resources, analyze the potential for additional impacts, and assist in the development and implementation of a recovery plan/mitigation strategy.

Geological Hazards

The Project Site is in an area with carbonate bedrock geology, which is associated with a risk for sinkholes, though none are documented, and none were observed by biologists and wetland scientists who surveyed the Project Site. Geologic hazard impacts on the Project Site would be unlikely to impact off-site resources.

As discussed previously, there is some potential for seismic activity of small-to-moderate intensity. The Project facilities would be designed to comply with applicable standards (seismic building codes). In the most likely scenario (2 percent probability of exceedance in 50 years), an earthquake detected at the Project Site would have a light perceived shaking and a low potential for structural damage. In this event, only minor impacts to the facilities and associated infrastructure are expected. The Project would be designed to comply with applicable standards to minimize issues pertaining to sinkholes and seismic activity. Geologic hazard impacts onsite would be unlikely to impact off-site resources.

Soils

Minor, direct, adverse impacts to topography and soils within the Project Site would occur, as earth-moving activity would be required. Soil disturbance (grading) would be required for construction of the solar array, BESS, operations and maintenance building, and laydown areas. Soils would also be disturbed by grading for roads and trenching for collection lines. New impervious surfaces would be required in the form of foundations for the central inverters, the BESS, and the Project operations and maintenance building, which would result in a minor increase in stormwater runoff and potential increase in soil erosion. Short-term, minor soil erosion at the solar development would occur. Implementation of BMPs during the construction period would reduce the potential for soil erosion from the construction site. The proposed Project would require coverage under General Permit MSR10 for discharge of stormwater from large construction projects (MDEQ 2022). Hope SB would file an NOI, including a site-specific SWPPP.

Construction traffic would cause minor, short-term erosion before the site is revegetated. Construction would be sequenced to minimize the time that bare soil on the disturbed areas is exposed. Prior to any major grading, efforts would be made to preserve native topsoil, which would be removed from the area to be graded and stockpiled on site for redistribution over the disturbed area after the grading is completed. After construction, the disturbed areas would be seeded with a native seed mixture of certified weed-free, low-growing, noninvasive grasses, and herbaceous plants. Erosion control measures (BMPs) would be regularly inspected and maintained until vegetation in the disturbed areas has been established to the extent it meets construction stormwater permit restoration requirements.

Prime Farmland

NRCS considers all soils (2,381.4 acres) except the water component (38.2 acres) within the 2,419-acre Project Site to be Prime Farmland (including qualified lands that are protected from flooding or not frequently flooded during the growing season) or Farmland of Statewide Importance under the Farmland Protection Policy Act. Prime Farmland (designated and qualified) and Farmland of Statewide Importance comprise 1,645 acres and 32 acres, respectively, within the 1,700-acre limit of disturbance. The conversion of 1,645 acres of Prime Farmland and 32 acres of Farmland of Statewide Importance to nonagricultural uses during the construction and operation of the solar facility would likely impact the Prime Farmland and Farmland of Statewide Importance designations on the land and would result in moderate adverse impacts to soils.

During ecological field surveys, approximately 1,756 acres within the 2,419-acre Project Site were identified to be actively used for row crop agriculture or pastureland (Appendix D, Tetra Tech 2025b). Approximately 1,429 of these acres fall within the limit of disturbance. The 1,429 acres of farmland removed from row cropping and pasture during the lifetime of the Project represents less than one percent of the 157,471 acres in Clay County identified as “land in farms” in the 2022 Census of Agriculture (USDA 2022). There would be a minor loss of agricultural production over the life of the Project, which is expected to be 40 years, including the 20-year PPA term and the subsequent 20-year period following expiration of the PPA.

Hope SB would operate the Project and sell power to TVA under the terms of the PPA for 20 years. At the end of the term of the PPA, Hope SB would assess whether to cease operations at the Project Site or to replace equipment and attempt to enter into a new PPA or make some other arrangement to sell the power. If operations cease, the Project would be decommissioned and dismantled, and the Project Site would be restored to a tillable state and revegetated. Once restored, the Project Site could be returned to agricultural uses with minimal loss of soil productivity and potentially an increase in soil productivity after a prolonged rest period.

3.3.2.3 Reasonably Foreseeable Future Actions

The Proposed Action, in combination with the RFFAs described in Section 3.1, is not expected to adversely affect the geology, paleontology, geological hazards, or soils in the region. As described in Section 3.2.2.3 above, the Proposed Action and other RFFAs related to energy generation and industrial development would contribute to a loss of Prime Farmland in the region. According to the NRCS Web Soil Survey (NRCS 2025c), approximately 83 percent of the soils in Clay County, Mississippi, are classified as Prime Farmland (designated or qualified) or Farmland of Statewide Importance. The Proposed Action would remove about 1,677 acres of Prime Farmland and/or Farmland of Statewide Importance; when considered with the RFFAs, the Proposed Action would have moderate impacts on Prime Farmland in the region.

3.4 Water Resources

3.4.1 Affected Environment

3.4.1.1 Groundwater

Groundwater is the subsurface water that fills the pores and fractures in soil, sand, and rock beneath the Earth's surface, forming aquifers that can be tapped for wells and springs. In Mississippi, groundwater is sourced primarily from precipitation with additional recharge supplied by seepage from streams, rivers, and/or adjacent geologic formations.

Segment 5 of the United States Groundwater Atlas extends across Mississippi, Arkansas, and Louisiana and contains parts of four physiographic provinces: Coastal Plain, Ouachita, Ozark Plateaus, and Interior Low Plateaus (Renken 1998). The Project Site is located within the East Gulf Coastal Plain Section of the Coastal Plain Province, an area of subdued relief characterized by low hills, gentle cuesta ridges, and broad, nearly level lowlands. In the low-lying zones, deposits of fine-grained clay, chalk, and mudstone predominate, whereas the ridges and uplands rest on coarser sand and gravel strata. Although surface water is the largest source of freshwater to public supply, domestic and commercial, industrial, mining, thermoelectric power and agricultural users, groundwater accounts for 38 percent of total water use in Arkansas, Louisiana, and Mississippi (Renken 1998).

The Southeastern Coastal Plain and Mississippi Embayment aquifers are present in Clay County and are vertically separated by an intervening confining unit. Regionally, the clean sand and gravel horizons within both these Coastal Plain systems exhibit the highest transmissivity and represent the most heavily relied-upon groundwater resources in Segment 5 (Renken 1998). There are no USEPA designated sole source aquifers in Clay County (USEPA 2025a).

The Mississippi Embayment aquifer system underlies the East Gulf Coastal Plain Province and is divided into six regional aquifers, water bearing layers you can pump from, and three regional confining units, low-permeability clay or silt layers that act like caps. Confining units within the aquifer system may contain local aquifers that collectively impede vertical water movement (Renken 1998). The Project Site is located within the Midway confined regional unit, one of the three major clay-rich layers of the Mississippi Embayment aquifer system. The Midway confining unit consists of massive clay beds and separates the Lower Wilcox and McNairy-Nacatoch aquifers in sediments of Tertiary age from underlying aquifers of rocks of Cretaceous age. Vertical movement of groundwater and any dissolved contaminants is limited across the Midway confining unit.

The state of Mississippi uses 3.5 billion gallons of water per day, of which 75 percent is supplied by groundwater (roughly 2.5 billion gallons per day), the remaining coming from surface water (Mississippi State Department of Health 2025). The state relies heavily on the Mississippi Embayment aquifer system for agricultural and municipal water supply (Clark et al. 2011). No water wells are located within the Project Site (MDEQ 2025).

3.4.1.2 Surface Waters and Wetlands

Surface waters are above-ground water bodies, such as rivers, streams, lakes, ponds, reservoirs, and wetlands, that collect runoff, groundwater discharge, and precipitation. These waters are subject to natural flows and cycles and serve as critical habitats, water supplies, and conveyance pathways.

The USGS uses a national standard hierarchical system to categorize surface water resources of the United States into hydrologic unit codes (HUCs). Based on this tiered system, the United States is divided and sub-divided into successively smaller hydrologic units that are classified into four levels: regions, sub-regions, accounting units, and cataloging units. The hydrologic units are arranged or nested within each other, from the largest geographic area (regions) to the smallest geographic area (cataloging units). The Project Site is within the Tibbee Basin (HUC 03160104) and further divided into two subwatersheds: HUC031601040602 McGee Creek-Tibbee Creek and HUC 031601040302 Walker Lake-Chuquatonchee Creek.

USGS 2024 topographic quadrangles for Muldon and Strong, Mississippi determined the Project Site consists of relatively flat land and ranges in elevation from approximately 290 feet amsl down to 220 feet amsl. Topography indicates the land gradually slopes south towards Tibbee Creek (USGS 2024a, 2024b).

Field delineations of the Project Site surface water features were conducted March 10-14, June 16-18, July 24, October 28-30, 2025, and April 14-16, 2026 (Appendix C, Tetra Tech 2026a). The field delineations were conducted using the standardized method following the USACE Wetland Delineation Manual (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region*, Version 2.0 (USACE 2010).

During the field survey, the boundaries of wetlands were identified through visual assessment of hydrophytic vegetation, hydric soils, and hydrology indicators. Linear water features including streams and drainage ditches were identified by the presence of a continuous channel that exhibited evidence of frequent or recurring water flow such as a defined bed and bank and ordinary high-water mark (OHWM). Open waters (i.e., ponds and lakes) were identified by the presence of an OHWM and the relatively permanent presence of standing water.

The physical and biological characteristics of the delineated linear water features (streams or ditches) were evaluated to determine flow regime (i.e., ephemeral, intermittent, or perennial). Perennial streams maintain year-round flow from the groundwater typically staying above the stream bed throughout the year. Intermittent streams carry groundwater-supported baseflow at least once each year. Ephemeral streams lie above the water table and only flow in direct response to precipitation, usually for a short duration, within 48 hours, immediately after a storm event. Physical characteristics evaluated included channel morphology, substrate size/type, and base flow conditions. Biological characteristics evaluated include the presence of fish, aquatic macroinvertebrates, and rooted vegetation within the OHWM.

The hydrologic (or flow) regimes for delineated wetlands and open waterbodies were classified in accordance with the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). Three wetland types and one open water type were identified within the Project Area, as described below:

- **Palustrine emergent (PEM)** contain emergent, herbaceous (non-woody) plants, which are the tallest life form with at least 30 percent areal coverage.
- **Palustrine scrub-shrub (PSS)** contain woody plants less than 6 meters (20 feet) in height, which are the tallest life form with at least 30 percent areal coverage, or, when trees or shrubs alone cover less than 30 percent of an area but in combination cover 30 percent or more. Trees are defined as woody plants at least 6 meters (20 feet) in height, and shrubs are defined as woody plants less than 6 meters (20 feet) in height.
- **Palustrine forested (PFO)** contain woody plants at least 6 meters (20 feet) in height, which are the tallest life form with at least 30 percent areal coverage.
- **Palustrine unconsolidated bottom (PUB)** contains all wetland and deep-water habitats with at least 25 percent cover of particles smaller than stones, and a vegetative cover of less than 30 percent.

Additionally, the TVA Rapid Assessment Method (TVARAM) was used to assess the conditions, functional capacity, and habitat quality of each delineated wetland, as required by the TVA's *Guidelines for Conducting Biological and Cultural Surveys and Impact Analyses* (TVA 2025a). Wetlands on the Project Site were scored and sorted into three quality classes based on their function scores:

- **Category 1: Low (0–29):** provide only minimal wildlife habitat as well as limited hydrological and recreational functions and do not support critical or rare species, including threatened or endangered species. They are often hydrologically isolated and exhibit one or more of the following traits: low species diversity, little to no habitat used by wildlife, minimal capacity to perform beneficial wetland functions, and/or dominance by non-native species.
- **Category 2: Good/Moderate (30–59):** Support moderate wildlife habitat or provide hydrological and/or recreational benefits; dominated by native species but generally lack habitat for rare, threatened, or endangered species; may be degraded yet still retain a reasonable capacity to recover and reestablish their lost wetland functions.
- **Category 3: Superior (60–100):** Offer superior wildlife habitat or exceptional hydrological or recreational functions; exhibit high biodiversity, a strong predominance of native species, and overall high functional value.

Wetlands

The field-based delineation identified 60 wetlands (80.8 acres), including 48.2 acres of PEM wetlands, 23.2 acres of PFO wetlands, and 9.4 acres of PSS wetlands; 71 stream reaches (57,458.0 linear feet), including 18,839.2 linear feet of perennial streams, 26,205.8 linear feet of intermittent streams, and 12,413.0 linear feet of ephemeral

streams; and 20 open waterbodies (66.6 acres) within the Project Site (Appendix C, Tetra Tech 2026a, Figure 3-4).

Using the TVARAM, the delineated wetlands were scored to determine their function, condition, and quality (Appendix C, Tetra Tech 2026a). Three wetlands were determined to have superior function, 41 wetlands were determined to have moderate/good function, and 16 wetlands were determined to have low function.

PEM wetlands delineated consisted of low-lying and depressional areas located in active agricultural fields, fallow fields, old fields, and maintained pastures. The PEM wetlands were largely dominated by wetland herbaceous species including bushy bluestem (*Andropogon glomeratus*), broomsedge (*Andropogon virginicus*), marsh seedbox (*Ludwigia palustris*), keeled bulrush (*Isolepis carinata*), curly dock (*Rumex crispus*), tall dock (*Rumex conglomeratus*), hairy buttercup (*Ranunculus sardous*), soft rush (*Juncus effusus*), cattail (*Typha latifolia*), smartweeds (*Persicaria* spp.), cutgrass (*Leersia oryzoides*), and tall fescue (*Festuca arundinacea*). The wetlands exhibited numerous hydrology indicators including surface water, high water table, FAC-neutral test, and geomorphic positioning. They consisted of loamy/clayey soils that met the depleted matrix, redox dark surface, and depleted dark surface, and umbric surface indicators for hydric soils.

PFO wetlands delineated generally consisted of mature depressional mixed-hardwood wetlands. Dominant wetland vegetation included water oak (*Querus nigra*), cherrybark oak (*Quercus pagoda*), sugarberry (*Celtis laevigata*), red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanica*), nut grass (*Cyperus rotundus*), Cherokee sedge (C*arex cherokeensis*), and switch cane (*Arundinaria tecta*). The wetlands exhibited hydrology indicators including saturated soils, high water table, geomorphic position, and FAC-neutral test. They consisted of loamy/clayey soils that met the depleted matrix indicator for hydric soils.

PSS wetlands delineated typically existed as depressional features within the greater old field habitat areas. Dominant wetland vegetation included sugarberry, green ash, Japanese honeysuckle (*Lonicera japonica*), nut grass, hairy buttercup, common rush (*Juncus effusus*), and curly dock. The wetlands exhibited hydrology indicators including geomorphic position, saturated soils, high water table, and drainage patterns. They consisted of loamy/clayey soils that met the depleted matrix indicator for hydric soils.

Open Waters

Open water features consisted of medium to large impoundments located throughout the western side of the Project Site. These features may have historically existed as wetlands that were excavated and impounded to retain water in the area. Based on field observations and from review of available historical imagery, some of the ponds were created to provide drainage for surrounding agricultural practices and possibly for local recreational use. Large, stabilized, and vegetated berms surrounding the ponds likely originated from excavation spoil mounds.

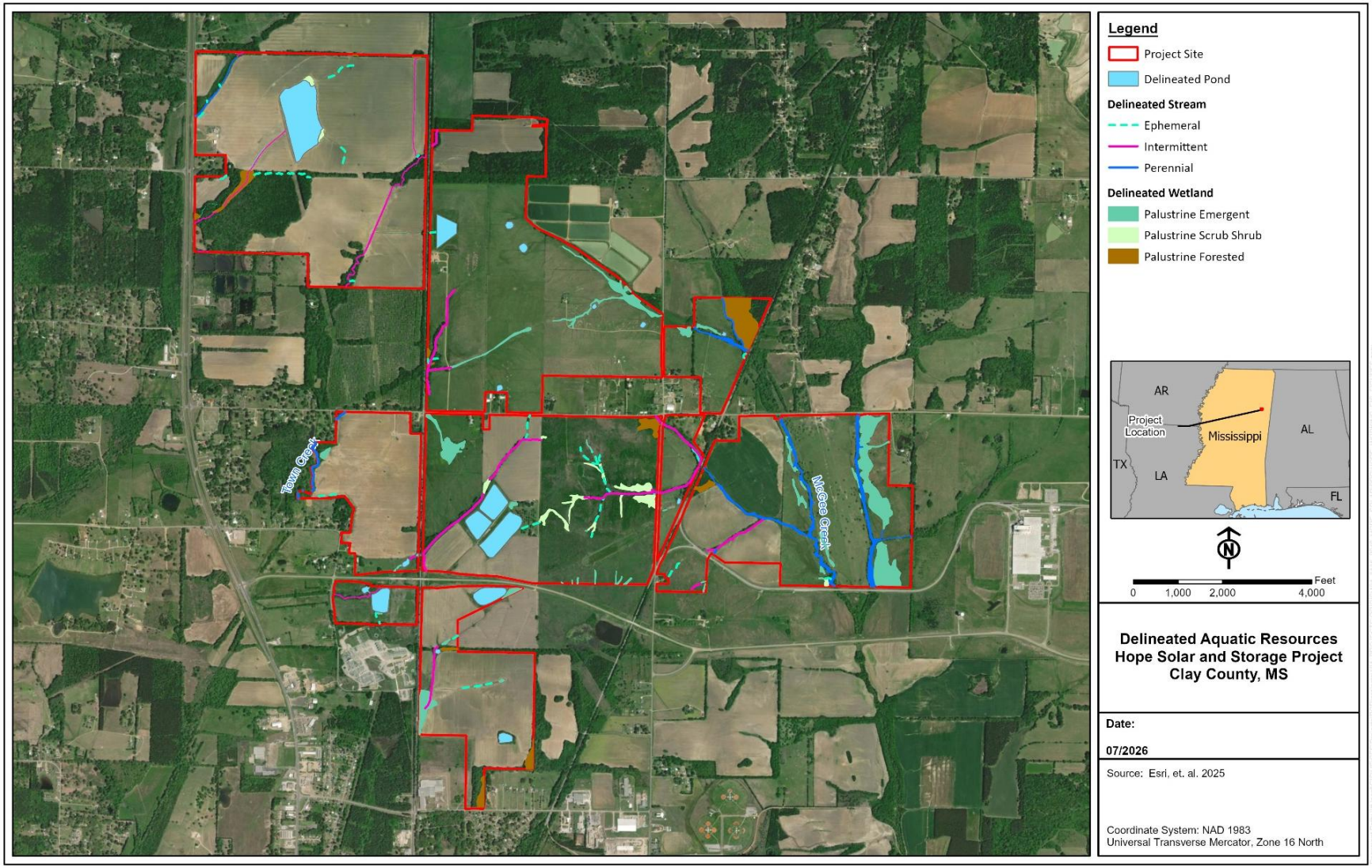

Figure 3-4. Delineated Aquatic Resources

The remaining open water features consisted of small impoundments throughout the Project Site. Based on field observations and from review of available historic imagery, most of the ponds were likely created for surrounding agricultural and recreational use.

Using the TVARAM, the delineated open water features were scored to determine their function, condition, and quality (Appendix C, Tetra Tech 2026a). One water feature was determined to have superior function, 17 open water features were determined to have moderate/good function, and two open water features were determined to have low function (Appendix C).

Streams

McGee Creek, a tributary of the Tombigbee River, flows north to southeast and runs through the eastern portion of the Project Site. McGee Creek is the primary receptor of runoff in the Project Site. The headwaters of Town Creek begin in the southwestern portion of the Project Area and continue to flow southwest out of the Project Site.

Seventy-one linear aquatic features measuring a total of 57,458.0 linear feet were delineated within the Project Site. Appendix C provides a list of all delineated streams, their classifications, and their linear extent within the Project Site.

Twenty-nine of the onsite streams were determined to be ephemeral features that likely only flow in response to rainfall events and consisted of both naturalized channels and man-made or anthropogenically altered linear features used to support drainage for agriculture. These streams lacked natural sinuosity and riffle-run-pool sequencing. Substrates consisted of silt and sand. All ephemeral streams exhibited moderately stable banks, OHWM, aquatic and/or emergent wetland vegetation including soft rush and curly dock.

The remaining 35 streams consisted of relatively permanent intermittent and perennial streams. Most of these streams drained to McGee Creek, located in the eastern portion of the Project Site. These streams exhibited low to moderate sinuosity, bars and benches, and riffle-run-pool sequencing. Surface water depths ranged approximately 5 to 60 inches and substrates largely consisted of sand, silt, clay, and gravel.

These findings are based upon a survey employing USACE approved protocols, the USACE (Mobile District) must make the official determinations regarding the jurisdictional status of Waters of the U.S. (WOTUS) within the Project Site through the jurisdictional determination process. A jurisdictional determination request would be submitted to the USACE during the first quarter of 2027.

3.4.1.3 Water Quality

The CWA requires states to identify all waters where required pollution controls are not sufficient to attain or maintain applicable water quality standards and to establish priorities for the development of limits based on the severity of the pollution and the sensitivity of established uses of those waters. States are required to submit reports to USEPA with this data. The resulting inventory of impaired and threatened streams and water bodies is known as the “303(d) list.”

For each impaired water body, the state determines the maximum amount of a pollutant, Total Maximum Daily Load, that can enter the water without violating quality standards. Total Maximum Daily Loads may establish pollutant discharge limits or serve as planning tools for water-quality improvements. The MDEQ develops these Total Maximum Daily Loads to ensure that impaired waters not only meet but continue to comply with state standards.

One stream within the Project Site, McGee Creek from its headwater to its confluence with Tibbee Creek, is listed as biologically impaired for aquatic life use (MDEQ 2024). Two additional streams within the vicinity of the Project Site are listed as impaired by MDEQ. Spring Creek near West Point from its headwaters to its confluence with the Tennessee-Tombigbee Waterway is listed as impaired by sediment for aquatic life use and Town Creek at West Point to its confluence with Tibbee Creek is listed as biologically impaired for aquatic use (MDEQ 2024).

3.4.1.4 Floodplains

A floodplain is a low-lying area adjacent to a stream or river that is periodically inundated during high-flow events. The land area subject to a one-percent chance of flooding in any given year is normally called the 100-year floodplain. The land area subject to a 0.2-percent chance of flooding in any given year is normally called the 500-year floodplain. It is necessary to evaluate development in the floodplain to ensure that the Project is consistent with the requirements of EO 11988, *Floodplain Management*, as well as local floodplain development regulations.

Review of FEMA Flood Insurance Risk Map panels 28025C0193D, 28025C0194D, and 28025C0195D (effective May 3, 2011), and 28025C0215E (effective November 28, 2025) indicate most of the Project Site (approximately 2,293.9 acres; 94.8 percent) to be located within Zone X (Unshaded), designated as an area of minimal flood hazard located outside of the 100-year floodplain (Figure 3-5**;** FEMA 2011, 2025). The remaining 125.4 acres (5.2 percent) are mapped as Zones A and AE Special Flood Hazard Areas indicating these areas are subject to a 1-percent-annual-chance of flood hazard (100-year flood). No 500-year floodplains are mapped within the Project Site.

Clay County's Flood Prevention Ordinance requires that new construction implement methods that minimize flood damage (Clay County 2011). The ordinance calls for an evaluation concluding no rise in the flood elevation and/or construction at 18 inches or 2 feet above the (100-year) Base Flood Elevation. The City of West Point requires a floodplain development permit for activities on the Project Site and within the Town Creek and McGee Creek floodplains as shown on Flood Insurance Rate Map Panels 28025C0193D, 28025C0194D and 28025C0215D (West Point 2017b).

3.4.2 Environmental Consequences

3.4.2.1 No Action Alternative

Under the No Action Alternative, the proposed Project would not be constructed; therefore, no direct Project-related impacts to water resources would be expected. Existing land would remain primarily in agricultural use, and water resources would stay at current conditions. Indirect impacts to water resources could occur due to continuing

agricultural use of the Project Site. On-site erosion and sedimentation may alter runoff patterns and degrade downstream surface water quality. Use of chemical fertilizers and pesticides could impact both surface and groundwater through surface water runoff and recharge.

3.4.2.2 Proposed Action Alternative

Under the Proposed Action, minor direct and indirect impacts to water resources would result from construction, operation, maintenance, and decommissioning of the Project. To address these minor impacts the appropriate permits from USACE and MDEQ would be obtained, and if required, Hope SB would mitigate the impacts.

Groundwater

Under the Proposed Action, no direct adverse impacts to groundwater are anticipated. The risk of groundwater contamination from accidental spills of hazardous materials (i.e. petroleum products or hydraulic fluids) during construction or operation would be minimized through implementation of the BMPs in TVA's *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities* (TVA 2022a) and an SPCC Plan would be prepared to minimize the potential for leaks or spills to occur and provide countermeasures for spill response.

Most of the land proposed for Project use is actively cultivated cropland that is routinely treated with fertilizers, herbicides, and pesticides. The Project does not plan to apply agricultural chemicals during construction or operation, aside from limited fertilizer use and spot weed treatment during revegetation of disturbed areas. As a result, any impact to groundwater from agricultural chemicals associated with facility construction or operation would be minimal.

Construction water needs would be limited and primarily used for dust control and compaction during grading of access roads, pads, and foundations. This water would likely be supplied by truck or from existing groundwater wells, or from a newly drilled well. A water source would also be required for the O&M building well and possibly for occasional panel washing during operation. Wells must be drilled by a state licensed water well contractor and constructed to applicable standards to protect groundwater resources. Groundwater withdrawals are expected to be minimal, if any, and would not affect regional groundwater supplies.

Operational and maintenance water demand would be low, used mainly for occasional dust suppression and equipment washing. Because internal road traffic is light and regional precipitation would typically limit dust buildup, dust-control applications are expected to be infrequent and targeted. Routine panel washing is anticipated to occur two times per year. All washing and dust control activities would follow water only BMPs, minimizing volumes, containing applications, and controlling runoff. Operational water would be sourced from permitted wells or hauled nonpotable supplies, and routine equipment cleaning and any incidental discharges would adhere to the same BMPs to protect groundwater.

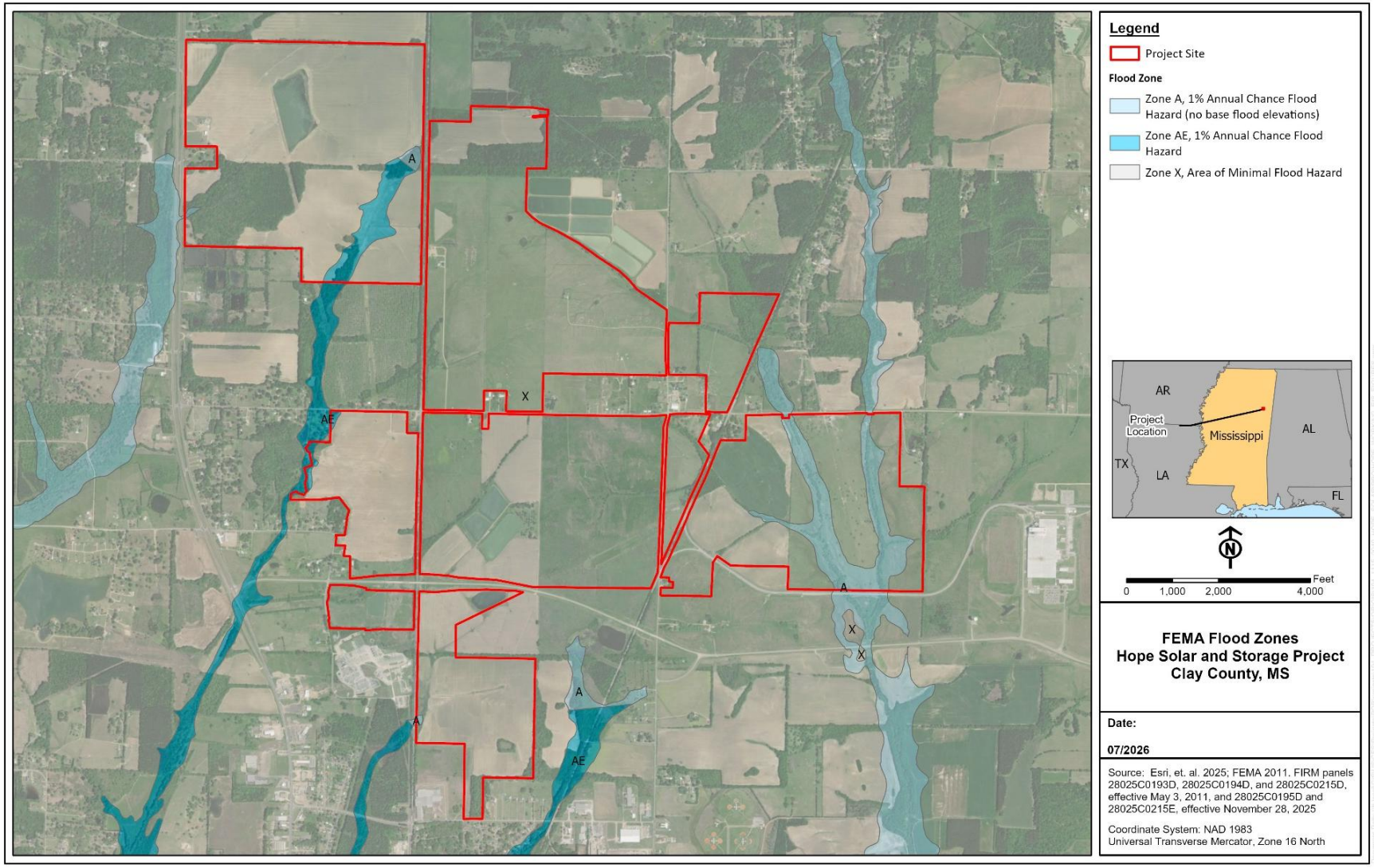

Figure 3-5. FEMA Flood Zones

If the facility were to be decommissioned or closed, a Decommissioning and Closure Plan would be developed; the plan would detail procedures to control erosion and sedimentation to comply with NPDES requirements and permits. Water usage for potential decommissioning and closure is not likely to exceed that used for operation and maintenance. Therefore, impacts to groundwater resulting from decommissioning and closure of the facility are not anticipated.

Surface Water and Wetlands

Pursuant to Section 404 of the CWA and EO 11990 *Protection of Wetlands*, the Proposed Action must avoid wetland and WOTUS impacts where practicable and, where avoidance is unfeasible, minimize and mitigate impacts in accordance with federal and state requirements. USACE jurisdictional wetlands potentially affected by the Proposed Action would be subject to USACE review to fully identify impacts and appropriate restoration and mitigation measures.

The Proposed Action would result in minor permanent impacts and temporary impacts to surface waters. Temporary impacts to surface waters (sedimentation caused by increased erosion and runoff) would be minimized by adhering to approved BMPs and NPDES permit requirements. BMPs to reduce soil erosion and sedimentation include, but are not limited to, topsoil segregation, silt fences, straw bale dikes, diversion ditches, riprap channels, water bars, water spreaders, and other measures prescribed in the TVA BMP Manual (TVA 2022a). Vegetation clearing at stream and wetland crossings would be minimized to the maximum extent practicable. Appropriate BMPs would be implemented during construction and operation of the Project. Project facilities and majority of the supporting infrastructure have been sited to maintain a minimum 50-foot setback from all streams and wetlands.

Complete avoidance of surface waters is not feasible, and the construction and operation of the Project would result in permanent impacts to 9 perennial/intermittent streams (S012, S016 (twice), S021, S022, S023, S044, S051 and S052, totaling 408.0 linear feet) and one ephemeral stream (E043, 40.0 linear feet). All permanent impacts to the aquatic resources listed above would be the result of culvert installations and/or replacements associated with construction and maintenance access roads within the Project Site (Figure 3-6). Direct impacts to wetlands would be avoided as all permanent structures are sited outside of existing wetlands. Once construction is complete, the ongoing operation of the Project would not result in additional impacts to surface waters based on the current Project layout. No panels or other additional above-ground structures are expected to impact surface waters within the Project Site or within TVA's streamside management zone of 50 feet (TVA 2022b). These areas would be avoided during construction; tree removal to reduce shading is not required.

Appropriate permits including CWA Section 404 Individual or NWP and individual or general 401 Water Quality Certifications would be obtained for the proposed permanent impacts to jurisdictional WOTUS and state-regulated waters prior to the commencement of Project-related construction activities. If additional impacts to wetlands are identified, the Project would apply for CWA Section 404 permitting up to Individual Permitting as necessary. If required, compensatory mitigation would be purchased, prior to

construction, to offset impacts to wetlands. Appropriate BMPs would be implemented during construction and operation of the Project. Therefore, the Proposed Action is anticipated to result in minor impacts to surface waters.

During operation, the Project is expected to provide water-quality benefits to streams and wetlands on the site by replacing annual agricultural activities, reducing pesticide and fertilizer applications and eliminating livestock grazing near stream banks. These changes should lower nutrient inputs that fuel nuisance algal growth, as well as decrease bank erosion, downstream siltation, and eutrophication from manure. No indirect impacts to surface water are anticipated during the operational phase.

If the facility were to be decommissioned or closed, a Decommissioning and Closure Plan would be developed; the plan would detail procedures to control erosion and sedimentation to comply with NPDES requirements and permits.

Water Quality

Soil disturbances associated with Project construction activities can result in adverse water quality impacts. Soil erosion and sedimentation can impact surface water quality, particularly where grading, trenching for collection lines, access road construction, and equipment staging disturb native soils or remove vegetation. To reduce these risks, construction activities would be performed using BMPs to minimize these impacts and all appropriate local, state, and federal permit requirements would be adhered to. Typical construction BMPs would include installation and maintenance of silt fences and sediment traps, stabilized construction entrances, phased clearing and grading, prompt revegetation or mulching of exposed soils, and management of stockpiles to prevent runoff and dust. Regulatory compliance would be achieved through coverage under the MDEQ administered NPDES construction stormwater permitting program. The Project would obtain coverage under General Permit MSR10 for large construction projects and file an NOI together with a SWPPP that documents site-specific erosion and sediment control measures. Waste management protocols would ensure containment of construction-derived waste materials and minimize the potential for pollutant introduction to receiving waters; procedures for handling, storage, and disposal of hazardous and nonhazardous wastes would be documented in project plans and implemented in the field.

Residual, unavoidable effects are expected to be small and highly localized, primarily manifesting as minor changes to infiltration and runoff characteristics where impermeable or compacted surfaces (e.g., gravel pads, access roads) are installed. These effects would be minimized through design measures and mitigated onsite using stormwater management practices (e.g., swales, detention/infiltration features, and surface permeability treatments) sized and located to attenuate peak flows and promote recharge where feasible. In the unlikely event of a spill impacting surface water or groundwater, the Project's SPCC Plan, implemented in coordination with appropriate regulatory agencies, would guide immediate containment, remediation, monitoring, and reporting actions.

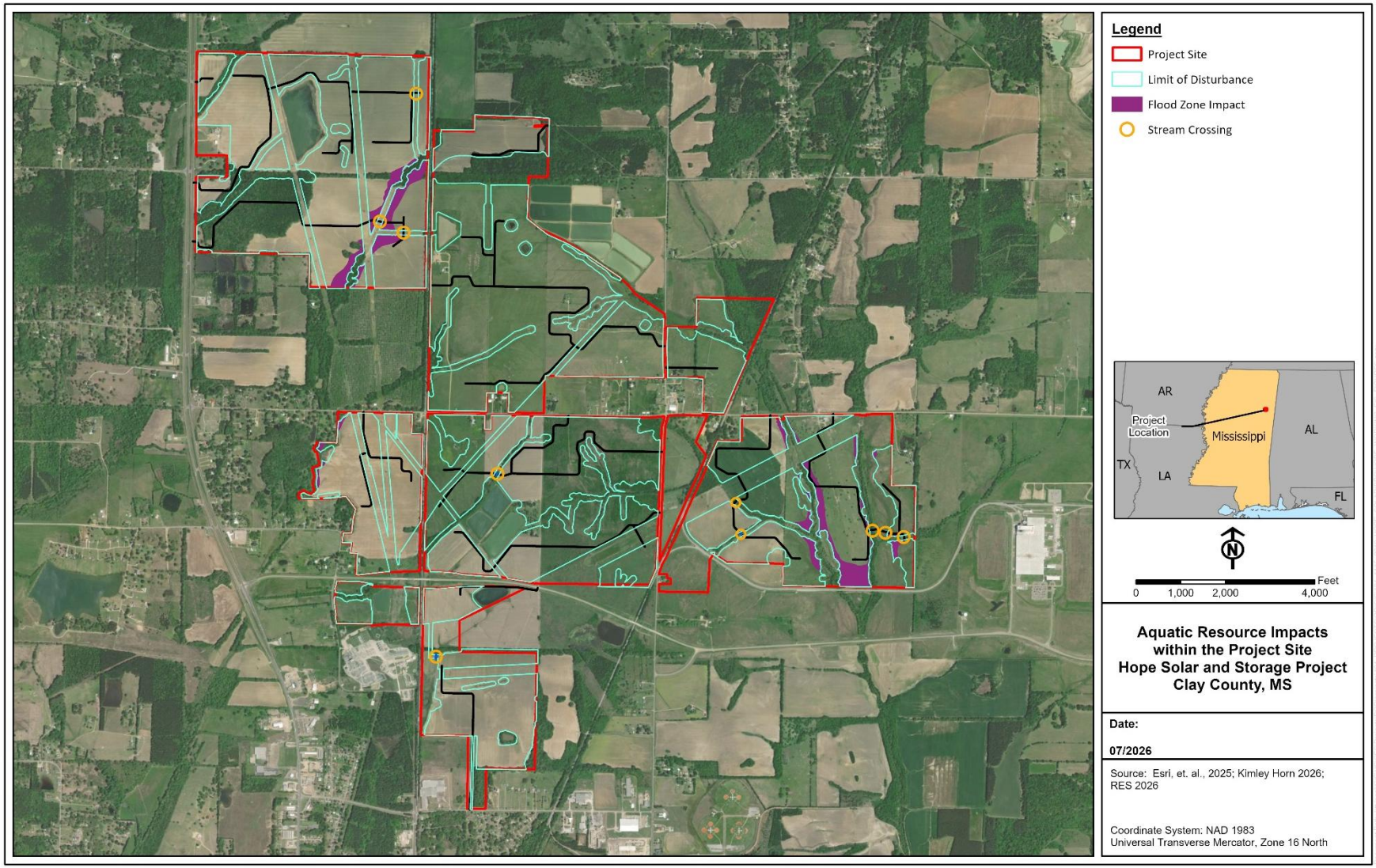

Figure 3-6. Aquatic Resources Impacts within the Project Site

The Project is expected to yield minor indirect beneficial effects to water quality over the long term by reducing the need for fertilizer and pesticide applications from agricultural activities once permanent vegetation is established and by maintaining continuous vegetative cover that reduces soil exposure and nutrient runoff.

Floodplains

As a federal agency, TVA adheres to EO 11988. The objective of EO 11988 is "…to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative..." The EO is not intended to prohibit floodplain development in all cases, but rather to create a consistent government policy discouraging such development under most circumstances (US Water Resources Council 1978). The EO requires that agencies avoid the 100-year floodplain unless there is no practicable alternative. TVA has designated BESS facilities as critical infrastructure. Consistent with Executive Order 11988, critical infrastructure should avoid the 500-year floodplain where practicable. Additionally, the Project would comply with West Point's and Clay County's floodplain ordinances.

Most facilities, structures, and activities required for the Proposed Action would be located outside of the 100-year floodplain, except for construction of certain internal access roads, and installation of select solar panels, illustrated in Figure 3-6. The access roads would require road culvert improvements within the 100-year floodplain. Consistent with EO 11988, access roads are considered to be repetitive actions in the 100-year floodplain that should result in only minor impacts. To minimize adverse impacts, any road improvements would be done in such a manner that upstream flood elevations would not be increased by more than one foot.

Construction of the solar panel arrays within the approximately 50.0 acres of mapped floodplain would involve limited ground disturbance associated with pile driving and installation of panel supports; however, no fill placement within the floodplain is anticipated. The solar arrays would be elevated above the base flood elevation and spaced to allow for continued flood conveyance, thereby minimizing obstruction of flood flows and preserving flood storage capacity. For all photovoltaic facilities, inverter pad elevations and the lowest module elevation at maximum tilt (with trackers in their lowest operating position) will be designed to maintain a minimum of one foot of freeboard above the modeled 100-year water surface elevation, as shown in the hydrology study (Kimley Horn 2026a).

Project-specific hydrologic and hydraulic modeling will be used to determine the modeled 500-year water surface elevations at the proposed BESS locations. The proposed BESS designs are preliminary, therefore the final BESS equipment locations will be designed such that the equipment is maintained at a minimum of one foot above the modeled 500-year water surface elevation, as shown in the hydrology study (Kimley Horn 2026b).

Short-term impacts may include localized soil disturbance and temporary increases in erosion potential during construction, which would be minimized through implementation

of BMPs in TVA's *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities* (TVA 2022a) and through compliance with MDEQ stormwater requirements. Long-term impacts on floodplain function are expected to be negligible, as the Project would not substantially alter site topography, hydrologic connectivity, or flood conveyance, and would remain consistent with the intent of EO 11988 to minimize adverse impacts and avoid increased flood risk to people or property.

Alternatives to locating the solar arrays and other facilities within the floodplain were evaluated, including siting the Project outside the floodplain or on previously developed lands. These alternatives were determined to be not practicable due to site-specific constraints such as land availability, Project configuration requirements, interconnection feasibility, and the need to co-locate the facility within existing agricultural fields. The selected alternative represents the practicable option that minimizes floodplain impacts while meeting the Project purpose and need and is consistent with the intent of EO 11988 and local floodplain ordinances.

If the facility were to be decommissioned or closed, a Decommissioning and Closure Plan would be developed; and require demolition debris be disposed of outside of floodways. Therefore, impacts to floodplains resulting from decommissioning and closure of the facility are not anticipated.

3.4.2.3 Reasonably Foreseeable Future Impacts

Section 3.1 describes the RFFAs within 15 miles of the Project Area, including activities at Columbus Air Force Base; construction, operation, and maintenance of energy generation facilities and transmission lines; MDOT road and bridge construction and maintenance; railroad track maintenance; and regional industrial development and agricultural activities. Construction activities, as well as agricultural practices related to planting and harvesting, can have short-term, minor effects to surface water and wetlands, floodplains, and water quality. The MDOT projects involving the repair or replacement of bridges, and construction of transmission lines over streams and wetlands have the potential to affect water quality or increase the upstream flood elevation. If standard BMPs are used during construction to prevent impacts to water quality and upstream flood elevations are not increased by more than 1 foot, the RFFAs described in Section 3.1 are not expected to have long-term, significant impacts to water resources in or near the Project Area.

3.5 Biological Resources

3.5.1 Affected Environment

The Project Site lies within the Blackland Prairie Level IV USEPA Ecoregion, which is situated in the greater Southeastern Plains Level III USEPA Ecoregion (USEPA 2013). The Blackland Prairie Ecoregion, known for its dark, fertile soil, is characterized by gently rolling hills that overlies Quaternary to Tertiary dark gray to reddish clay solution residuum over Cretaceous-age marl (a calcium-rich mudstone), chalk, and calcareous clay (Griffith et al. 2001). Although the ecoregion has a humid and subtropical climate, tree growth is limited due to the lack of stability in these calcium-rich and fine-textured

deposits. Additionally, these soils tend to shrink and crack when dry and swell when wet due to these distinctive soil conditions (Chapman et al. 2004). Originally, the ecoregion supported a natural community of Blackbelt oak-forest containing numerous tree species including American sweetgum (*Liquidambar styraciflua*), eastern red cedar (*Juniperus virginiana*), and post oak (*Quercus stellata*), as well as bluestem prairie with herbaceous species such as big bluestem (*Andropogon gerardii*), Indian grass (*Sorghastrum nutans*), and prairie rosinweed (*Silphium terebinthinaceum*). However, today, the Blackland Prairie Ecoregion contains a mosaic of pastureland, cropland and large aquaculture operations and pond-raised catfish. However, small, fragmented, irregularly distributed patches of mixed hardwoods, pines (*Pinus* sp.), eastern red cedar and prairie remnants remain (Griffith et al. 2001). The Project lies within the Tombigbee River drainage, which encompasses approximately 6,025 square miles in northeast and eastern Mississippi. Major rivers of this system are the Buttahatchee River, Noxubee River, Sucarnoochee River, Town Creek (West Fork Tombigbee River), Bull Mountain Creek, Tibbee Creek, and Luxapallila Creek (Appendix D, Tetra Tech 2025b).

Field surveys were conducted in 2025 and 2026 to characterize the Project Site's plant and animal communities and identify habitats that might support sensitive and special-status wildlife species (Appendix C, Tetra Tech 2026b). For this impact assessment, sensitive and special-status species included federal and state threatened and endangered species, bald and golden eagles, species of special concern, and candidate or proposed species for listing. Details on survey methods and results can be found in Appendix D.

A bat habitat suitability assessment was also conducted within the Project Site in 2025 and 2026 (Appendix D, Tetra Tech 2026b and 2026c). The assessment considered bat habitat generally but focused on potential habitat of the tricolored bat (TCB; *Perimyotis subflavus*), a species that occurs across the state of Mississippi and has been proposed as a federally endangered species under the ESA (87 Federal Register [FR] 56381). TCB was identified as a species that could be affected by the Project in the USFWS' Information for Planning and Consultation (IPaC) Species List (USFWS 2025 and 2026). The bat habitat assessment also evaluated potential habitat for Rafinesque's big-eared bat (RBEB) (*Corynorhinus rafinesquii*), a species recorded within Clay County and surrounding counties that has been designated "vulnerable" by the Mississippi Natural Heritage Program (MNHP) according to the TVA Regional Natural Heritage Database (NHD).

A presence/absence survey for the TCB was conducted in suitable forest habitat within the Project Site in July 2025 (MES 2025). The USFWS did not require additional presence/absence bat surveys in 2026 for the parcels added to the Project Site (Appendix D, Tetra Tech 2026b). During the 2025 surveys, biologists employed a hybrid survey approach that involved deploying acoustic detectors adjacent to mist-net capture sites. Particulars on survey methods and complete survey results can be found in the *Northern Long-eared Bat and Tricolored Bat Presence/Absence Survey for Hope Solar Project in West Point, MS* (Appendix D, MES 2025).

3.5.1.1 Vegetation

Vegetation in the form of trees, shrubs, vines, and herbaceous cover provides habitat and food resources for birds, mammals, reptiles, amphibians, and insects. Vegetation also supports soil and nutrient cycles and provides ecosystem services, such as food, fresh water, fuel, fiber, and medicines to human populations (Michigan State University n.d.). Vegetation surveys were conducted in 2025 and 2026 to characterize the Project Site's plant communities, including noxious weeds and non-native plants, and identify any threatened and endangered plants that might be present (Appendix D, Tetra Tech 2026b). Vegetation communities documented during the survey were grouped into 12 distinct habitat types based on shared characteristics using the National Vegetation Classification System (Grossman et al.1998): Table 3-3 lists these communities and their areas. Figure 3-7 displays the locations of the habitat types within the Project Site.

Table 3-3. Habitat Types within the Project Site

Habitat Type	Area (acres)	Percent of Project Site
Agricultural (row crops and pasture)	1,755.8	72.6
Old Field	260.7	10.8
Oak-Hickory Forest	106.8	4.4
Riparian-Alluvial Forest	103.6	4.3
Ponds	66.6	2.8
Palustrine Emergent Wetland	48.2	2.0
Palustrine Forested Wetland	23.2	1.0
Bottomland Forest	14.7	0.6
Streams	17.4	0.7
Palustrine Scrub-Shrub Wetland	9.4	0.4
Developed/Residential	9.0	0.3
Meadow	3.9	0.2
Total	2,419.2	100.0

*Totals may not sum exactly due to rounding.
Source: Tetra Tech 2026b.

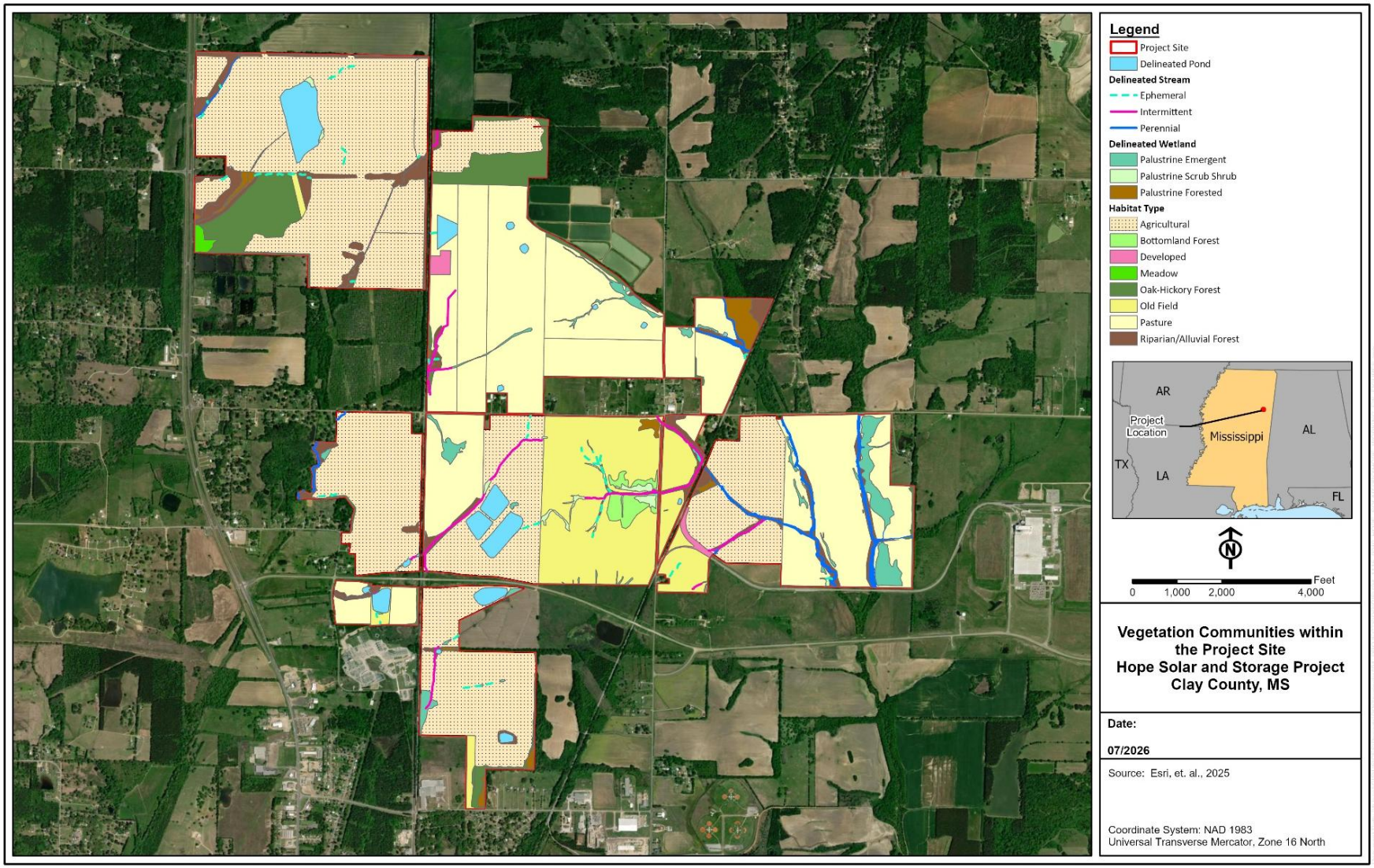

Figure 3-7. Vegetation Communities within the Project Site

Agricultural fields, including row crops and pasture, comprise about 73 percent of the Project Site (Table 3-3). Current row crop management is concentrated around the production of corn and soybeans. Pastures in the Project Site are managed for cattle grazing. A variety of plant species were documented within the agricultural fields during the 2025 and 2026 surveys including beaked cornsalad (*Valerianella radiata),* Carolina crane's-bill *(Geranium carolinianum),* catchweed bedstraw (*Galium aparine*), common goldenrod (*Solidago altissima*), dwarf dandelion (*Krigia caespitosa*), sawtooth blackberry (*Rubus argutus*), horrid thistle (*Cirsium horridulum*), pale dock (*Rumex altissimus*), path rush (*Juncus tenuis*), Philadelphia fleabane (*Erigeron philadelphicus*), eastern red cedar (*Juniperus virginiana*), southern dewberry (*Rubus trivialis*), tufted meadow-foxtail (*Alopecurus carolinianus*), Virginia cress (*Planodes virginicum*), and wild onion (*Allium canadense*). Additionally, numerous non-native plant species were also documented within the agricultural fields during the survey including common brome (*Bromus inermis*), common chickweed (*Stellaria media*), common dandelion (*Taraxacum officinale*), crow garlic (*Allium vineale*), curly dock (*Rumex crispus*), hairy buttercup (*Ranunculus sardous*), hairy bittercress (*Cardamine hirsuta*), henbit (*Lamium amplexicaule*), Japanese brome (*Bromus japonicus*), Kentucky bluegrass (*Poa pratensis*), lesser hop clover (*Trifolium dubium*), low hop clover (*Trifolium campestre*), mouse-ear chickweed (*Cerastium glomeratum*), narrowleaf vetch (*Vicia angustifolia*), orchard grass (*Dactylis glomerata*), ryegrass (*Lolium multiflorum*), shepherd's purse (*Capsella bursa-pastoris*), smooth vetch (*Vicia dasycarpa*), tall fescue (*Lolium arundinaceum*), and white clover (*Trifolium repens*) (Appendix D, Tetra Tech 2026b, Appendix D).

Old fields make up nearly 11 percent of the Project Site (Table 3-3). In spring 2025 and 2026, the fields were generally open and dominated by low-growing herbaceous vegetation such as grasses, forbs, and sedges. The fields also contained widely scattered shrubs and small [most less than five inches in diameter at breast height (dbh)] oak and eastern red cedar trees. Numerous plant species were documented within the old fields during the survey including broomsedge (*Andropogon virginicus*), bushy bluestem (*Andropogon glomeratus*), Cherokee sedge (*Carex cherokeensis*), common goldenrod, cudweed (*Gamochaeta* spp.), dog-fennel (*Eupatorium capillifolium*), greenbriers (*Smilax* spp.), small's ragwort (*Packera anonyma*), horrid thistle, horseweed (*Conyza canadensis*), loblolly pine (*Pinus taeda*), lyreleaf sage (*Salvia lyrata*), peppervine (*Nekemias arborea*), Philadelphia fleabane, post oak (*Quercus stellata*), eastern red cedar, silver plume grass (*Erianthus alopecuroides*), and winged elm (*Ulmus alata*). Non-native plant species documented within old fields during the survey included Bradford pear (*Pyrus calleryana*), curly dock, hairy buttercup, Japanese honeysuckle (*Lonicera japonica*), narrowleaf vetch, red clover (*Trifolium pratense*), , sheep sorrel (*Rumex acetosella*), tall fescue, and white clover (Appendix D, Tetra Tech 2026b).

Oak-hickory forest habitats comprise approximately four percent of the Project Site (Table 3-3). Small patches of oak-hickory forest occur throughout the site, containing mature trees with an average dbh of around 20 inches. Tree species documented within oak-hickory habitats included post oak, cherrybark oak (*Quercus pagoda*), shagbark hickory (*Carya ovata*), mockernut hickory (*Carya tomentosa*), American elm (*Ulmus*

americana), hop-hornbeam (*Carpinus caroliniana*), eastern red cedar, sugarberry (*Celtis laevigata*), winged elm, and white ash (*Fraxinus americana*). The shrub species documented within oak-hickory forest habitats during the survey included sawtooth blackberry, coralberry (*Symphoricarpos orbiculatus*), and deciduous holly (*Ilex decidua*) (Appendix D, Tetra Tech 2026b). The vine stratum documented within oak-hickory forest habitats was composed of bullbrier (*Smilax bona-nox*), common greenbrier (*Smilax rotundifolia*), cross vine (*Bignonia capreolata*), peppervine, poison ivy (*Toxicodendron radicans*), rattan vine (*Berchemia scandens*), southern dewberry , Virginia creeper (*Parthenocissus quinquefolia*). Non-native species observed within the oak-hickory forests included Chinese privet (*Ligustrum sinense*) and Japanese honeysuckle (Appendix D,Tetra Tech 2026b,).

Riparian-alluvial forest habitats comprise approximately four percent of the Project Site (Table 3-3) and occur along McGee Creek, a perennial stream, and its tributaries. The habitat is mostly disturbed and contains trees with 10 to 24 inches dbh. Dominant tree species documented within the riparian-alluvial forest habitats included American elm, black walnut (*Juglans nigra*), box-elder (*Acer negundo*), cherrybark oak, cottonwood (*Populus deltoides*), green ash (*Fraxinus pennsylvanica*), hop-hornbeam, Osage-orange (*Maclura pomifera*), persimmon (*Diospyros virginiana*), redbud (*Cercis canadensis*), eastern red cedar, shagbark hickory, Shumard oak (*Quercus shumardii*), sugarberry, and water oak (*Quercus nigra*) (Appendix D, Tetra Tech 2026b). Shrub species documented within the riparian-alluvial forest habitat during the survey included coralberry, deciduous holly, elderberry (*Sambucus canadensis*), poison oak (*Toxicodendron pubescens*), and silky dogwood (*Cornus amomum*) (Appendix D, Tetra Tech 2026b). Vine species including peppervine, Virginia creeper, greenbriers, and poison ivy were present. The herbaceous layer was a mix of mostly native perennial wildflowers, grasses, and sedges. Non-native species observed within riparian areas included Bradford pear, Chinese privet, and Japanese honeysuckle.

Project wetland scientists identified 60 wetlands within the Project Site (Appendix C, Tetra Tech 2026a) totaling approximately 80.8 acres, including approximately 23.2 acres of palustrine forested wetlands, 9.4 acres of palustrine scrub-shrub wetlands, and 48.2 acres of palustrine emergent wetlands (Figure 3-4). These three wetland types make up a small proportion of the total Site area, slightly more than three percent.

Palustrine forested wetlands occur throughout the Project Site and are dominated by mature trees with a sparse understory. Dominant species observed in the palustrine forested wetlands included water oak, cherrybark oak, sugarberry, red maple (*Acer rubrum*), green ash, Cherokee sedge, and switch cane (*Arundinaria tecta*) (Appendix C, Tetra Tech 2026a). One non-native species, nut grass (*Cyperus rotundus*), was commonly observed within Project Site forested wetlands.

Palustrine scrub-shrub wetlands occur within the Site's old fields and appeared to be in an early-successional stage, with scattered sugarberry and green ash saplings (Appendix C, Tetra Tech 2026a). A sparse herbaceous layer was present that included common rush (*Juncus effusus*), as well as the non-native species curly dock, hairy buttercup, Japanese honeysuckle, and nut grass (Appendix C, Tetra Tech 2026a).

Palustrine emergent wetlands occur in low-lying and depressional areas within the Project Site's agricultural and old field habitats. These wetlands were highly disturbed. Plant communities in the emergent wetlands included broomsedge, bushy bluestem, smartweeds (*Persicaria* spp.), common rush, keeled bulrush (*Isolepis carinata).* Non-native species documented within the herbaceous layer of the palustrine emergent wetland habitat included curly dock, hairy buttercup, and tall fescue (Appendix C, Tetra Tech 2026a).

Pond habitats cover approximately three percent of the Project Site and range in size from about 0.1 acre to 25 acres. The ponds are surrounded by agricultural fields or pastures and contain very narrow vegetative margins. The vegetated pond margins are dominated by wetland species, including black willow (*Salix nigra*), box-elder, cottonwood, red maple, green ash, swamp dogwood (*Cornus stricta*), elderberry, docks (*Rumex* spp.), cattail (*Typha latifolia*), butterweed (*Packera glabella*), marsh seedbox (*Ludwigia palustris*), mock bishop's-weed (*Ptilimnium capillaceum*), peppervine, sedges (*Carex* spp.), common rush, keeled bulrush, smartweeds, and water-nymph (*Najas guadalupensis*) (Appendix C, Tetra Tech 2026a).

Stream habitats occupy less than one percent of the Project Site. Most streams are moderately sized or smaller, with the OHWM ranging from 3 to 30 feet and depths generally less than two feet (Appendix C, Tetra Tech 2026a). The channels of these streams are typically incised with unstable, eroding banks. Sedimentation is evident, with deposits of silt and sand. There are also areas of exposed (scoured) claypan. Riffle-pool sequences are rare. The vegetated strips along the streams are narrow and surrounded by agricultural fields. Habitat in and along the largest stream (McGee Creek) is degraded, as it flows through active cattle pastures. Degradation to McGee Creek due to cattle was observed in the form of eroded banks and a trampled vegetative buffer. Smaller streams within the Project Site are also degraded, with incised channels and extensive sedimentation.

Bottomland forest habitat makes up less than one percent of the Project Site. A young bottomland forest composed mostly of sugarberry was associated with one drainage in the central portion of the Project Site. Trees were immature and ranged between 2 to 5 inches dbh. The site also included trees and saplings of green ash and eastern red cedar. The herbaceous layer was bare to sparse and comprised two native species, common rush and silver plume grass. Non-native species documented within the bottomland forest habitat included Bradford pear, curly dock, hairy buttercup, nut grass, and watercress (*Nasturtium officinale*) (Appendix C, Tetra Tech 2026a).

Noxious weeds are federally defined as plants or plant products that can directly or indirectly injure or cause damage to crops, livestock, poultry, or other interests of agriculture, irrigation, navigation, the natural resources of the U.S., the public heath, or the environment (USDA 2010). The U.S. Department of Agriculture is responsible for maintaining a list of federally recognized noxious weeds (USDA 2010, 2012). No federally recognized noxious weeds were documented within the Project Site during the survey. However, numerous non-native plants were documented within the Project Site.

Non-native plants include exotic plants (species that have been introduced to an area) as well as invasive plants (USFS 2003).

3.5.1.2 Wildlife

As noted in the previous section, the Project Site is predominantly (73 percent) agricultural, with large tracts of pastureland and cropland. Actively managed agricultural fields (row crops and pastures) within the Project Site provide habitat for numerous avian species including the American pipit (*Anthus rubescens*), eastern bluebird (*Sialia sialis*), European starling (*Sturnus vulgaris*), killdeer (*Charadrius vociferus*), loggerhead shrike (*Lanius ludovicianus*), mourning dove (*Zenaida macroura*), red-tailed hawk (*Buteo jamaicensis*), and song sparrow (*Melospiza melodia*) (Appendix D, Tetra Tech 2026b).

Old fields, areas formerly used as pastures and cropland that are no longer actively managed, occur across the Project Site. Old fields supported a diverse mix of avian species associated with early-successional habitats including American crow (*Corvus brachyrhynchos*), black vulture (*Coragyps atratus*), Carolina wren (*Thryothorus ludovicianus*), cedar waxwing (*Bombycilla cedrorum*), eastern kingbird (*Tyrannus tyrannus*), eastern meadowlark (*Sturnella magna*), field sparrow (*Spizella pusilla*), golden-crowned kinglet (*Regulus satrapa*), orchard oriole (*Icterus spurius*), pine warbler (*Setophaga pinus*), savannah sparrow (*Passerculus sandwichensis*), turkey vulture (*Cathartes aura*), white-throated sparrow (*Zonotrichia albicollis*), and winter wren (T*roglodytes hiemalis*) (Appendix D, Tetra Tech 2026b). Four mammal species were also observed: white-tailed deer (*Odocoileus virginianus*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), and eastern cottontail (*Sylvilagus floridanus*). The diversity of wildlife found in the Project Site's old field habitats is not surprising because old field habitats actually encompass a range of habitats - from wildflower meadows to dense scrub-shrub areas to mostly open broomsedge fields with scattered young pines and sweetgum trees.

Oak-hickory forest habitats occur in small patches across the Project Site. Species observed in these habitats included barred owl (*Strix varia*), brown-headed cowbird (*Molothrus ater*), brown thrasher (*Toxostoma rufum*), eastern gray squirrel (*Sciurus carolinensis*), eastern towhee (*Pipilo erythrophthalmus*), hermit thrush (*Catharus guttatus*), northern flicker (*Colaptes auratus*), ruby-crowned kinglet (*Regulus calendula*), tufted titmouse (*Baeolophus bicolor*), yellow-bellied sapsucker (*Sphyrapicus varius*), and yellow-rumped warbler (*Setophaga coronata*) (Appendix D, Tetra Tech 2026b).

Riparian-alluvial forests and bottomland forests within the Project Site are limited in area (approximately 103 acres) but provide habitat for woodpeckers and woodland songbirds, such as the downy woodpecker (*Picoides pubescens*), hairy woodpecker (*Leuconotopicus villosus*), eastern phoebe (*Sayornis phoebe*), and northern cardinal (*Cardinalis cardinalis*) (Appendix D, Tetra Tech 2026b). One mammal, a nine-banded armadillo (*Dasypus novemcinctus*), was documented in the young bottomland forest (Appendix D, Tetra Tech 2026b).

Wetlands and pond margins within the Project Site provide habitat for common amphibians and reptiles including American bullfrog (*Lithobates catesbeianus*), eastern box turtle (*Terrapene carolina carolina*), and Mississippi green watersnake (*Nerodia cyclopion*). Wetlands and ponds also provide habitat for waterfowl [(Canada goose (*Branta canadensis*) and mallard (*Anas platyrhynchos*)], wading birds [(cattle egret (*Bubulcus ibis*) and great blue heron (*Ardea Herodias*)], and songbirds typically associated with wetlands and marshes [red-winged blackbird (*Agelaius phoenicus*) and swamp sparrow (*Melospiza georgiana*)] (Appendix D, Tetra Tech 2026b).

3.5.1.3 Aquatic Life

The National Hydrography Dataset (NHD) identified McGee Creek and Town Creek as perennial stream/river features within or directly adjacent to the Project Site. A tributary of the Tombigbee River, McGee Creek runs north to southeast through the eastern part of the Project Site (Figure 3-4) and receives most of the Site's stormwater runoff. The headwaters of Town Creek are in the southwestern portion of the Project Site. Town Creek flows southwest out of the Site and into the City of West Point.

Land use within the Project Site is mostly agricultural, with narrow, mostly wooded, riparian corridors that are surrounded by large, cultivated fields and pastures. All the streams and ponds on the Project Site have been degraded, to one degree or another, by agricultural activities. Streambanks are often eroded, and vegetation buffers are often trampled by cattle. All perennial streams are turbid with soft or unstable bottoms. There are no hard sand-gravel substrates, no rocky riffle areas. Ponds and streams may also receive herbicides, pesticides, and fertilizer applied to agricultural fields via stormwater runoff.

As noted in Section 3.4, McGee Creek from its headwaters to its confluence with Tibbee Creek is on the MDEQ (2024) list of biologically impaired waters because its water quality doesn't support its designated use (Aquatic Life Use). Two other streams in the Project Area, Spring Creek and Town Creek, are listed as impaired by sediment for aquatic life use support and biologically impaired for aquatic use support, respectively (MDEQ 2024).

Given the impaired condition of streams within the Project Site, it is highly unlikely that they provide suitable habitat for commercially or recreationally significant fish or shellfish species. Furthermore, the occurrence of sensitive or rare aquatic taxa within these waters is considered improbable based on current water quality conditions. Tetra Tech (2026b), *Protected Species and Ecological Assessment, Hope Solar Project* in Appendix D contains photographs of Project Site streams.

3.5.1.4 Rare, Threatened and Endangered Species

The TVA NHD and IPaC databases were queried to identify rare, sensitive, threatened, and endangered plants and animals with the potential to occur on the Project Site. Table 3-4 lists these species. The statuses, ranks, and habitat preferences of these species were compiled from the previously mentioned databases, resource agency websites, and standard references on the flora and fauna of the region. These species and their preferred habitats were the focus of the surveys conducted 2025 and 2026

(Appendix D). Additionally, the data from TVA NHD and IPaC confirmed that federally designated critical habitat (areas that the USFWS has determined are essential to the conservation of a threatened or endangered species) was not present within 5 miles of the Project Site (Appendix D, Tetra Tech 2026b).

Table 3-4. Rare, Threatened, and Endangered Species with the Potential to Occur within the Project Site

Common Name *Scientific Name*	Federal Status[1]	State Status and Rank[2]	Suitable Habitat Description[3]	Likelihood of Occurrence within Project Site
Mammals				
Tricolored bat *Perimyotis subflavus*	FPE	S3S4	During non-hibernating season (Spring through Fall) generally roosts and forages in hardwood/mixed pine-hardwood forests near water where tree cavities, crevices, and live or dead leaf clusters are present. Uses structures such as barns, culverts, and bridges for roosting. Caves or large culverts/bridges are utilized as winter hibernacula.	Likely; suitable habitat present
Rafinesque's big-eared bat *Corynorhinus rafinequii*	---	S3	Roosts in hollow trees, old buildings, or bridges near waterbodies or forested wetlands. Winter hibernation occurs in caves, mines, old buildings, attics, tree hollows and rock formations.	Likely; suitable habitat present
Birds				
Bald eagle *Haliaeetus leucocephalus*	DL, BGEPA, MBTA	S2	Forages and nests in estuaries, large lakes, reservoirs, rivers, and along coastlines. Typically nests in large, super-canopy trees within proximity to large waterbodies.	Likely; suitable habitat present
Brown-headed nuthatch *Sittia pusilla*	BCC	S3	Almost exclusively occurs in association with pine trees, common in open, mature, old-growth pine forest. Also regularly found in young or medium-aged pine stands, mixed pine-hardwood stands, and in mature pine stands with heavy undergrowth. Require snags for nesting and roosting.	Unlikely; suitable habitat not present
Chimney swift, *Chartura pelagica*	BCC	---	Forages over a variety of habitats including forests, open country, lakes and ponds, suburban areas, and urban areas.	Likely; suitable habitat present
Coastal (Wayne's) black-throated warbler, *Setophaga virens waynei*	BCC	---	Breeds in cypress swamps; confined to a fairly narrow band within the outer coastal plain from Virginia to South Carolina.	Unlikely; suitable habitat not present

Common Name *Scientific Name*	Federal Status[1]	State Status and Rank[2]	Suitable Habitat Description[3]	Likelihood of Occurrence within Project Site
Grasshopper sparrow, *Ammodramus savannarum perpallidus*	BCC	S3B, S3N	Prefers grasslands of intermediate height and are often associated with clumped vegetation interspersed with patches of bare ground. Other habitat requirements include moderately deep litter and sparse coverage of woody vegetation; are often associated with clumped vegetation interspersed with patches of bare ground. Other habitat requirements include moderately deep litter and sparse coverage of woody vegetation.	Likely; suitable habitat present
Kentucky warbler, *Geothlypis formosa*	BCC	---	Occurs in bottomland hardwoods and woods near streams with dense understory. Requires well-developed ground cover and thick understory for ground nesting.	Likely; suitable habitat present
Lesser yellowlegs, *Tringa flavipes*	BCC	---	Occupies shores of large, shallow, freshwater lakes and sloughs, or portions of salt marshes.	Likely; suitable habitat present
Osprey, *Pandion haliaetus*	MBTA	S3	Habitat varies greatly but must include adequate supply of fish within 10-20 kilometers of nest, shallow waters (0.5-2 meters deep), and open nest sites.	Likely; suitable habitat present
Painted bunting, *Passerina ciris*	BCC	S3B	Occurs in thickets, woodland borders, marsh edges, and brushy areas.	Likely; suitable habitat present
Prairie warbler, *Setophaga discolor*	BCC	---	Typically inhabits southern pine forests, pine and scrub oak barrens, abandoned fields/pastures with shrubby growth, regenerating forests, and grassland-forests- prairie edge habitat. Breeds in various shrubby habitats lacking closed canopies.	Likely; suitable habitat present
Prothonotary warbler, *Protonotaria citrea*	BCC	---	During breeding season inhabits mature deciduous floodplain, river, and swamp forests; wet lowland forest; In the non-breeding and migratory season inhabits dry woodland, scrub, thickets, and mangroves.	Likely; suitable habitat present

Common Name *Scientific Name*	Federal Status[1]	State Status and Rank[2]	Suitable Habitat Description[3]	Likelihood of Occurrence within Project Site
Red-headed woodpecker, *Melanerpes erythrocephalus*	BCC	---	Inhabits a variety of forested habitats including deciduous woodlands, lowland and upland habitats, river bottoms, open woods, groves of dead/dying trees, orchards, parks, golf courses, open agricultural land, savanna-like grasslands with scattered trees, and forest edge along roadsides. Nesting sites are typically associated with open forested habitat with the presence of dead limbs or snags.	Likely; suitable habitat present
Rusty blackbird, *Euphagus carolinus*	BCC	S2N	Occurs in swamps, wet woodlands, cypress lagoons, stream and pond borders, and adjacent fields. Foraging habitat includes pasture, plowed fields, edges of swamps, and wooded areas.	Likely; suitable habitat present
Southeastern American kestrel, *Falco sparverius paulus*	BCC	S2B	Inhabits open pine/oak forests, old fields, brushy areas, utility rights-of-way, and young grassy pine regeneration areas.	Likely; suitable habitat present
Swallow-tailed kite, *Elanoides forficatus*	BCC	SE, S2B	Occupies river swamps; marshes; open pine and bottomland forest with super canopy trees.	Unlikely; suitable habitat not present
Wood thrush, *Hylocichla mustelina*	BCC	---	Occurs in interior and edges of deciduous and mixed forests, especially well-developed, upland, mesic forests. Prefers trees greater than 16 m in height, high variety of deciduous species, moderate subcanopy and shrub density, shade, fairly open forest floor, moist soil, and decaying leaf litter.	Likely; suitable habitat present
Reptiles				
Alligator snapping turtle, *Macrochelys temminckii*	FPT	S3	Found only in river systems that flow into the Gulf of Mexico. Within these river systems, adults are normally found in larger rivers and streams or oxbow lakes. Juveniles are sometimes found in smaller streams and wetlands.	Likely; suitable habitat present
Alabama map turtle, *Graptemys pulchra*	SAT	S2	Confined to the Mobile Bay drainage basin, stretching across Alabama, Mississippi, and Georgia. Inhabits large creeks to medium rivers. Listed as threatened due to a similar appearance to the Pearl River map turtle.	Likely; suitable habitat present

Common Name *Scientific Name*	Federal Status[1]	State Status and Rank[2]	Suitable Habitat Description[3]	Likelihood of Occurrence within Project Site
Fish				
Frecklebelly madtom, *Noturus munitus*	PS (Upper Coosa River DPS is threatened)	SE, S2	Occurs in small to large rivers with permanent gravel shoals and rocky riffles, runs, and rapids. Inhabits Pearl River and upper Tombigbee River drainages.	Unlikely; suitable habitat not present
Mollusks				
Flat pigtoe, *Pleurobema marshalli*	DL	SE/SX	Occurs in medium to large rivers with moderate to fast currents. This species is presumed extirpated in Clay County, Mississippi.	Unlikely; suitable habitat not present
Ovate clubshell, *Pleurobema perovatum*	FE	SE, S1	Occurs in sand and gravel substrates of small creeks to large rivers within the Mobile River Basin in Alabama and Mississippi. This species is presumed extirpated in Clay County, Mississippi.	Unlikely; suitable habitat not present
Southern clubshell, *Pleurobema decisum*	FE	SE, S1	Burrows in the sand and gravel substrates of large creeks and rivers in the Mobile River Basin of Alabama, Georgia, Mississippi, and Tennessee. This species is presumed extirpated in Clay County, Mississippi.	Unlikely; suitable habitat not present
Southern combshell, *Epioblasma penita*	FE	SE, S1	Inhabits medium-sized rivers with moderate to swift currents with sandy gravel to cobble substrates. This species is presumed extirpated in Clay County, Mississippi.	Unlikely; suitable habitat not present
Stirrupshell, *Theliderma stapes*	DL	SE/SX	Occurs in medium to big rivers with clean water and moderate to fast currents. This species is presumed extirpated in Clay County, Mississippi.	Unlikely; suitable habitat not present
Insects				
Monarch butterfly, *Danaus plexippus*	FPT	---	Occupies fields, prairies, meadows, grasslands, and woodland edges. Prefers milkweed (Asclepias spp.) dominant fields or pastures for foraging and reproduction.	Likely; suitable habitat present
Plants				
American bladdernut, *Staphylea trifolia*	-	S3	Prefers moist woods and floodplain woods.	Unlikely; suitable habitat not present
Beard-tongue, *Penstemon tenuiflorus*	-	S3	Prefers dry, open woods and calcareous barrens with thin, sandy soils.	Unlikely; suitable habitat not present

Common Name *Scientific Name*	Federal Status[1]	State Status and Rank[2]	Suitable Habitat Description[3]	Likelihood of Occurrence within Project Site
Bur oak, *Quercus macrocarpa*	-	S2	Prefers limestone or calcareous clay in prairies, open woods, or stream edges.	Unlikely; suitable habitat not present
Ear-flower lobelia, *Lobelia appendiculata*	-	S4	Prefers calcareous glades and barrens.	Unlikely; suitable habitat not present
Prairie parsley, *Polytaenia nuttallii*	-	S2	Prefers well-drained, loamy soils in full sun.	Unlikely; suitable habitat not present
Price's potato-bean, *Apios priceana*	FT	S1	Occurs in Oktibbeha, Lee, and Kemper Counties and was historically found in Clay County. Often found in forest openings and thrives in areas with partial canopy; habitat includes woodland edges in limestone areas, river bottoms, and roadside or powerline rights-of-way.	Unlikely; suitable habitat not present
Whorled sunflower, *Helianthus verticillatus*	FE	S1	Occurs in wet prairies, calcareous barrens, and moist woodland openings along creeks. Prefers alkaline sandy clay soils that are high in organic matter.	Unlikely; suitable habitat not present

Notes:
1/ Federal statuses: FE = Federally Endangered; FT = Federally Threated; FPE = Federally Proposed Endangered; FPT = Federally Proposed Threatened; SAT = Similarity of Appearance (Threatened); PS = Partial Status; BGEPA = Bald and Golden Eagle Protection Act; MBTA = Migratory Bird Treaty Act; DL = Delisted.
2/ SE = State-listed Endangered.
3/ Davis 2000; Jones et al. 2019; Kurta 2017; Peterson 2010; NatureServe 2025; UTA 2025a, 2025b.

Federally Listed and Proposed Species

Mammals

The IPaC review identified one mammal species proposed for federal listing as endangered, the TCB, as having the potential to occur within the Project Site or be affected by Project activities (USFWS 2025). The TCB was proposed for federal listing as endangered in 2022 (87 FR 56381). TCBs have been documented in 56 of 82 Mississippi counties, but not Clay County (MBWG 2020). TCBs were once common across the central and eastern U.S., but populations have declined since 2006 from the effects of white-nose syndrome (NatureServe 2025). In Mississippi, summer roosts have been documented in pine-dominated forests, bottomland hardwood forests, under bridges, in caves, and in an abandoned mine (MBWG 2020). Hibernation sites include caves and mines in northeastern counties, (under) bridges in southern and west-central counties, and box culverts across the state (MBWG 2020). TCBs forage along forest edges and over waterways and ponds.

During the 2025 and 2026 protected species habitat surveys (Appendix D, Tetra Tech 2026b) and bat habitat suitability assessments (Appendix D, Tetra Tech 2026c), Project biologists found suitable summer roosting and foraging habitat (i.e., oak-hickory forest, riparian-alluvial forest, bottomland forest, forested wetland, and ponds) for the TCB within the Project Site. The analysis and the assessment, however, did not identify any potential karst features (e.g., sinkholes or caves) within the Project Site that could serve as bat hibernacula. These findings were supported by data obtained from TVA's Natural Heritage Database confirming that no caves had been documented within a 3-mile radius of the Project Site (Appendix D, Tetra Tech 2026c).

Project biologists identified approximately 235 acres of suitable potential summer roosting bat habitat within the Project Site that included 78 acres of high-quality summer roosting habitat, 69 acres of moderate-quality summer roosting habitat, and 88 acres of low-quality summer roosting habitat (Appendix D, Tetra Tech 2026c) (Figure 3-8).

The assessment identified several structures (e.g., barns/sheds) within the Project Site that were suitable as summer roosting and pup rearing habitat, as well as a number of overpasses outside of the site boundary that could provide suitable summer roosting habitat (Tetra Tech 2026c).

The bat habitat assessment also identified approximately 372.5 acres of foraging habitat for bats within the Project Site. Suitable foraging habitat was defined as oak-hickory forest, riparian-alluvial forest, palustrine forested wetland, palustrine emergent wetland, bottomland forest, ponds, and palustrine scrub-shrub wetland. No suitable winter habitat for TCB or RBEB was found within the Project Site (Appendix D, Tetra Tech 2025c).

Once roosting habitat was mapped and categorized as low, moderate, or high quality, mist nets and acoustic bat detectors were deployed to determine if any federally protected bat species were present (Appendix D, MES 2025).

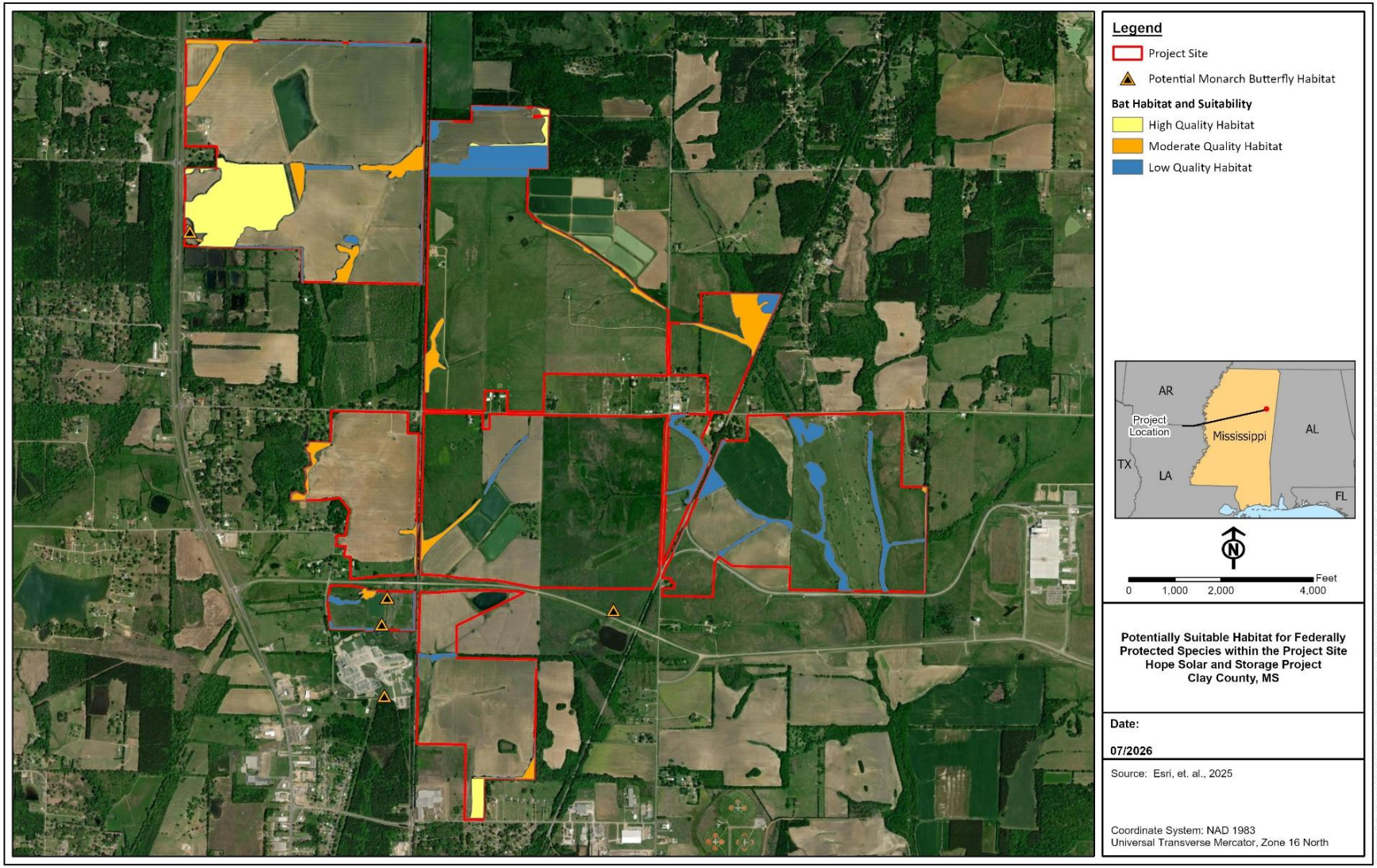

Figure 3-8. Potentially Suitable Habitat for Federally Protected Species within the Project Site

Mist netting was conducted for eight nights at the four net sites from July 12 through 19, 2025 (320 net nights of effort). A total of 15 bats representing four species were captured: big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), southeastern myotis (*Myotis austroriparius)*, and evening bat (*Nycticeius humeralis*). Table 3-5 shows bat captures at various mist-netting sites with each site's roost habitat quality in parentheses. The big brown bat, eastern red bat, and evening bat are all common, widely distributed species in Mississippi with stable populations, and are not tracked by the Mississippi Natural Heritage Program. The southeastern myotis is a Species of Greatest Conservation Need in Mississippi with a state rank of S3, "rare or uncommon in Mississippi" (MMNS 2015). No federally listed or state-protected bat species were captured during the mist-net survey (MES 2025).

Table 3-5. Mist Net Captures at four Hope Project Sites, July 2025

Species	HSMN01 (High quality)	HSMN02 (High quality)	HSMN03 (Moderate quality)	HSMN04 (High quality)	Total Bats by Species
Big brown bat	0	1	2	3	6
Eastern red bat	1	1	0	0	2
Southeastern myotis	0	1	1	0	2
Evening bat	0	1	0	4	5
Total Bats by Location	1	4	3	7	

Source: MES 2025
USFWS did not require additional presence/absence bat surveys to be conducted in 2026 for the parcels added to the Project Site (Tetra Tech 2026c)

Acoustic detectors identified calls of nine bat species, with four predominant species: eastern red bats, TCBs, evening bats, and big brown bats. Statistical analyses indicated significant probabilities of presence ($p<0.05$) for eastern red bats, TCBs, evening bats, and big brown bats. There was insufficient evidence for probable presence of the other five species. Study results indicated that bats use the site for foraging and commuting (traveling from roosting areas to foraging areas and back).

In summary, the 2025 MES survey of the Project Site documented considerable bat activity across the survey period, but did not observe evidence of roosting, maternity colonies, or hibernation by federally listed or protected bat species during the survey. Although the TCB was acoustically detected, no roosting habitat or high concentrations of activity were documented that would indicate maternity use.

Reptiles

According to the IPaC report (USFWS 2025; USFWS 2026), one reptile species proposed for federal listing as threatened (86 FR 62434), the alligator snapping turtle (*Macrochelys temminckii)* could occur within the Project Site or be affected by Project activities. Alligator snapping turtles are found only in southeastern river systems that flow into the Gulf of Mexico, from Florida to Texas. They inhabit a range of freshwater habitats from large rivers to small streams, oxbows, bayous, lakes, and swamps, with water clarity that ranges from clear to murky and turbid (DoD PARC 2021). No alligator snapping turtles were documented during surveys (Appendix D, Tetra Tech 2026b), but

potentially suitable habitat was observed within the Project Site, including large farm ponds and an inundated wetland complex.

The TVA NHD review indicated that the Alabama map turtle, listed as threatened due to similarity of appearance with the Pearl River map turtle (*Graptemys pearlensis*), occurs in Clay County. The Alabama map turtle is found in major tributaries of the Alabama River in Alabama and the Tombigee River in northeast Mississippi (GDNR 2023; NatureServe 2025). It inhabits large streams and rivers with a relatively fast current, sandy or muddy bottoms, and abundant sandy banks, sand bars and fallen trees that can be used for basking. They are often found in rivers with mussels, which are a preferred food of the female of the species (NatureServe 2025). Based on the survey and habitat suitability assessment, there appears to be suitable habitat for the Alabama map turtle in and around McGee Creek, which flows through the eastern part of the Project Site. The reach of McGee Creek that lies within the Project Site is approximately 30 feet wide, on average, and contains sections with large gaps in the canopy that could provide sunny areas suitable for basking. No Alabama map turtles were documented during 2025 and 2026 surveys (Appendix D, Tetra Tech 2026b).

Aquatic Species

According to the TVA NHD, the frecklebelly madtom (*Noturus munitus*), a federally threatened fish with partial status (listed in parts of its range and not in others), occurs in Clay County and has the potential to occur within the Project Site. The species is only federally threatened in headwater tributaries of the Coosa River in north Georgia and Tennessee, designated the Upper Coosa River Distinct Population Segment (DPS) (88 FR 13038). Although uncommon, the frecklebelly madtom survives in several river systems in western Alabama and eastern Mississippi (FMNH 2017), where it is state-listed as endangered. The species' current range includes the upper Tombigbee River drainage in Mississippi, including lower reaches of the Buttahatchie River, approximately 6 miles east of the Project Site (Haden and Wagner 2021; NatureServe 2025). The frecklebelly madtom is found in fast-moving streams with firm gravel substrates (for spawning) (88 FR 13041) and some aquatic vegetation for escape cover. Although the species has been found in a nearby stream, the sluggish, silt-laden streams within the Project Site are wholly unsuitable for this species.

The TVA NHD indicated that three federally endangered mussels [ovate clubshell (*Pleurobema perovatum*), southern clubshell (*Pleurobema decisum*), and southern combshell (*Epioblasma penita*)] historically occurred in Clay County but are now "extirpated" from the county. The TVA NHD shows two other formerly endangered mussels [flat pigtoe (*Pleurobema marshalli*) and stirrupshell (*Quadrula stapes*)] as having been recorded in Clay County. Both of these mussel species were delisted in 2023 due to extinction (88 FR 71644). As noted above, streams in the Project Site are sluggish and silt-laden and could not support sensitive mussel species. All of these mussel species require moderate-to-swift currents and stable sand, sand-gravel, or gravel substrates, conditions that don't exist in any of the Project Site streams.

Insects

One federally proposed threatened insect species, the monarch butterfly (*Danaus plexippus*), has the potential to occur within the Project Site according to IPaC and TVA NHD databases. Monarch butterflies are a migratory species that rely on milkweed (*Asclepias* spp.) both as a food source for caterpillars (monarch larvae) and for reproduction; adults lay their eggs on milkweed leaves. Milkweed was observed throughout the parcel north of the TVA West Point substation, near pond P022. It was also observed in the vicinity of the proposed TVA power pole, near W065 (Figure 3-8). Migrating adult monarchs obtain nectar from a variety of flowering plants, including goldenrod, aster, and joe pye weed (*Eutrochium* sp). Monarch butterflies are known to forage in open fields, cropland/hedgerows, grasslands, wetlands, roadside areas, and various woodland habitats including hardwood, shrubland, savanna and other mixed woodlands. Agricultural fields, old fields, and meadows within the Project Site support a variety of flowering plants, including goldenrods (Appendix D, Tetra Tech 2026b). Goldenrods are an important source of nectar for adult monarchs migrating to Mexico in the fall (Simoneaux 2024). No monarch butterfly adults or larva were documented during surveys (Appendix D, Tetra Tech 2025b); due to the presence of suitable habitat, however, this species could occur within the Project Site during seasonal migrations.

Plants

Database queries indicated that two federally listed plant species could potentially occur within the Project Site, the federally endangered whorled sunflower (*Helianthus verticillatus*) and the federally threatened Price's potato-bean *(Apios priceana).* Desktop-level evaluations determined that suitable habitat for these species was not present. The absence of suitable habitat for these species was confirmed by biologists who conducted field surveys in 2025 and 2026 (Appendix D, Tetra Tech 2026b).

Migratory Birds of Concern and Bald Eagles

EO 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds) directs federal agencies to take certain actions to conserve migratory birds and implement the Migratory Bird Treaty Act (MBTA) of 1918. The MBTA prohibits the "take" of migratory birds.

In addition to the MBTA, the USFWS is mandated to identify species, sub-species and populations of all migratory nongame birds (beyond those already designated as federally threatened or endangered) that without additional conservation action are likely to become candidates for listing under the ESA. USFWS has designated these species as Birds of Conservation Concern (BCCs; USFWS 2021).

Approximately 227 bird species, almost all migratory, have been recorded in Clay County (eBird 2025). Biologists conducting field surveys at the Project Site in summer and spring 2025 observed 45 avian species protected under the MBTA (Appendix D, Tetra Tech 2026b). None of these species has been designated as a BCC. The IPaC report (USFWS 2026) identified 14 BCCs that could occur within the Project Site or be affected by Project activities. Biologists who conducted the literature review, habitat assessment, and surveys in 2025 and 2026 determined that 11 of the 14 BCCs could potentially use the Project Site.

The IPaC report (USFWS 2026) included the bald eagle in its list of migratory birds that could be affected by Project activities, noting that although the bald eagle is not a BCC, it "warrants attention because of the (Bald and Golden Eagle Protection) Act."

Bald eagles typically nest in forested areas adjacent to large bodies of water that are isolated from human development (Buehler 2022). Summer foraging habitat is characterized by the presence of tall, easily accessible "super-canopy" trees that are adjacent to shoreline and offer a wide view of the surroundings. According to eBird (2025), one adult bald eagle was observed nesting, and one adult and one juvenile were observed soaring in Clay County in 2025. TVA (2026) NHD data indicated that there was a record of bald eagles in Clay County but did not show any records of bald eagles within three miles of the Project Site. Bald eagles have historically nested on Officer's Lake, a small impoundment approximately nine miles southeast of the Project and are routinely observed foraging around Columbus Lake and the Tennessee-Tombigbee Waterway, approximately ten miles southeast of the Project (eBird 2025). No super canopy trees were documented within the Project Site during the 2025 and 2026 habitat assessment that would support nesting bald eagles, yet the Project Site contains wetlands and swamps that have been impounded by beavers and contain large dead trees and snags (Appendix D, Tetra Tech 2026b). These wetlands and swamps could provide marginally suitable foraging and nesting habitat for the bald eagle.

State-Listed Species

One migratory bird (BCC), the swallow-tailed kite, is also state listed (endangered) in Mississippi. Swallow-tailed kites in the southeastern U.S. are primarily associated with large bottomland hardwood forests and cypress-gum swamp forests (MMNS 2016; Meyer 2020). Within these habitats they normally nest in tall, mature trees that are larger than surrounding trees The strips of bottomland/riparian forest and patches of forested wetlands on the Project Site are too small and too exposed to regular agricultural activity to provide nesting habitat for kites. They also lack the tall, mature trees that kites use for perching, roosting, and nesting, Swallow-tailed kites move through northeast Mississippi during seasonal migrations (Audubon 2025) but are not likely to nest on the Project Site or spend significant time foraging there.

As discussed previously, the frecklebelly madtom has partial status under the Endangered Species Act, but populations in Mississippi are not federally protected. It is, however, a state-listed species and as such is fully protected under the Nongame and Endangered Species Conservation Act of Mississippi, which provides for substantial fines and/or imprisonment for individuals who violate the Act. Although the frecklebelly madtom has been found in the Buttahatchie River, approximately six miles from the Project Site, the sluggish, silt-laden streams of the Project Site are unsuitable for this species.

TVA Species of Concern

The TVA NHD identified one mammal species of special concern, RBEB, as having been documented within three miles of the Project (TVA 2025b). RBEB are found

across the southeastern U.S., but distribution is spotty and localized (NatureServe 2025). RBEBs have been documented in 43 of the Mississippi's 82 counties, including Clay County (MBWG 2020). Summer roosts in Mississippi include tree cavities, bridges, culverts, wells, cisterns, and abandoned buildings, in or near wooded areas (MBWG 2020; NatureServe 2025). Males and non-reproductive females roost apart from maternity colonies. RBEBs use both natural (old bald cypress trees) and man-made structures (bridges, highway culverts, abandoned houses) in winter (MBWG 2020). Foraging habitat is primarily mature forests in both upland and lowland areas. As noted in the previous discussion of bats, no RBEBs were captured during the mist net survey; the companion acoustic survey indicated that the species was probably not present (MES 2025).

Osprey, a migratory species that has not been designated a BCC, appears in Table 3-4 because it has been recorded within three miles of the Project and has been given a state rank of S3 ("vulnerable") (TVA 2026b). Although this species was not observed (nor were any large nests observed) during the field assessments in 2025 and 2026, the Project Site contains wetlands and riparian/alluvial forests that have been impounded by beaver activity and contain large dead trees and snags. The Project Site also contains farm ponds that are presumably stocked with sunfish and catfish, on which ospreys are known to feed. Project Site farm ponds could provide suitable foraging habitat for ospreys. Project Site beaver ponds and wetlands could provide suitable foraging and nesting habitat for ospreys.

Five plant species of conservation concern were identified by TVA (TVA 2026b) as potentially occurring within a 5-mile radius of the Project Site. None of these species was observed by the Project botanist who conducted a vegetation survey in March 2025 and April 2026, or by Project biologists who conducted the protected species habitat assessment in 2025 and 2026.

3.5.2 Environmental Consequences

3.5.2.1 No Action Alternative

Under the No Action Alternative, the proposed Project would not be constructed; therefore, no Project-related impacts to biological resources would be expected. Agriculture would likely continue to be the primary activity within the Project Site. There would be no change in vegetation, wildlife use, or impacts on protected species.

3.5.2.2 Proposed Action Alternative

Under the Proposed Action Alternative, approximately 70 percent (1,700 acres) of the 2,419-acre Project Site would be cleared and/or graded for the Project. Direct minor impacts to vegetation, wildlife, aquatic life, migratory birds, and threatened and endangered species would result from construction and operation of the Project. If the facility were to be decommissioned or closed, a Decommissioning and Closure Plan would be developed, and the Project Site would be restored to a tillable state and revegetated where necessary.

Vegetation

Under the Proposed Action, approximately 1,700 of the Project Site's 2,419 acres (70 percent) would be cleared and graded for solar generating facilities and supporting infrastructure. This includes approximately 1,429 acres of agricultural land (row crops and pasture), 147 acres of old fields, 68 acres of oak-hickory forest, 33 acres of riparian-alluvial forest, 10 acres of bottomland forest; 7 acres of meadow; and the remaining 5 acres, which are already considered developed and/or residential areas.

As noted elsewhere in the EIS, the Project Site is mostly (73 percent) agricultural land used in recent years to grow cotton and soybeans for market or hay for livestock. Under the Proposed Action, approximately 1,429 acres of agricultural land within the 1,700-acre Limit of Disturbance would be converted to light industrial use (solar production facilities and supporting infrastructure). Existing agricultural areas would be cleared (any woody vegetation removed) and graded, and replanted with low-growing, drought-tolerant native plants intended to stabilize soils disturbed during site preparation. Although specific plans have not been formulated and plant species have not been chosen, noninvasive vegetation would be planted to create beneficial habitat, reduce erosion, and limit the spread of invasive species. This conversion of agricultural land to herbaceous plant communities composed of native species would increase vegetative diversity (relative to monoculture cropland, in particular), reduce the amount of herbicide and pesticide used (on row crops), and likely reduce the amount of invasive vegetation present.

The native Black Belt Prairie that once covered the region and supported a diversity of plant and animal life was plowed under in the 19th and 20th centuries. Biologists who surveyed the Project Site found no remnant prairie/grasslands, no "exemplary natural communities" (a term used by the MNHP to describe special natural communities worthy of protection), no rare or protected plants, and no plant species that are tracked by MNHP. The loss of 1,429 acres of cropland and pastureland would therefore have no impact on native prairie, "exemplary" plant communities, or any rare or protected plant species.

Approximately 101 acres of upland hardwood forest and 10 acres of bottomland/riparian forest would also be cleared. There are patches of upland forest scattered across the Project Site, but these are likely third- and fourth-growth woodlands (Hair 1985), with oaks, hickories, and pines that have regenerated over the last 50 years. The bottomland and riparian forests are also relatively young, with none of the towering hardwood (e.g., cypress, gum, oaks, ash, beech) trees that are sometimes found in these floodplain areas. No old-growth, rare, or exemplary forest communities would be affected by Project Site development. Impacts to forest resources from the removal of 113 acres of young forest would be minor, whether considered on a landscape or regional scale. If it is necessary to remove trees within streamside or wetland buffer zones, they would be removed with hand tools (chainsaws) rather than heavy machinery (feller-bunchers and harvesters) to limit soil and vegetation disturbance. Their roots would be left in place for the same reason.

Wildlife

Under the Proposed Action, approximately 113 acres of woodland (upland hardwood forest and bottomland/riparian forest) would be cleared, and 1,429 acres of agricultural land (cropland and pastureland) would be disturbed within the Project Site. Removal of woodlands would displace a variety of forest-dwelling species, including gray squirrel, raccoon, downy woodpecker, hermit thrush, and yellow-bellied sapsucker. Eliminating pastures (and to a lesser degree, cropland and old fields) would impact “grassland” species including eastern cottontail, eastern meadowlark, killdeer, and red-tailed hawk. All of the species named were observed during field surveys in 2025 and 2026 (Appendix D, Tetra Tech 2026b). Impacts to these common, widely distributed wildlife species from facility construction and operation would be minor.

Some smaller, less-mobile animals (e.g., voles, cotton rats, box turtles) could be harmed by heavy equipment during the construction phase of the Project. Larger, more-mobile species (e.g., foxes, bobcats, and birds) would be expected to disperse to nearby areas that offer suitable habitat when tree clearing and earth moving begin. In addition to these direct impacts, potential denning, nesting, roosting, and foraging habitats may be eliminated by facility development. None of the species or habitats that would be affected by facility construction is unique or rare; none is state or federally listed.

Siting solar facilities in agricultural areas is a common practice. Although agricultural land can, when appropriately managed, provide habitat for disturbance-tolerant wildlife (e.g., white-tailed deer, small mammals, grassland birds), this habitat is generally not of high quality and does not promote biodiversity. The habitats (native grasses and flowering plants) that would be established around the solar arrays should support an array of small mammals, ground-foraging and ground-nesting birds, and hawks and owls that prey on these small mammals and birds.

Recent research has shown that utility-scale solar facilities incorporating ecological principles may actually benefit grassland birds, which have declined in abundance across the central US as their native prairie habitats have been converted to croplands. In a wide-ranging study of grassland birds at solar farms in the midwestern US, Argonne National Lab researchers found that 10 of 13 grassland bird species were more likely to occupy “ecologically informed” solar installations than control sites (row crop fields) in the same region (Walston et al. 2025). All ten species occur in northern Mississippi. Five of the ten species (eastern bluebird, eastern meadowlark, field sparrow, red-winged blackbird, and savannah sparrow) were observed by project biologists who conducted ecological surveys for the Project (Appendix D, Tetra Tech 2026b). Moreover, researchers found that species richness was significantly greater at “eco-voltaic” sites than agricultural sites during the spring-summer breeding period, when migrants were present.

Potential benefits to wildlife of facility development and operation would accrue from discontinuation of agricultural operations. A variety of invertebrates and pollinators, including bees and butterflies, would be less exposed to pesticides and herbicides

routinely applied to row crops. Water quality in streams that flow through the Project Site would be expected to improve, due to greatly reduced use of pesticides, herbicides, and fertilizer and the removal of cattle. This should benefit the limited aquatic biota that are present (pollution-tolerant benthic organisms and minnows) and even result in the re-colonization of streams by less tolerant taxa.

Aquatic Life

Project Site streams are in a degraded state, having received eroded soil (sediment), agricultural chemicals, and fertilizer via stormwater for decades, if not generations. As noted in the previous section (Section 3.4, Water Resources) the major streams draining the Site (McGee Creek and Town Creek) have all been identified as impaired by MDEQ based on the agency's assessment of their water quality and benthic communities. This is consistent with observations of biologists who conducted habitat surveys of the Project Site and delineated its wetlands in 2025 and 2026 (Appendix C and D, Tetra Tech 2026a and b). Site streams with year-round flows appear to support only pollution-tolerant benthic organisms (e.g., chironomids and oligochaetes) and small, minnow-like fishes adapted to sluggish flows, high turbidities, and high summer temperatures with low dissolved oxygen levels (e.g., Gambusia, cyprinids, small centrarchids). In Mississippi streams impacted by agricultural operations, relative abundance of sensitive fish species tends to decline, while relative abundance of tolerant species tends to increase (Killgore et al. 2024).

Under the Proposed Action, approximately 1,540 acres of cropland, pastureland, and forestland would be cleared, grubbed, and graded for generating equipment, facilities, and supporting infrastructure. Streamside buffers and construction BMPs would be used to limit impacts to the Project Site's streams and wetlands.

One proposed activity, the installation of culverts for access roads across 10 streams, would involve heavy equipment operating adjacent to streams. MDEQ approved BMPs would be employed during culvert installation to control erosion and limit the amount of soil and sediment-laden water entering Project Site streams. Erosion control and stabilization practices could include mulching, geotextiles, chemical stabilization (soil binders), buffer strips, and, when work is completed, establishment of temporary or permanent vegetation. Pump-around systems, coffer dams, and other "work in the dry" methods could also be employed to limit impacts to water quality. Streambeds and banks would be returned to their preconstruction grades, with stream banks matted and seeded with an approved/appropriate riparian seed mix.

The potentially damaging effects of construction-generated sediment on aquatic ecosystems have been widely studied and documented (Waters 1995). Three major groups of aquatic organisms are typically affected: (1) aquatic plants (both periphyton and vascular plants), (2) benthic macroinvertebrates, and (3) fish. Turbidity associated with suspended sediments reduces photosynthetic activity in both periphyton and rooted aquatic plants. Deposited sediments can smother these plants. Suspended sediment can interfere with respiration and filter feeding of macrobenthos (especially mussels and aquatic insect larvae), while heavy deposition of sediment on the streambed can blanket both surficial and interstitial habitats of these organisms. Suspended sediment in

streams can interfere with respiration and feeding in both young and adult fish; however, juvenile and adult fish are generally able to move from areas with high levels of suspended sediment to areas with lower levels. Deposited sediment can render formerly prime areas unsuitable for spawning or, if deposited after spawning has been completed, destroy eggs and fry (Waters 1995).

While MDEQ-approved BMPs would be used to avoid and mitigate construction impacts to Project Site streams, some disturbed soil from site prep and construction could be carried into streams with stormwater runoff. Construction-related sedimentation could, depending on the effectiveness of mandated erosion controls, have a small, localized effect on common benthic macroinvertebrates. Impacts to fish would depend on stream flows and levels during the 18-month construction period but would likely be limited to displacement of individual fish or schools of minnows (fish moving upstream or downstream in response to turbidity or sediment deposition).

In summary, impacts from site development and facility construction on the aquatic communities of the Project Site would be limited to temporary increases in stream turbidity and sediment loads that would have a localized effect on benthic macroinvertebrate and fish populations. Once disturbed soils have been stabilized and construction zones revegetated, aquatic biota would begin to recover. When all agricultural operations cease (no cattle in streams, no pesticides and herbicides entering streams with storm water) and facility operations begin, benthic organisms and fish in Project Site streams should become more abundant and diverse, with more pollution-intolerant taxa appearing.

Threatended and Endangered Species

Mammals

The Proposed Action may directly affect the federally proposed endangered TCB. Mist net surveys conducted at the Project Site were negative for this species; however, acoustic surveys indicated a significant probability of presence ($p<0.05$) for TCBs (Section 3.5.1.4.1). The TCB may be negatively impacted by loss of suitable summer foraging and roosting habitat due to tree clearing and construction of the solar arrays, BESS, Project substation, and ancillary infrastructure.

Approximately 61 acres of high-quality, 20 acres of moderate-quality, and 24 acres of low-quality summer roosting habitat for Project bat species totaling 106 acres would be permanently removed from the Project Site (Figure 3-9). During operation of the solar and storage facility, approximately 131 acres of summer roosting habitat for bat species would remain. The proposed action would not jeopardize the continued existence of the TCB nor significantly impact the TCB.

Reptiles

Potentially suitable habitat for two federally protected reptiles, the alligator snapping turtle (proposed for federal listing) and the Alabama map turtle (threatened due to similarity of appearance with the Pearl River map turtle) was found on the Project Site. The Project was designed to avoid wetlands and streams and would establish streamside buffers to limit ground-disturbing work around these resources. With the

possible exception of culvert installations, which would involve heavy equipment working in and around Project Site streams, none of the activities planned should have an impact on the alligator snapping turtle or the Alabama map turtle. Therefore, the proposed action would not jeopardize the continued existence of alligator snapping turtle or the Alabama map turtle nor significantly impact either species.

Aquatic Species

The TVA Natural Heritage Database indicated that the frecklebelly madtom, a species that is federally threatened in a river basin in southeast Tennessee and northwest Georgia but has no federal protection in Mississippi, could occur in the Project vicinity. None of the streams on the Project Site has habitat that is suitable for this species. The TVA Natural Heritage Database indicated that five federally listed mussels could occur in the Project vicinity. No suitable habitat for any of these mussel species was found at the Project Site, whose streams have been degraded by many decades of runoff from croplands (disturbed soil, pesticides, herbicides, and fertilizer) and livestock activity. The proposed action would have no effect on federally listed mussels.

Insects

Agricultural fields, meadows, and old fields across the Project Site provide suitable habitat for the monarch butterfly, a species that has been proposed for federal listing. The Proposed Action (land clearing, in particular) could directly impact individual monarchs migrating through the Project Site in spring and fall, but short-term movements of monarchs are dictated by local weather conditions (insolation, temperature, wind speed and direction) and are impossible to predict. Therefore, there would be no way to schedule construction activities around these local movements, or around waves of migrating monarchs. The clearing of agricultural fields, meadows and old fields would eliminate the monarch's potential food sources on more than 1,584 acres of Project land. Despite minor direct and indirect impacts, the proposed action would not jeopardize the continued existence of monarch butterflies.

Plants

The IPaC tool indicated that two federally listed plants, the endangered whorled sunflower and threatened Price's potato bean, could occur in the Project vicinity. No suitable habitat for either species was found by biologists who conducted field surveys in 2025 and 2026. Therefore, no impacts to listed plant species are anticipated, and the proposed action would have no effect on whorled sunflower or Price's potato bean.

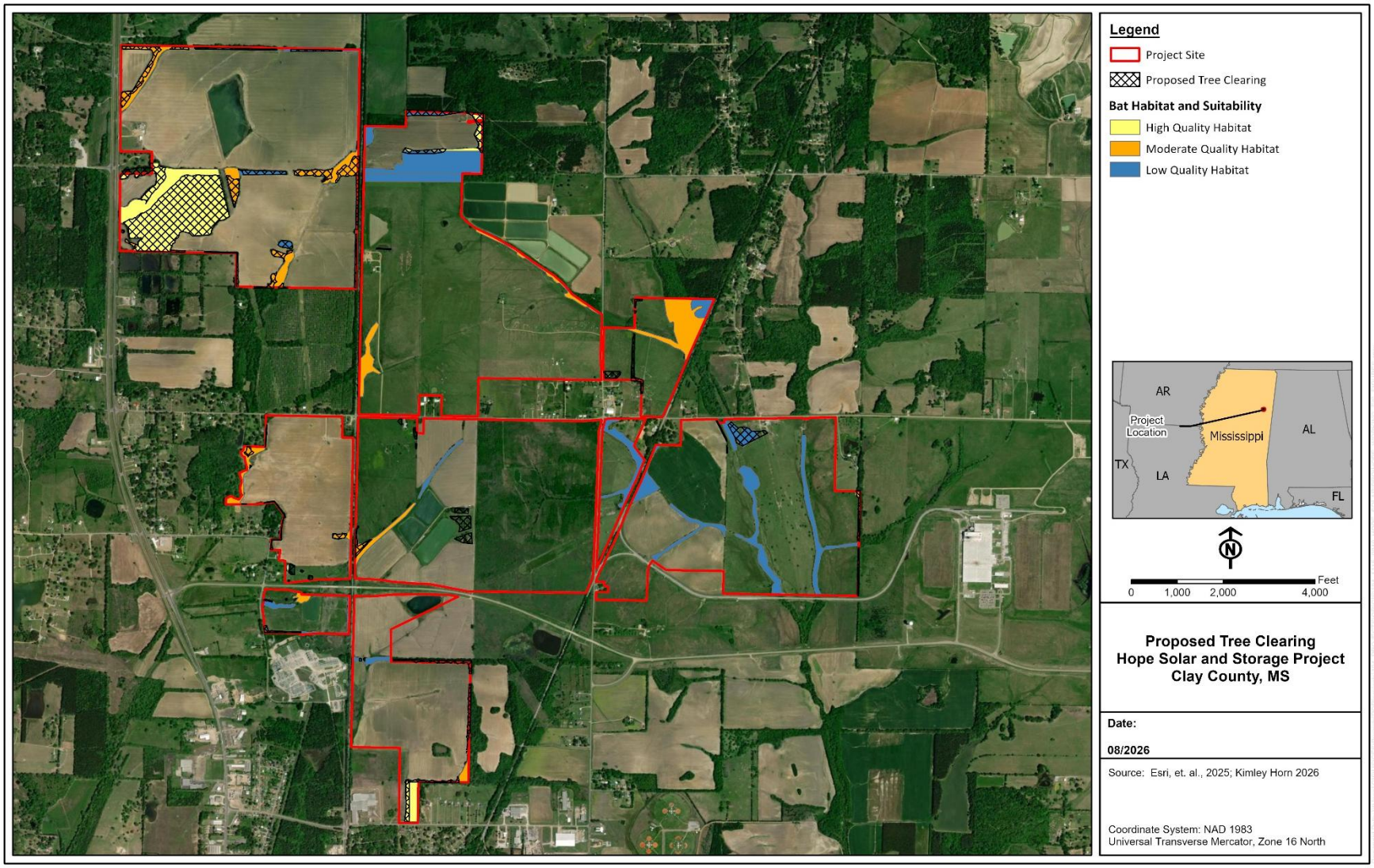

Figure 3-9. Proposed Tree Clearing

Migratory Birds of Concern and Bald Eagles

As discussed previously, 11 BCCs are believed to occur in the Project vicinity at various times of year. The degree to which they would be affected by Project construction and operations depends on their life histories (phenology) and habitat preferences.

Two species, lesser yellowlegs and swallow-tailed kite, are present only as migrants moving through the area in spring and fall. They should be largely unaffected by the Project. Another, the rusty blackbird, is present only in winter, so its nesting would not be affected. Blackbirds would, however, be subject to minor disturbance impacts from construction noise and movement of heavy equipment.

Seven species – chimney swift, Kentucky warbler, painted bunting, prothonotary warbler, wood thrush, prairie warbler, and red-headed woodpecker - would lose a small amount of potential nesting habitat when forested areas are cleared. The upland (oak-hickory) forest habitats are scattered across the landscape in small patches rather than large, continuous blocks of habitat. None of these woodlands would be regarded as high-quality habitat for migratory birds, or wildlife generally. The bottomland and riparian forests are associated with narrow riparian corridors, rather than broad river floodplains or extensive bottomlands, reducing their value as nesting habitat.

Hope SB made a determined effort to avoid wetlands and forested habitats when laying out the Project's generating facilities and infrastructure and was mostly able to do so. No encroachment on wetlands is planned, so birds should be able to forage and nest in these areas with minimal exposure to construction disturbance.

The two migratory birds most affected by Project activities would be the southeastern American kestrel and the savannah sparrow. The southeastern American kestrel would lose a small amount of potential nesting habitat (large trees with cavities near open areas that kestrels use for hunting) and a substantial amount of potential foraging habitat, approximately 1,429 acres of agricultural land and old fields. The savannah sparrow would lose more than 1,429 acres of potential nesting and foraging habitat, the same agricultural land and old fields. Even though substantial acreage would be disturbed, there is nothing unique about these croplands, pastures, and old fields; there are hundreds of thousands of acres of similar habitat across Clay County and northeast Mississippi.

Excluding the kestrel and savannah sparrow, impacts to migratory birds would be minor, mainly avoiding (or fleeing) disturbances: noise of generators and heavy equipment, movement of workers, vehicles, and heavy equipment. Impacts would be limited to minor energetic losses associated with moving to nearby areas with less noise and activity.

Although some marginally suitable foraging and nesting habitat (forested wetlands) for bald eagles lies within the Project Site, bald eagles have not been observed there and are not expected to be affected by Project activities. Proposed actions would be consistent with the National Bald Eagle Management guidelines.

State-Listed Species

Two state-listed species were identified during the desktop review as potentially occurring in the Project vicinity, the swallow-tailed kite and the frecklebelly madtom. Swallow-tailed kites migrate through the Project Area but typically breed in large bottomland hardwood forests and cypress-gun swamps, habitats that are not found on the Project Site. Only minor impacts to swallow-tailed kite populations are expected. The frecklebelly madtom, discussed in the previous section as a federally listed species, is also state listed in Mississippi. The sluggish, silt-laden streams of the Project Site are unsuitable for this species.

3.5.3 Reasonably Foreseeable Future Impacts

Since agriculture is the dominant land use in the areas suited for development, future development would likely not result in significant impacts to important terrestrial and aquatic habitats. RFFAs such as the adjacent Optimist Solar and BESS Facility, the Golden Triangle I and II Solar and BESS, New Caledonia gas plant projects, and the Prairie Belt Powersite industrial projects in the vicinity would likely remove available habitats for wildlife in the foreseeable future, potentially resulting, in combination with the impacts of the Project, in minor adverse impacts to vegetation and wildlife in the local area. The Project would likely not result in significant impacts to threatened and endangered terrestrial wildlife, aquatic species, and plants.

3.6 Natural Areas, Parks, and Recreation

3.6.1 Affected Environment

There are no natural areas, developed parks, or outdoor recreation areas within the Project Site. Review of the TVA Regional Natural Heritage Database did not identify any Heritage Natural Areas within a 3-mile radius of the Project (Nature Conservancy 2025 and 2026). Natural areas, parks, and recreational areas within 5 miles of the Project Site include city parks and trails, golf courses, and a private hunting club (Figure 3-10).

The City of West Point administers a number of parks within 5 miles of the Project including: West Point City Park (Sally Kate Winters Park) located 1.4 miles south of the Project; Half Mile Park located 0.8 miles south of the Project; Sportsman Park located 1.2 miles south of the Project; Zuber Park located 2.0 miles south of the Project; Marshall Park located 1.2 miles south of the Project; and Kidtown located 1.5 miles south of the Project (West Point Growth Alliance 2025, West Point 2025a). Bryan Reading Park is located 1.6 miles south of the Project. The Jesse Harmon Sports Complex, located 0.7 miles east of the Project, is also administered by City of West Point and features baseball facilities.

The Kitty Bryan Dill Memorial Parkway is a paved pathway that extends for 3.8 miles through West Point, linking a total of five local parks. In 2005, the Kitty Dill Memorial Parkway was designated by the U.S. Department of the Interior as a National Recreational Trail (National Recreation Trails 2025).

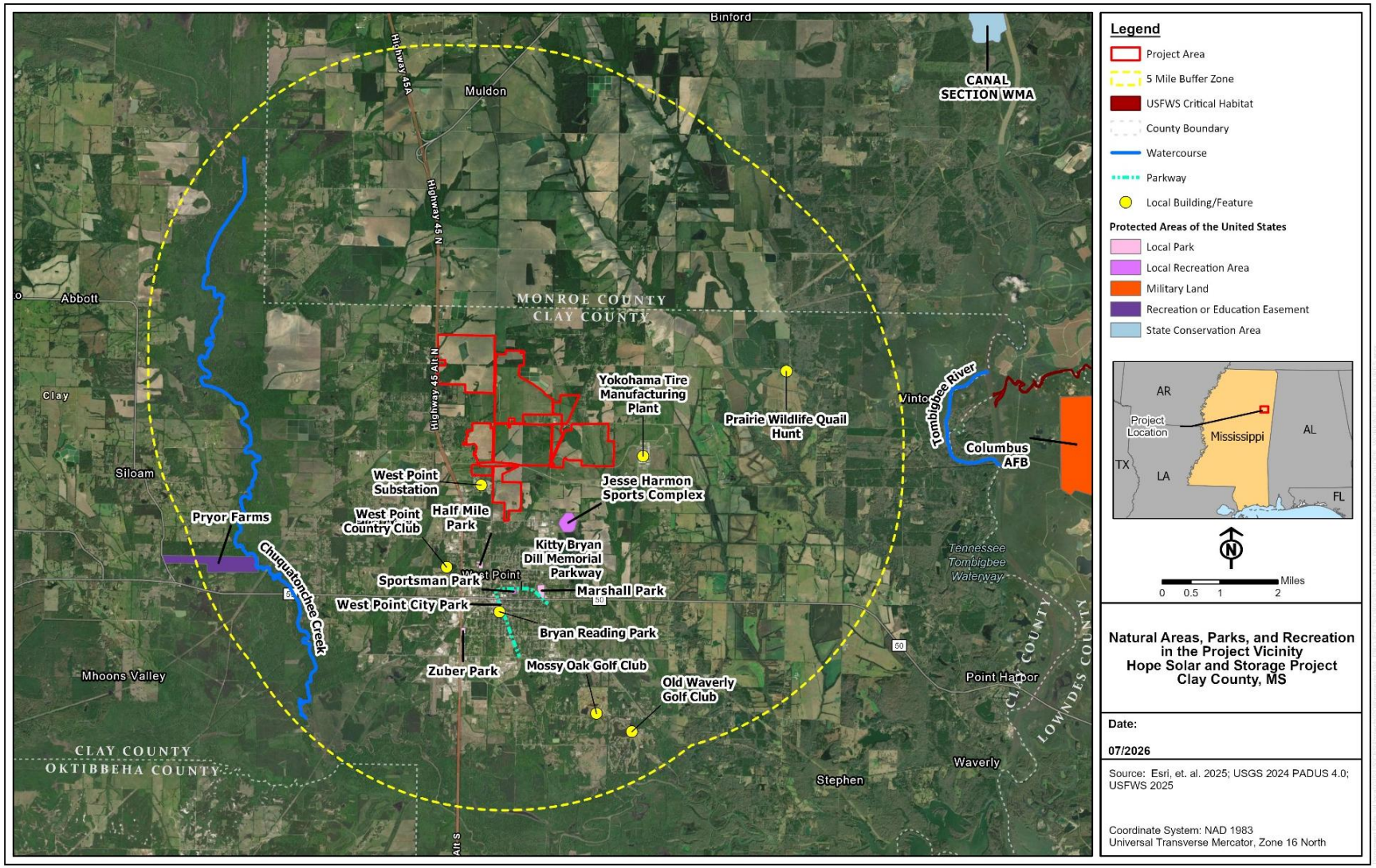

Figure 3-10. Natural Areas, Parks, and Recreation in the Project Vicinity

West Point Country Club, located 1.3 miles southwest of the Project, is a 9-hole golf course with clubhouse facilities and a pool (West Point Country Club 2025). Old Waverly Golf Club is an 18-hole championship golf course located 4.2 miles southeast of the Project. The facility also provides a swimming pool, tennis courts, walking trail, and fishing opportunities. Old Waverly's second course, Mossy Oak Golf Club opened in 2016 on an adjacent property (Old Waverly Club 2025).

Prairie Wildlife is a private hunting and sporting estate located 3.2 miles east of the Project Site, offering hunts, clay shoots, and corporate outings. Hunting opportunities include quail, dove, pheasant, white-tailed deer, and rabbit (Prairie Wildlife 2025).

Dispersed recreation may occur on private property within 5 miles of the Project, particularly in areas along Tibbee Creek, Chuquatonchee Creek, and the Tennessee-Tombigbee River.

3.6.2 Environmental Consequences

3.6.2.1 No Action Alternative

Under the No Action Alternative, the proposed Project would not be constructed; therefore, no Project-related impacts to natural areas, parks, and recreation would occur.

3.6.2.2 Proposed Action Alternative

Under the Proposed Action Alternative, the Project would not impact the use of or access to any natural areas, parks, or recreational areas. Impacts to these areas would primarily occur from noise and visual disturbances (Sections 3.7 and 3.8).

During operations, the Project's inverters would emit continuous sound while operating. Inverters would be placed throughout the solar arrays but would be located away from the property lines to the extent practicable. The sound emitted from the inverters would be attenuated by the surrounding PV array structures. Operational noise would not impact other natural areas, parks, or recreational areas in the Project Area.

The viewshed analysis in Section 3.7 identified potential visibility primarily in the immediate vicinity of the Project where proposed clearing, existing agricultural clearing, and/or a lack of other intervening surface features would allow for views of the Project within the foreground and middle ground viewing distances. No visibility was identified from any recreational resources within the VSA.

If the facility were to be decommissioned or closed, a Decommissioning and Closure Plan would be developed and implemented. The decommissioned equipment and materials would be removed and the Project Site would be restored to a tillable state and revegetated where necessary. Noise levels during decommissioning would be similar to those experienced during construction and operation. Any visual disturbance associated with the Project would cease.

3.6.2.3 Reasonably Foreseeable Future Impacts

Future projects in Table 3-1 within the geographic area of analysis that include use of undeveloped lands to support industrial or other intensive developments would reduce the availability of lands suitable for recreation within Clay County. This would decrease the amount of potentially available land to support dispersed outdoor recreation activities such as hunting, fishing, or nature observation. The combined effect of these future land development actions and the Project would likely result in a slight reduction in resources for dispersed recreation. However, in view of the relatively large amounts of rural and undeveloped lands within the county, cumulative impacts on dispersed recreation opportunities are expected to be minor. Because developed outdoor recreation areas are located sufficiently distant from the Project Site, no direct, indirect or cumulative impacts on these resources are expected.

3.7 Visual Resources

Visual resources are the natural and built features of a landscape including landforms, water, vegetation, built features, and other cultural elements that together create and influence the visual character, quality, sense of place, and scenic integrity of an area as perceived by people.

The analysis of Project impacts adapted key terms and concepts from Federal visual resource management methodologies including the U.S. Forest Service Scenery Management System and the Bureau of Land Management Visual Resource Management program (USFS 1995, BLM 1984). Additionally, the analysis was informed by industry standard steps in visual resource assessment including resource and viewer group inventory, viewshed analysis, and field surveys. The following sections describe the character of the landscape within the vicinity of the Project and established VSA and discuss potential visual resource impacts associated with the No Action and Proposed Action Alternatives.

3.7.1 Affected Environment

3.7.1.1 Project Site and Visual Study Area

The Project's affected environment is influenced by a mix of industrial, energy, and agricultural land uses. Overall, it maintains a sense of rural/agricultural landscape integrity. Based on the results of the viewshed analysis (discussed further in Section 3.7.2.2), the VSA was set as a one-mile buffer area surrounding the Project Site and served as the area within which the analysis of visual resource impacts was studied (Figure 3-13).

The landscape within the VSA is mostly consistent with the rural and agricultural land uses typical of the outskirts of cities and community centers in eastern Mississippi, while also including some areas of regional energy and industrial land use. The landscape character is defined by generally flat and gently rolling landform that consists of large, cleared cultivated lands and pasture lands framed by narrow hedgerows, intermittent woodlands, and creek corridors. These natural and man-made features influence the typical views of the characteristic landscape as seen from roads and private properties. Views across fields and other open spaces typically terminate at the nearest hedgerow or wooded area; completely

or partially screening views of further land uses beyond. Figure 3-11 and Figure 3-12 demonstrate the typical rural landscape character within the VSA.

Figure 3-11. Existing Conditions View Northeast from Yokohama Boulevard

Figure 3-12. Existing Conditions View Northwest from Payne Field Road

Residential land uses are mostly low density/rural, though medium and high-density residential development exists closer to West Point's city center as well as along primary travel routes in rural areas. The closest clusters of medium and high-density residential development that directly abut the Project are centered around East Industrial Access Road to the south and of the Project Site, along TVA Road southwest of the Project Site, and along Hazelwood Road, which bisects the Project Site from east to west. Views of rural and medium density residential areas are shown in Figure 3-14 and Figure 3-15.

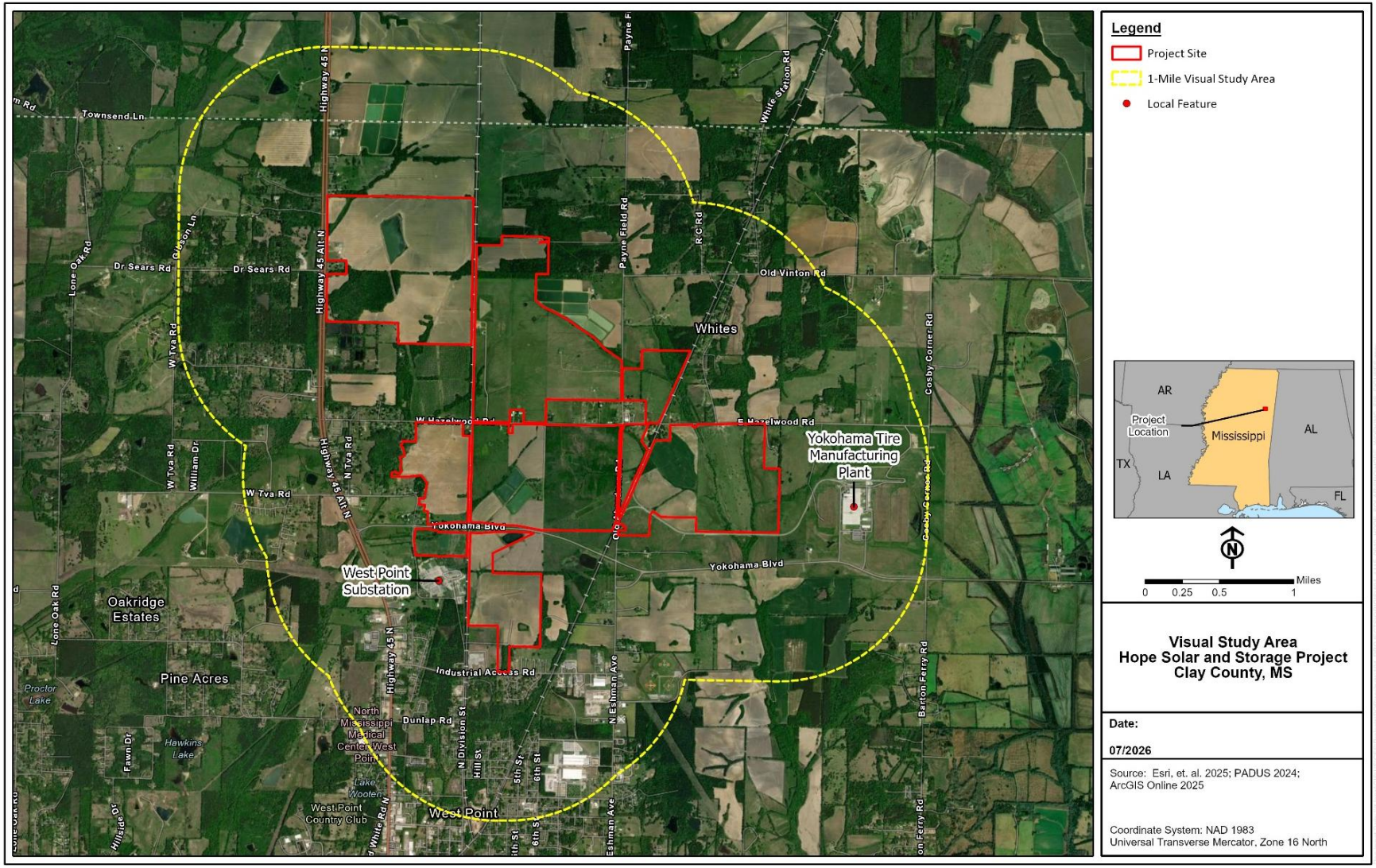

Figure 3-13. Visual Study Area

Figure 3-14. Existing Conditions View Northeast Toward Rural and Agricultural Development along Hazelwood Road

Figure 3-15. Existing Conditions View North Toward Medium-density Residential Development off of East Industrial Access Road

Industrial and energy-related land uses abut the eastern and western edges of the Project. The West Point Substation is a large transmission facility that supports TVA's regional service area and is located just west of the proposed Project's BESS and substation sites. Overhead transmission structures and their associated ROWs run north, northeast, and east from the West Point Substation crossing through the VSA (Figure 3-16). Located approximately 0.4 mile east of the Project is the Yokohama Tire Manufacturing Plant. Its associated one-million-gallon water tower is visible from most of Yokohama Boulevard and periodically from other roads in the eastern portions of the VSA. Yokohama Boulevard is a relatively new, high-speed roadway running east-west through central parts of the VSA and was built primarily to facilitate direct and efficient transportation operations between US-45ALT and the Yokohama Tire Manufacturing Plant (Figure 3-17 and Figure 3-18). The existing Optimist Solar and BESS Project is located approximately 1.1 miles southeast of the Project Site and is visible near the intersection of Yokohama Boulevard and Barton Ferry Road.

Figure 3-16. Existing Conditions View South toward West Point Substation from Yokohama Boulevard

Figure 3-17. Existing Conditions View Southeast at the Intersection of Yokohama Boulevard and Barton Ferry Road. The Optimist Solar and BESS Project is visible beyond the vegetation and residence in the foreground.

Figure 3-18. Existing Conditions View Southeast from Hazelwood Road, with the Yokohama Tire Manufacturing Plant and Associated Water Tower Visible in the Background

Research identified no designated visual resources and limited recreational resources within the one-mile VSA. The Jesse W. Harmon Sports Complex is located east of Eshman Avenue on property approximately 0.7 mile southeast of the Project Site.

3.7.1.2 Viewer Groups and Viewer Sensitivity

The way in which viewers interact and experience the landscape affects their perception and awareness of their setting (BLM 1986). The various types of viewers who live, work, visit, or recreate in the VSA can be referred to as viewer groups. Two primary viewer groups identified as those who would most likely experience visibility of the Project within the VSA were Residents and Travelers.

Residents consist of people who live within the VSA. Residents typically view the landscape from their property and homes and may experience longer viewing durations in any given direction from static positions. Travelers may include people engaged in various types of frequent local and regional work-related or personal travel who typically view the landscape from motor vehicles on State, county, and local roadways within the VSA.

3.7.1.3 Distance Zones

Viewer distance and visual acuity are key factors in studying and determining visual effects, with perceived visual contrast and impacts generally diminishing as distance between the viewer and the affected area increases. Three distance zones were defined for this analysis and are consistent with established protocols used by the U.S. Forest Service (USFS 1995):

- **Foreground (0-0.5 mile):** Viewers perceive surface textures, fine details, and full color—distinct forms, lines, and textures of natural and built features are readily apparent.
- **Middle ground (0.5-4 miles):** Details give way to overall pattern: trees read as hedgerows, buildings as simple shapes, and roads as lines. Development patterns and edges are evident; colors are somewhat muted.
- **Background (≥ 4 miles):** Provides a panoramic setting; distance and atmospheric haze mute texture and detail. Features are visible mainly by strong contrast in form or line and under favorable lighting or weather.

The mostly flat, rural agricultural landscape setting and limited elevated viewing opportunities combined with natural and human influenced vegetation patterns, generally limit existing landscape visibility to foreground and middle ground distance zones within the VSA.

3.7.2 Environmental Consequences

3.7.2.1 No Action Alternative

Under the No Action Alternative, the existing land use would be expected to remain more or less unchanged. Consequently, no significant impacts to visual resources would be anticipated, since the site would not be developed for the Project.

3.7.2.2 Proposed Action Alternative

A viewshed mapping analysis was produced to better understand the geographic extent of potential Project visibility. The analysis was based on a 1-meter resolution Digital Surface Model (DSM) created from publicly available USGS LiDAR point cloud data. In addition to accounting for terrain only/bare-earth surface conditions, the DSM and resulting viewshed outputs account for the intervening effects of surface features such as vegetation and built structures. Figure 3-19 presents the results of the DSM-based viewshed analysis.

The analysis identified potential visibility primarily in the immediate vicinity of the Project where proposed clearing, existing agricultural clearing, and/or a lack of other intervening surface features would allow for views of the Project within the foreground and middle ground viewing distances. No visibility was identified from any recreational resources within the VSA such as the Jesse W. Harmon Sports Complex.

Dense concentrations of residential development and associated viewers are located near the intersection of Hazelwood Road and Payne Field Road, TVA Road, and near the intersection of East Industrial Access Road and Eshman Avenue. Figure 3-20, Figure 3-21, and Figure 3-22 show maps of these areas and viewshed analysis outputs.

Viewshed results showed that existing intervening landscape features, such as hedgerows and wooded areas, where present in the foreground, would likely be effective at fully or partially screening the mostly low-profile Project components.

Discussion of Impacts

Desktop level research, aerial image review, and viewshed analysis were followed by field surveys to better understand the landscape character and cultural context of the VSA and inform the discussion of potential impacts on visual resources. Fieldwork focused on areas with larger concentrations of residential viewers and from view locations on primary travel routes. The analysis is discussed in terms of likely impacts to those viewer groups (e.g., residents, travelers), and the places within the VSA from which they would experience views of the Project. For the purpose of this analysis, impacts to visual resources are defined as follows:

- **Minor:** The Project would be minimally visible to a low number of sensitive viewers, introduce little or no visual contrast, and have a low or negligible effect on existing scenic integrity of the landscape due to viewing distance and/or intervening terrain and vegetation.
- **Moderate:** The Project would be visible to a moderate number of sensitive viewers and have a medium effect on the existing scenic integrity due to visual contrasts that begin to dominate the characteristic landscape.
- **Strong:** The Project would be visible to a large number of sensitive viewers and would not be overlooked. Project visual contrasts would dominate and significantly alter the existing scenic integrity of the landscape.

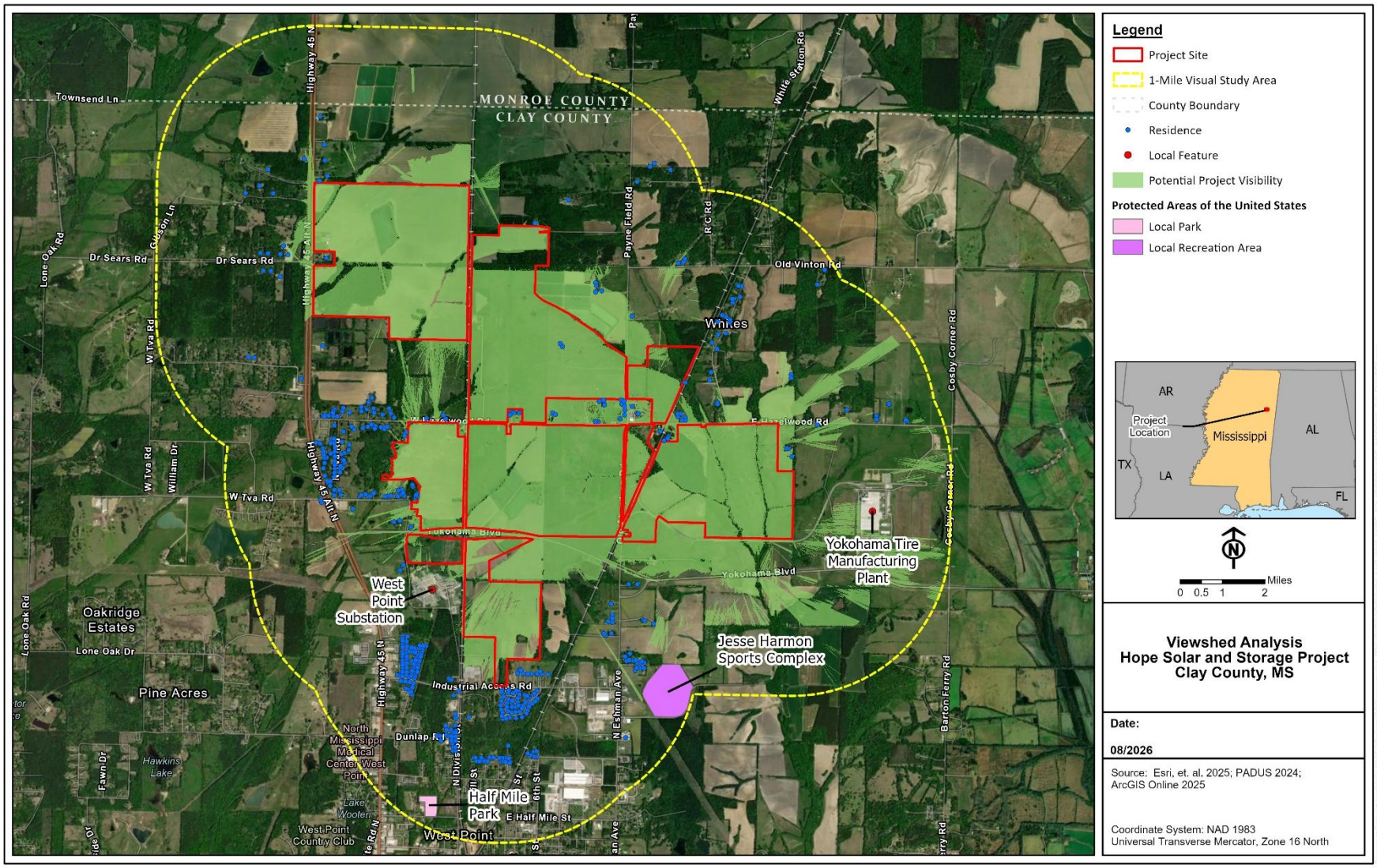

Figure 3-19. Viewshed Analysis

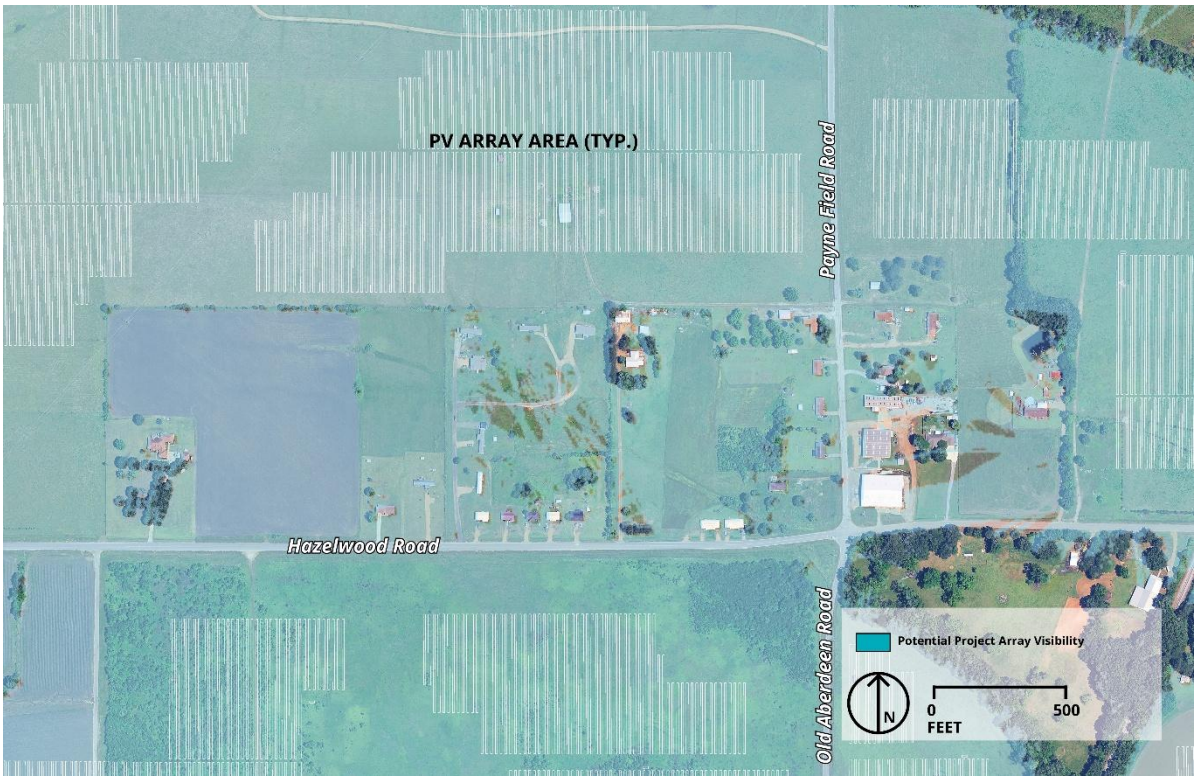

Figure 3-20. Vicinity of Hazelwood Road and Payne Field Road

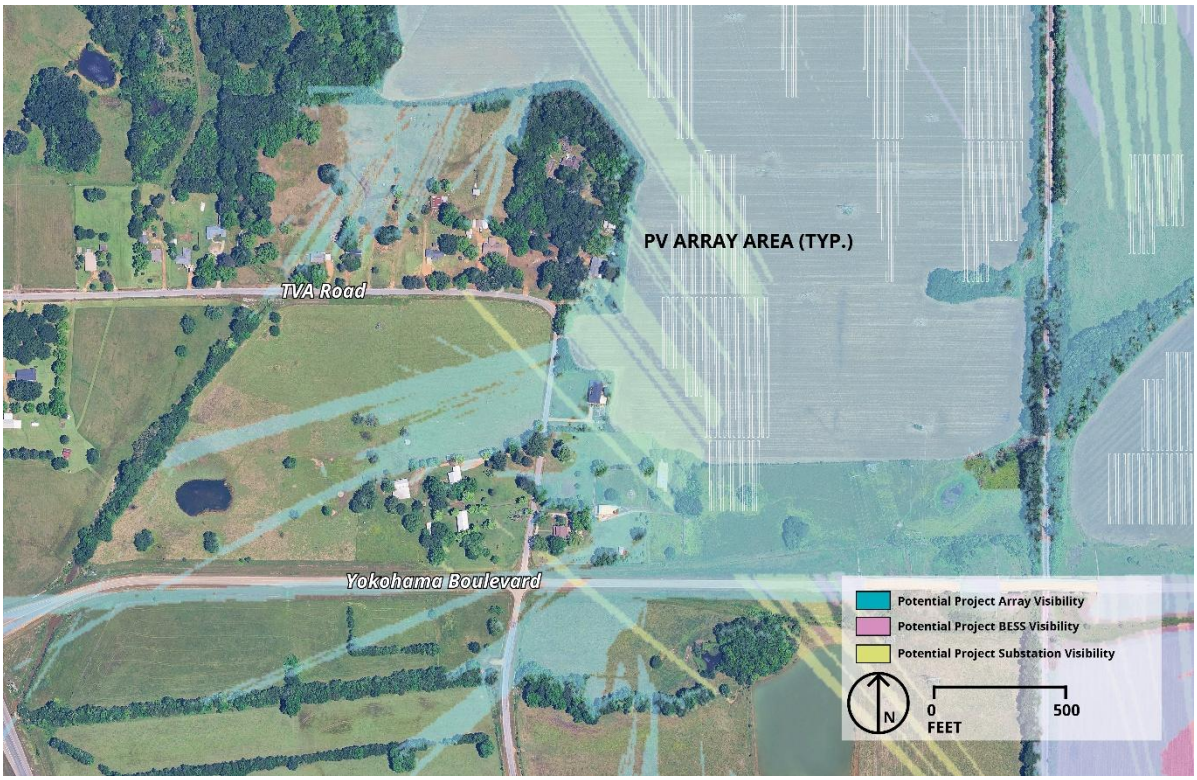

Figure 3-21. TVA Road

Figure 3-22. Vicinity of East Industrial Access Road

The primary Project components introduced into the VSA include the solar PV arrays and associated inverters/electrical equipment, BESS, overhead collection lines, and substation.

During construction, the Project Site and areas within and surrounding the VSA would experience temporary increases and vehicular traffic patterns and uses, including trucks and construction equipment transportation that would likely be noticed by both local residents and daily travelers. At the Project Site, the existing landscape would be altered during earthwork phases and vegetation clearing activities, revealing areas of bare/rough earth and debris. Construction and pile driver equipment would be active alongside vehicles traversing the Site (along with associated noise and occasional dust), and construction personnel would be visible working in various areas of the Site. As construction is completed, material stockpiles would be removed and centralized, construction and vegetative debris would be cleaned up, and surfaces would be smoothed and seeded with vegetative groundcover. Any specific direct or indirect visual impacts associated with construction would be temporary and last approximately 18 months.

During operation, the PV arrays would be the most geographically widespread Project component that would have the most potential to be seen by residents and travelers within the VSA. Where visible in foreground and middle ground views, the PV arrays would introduce relatively uniform visual contrast in line, metallic texture patterns, geometric shapes and forms, and blue/black and gray color tones. Color contrast

introduced by the Project would be dynamic, influenced by the time of day and weather patterns. The single axis tracking PV arrays would likely present the greatest visual contrast during the morning and late afternoon when they would be facing east or west at or near their maximum/full angle of tilt. The maximum height of the PV arrays at full tilt would be appropriately 8 feet above ground, with heights reducing to appropriately 5 feet during midday hours. Figure 3-23 and Figure 3-24 show examples of PV arrays similar to those proposed as part of the Project.

Figure 3-23. Typical arrangement of PV arrays.

Figure 3-24. PV arrays near max tilt angle.

Impacts on Residential Viewers

Residents would likely experience unobstructed views of the Project during construction and operation, with some residents experiencing Project views in multiple viewing directions to the north and south of Hazelwood Road, and east and west of Payne Field Road. Figure 3-25 and Figure 3-26 show views from these residential areas where the project would be located approximately 100 to 200 feet away. Without mitigation, the Project would be anticipated to present moderate to strong visual impacts due to the degree of visual change within proximity to these viewers. Nearby rural/low density residential viewers further east and west on Hazelwood Road would likely experience similar impacts.

Figure 3-25. Existing conditions view south from residential development on Hazelwood Road. The Project would occupy the foreground within view.

Figure 3-26. Existing conditions view northwest from residential development on Payne Field Road. The Project would occupy the foreground and middle ground within view on both sides of the road.

Along TVA Road abutting the western edge of the Project, medium to high-density residential development would experience both unobstructed and partially screened foreground views of the Project in northerly and easterly viewing directions. The existing landscape in this area includes both agricultural and energy/transmission corridors that would be visible in the same direction of view as the Project. Taller transmission infrastructure around the existing West Point Substation is also intermittently visible in

southerly viewing directions located approximately 0.4 miles south of TVA Road. Project construction and operation would result in an increase of energy related infrastructure visible to nearby residents. Existing vegetation to remain within the Project Site and on private residential property would provide varying but mostly limited screening of the Project.

Residences on TVA road would likely experience both direct and partially screened views of the Project. Overall, visual impacts on residential viewers along TVA Road are expected to be moderate and would likely be reduced through vegetative mitigation/screening.

Abutting the southernmost edge of the Project, residential development is centered near the intersection of East Industrial Access Road and Old Aberdeen Road. Visible to the north from residents on East Industrial Access Road, filtered views of Projects associated substation and BESS site would likely be experienced through an existing strip of mature vegetation that separates the Project from residential properties. The intervening effects of the mostly deciduous vegetation would likely provide adequate Project screening during construction and operation in leaf-on seasons, though these effects would become reduced during the fall and winter. Residents would likely experience minor to moderate visual impacts depending on site specific and seasonal vegetative conditions.

Impacts on Travelers

Travelers would most likely experience views of the Project from regional and local roads abutting or within close proximity to the Project, primarily including US-45A, Payne Field Road, Hazelwood Road, Eshman Avenue/Old Aberdeen Road, and Yokohama Boulevard.

Hazelwood Road is a primary east-west route that connects the mostly residential and agricultural northern areas of the VSA with US-45A and central West Point. Hazelwood Road traverses the longest east-west stretch of the Project site. While daily travelers typically experience changing landscape patterns within their foreground and middle ground views, the Project would remain a consistent visible feature for an approximately 2.5-mile stretch of Hazelwood Road. The Project setbacks would occupy the majority of the existing cleared agricultural and other open space abutting the road. Hazelwood Road would likely experience the most apparent and frequent Project visibility during construction and operation of any road within the VSA. However, Hazelwood Road is not formally designated as a visual resource, and travelers are not expected to be using the road for the primary purpose of viewing scenery. For these reasons, the Project is anticipated to present a moderate visual impact as seen from the road.

Similar to Hazelwood Road, Payne Field Road is a primary north-south local road that provides access to and from central and northern areas of West Point, becoming Old Aberdeen Road/Eshman Avenue as it nears West Point. The Project would likely present minor to moderate visual impacts to travelers coming to and from central West Point due to the intermittent nature and duration of which the Project would be experienced.

Yokohama Boulevard is a wide, high-speed roadway with a primary purpose of providing efficient transportation to and from the Yokohama Tire Manufacturing Plant. The boulevard also serves as an optional route that brings travelers on US-45A to and from destinations in eastern West Point and other points beyond. Motorists on Yokohama Boulevard traverse a mostly open agricultural and industrial/energy landscape where the majority of built features are set back hundreds of feet or more. The Project would be visible to the north and south of the boulevard during construction and operation at varying foreground and middle ground viewing distances as travelers traverse east-west directions. The series of elevated bridges and causeways that bring motorists over other roads and railways would offer some of the only elevated views of the Project for much of the VSA and surrounding area. Yokohama Boulevard would also be one of the relatively few places where the Project BESS and substation would be visible adjacent to the existing West Point Substation and transmission corridors. Field surveys from Yokohama Boulevard observed notable light traffic patterns and use. Due to the lighter use combined with the existing mixed agricultural and industrial/energy land uses, visual impacts would likely range from minor to moderate as seen by travelers on the road.

US-45A is main regional highway running north and south through the VSA that connects many of the easternmost towns and cities in Mississippi. The Project would abut US-45A and be intermittently visible to northbound and southbound travelers in easterly view directions for an approximately one-mile stretch of roadway. Though representative of the busiest travel corridor with views of the Project in the VSA, US-45A holds no formal scenic designation or byway status, and the high-speed nature of travel means that viewers would generally be exposed to Project views for a matter of seconds. For these reasons, visual impacts on travelers along US-45A are expected to be minor.

The review of cultural resources in Section 3.10 identified two railroad sections that were recommended as NRHP eligible including the Mobile & Ohio Railroad, which runs due north and south through the western part of the VSA (clipping the western edge of the Project), and the Canton, Aberdeen, & Nashville Division of the Illinois Central Railroad, which runs diagonally northeast-southwest through the center of the Project and VSA.

Both railroad routes traverse the mostly agricultural and mixed industrial/energy landscape where the Project is proposed. Viewshed analysis indicated mixed intermittent unobstructed Project views, as well as partial Project views from both railroad lines. Project visibility experienced by travelers on these railroad lines would be most influenced by both natural and man-made vegetation and landform patterns immediately adjacent to the railroad alignment. Existing vegetation along border/edge areas consisting of mixed deciduous and evergreen species would provide periodic screening of the Project, as would the occasional railway landform cut and fill deposits that would limit visibility on one or both sides of the railroad. Due to the moving and intermittent nature of visibility that would be experienced by travelers on both railroads, visual impacts are anticipated to be minor.

The Project BESS and substation would be located near the southwest edge of the Site adjacent to the existing West Point Substation. As discussed above, these Project components would likely be visible to some degree from elevated areas or other unobstructed view corridors along Yokohama Boulevard but would otherwise be fully or partially screened from most other locations due to existing intervening hedgerows, woodlands, and setbacks of approximately 1,000 feet or greater from area roadways and residential development. Similar to the low-profile PV arrays, the BESS components would also be uniform low-profile features in the landscape (slightly taller than the PV arrays at 12-14 feet). The Project substation would contain some structures up to 60 feet in height which may present linear form and line contrast against the existing landscape and sky. The substation would be consistent with, though visually subordinate to, the larger West Point Substation. Limited viewing opportunities combined with proposed siting adjacent to existing intensive energy/transmission infrastructure would likely mean that the Project BESS and substation would present minor visual impacts to nearby residents and travelers.

Summary of Impacts

The Project would result in the visual alteration of an existing rural/agricultural and industrial/energy landscape, increasing the presence of energy related infrastructure in foreground and middle ground views in areas previously used in agriculture. Most of the Project would be sited within currently cleared areas, preserving existing vegetation patterns throughout the Project Site that would help to screen Project views from some areas of the VSA. Targeted vegetative or screening mitigation would help to further reduce Project visibility from areas where sensitive viewers are concentrated. The primary Project components, the PV arrays, would maintain a low-profile in the landscape with taller components, such as the Project substation, sited away from sensitive viewers and adjacent to existing energy/transmission development. Construction, operation, and maintenance phases of the Project would be expected to have no more than a moderate visual impact on the landscape and viewers within the VSA.

3.7.2.3 Reasonably Foreseeable Future Impacts

The landscape in and around the Project VSA is primarily rural agricultural, with some industrial development such as the Yokohama Tire Manufacturing Plant, railroad lines, Optimist Solar and BESS Project, TVA substations, New Caledonia gas plant projects, and planned future development such as the Prairie Belt Powersite adjacent to the Project Area and nearby transmission line construction, as described in Section 3.1. Construction of the Proposed Action would take some agricultural land out of production and add to the already observable industrial character of the area adjacent to the Project Site. However, the wider landscape would remain in agricultural development with some forested areas for the foreseeable future, and the Proposed Action would not have a significant impact on the rural characteristics of the broader landscape.

3.8 Noise

The noise generated from Project construction, operation, maintenance and decommissioning has the potential to increase sound levels offsite, thus impacting

offsite receptors. The impact to these receptors is strongly influenced by the time of day, the duration of the onsite noise, topography, the distance from the noise source to sensitive offsite receptors, and the density of vegetation between the noise source and the sensitive receptors.

Environmental noise experienced by humans is measured in A-weighted decibels (dBA) on the A-weighted scale. Ambient sound level measurements also account for levels throughout the 24-hour day and greater sensitivity to sound during nighttime hours. Two measures that relate the time-varying quality of environmental noise to its known effect on people are the 24-hour equivalent sound level (Leq) and day-night sound level (Ldn). The Leq is the level of steady sound with the same total (equivalent) energy as the time-varying sound of interest, averaged over a 24-hour period. The Ldn is the Leq plus 10 dBA added to account for people's greater sensitivity to nighttime sound levels (typically considered between the hours of 10:00 p.m. and 7:00 a.m.). The human ear's threshold of perception for noise change is 3 dBA with a 6-dBA change being clearly noticeable to the human ear, and a 10-dBA change perceived as a doubling of noise (or halving, if the noise is decreasing).

Clay County has no noise ordinance (Clay County 2025b). The City of West Point has a noise ordinance (Chapter 16), but the provisions only concern noise from outdoor amplifiers and vehicle audio systems (West Point 2024, 2025b). The USEPA developed protective noise guidelines (USEPA 1974) that recommend an average annual equivalent Ldn of 55 dBA to protect the health and well-being of the public with an adequate margin of safety. Because most environmental noise is intermittent (not at a steady level, but below 65 dBA more than 10 percent of any one-hour period) and intermittent noise is less damaging than continuous noise of the same Leq, USEPA applied a correction factor for intermittent noise and developed a protective level of 75 dBA for the 8-hour workday (Leq(8)) and 70 dBA Leq for the 24-hour day (USEPA 1974).

3.8.1 Affected Environment

The Project Site is primarily rural with current land uses of mostly agricultural (cultivated fields and pasture), but some forest and low-density residential areas are present (see Figure 3-1). The Project Site is characterized by gently rolling hills, with elevations ranging from approximately 220 feet to 290 feet amsl. The Project Site is bordered by various local roads including Hazelwood Road, Payne Field Road, Old Aberdeen Road, Yokohama Boulevard, Eshman Avenue, TVA Road, Johnny Thomas Road, East Industrial Access Road, and US Highway 45 Alt (see Figure 2-1). Along the western boundary and traversing the Project Site northeast to southwest are railroad lines (see Figure 2-1). In addition, there are low-density residential areas nearby with several residences bordering the Project Site (Figure 3-27). East of the central portions of the Project Site is a designated industrial development area, the Prairie Belt Powersite, currently hosting the Yokohama Tire Manufacturing Plant. The point of interconnection is at TVA's West Point Substation (see Figure 1-1).

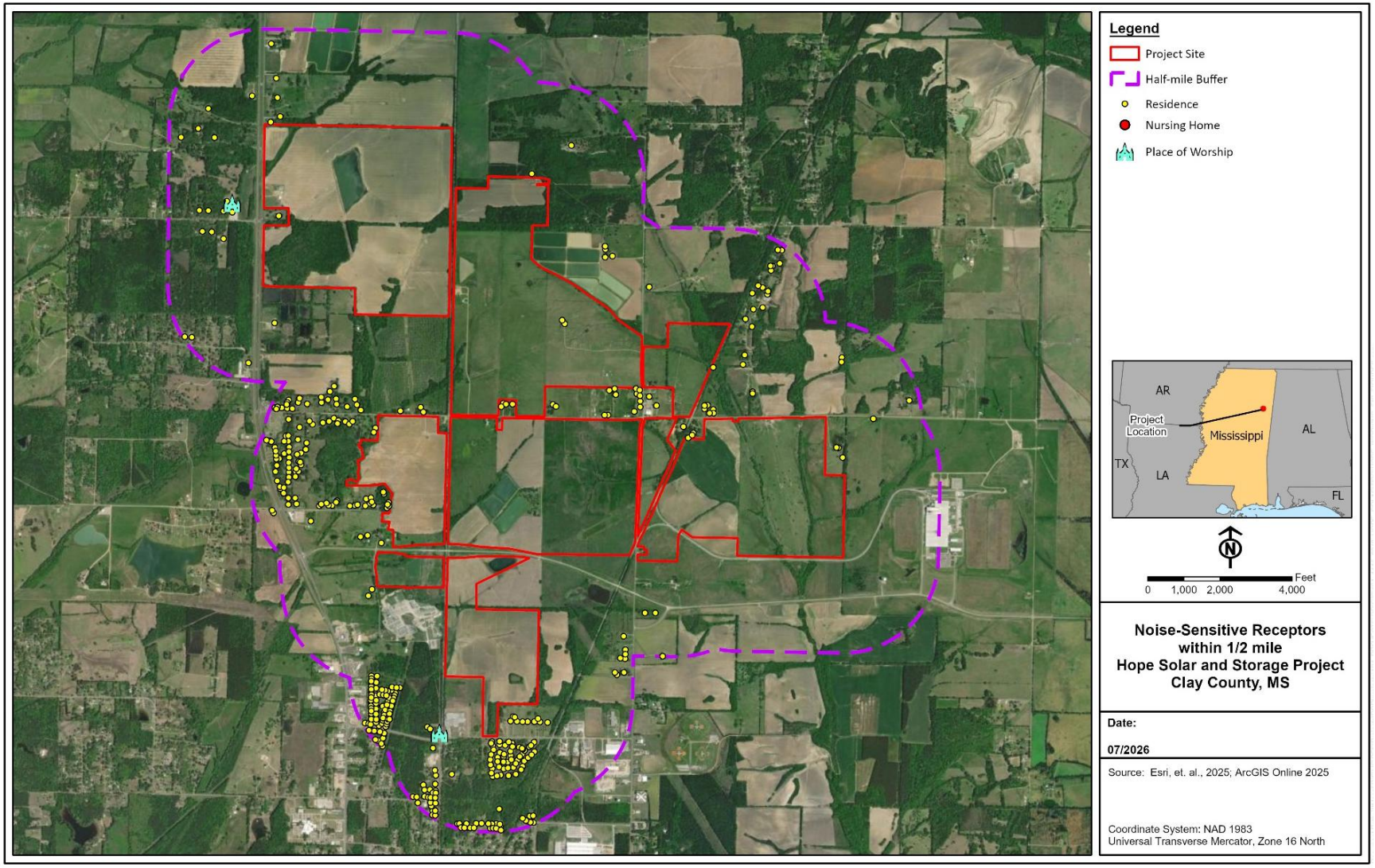

Figure 3-27. Noise Sensitive Receptors with 1/2 Mile

The USEPA (1974) characterized the sound level of a small town or quiet suburban area as 46 to 53 dBA. Rural areas without traffic and businesses could have lower sound levels. However, as mentioned above, the solar array portions of the Project Site are bordered by roadways and rail lines, and commercial properties, as well as the industrial development, the Prairie Belt Powersite. Furthermore, the land is farmed, and farm machinery would be used intermittently throughout the year for tilling, planting, and harvesting. Agricultural sounds can raise the ambient noise levels with the use of machinery such as a tractor, combine, and grain grinder with sound levels from 90-110 dBA (UF 2018).

3.8.2 Environmental Consequences

3.8.2.1 No Action Alternative

Under the No Action Alternative, the Project would not be constructed; therefore, no Project-related noise impacts would result. Current noise impacts related to agricultural land use and road and rail traffic would persist.

3.8.2.2 Proposed Action Alternative

Construction activities would involve operation of pile drivers, excavators, bulldozers, backhoes, graders, front-end loaders, dump trucks, compressors, generators, and similar equipment and machinery over the construction phase of the Project. The use of typical construction equipment categories and their estimated sound levels at a distance of 50 feet, as provided by the Federal Highway Administration, were used for roadway construction noise modeling (FHWA 2006).

The noise levels from construction activities would be temporary and fluctuate depending on the number and type of vehicles and equipment in use at a given period. Most of the construction activity would be to prepare the land for the solar arrays and their installation. Temporary construction laydown areas would also be noise sources during construction. The loudest construction activity would be driving the posts for mounting the solar panels. The sound level of post drivers used for solar panel installation is approximately 84 dBA at 50 feet (Dudek 2018; Mohawk Solar 2019).

Construction-related sound levels experienced by a noise-sensitive receptor near construction activity would be a function of distance, other noise sources, and the presence and extent of vegetation, structures, and intervening topography between the noise source and receptor. Figure 3-27 shows locations of noise sensitive receptors within 0.5 mile of the Project Site. Low-density residential receptors are found in the surrounding area with greater concentrations along Hazelwood Road and Payne Field Road. The planned layout for the solar arrays as shown on Figure 2-2 includes property boundary setbacks of 100-150 feet buffers from adjacent residential properties; however, Clay County does not have zoning ordinances or otherwise established property setback requirements (Clay County 2025b).

Nearby residents would experience elevated noise levels from the operation of construction equipment during daytime hours as well as an increase in traffic during peak morning and evening commutes. Sound levels from construction activities would attenuate with distance as the sound waves spread from the source. Generally, there is

a 6 dBA drop in sound level with a doubling of distance. The loudest construction noise of post driving at 84 dBA would be expected to drop to 78 dBA at the minimal setback distance of 100 feet and to 75 dBA at a 150 feet setback. Post driving would be intermittent construction noise in contrast to a constant noise is such as continuously operating fans or generators. Noisy construction equipment would not remain concentrated at one location in the Project Site but would move as construction activities shift from one area to the next. Thus, the distance between residences and construction equipment and activity would frequently change over the 18-month duration of construction activities. The noise levels experienced by local residents are not expected to exceed 75 dBA for prolonged periods. As presented in Section 3.8, the USEPA considers exposure to noise levels of 75 dBA and less to be protective of hearing for workers. Thus, intermittent construction noise over the 18-month construction duration would not present a human health hazard.

During operations, the Project's inverters would emit continuous sound while operating. The inverters would operate only during daylight hours when the PV panels are producing electricity. The sound level immediately adjacent (3 to 5 feet away) to an inverter is expected to be up to 75 dBA. Inverters would be placed throughout the solar arrays but would be located away from the Project Site boundary and nearby residences to the extent practicable. The sound emitted from the inverters would be attenuated by the surrounding solar array structures and the distance to offsite noise receptors.

Noise studies conducted for other solar installations were reviewed. Field surveys of inverter noise from three solar array locations demonstrated that at a distance of 150 feet all inverter sounds along with sound from other equipment approached background sound levels (MCEC 2012). An updated review of solar facility noise levels indicated that inverters would need to be located 147 feet from neighboring properties for a sound level of 55 dBA to be achieved (Chambers and Mehraeen 2025).

Inverter placement for the Project is planned for more than 200 feet from the closest residence with most inverters placement planned for more than 400 feet from the nearest residence. Based on noise studies from other solar installations mentioned above, noise levels experienced at nearby residences would be less than 55 dBA, the USEPA recommended average annual equivalent Ldn for continuous noise.

Intermittent sound emissions from the facility would include maintenance activities at the solar arrays and electrical infrastructure including worker vehicles. In addition, there would be periodic mowing and possibly panel washing. The Project's operations and maintenance offices, storage, and parking would be sources of intermittent noise during daylight hours and would be located next to the solar arrays. The Project would connect to an existing offsite substation, TVA's West Point Substation, which would not be noise sources other than occasional operations and maintenance activities during daylight hours. The sound levels experienced offsite would be consistent with existing conditions of agricultural operations and road noise and noise impacts from operations would be minor. If the facility were to be decommissioned or closed, a Decommissioning and Closure Plan would be developed and implemented.

The Project would also include an emergency generator capable of providing emergency power in the event of the disruption of the primary power supply. The exact location of the emergency generator, if needed, is not yet known, but it would most likely be located on the parcel east of the West Point Substation, in proximity to the BESS. The generator would be started periodically for operational readiness testing and routine maintenance; however, these activities would occur during the daytime. The use of the emergency generator as a backup power source could occur at any time of the day when a power outage occurs; however, the emergency generator would operate a maximum of 500 hours per year. There would be multiple noise sensitive receptors located within ½ mile of the location of the emergency generator. Because the generator would only be operated under emergency conditions, the noise generated by its operation would be intermittent, the effects would be short-term and minor.

3.8.2.3 Reasonably Foreseeable Future Impacts

As discussed above, the Project Site is bordered by existing local roads, railroad, residences, and nearby operating Yokohama Tire Manufacturing Plant. The tire plant is within an industrial development site, the Prairie Belt Powersite, which encompasses the plant and parcels farther west including a portion of the operating Optimist Solar and BESS Project. In addition, Columbus Air Force Base contributes noise to the area from ongoing overhead flight training, as well as an upcoming construction project at the base to accommodate changes in flight equipment. Other foreseeable projects include energy generation and transmission line installation and upgrades, MDOT road work, and CPKC railroad maintenance, as described in Section 3.1, which would have temporary construction activities that could also contribute to ambient noise levels. If RFFAs in the surrounding area occur at the same time, adverse noise effects (from construction equipment operation) could occur and the severity of the impacts would depend on the distance between the construction activities and the timing and level of construction activities. The effects from noise associated with multiple construction activities would be short-term, most obvious during normal daytime working hours, and would subside once construction was complete. Noise associated with agricultural activities, the railroad, road traffic, and ongoing Air Force Base and industrial activities would continue long-term, primarily during daytime hours.

3.9 Air Quality and Greenhouse Gases

3.9.1 Affected Environment

Ambient air quality is determined by the type and concentration of pollutants emitted into the atmosphere, the size and topography of the airshed in question, and the prevailing meteorological conditions in that airshed. Under the authority granted by the Clean Area Act of 1970 and subsequent amendments, the USEPA established National Ambient Air Quality Standards for the following criteria pollutants to protect the public health and welfare: sulfur dioxide (SO_2), nitrogen dioxide (NO_2), particulate matter less than or equal to 2.5 micrometers ($PM_{2.5}$), particulate matter less than or equal to 10 micrometers (PM_{10}), carbon monoxide (CO), and lead (Pb). The USEPA has established two types of National Ambient Air Quality Standards: primary standards for public health protection, including protection of sensitive populations such as asthmatics, children, and the elderly; and secondary standards for public welfare

protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

The USEPA monitors ambient air quality and determines attainment with the National Ambient Air Quality Standards for the following criteria pollutants: SO_2, ozone, NO_2, $PM_{2.5}$, PM_{10}, CO, and Pb. Clay County is in attainment for all criteria pollutants (USEPA 2025b).

GHGs are specific gases that trap heat in the atmosphere and increasing levels of GHGs in the atmosphere can result in an increase in warmer temperatures and changes in the hydrologic cycle (e.g., heavy rainfall, drought). The main GHGs and those monitored by USEPA are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated gases. Of these, CO_2 is the dominate GHG, making up 80 percent of the U.S. GHG emissions in 2022. Overall CO_2 emissions increased 1 percent from 2021 levels. The primary sources of carbon dioxide emissions are from the combustion of fossil fuels (e.g., gasoline, diesel, oil, natural gas) in the transportation (35 percent) and electricity generation (30 percent) sectors of the U.S. economy (USEPA 2025c).

The Project Site is located in Clay County, a rural area of northeastern Mississippi where the land use is mostly agricultural. Urban areas in the vicinity are West Point and Columbus. Pollutants emitted in the Project Area would be reflective of an agricultural setting, traffic between the urban areas, and a nearby industrial site.

The topography of the area is gently rolling hills. Northern Mississippi has a normal mean annual temperature of approximately 62°F with rainfall fairly evenly distributed through the year (MSU 2025). At the nearest weather station to the Project Site, West Point 1.0 mile SSE, the 30-year annual average precipitation is 57 inches with monthly averages ranging from 3.6 to 5.9 inches (CoCoRaHS 2025).

3.9.2 Environmental Consequences

3.9.2.1 No Action Alternative

Under the No Action Alternative, the Project would not be constructed. Therefore, no air emissions or GHGs would be generated by equipment or vehicles from construction or operation of the Project. Existing land use and ongoing emissions would be expected to remain.

3.9.2.2 Proposed Action Alternative

Construction Emissions

Construction would involve land clearing and grading, operation of construction equipment and vehicles, and potentially open burn activities, all of which would generate air emissions. Land clearing and grading for solar arrays would result in exposed soils and generate fugitive dust. Based on the results of the Phase I Environmental Site Assessment (Tetra Tech 2025 and 2026d) completed for the Project Site, no contaminated soils were identified; therefore, it is unlikely that exposed soils would result in air emissions besides particulates from fugitive dust. Control measures

such as wetting of soil piles, covering loads and staging areas, and seeding of bare areas would be implemented to minimize fugitive dust.

Land clearing could also involve open burning. Any such burning of vegetative debris would be done in accordance with MDEQ air regulations (Mississippi Administrative Code Title 11, Part 2, Rule 1.3, Section G), which also prohibits burning during high fire danger conditions. The appropriate open burning permits would be obtained from the Mississippi Fire Commission. Weather conditions would be monitored and considered to ensure safety and minimize degradation to air quality.

Chipping and grinding operations during land clearing would produce particulate emissions. Operation of diesel or gasoline-powered construction equipment and vehicles at the Project Site, for clearing, grading, equipment installation, as well as vehicles hauling supplies and debris and workers' personal vehicles would generate local emissions of PM, NOx, CO, volatile organic compounds (VOCs), and SO_2. The air emissions from these activities could have temporary localized air quality impacts. Operation of construction equipment and vehicles supporting construction would also cause a minor temporary increase in GHG emissions. Construction activities would be conducted primarily during daylight hours and are expected to last approximately 18 months. The construction contractors are expected to utilize equipment that have undergone regularly scheduled maintenance as recommended by its manufacturers. Performing routine maintenance, utilizing standard emissions control technology, and minimizing unnecessary vehicle idling could reduce emissions generated during construction. With implementation of fugitive dust control measures, proper maintenance of construction equipment, and adherence to open burning regulations, the temporary air quality impacts would be minimized. Impacts to air quality associated with construction activities would be temporary and minor.

Operational Emissions

An emergency diesel generator would be installed to provide on-site emergency power in the event of a disruption of the primary power supply. The emergency generator would have a capacity of 2,700 kilowatts (kW) and 3,621 horsepower (hp). The emergency generator engine would be certified to meet Tier II emission standards, and ultra-low sulfur diesel would be used for readiness tests, routine maintenance, and in the event that the generator is needed in an emergency.

Operation of the emergency generator would be limited to a maximum of 500 hours per rolling 12-month period for all operating conditions, and 100 hours per rolling 12-month period for operational readiness testing and routine maintenance. Table 3-6 presents the estimated annual emissions based on the maximum operational scenario of 500 hours per year, which were calculated using Tier II emission standards for CO, NO_x, PM_{10}/$PM_{2.5}$, and VOCs; and AP-42 Section 3.4 for SO_2, Pb, and Hazardous Air Pollutants (HAPs).

Table 3-6. Annual Potential-to-Emit

	CO	NO_x	$PM_{10}/PM_{2.5}$	SO_2	VOC	Pb	Single Largest HAP	Total HAPs
Annual Emissions (tons per year)	5.21	9.05	0.30/0.29	<0.01	0.51	<0.01	<0.01	<0.01

Source: U.S. EPA AP-42 Section 3.4; U.S. EPA Tier 2 emission standards, Table 1 of Appendix I to 40 CFR 1039.101; 40 CFR Part 98 Subparts A and C.

Operation of the emergency generator would be subject to 40 CFR Part 60 Subpart III and 40 CFR Part 63 Subpart ZZZ. Because the emergency generator would generate less than 10 tons per year (tpy) of CO, NO_x, $PM_{10}/PM_{2.5}$, SO_2, or VOCs, less than 1.0 tpy of any single HAP, and less than 2.5 tpy of total HAPs, it would not require an air permit to operate based on Mississippi State Regulation 11 Mississippi Administrative Code Part 2, R.2.13 (Exclusions). However, Hope SB would be required to submit a true minor determination permit application to the MDEQ and gain written concurrence that a construction or operating permit is not necessary.

Operation of the Project would also result in a small amount of vehicle emissions associated with vehicle trips for routine and unanticipated maintenance activities. These vehicles may be diesel or gasoline-powered and would generate local emissions of PM, NO_x, CO, VOCs, SO_2, and GHG emissions. These emissions would be minor and would occur over the course of the Project's anticipated 40-year life span, including the 20-year PPA term and the subsequent 20-year period following expiration of the PPA. Impacts to air quality associated with maintenance activities would be negligible.

The construction and operation of the Project is not anticipated to have any long-term adverse impacts on air quality or GHG emissions. The operation of the Project would generate electricity without GHG emissions in contrast to electricity generation from fossil fuel-fired power plants. The nearly emissions-free power generated by the Project would have little noticeable effect at regional or larger scales. It would be a component of the TVA power system and reduce the need for some fossil-fuel-based electricity generation. If the facility were to be decommissioned or closed, a Decommissioning and Closure Plan would be developed and implemented.

3.9.2.3 Reasonably Foreseeable Future Impacts

The potential exists for air emissions associated with construction and operation of the Project to combined with existing or future air emissions in the region. As previously noted, Clay County is in attainment for all National Ambient Air Quality Standards. Further construction of the Project would result in short-term and minor air emissions and operation of the Project would result in long-term and negligible air emissions. However, the operation of the Project is likely to result in net benefits to the air quality of the region by reducing the need for fossil-fuel-based electricity generation. Therefore, the air emissions associated with the Project are unlikely to result in any reasonably foreseeable negative impacts to regional air quality.

Other activities near the Project Area that could affect air quality include agricultural activities associated with planting and harvesting, use of gas-powered machinery to

conduct railroad maintenance such as vegetation removal, emissions from airplanes at the Columbus Air Force Base, and construction associated with other energy generation facilities and transmission lines, MDOT roadwork, and industrial sites, as described in Section 3.1. These activities would result in short-term, minor impacts to air quality due to dust and emissions from equipment with combustion engines. Multiple activities occurring in the same timeframe could lead to greater temporary effects to air quality, which would subside following completion of the activities. Best management practices should be used for dust abatement, and construction activities should be coordinated to limit the use of equipment with combustion engines to the minimum required amounts to accomplish the work. Agricultural and industrial activities and Air Force Base emissions would continue long-term.

3.10 Cultural Resources

The Project's Area of Potential Effects (APE) has been defined as the area of direct ground disturbance and the viewshed within a 0.5-mile buffer surrounding the Project Site. Federal agencies such as the TVA are required by the NHPA and NEPA to consider whether their undertakings will have adverse effects on historic properties (i.e., cultural resources that are listed on or eligible to be listed on the NRHP). The term "undertaking" means any project, activity, or program that is funded under the direct or indirect jurisdiction of a federal agency, or requires a federal license, permit, or federal approval.

An agency may fulfill its statutory obligations under the NHPA by following the process outlined in the implementing regulations, Section 106 of NHPA, at 36 CFR Part 800. Throughout the process, the agency must consult with the appropriate State Historic Preservation Officer (SHPO) and federally recognized Native American tribes that have an interest in the undertaking and should provide public notice of the undertaking.

3.10.1 Affected Environment

NSA conducted Phase I cultural resources field surveys within the Project APE during February to April 2025, July to August 2025, November 2025, and April 2026 to determine the presence of archaeological and historic architectural resources that qualify as historic properties or are eligible within the Mississippi Landmark Program. The Project Site comprised 2,419 acres, of which approximately 2,222 acres were surveyed via shovel testing and pedestrian survey. Approximately 197 acres of APE overlapped areas previously surveyed in 2022-2023 for the Optimist Solar and BESS Project (Cavanaugh and Cavanaugh 2023; Lyons et al. 2022) and in 2023 for the proposed SeverCorr Industrial Park transmission line (D'Angelo 2006; Cavanaugh et al. 2024) and were not re-surveyed. The historic architectural APE encompassed the Project Site plus a 0.5-mile buffer to account for possible viewshed impacts.

NSA excavated 6,700 shovel tests at 30-meter intervals in a gridded array across the archaeological APE, with 192 positive shovel tests (i.e., contained artifacts), or less than 2.9 percent of the total. The pedestrian survey comprised approximately 847 acres of agricultural fields where ground visibility was at least 50 percent. Survey transects within areas of pedestrian survey were at 30-meter intervals. The Phase I survey identified 16 previously unidentified archaeological sites, and 23 isolated finds. In

addition, the survey revisited 16 previously recorded archaeological sites during the Phase I survey. NSA concluded that all 23 of the isolated finds and 27 of the 32 investigated archaeological sites did not meet the criteria for listing in the NRHP, resulting in management recommendations of no further cultural resources investigation at these sites and isolates. Table 3-7 presents information relating to the archaeological sites investigated during the Phase I survey.

Table 3-7. Archaeological Sites within the APE

Site Number	Description	NRHP Recommendation
Previously recorded resources		
22CL0102	Mid-19th to 20th Century Historic Railroad; Also recorded as 025-WPT-5470	Eligible; Criterion A
22CL0103	Mid-19th to 20th Century Historic Railroad; Also recorded as 025-WPT-0821	Eligible; Criterion A
22CL0525	Mississippian/ Historic Indian/ Chickasaw	Not Eligible
22CL0944	Mississippian	Not Eligible
22CL1056	Early-20th Century	Not Eligible
22CL1067	Unknown Precontact, Early-19th to Early-20th Century	Not Eligible
22CL1068*	Late-18th to -Early 20th Century	Not Eligible
22CL1071	19th – 20th Century	Not Eligible
22CL1092	20th Century	Not Eligible
22CL1093	19th – 20th Century	Not Eligible
22CL1104	20th Century	Not Eligible
22CL1109	20th Century	Not Eligible
22CL1111	20th Century	Not Eligible
22CL1121	19th – 20th Century	Not Eligible
22CL1122	19th – 20th Century	Not Eligible
22CL1123	19th – 20th Century	Not Eligible
Newly recorded resources		
22CL1124	Precontact Ceramic and Lithic Scatter with sensitive resource	Eligible; Criterion D
22CL1125	Late 19th – 20th Century	Not Eligible
22CL1126	Late 19th – 20th Century	Not Eligible
22CL1127	Indeterminate Precontact	Not Eligible
22CL1130	Early to Mid-20th Century	Not Eligible
22CL1131	Payne Field--WWI Military Aviation Training Base and Runway (1918 - 1920)	Eligible; Criteria A, C, and D
22CL1137	Woodland/Mississippian; 20th Century	Not Eligible
22CL1138	20th Century	Not Eligible
22CL1139	Indeterminate Precontact; 20th Century	Eligible; Criterion D
22CL1140	20th Century	Not Eligible

Site Number	Description	NRHP Recommendation
22CL1141	Indeterminate Precontact; 20th Century	Not Eligible
22CL1142	20th Century	Not Eligible
22CL1143	19th – 20th Century	Not Eligible
22CL1144	20th Century	Not Eligible
22CL1145	Indeterminate Precontact; 19th - 20th Century	Not Eligible
22CL1146	Indeterminate Precontact; 19th - 20th Century	Not Eligible

* Combined with 22CL1067 during current survey

The historic architecture survey identified 32 newly recorded resources and re-evaluated 10 previously recorded resources. Five resources, all previously recorded, were recommended as NRHP eligible. These five resources include three residences, the Mobile & Ohio Railroad corridor, and the Canton, Aberdeen & Nashville Division of the Illinois Central Railroad corridor (Figure 3-28). Table 3-8 presents information on the recorded resources.

3.10.2 Environmental Consequences

3.10.2.1 No Action Alternative

Under the No Action Alternative, the existing land use would be expected to remain unchanged. Consequently, no significant impacts to cultural resources or adverse effects on historic properties are anticipated, since the site would not be developed for the Project.

3.10.2.2 Proposed Action Alternative

Following the Phase I archaeological survey of the Project Site and upon completion of the artifact analysis, NSA recommended 13 of the 16 newly identified archaeological resources and 14 of the 16 re-visited archaeological resources as not eligible for listing in the NRHP. Three newly identified resources (22CL1124, 22CL1131, and 22CL1139) were recommended as NRHP eligible. Site 22CL1124 is a Mississippian site containing sensitive resources, Site 22CL1131 is the 1917-1920 U.S. Signal Corps Payne Field Advanced Aviation School and the 1937 Civilian Conservation Corps Camp at Payne Field, and Site 22CL1139 is a Mississippian house site with historic artifact scatter. Of the re-visited resources, the Mobile & Ohio Railroad (22CL0102) and the Canton, Aberdeen & Nashville Division of the Illinois Central Railroad (22CL0103) were recommended as NRHP eligible. These two archaeological sites would be avoided through the installation of overhead utility segments. Sites 22CL1124, 22CL1131, and 22CL1139 would be fenced off and avoided for the lifetime of the undertaking. The fenced off areas for these sites also include an avoidance buffer around the sites' perimeters. Pollinator species seeds would be distributed at Site 22CL1124 to help prevent further erosion.

Following the Phase I historic architectural survey of the APE, NSA recommended that none of the 32 newly recorded architectural resources possessed the necessary significance and/or integrity to be considered NRHP eligible. Five previously recorded architectural resources have been recommended as NRHP eligible. Due to the distance and existing landscape elements, such as dense tree coverage, the proposed Project

would not cause a visual intrusion to Sites 025-WPT-0817 or 025-WPT-5095. While the Project will be visible from Site 025-WPT-5096, its setting is no longer pristine and includes newer nearby construction and transmission infrastructure. As a result, it is not anticipated to affect these three properties' immediate setting or introduce visual elements that would diminish these properties' significant characteristics or features.

The Project would be visible from the Canton, Aberdeen & Nashville Division of the Illinois Central Railroad (Site 025-WPT-0821) and the Mobile & Ohio Railroad (Site 025-WPT-5470). Railroad crossings already exist along these railroad corridors within the Project Site and are not inconsistent with transportation infrastructure. The proposed overhead power line crossings would not cause an adverse physical effect to the railroad corridors, nor would the proposed Project affect these properties' continued use. While proposed tree removal along the railroad ROWs would increase the visibility of the proposed Project from the railroad corridors, due to the nature of the properties and changes that have already occurred within the railroad corridors' settings, Project implementation would not constitute an adverse effect. Therefore, the proposed Project would have no adverse effect on the Canton, Aberdeen & Nashville Division of the Illinois Central Railroad or the Mobile & Ohio Railroad.

In compliance with Section 106 of the NHPA, TVA is currently consulting with the MDAH and federally recognized Tribes Coordination with MDAH was started early in the planning process due to the proximity of several historic properties, other known cultural resources, and tribal land patents to the Project Site. Section 106 consultation with MDAH and the federally recognized Tribes is ongoing.

3.10.2.3 Reasonably Foreseeable Future Impacts

Future projects in Table 3-1 within the geographic area of analysis include the development of the adjacent Optimist Solar and BESS Facility would introduce some new visual elements to the viewsheds of the five recommended NRHP-eligible resources. However, these visual elements are not considered to be adverse effects, therefore reasonably foreseeable impacts would be negligible.

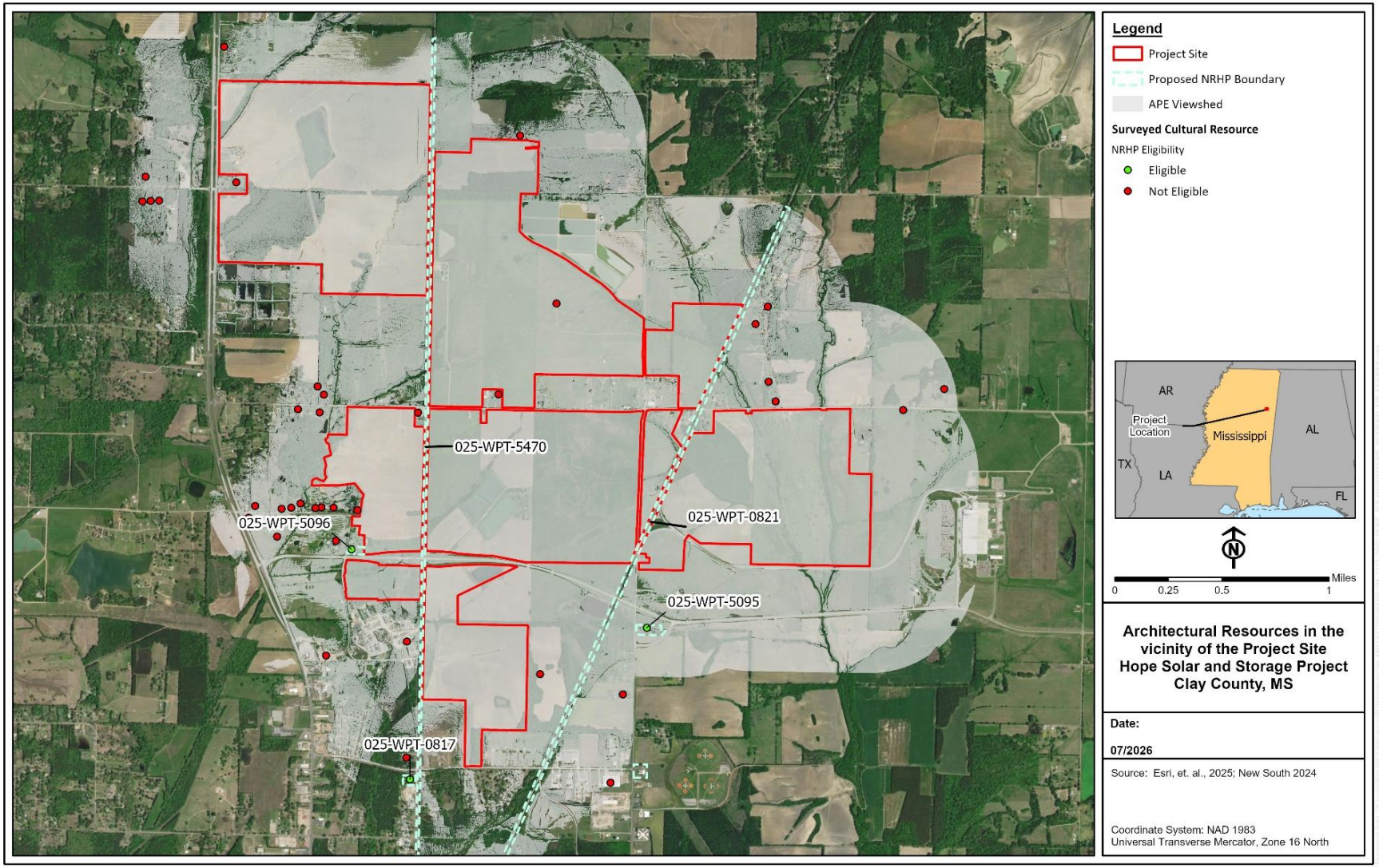

Figure 3-28. Architectural Resources in the Vicinity of the Project Site

Table 3-8. Historic Architectural Resources within the Architecture APE.

Resource Number	Description	Construction Date	NRHP Recommendation
025-WPT-5095	Bungalow	Circa 1920; moved 1955-1972	Eligible; No Effect
025-WPT-5096	Bungalow, Sharecropper House and Agricultural Outbuildings	Circa 1930; circa 1940-1955	Eligible; No Effect
025-WPT-5468	Residence and Agricultural Outbuildings	Circa 1940	Not Eligible
025-WPT-5470	Mobile & Ohio Railroad	Circa 1857	Eligible; No Effect
025-WPT-0816	West Point Substation	Circa 1955	Not Eligible
025-WPT-0817	L-Front Residence	Circa 1925	Eligible; No Effect
025-WPT-0821	Canton, Aberdeen & Nashville Division of the Illinois Central Railroad	Circa 1882	Eligible; No Effect
025-WPT-0823	Agricultural Outbuildings	Circa 1950-1960	Not Eligible
025-WPT-5098	Bungalow and Agricultural Outbuildings	Circa 1915	Not Eligible
025-WPT-5468	Residence and Agricultural Outbuildings	Circa 1940	Not Eligible
HS-101	Collapsed Residence	Circa 1970	Not Eligible
HS-102	Minimal Traditional Residence	Circa 1950; moved 1996-2004	Not Eligible
HS-103	Pyramid Cottage	Circa 1940	Not Eligible
HS-104	Residence	Circa 1922	Not Eligible
HS-105	Side-Gabled Cottage	Circa 1930	Not Eligible
HS-106	Abandoned Residence	Circa 1955-1972	Not Eligible
HS-107	Barn and Silo	Circa 1940-1952	Not Eligible
HS-108	Residence	Circa 1950; moved 2006	Not Eligible
HS-109	Residence	Circa 1940	Not Eligible
HS-110	Linear-with-Clusters Ranch House and Outbuildings	Circa 1960	Not Eligible
HS-111	Residence, A-Frame Building, and Outbuildings	Circa 1968	Not Eligible
HS-112	Vernacular Residence, Alphabet Ranch	Circa1940-1955; circa 1977	Not Eligible
HS-113	Linear Ranch House	Circa 1960	Not Eligible
HS-114	Residence	Circa 1956	Not Eligible
HS-115	Residence	Circa 1960	Not Eligible
HS-116	Municipal Building	Circa 1959-1972	Not Eligible
HS-117	Vernacular Residence	Circa 1930-1955; moved circa 2006	Not Eligible
HS-118	Half-Courtyard Ranch	Circa 1959-1972	Not Eligible
HS-119	Residence and Outbuilding	Circa 1960	Not Eligible

Resource Number	Description	Construction Date	NRHP Recommendation
HS-120	Residence	Circa 1960	Not Eligible
HS-121	Compact Ranch House	Circa 1963	Not Eligible
HS-122	Linear Ranch House	Circa 1961	Not Eligible
HS-123	Split-Level House	Circa 1973	Not Eligible
HS-124	Residence with Addition	Circa 1940; circa 1970-1982	Not Eligible
HS-125	Warehouse Building	Circa 1970	Not Eligible
HS-126	Linear-with-Clusters Ranch House	Circa 1966	Not Eligible
HS-127	Linear Ranch House and Outbuildings	Circa 1960	Not Eligible
HS-130	Linear Ranch House and Outbuildings	Circa 1961	Not Eligible
HS-131	Linear Ranch House and Outbuildings	Circa 1962	Not Eligible
HS-132	Linear Ranch House and Outbuildings	Circa 1960	Not Eligible
HS-133	Classical Revival Style Residence and Outbuildings	Circa 1963	Not Eligible
HS-134	Linear Ranch House and Outbuildings	Circa 1965	Not Eligible

3.11 Utilities

3.11.1 Affected Environment

The Project Site is within a rural agricultural area of Clay County, Mississippi. A portion of the Project Site is within the City of West Point. Available power sources to the county residents within the vicinity of the Project are electricity and natural gas.

3.11.1.1 Telecommunications

Telecommunication services, including phone services and internet in the area are provided by 4-County FastNet (FastNet 2025) and Xfinity (BroadbandNow 2025), as well as mobile carriers (FCC 2025).

3.11.1.2 Electric

The local electricity provider for the area is 4-County Electric Power Association (4EPA), a not-for-profit electric cooperative that purchases power generated by TVA. There are twelve transmission lines in seven ROWs that cross the Project Site (Figure 2-1). Distribution lines are present throughout the Project Site, including along portions of Old Aberdeen Road/Eshman Avenue, Hazelwood Road, and other major and minor roads in the vicinity.

3.11.1.3 Natural Gas

Atmos Energy provides natural gas to Clay County, including the Project Site (Mississippi Public Service Commission 2025). One natural gas pipeline traverses the Project Site running parallel to Eshman Avenue/Old Aberdeen Road until north of Yokohama Boulevard before turning northeast and running parallel to railroad tracks. A second natural gas pipeline crosses Eshman Avenue and traverses diagonally from southeast to northwest through the Project Site (Figure 2-1) (PHMSA 2025).

3.11.1.4 Water and Sewer

Water services in the area are provided by the City of West Point Water and Light (City of West Point 2025b). Because the Project Site is predominantly outside of the city limits, water service is also provided by private wells, and sewer service is provided through private septic systems.

3.11.2 Environmental Consequences

3.11.2.1 No Action Alternative

Under the No Action Alternative, the proposed Project would not be constructed; therefore, no Project-related impacts to utilities would be expected. Agriculture would likely continue to be the primary activity within the Project Site.

3.11.2.2 Proposed Action Alternative

During construction, the Proposed Action would result in the Project arranging for local distribution-level electric service to the construction trailer/future O&M building. Local telecommunications service (e.g., internet) would be established to support construction management activities. The Project would not require natural gas, municipal water, or municipal sewer service during construction. Portable toilet facilities would be available onsite for the duration of construction, and construction water would either be trucked in from a municipal source or obtained from an existing or temporary onsite well. Existing natural gas and electrical infrastructure in the area would not be disturbed, although distribution lines within the Project area that are no longer needed would be terminated by 4EPA and removed. No adverse impacts on local utilities are anticipated during the construction phase.

During operations and maintenance, the Project would maintain a dedicated internal communications system to support supervisory control and data acquisition (SCADA), remote monitoring, equipment health diagnostics, and real-time data exchange with the TVA system. Unlike the construction phase, when temporary commercial telecommunications service may be utilized, the long-term O&M phase would require a reliable, hardened telecommunications connection capable of supporting continuous grid-operations monitoring and coordination.

To support these functions, the Project may require installation of fiber-optic communications service to the substation control house, BESS, and O&M building. Fiber service would facilitate (i) SCADA communications with TVA's control center for real-time telemetry, control signals, alarms, and protective relaying data, and (ii) secure, high-bandwidth communications with Origis Energy's remote operations center for ongoing monitoring, performance analytics, and asset-management activities.

Depending on final design requirements and TVA protocols, this fiber connection could include redundant or diverse routing to enhance system reliability and ensure communication availability during grid disturbances.

Internal communications within the Project – such as between inverters, the BESS, transformer relays, meteorological stations, and internal SCADA servers – would be supported through a combination of fiber-optic cabling and secure wireless links installed as part of the facility's control and protection systems. External commercial telecommunications service beyond the required fiber connection to support SCADA and remote operations would not be required.

Station service for the substation control house and BESS equipment may be provided through several sources depending on final design: (i) power delivered with TVA, (ii) self-generation when operationally feasible, or (iii) an on-site backup generator. Water needed for periodic solar panel washing or other operational activities would be obtained from private wells or delivered via truck. A new water well and septic system may be required for the O&M building and Hope SB would obtain all necessary permits in accordance with Mississippi State Department of Health requirements.

No adverse impacts on local utilities are expected during operations and maintenance of the Project. If the facility were to be decommissioned or closed, a Decommissioning and Closure Plan would be developed and implemented. The plan would include procedures to safely disconnect or remove utility connections and would not affect existing utility infrastructure.

Implementation of the Proposed Action would result in additional energy and capacity available to the TVA system and would, thus, constitute a beneficial impact to electrical services across the region.

3.11.2.3 Reasonably Foreseeable Future Impacts

The Project could cause occasional, short-term adverse impacts to local utilities such as electricity connections when bringing the Project on-line or during routine maintenance of the facility. Thus, the Project, along with other utility projects in the Project vicinity, including other energy generation facilities and transmission line installation and upgrades as described in Section 3.1, may contribute to some minor short-term outages in the Project Area as these facilities are constructed or maintained, but are not expected to have long-term impacts to local utilities. The Proposed Action and other new energy generation facilities, as well as new and upgraded transmission lines, would increase the amount of electricity available to the region and the capacity to transmit power and would contribute additional clean energy to the transmission grid.

3.12 Waste Management

3.12.1 Affected Environment

"Hazardous materials" and "hazardous waste" are substances which, because of their quantity, concentration, or characteristics (physical, chemical, or infectious), may present a significant danger to public health and/or the environment if released. These substances are defined by the Comprehensive Environmental Response,

Compensation, and Liability Act (42. U.S.C. § 9601 *et seq.*) and the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA; 42 U.S.C. § 6901 *et seq.*).

Regulated hazardous waste under RCRA includes any solid, liquid, contained gaseous, or semisolid waste or combination of wastes that exhibit one or more of the hazardous characteristics of ignitability, corrosivity, toxicity, or reactivity, or is listed as a hazardous waste under 40 CFR Part 261. Storage and use of hazardous materials and wastes are regulated by local, state, and federal guidance including the Emergency Planning and Community Right-To-Know Act (42 U.S.C. § 116 *et seq.*) and RCRA. In Mississippi, the MDEQ operates under the authority of the Mississippi Solid Waste Disposal Law (Miss. Code Ann. § 17-17-1 *et seq*.) and implements RCRA Subtitle C at the state level.

A Phase I Environmental Site Assessment was conducted by Tetra Tech in 2025 and 2026, to evaluate the Project Site for the presence, former use, or spillage of hazardous substances or petroleum products, referred to as a recognized environmental condition (Tetra Tech 2025 and 2026d). As part of the Environmental Site Assessment, a search of readily available federal, state, regional, and local agency databases was conducted by Environmental Data Resources, Inc., a subcontracted regulatory research service. Since at least 1952, historical use of the Project Site has primarily consisted of agricultural cropland and pastureland with scattered rural residences and agricultural operations. Based on the Environmental Data Resources, Inc. report and field reconnaissance, no recognized environmental conditions were identified within the Project Site.

Collection and disposal of solid waste in Clay County is conducted by the Golden Triangle Regional Solid Waste Management Authority (Clay County 2026).

3.12.2 Environmental Consequences

3.12.2.1 No Action Alternative

Under the No Action Alternative, the proposed Project would not be constructed; therefore, no Project-related impacts to waste management resources would be expected. Agriculture would likely continue to be the primary land use within the Project Site, and existing waste management conditions would likely remain the same.

3.12.2.2 Proposed Action Alternative

Under the Proposed Action, construction activities would result in the generation of both hazardous and nonhazardous solid waste. The Project would develop and implement a variety of plans and programs to ensure safe handling, storage, and use of hazardous materials. Personnel would be supplied with the appropriate personal protective equipment and be properly trained in the use of personal protective equipment and the handling, use, and cleanup of hazardous and nonhazardous materials. Every effort would be made to minimize the amount of waste generated during and after Project construction.

Soils needed for grading and compaction may be procured from the Project Site or from off-site, as needed. These materials would be offloaded at the designated area for

immediate dispersion. Any materials not suitable for compaction would be removed and loaded for disposal at an acceptable off-site location. Contaminated grading materials are not anticipated; however, if any materials are encountered, they would be disposed of at the nearest appropriate facility in accordance with applicable laws, ordinances, regulations, and standards.

Non-hazardous waste generated during construction would include soiled rags, scrap metal, plastic, insulation, empty containers, cardboard, glass, wood, pallets, broken machine parts, broken electrical materials, and other miscellaneous waste. Because the Phase I Environmental Site Assessments identified no recognized environmental conditions, the demolition of the residential properties including single-family dwellings, barns, and ancillary structures needed for construction of the Project is not anticipated to generate hazardous waste. Construction of the Project is estimated to result in generation of approximately 40 cubic yards of construction debris and material waste each week (during heavier periods of construction). This material would be accumulated in a construction debris container and hauled off monthly to the appropriate refuse and/or recycling services. To the extent practicable, waste materials would be recycled. Disposal containers, such as dumpsters or roll-off containers, would be obtained from an appropriate waste disposal contractor. Applicable regulatory requirements would be followed in the disposal of these materials. Designated site personnel would conduct daily, weekly, and monthly inspections, cleanup, proper labeling of containers, proper storage and disposal of debris and refuse. The amounts of waste generated and removed from the Project would be recorded.

Possible hazardous waste generated during construction would be paint, primer, thinners, and solvents. Hazardous materials may be stored onsite during construction and would be stored in appropriate containers. Storage areas would have secondary containment, as necessary, in case of vessel failure. BMPs would be implemented and maintained to contain potential spills. Safety Data Sheets would be kept onsite and be readily available to personnel. A security fence would be installed and maintained during construction to keep unauthorized personnel from accessing the Project.

Additionally, minimal amounts of petroleum fuel, diesel, oil, and lubricants would be kept on site for equipment during construction. Fueling of construction vehicles and other mobile equipment would occur primarily in the construction laydown areas. Special procedures would be identified to minimize the potential for fuel spills, and spill control kits would be carried on refueling vehicles. Fuel for construction equipment could be provided by a fuel truck or could be stored in aboveground double-walled storage tanks with built-in containment. The volume of each individual tank would not exceed 1,320 gallons, the threshold above which a SPCC Plan would be required (40 CFR 112). However, because there would be fuel in reserve for diesel generators, in addition to the volume of oil contained in the main electrical transformers, the total volume of regulated materials may exceed the threshold. In that case, an SPCC Plan would be prepared, and the Project would fall under USEPA’s SPCC requirements of “oil-filled operational equipment” (40 CFR 112.7(k)).

The SPCC Plan, if required, would detail the procedures, methods, and equipment necessary to prevent spills or discharges from reaching navigable waters. The SPCC Plan would need to be maintained onsite and updated, as needed. If necessary, a State of Mississippi hazardous waste generator identification number would be obtained by Hope SB or its designated contractor, prior to generating any hazardous waste. Regardless of amount, each spill would be cleaned up and a cleanup report completed within 48 hours. All spills would be reported to MDEQ's Emergency Response Division. Copies of any spill and cleanup reports would be kept on site.

With implementation of appropriate BMPs, no adverse effects are anticipated from waste management activities associated with construction of the Proposed Action.

Under the Proposed Action, operations and maintenance activities would result in the generation of both hazardous and nonhazardous solid wastes. Non-hazardous wastes and quantities generated during operations and maintenance are shown in Table 3-9. Additional materials that would be present in small quantities would be janitorial supplies, paint, office supplies, laboratory supplies, degreaser, herbicides, residential grade pesticides, gasoline, hydraulic fluid, propane, air-conditioning fluids. Flammable materials would be kept in a flammable material cabinet(s). Spill kits would be located near these storage areas, as spills of small quantities would not be considered to have a significant environmental impact. Non-hazardous waste collection and disposal activities would be conducted similar to construction and in accordance with applicable regulatory standards and requirements to minimize health and safety effects.

Table 3-9. Operational Waste Streams and Management Methods

Waste Stream	Origin	Estimated Volume	Estimated Frequency of Generation	Waste Management Method	
				Onsite	Offsite
Used hydraulic fluid, oils, and grease –petroleum-related wastes	Tracker drives, hydraulic equipment	1,000 gallons per year	Intermittent	Accumulate for <90 days	Recycle
Oily rags, oil absorbent, and oil filters – petroleum-related wastes	Various	One 55-gallon drum per month	Intermittent	Accumulate for <90 days	Send offsite for recovery or disposed at Class I landfill

During operation and maintenance, the Project has potential to produce hazardous solid and liquid wastes, such as hydraulic fluids, greases, used oils, fluorescent bulbs, air conditioning fluids (chlorofluorocarbons), used cleaning solutions, and used batteries. Hazardous waste collection and disposal activities would be conducted similar to construction. The SPCC Plan, if required, would be updated to detail the procedures, methods, and equipment necessary to prevent, clean up, and report spills during operations and maintenance. Spills would continue to be reported to MDEQ's Emergency Response Division.

With implementation of appropriate BMPs, no adverse effects are anticipated from waste management activities associated with operations and maintenance of the Proposed Action.

Typically, at the end of a solar facility's life, the entire facility is decommissioned, and the land is returned to its previous condition. Decommissioning would include the removal of aboveground and below-ground equipment, electrical wiring, concrete pads, storage areas, and additional appurtenances. During decommissioning, the Project has potential to produce hazardous wastes such as diesel fuel, hydraulic fluids, lubricant oil, solar panels, and batteries used in the Project BESS.

The solar panels could be considered hazardous waste under RCRA when discarded if they exhibit the characteristic of toxicity (USEPA 2025d). Regulatory exclusions may apply to solar panels that are recycled. Hope SB would work to locate a facility to recycle the solar panels. Materials that cannot be recycled would be disposed of at appropriate facilities in accordance with federal, state, and local laws and regulations.

Some batteries exhibit hazardous characteristics and would be considered hazardous waste when disposed. RCRA regulations for managing batteries characterized as hazardous waste would apply to energy storage system batteries. Hope SB has not selected the type of BESS for the Project. Most energy storage systems throughout the U.S. that are 1 MW or greater in capacity use Li-ion batteries. Li-ion batteries have a typical lifespan of 15 years (Dubarry et al. 2021), at which point they would only hold approximately 70 percent of their initial amount of energy. Hope SB would decide if replacing batteries to maintain the storage capacity would be beneficial over the operating life of the Project. When discarded, energy storage system batteries (other than lead acid batteries) that exhibit hazardous characteristics would be managed under federal and Mississippi universal waste requirements (40 CFR 273, Mississippi Administrative Code Rule 11-3-1.21).

With implementation of appropriate BMPs, no adverse effects are anticipated from waste management activities associated with decommissioning of the Project.

3.12.2.3 Reasonably Foreseeable Future Impacts

Past, present, and RFFAs as described in Section 3.1, together with the Proposed Action, would create new waste streams within the area. Storage and use of liquid materials in the form of petroleum-based oils and fuels, and generation of liquid and solid wastes in the form of used oil, construction debris, packing materials, and general construction waste would also occur. Overall, the Project effects, likely similar to the past, present, and RFFAs, would be mitigated through implementation of BMPs for waste and wastewater, SPCC plans, if applicable, and hazardous material management plans. With proper planning and implementation of BMPs, adverse reasonably foreseeable environmental trends and planned actions from the Project in relation to waste management would not occur.

3.13 Public and Occupational Health and Safety

3.13.1 Affected Environment

The properties that make up the Project Site are primarily privately owned. The Clay County Economic District owns one parcel (approximately 28 acres) and an additional 8 acres are accounted for by the Clay County ROW within the Project Site. The Project Site is currently being used for agriculture.

Local emergency services in Clay County include fire protection, law enforcement, emergency medical, and emergency management response. Most Project activities would occur at the PV array area and emergency response times were calculated from West Point to the array location. Fire protection services would be provided by the two stations of the West Point Fire Department, located approximately 0.7 mile (2 minutes) southwest and 0.3 mile (6 minutes) south from the Project Site and the Clay County Volunteer Fire Department, located approximately 1.6 miles (5 minutes) south from the Project Site. Law enforcement services would be provided by the West Point Police Department and the Clay County Sheriff's Department, located approximately 2.0 miles (5 minutes) south and 1.9 miles (5 minutes) south, respectively, from the Project Site. The North Mississippi Medical Center is the closest hospital, located approximately 1.4 miles southwest (3 minutes) of the Project Site. The closest urgent care facility is the West Point Medical Urgent Care Clinic, located approximately 1.4 miles southwest (3 minutes) from the Project Site. The Mississippi Emergency Management Agency would coordinate with state and local (Clay County Emergency Management) agencies in the event of hazardous materials release.

3.13.2 Environmental Consequences

3.13.2.1 No Action Alternative

Under the No Action Alternative, the proposed Project would not be constructed; therefore, no Project related impacts on public and occupational health and safety would be expected. Agriculture would likely continue to be the primary land use within the Project Site, and existing health and safety issues would likely remain the same.

3.13.2.2 Proposed Action Alternative

During construction, the workers on the Project Site would have an increased safety risk. However, because construction work has known hazards, standard practice is for contractors to establish and maintain health and safety plans in compliance with Occupational Safety and Health Administration (OSHA) regulations. OSHA standards would be implemented to maintain health and safety on all construction sites. BMPs would also be instituted for site safety management to minimize potential risks to construction workers. All personnel would be required to complete health and safety training prior to work commencing on the Project. Training topics may include lockout and tag out procedures, site housekeeping, personal protective equipment, safety inspections, use of specific equipment, stop-work procedures, and plans to identify and resolve potential safety hazards.

During construction and operation of the Project, fuel would be stored onsite. An SPCC plan, if required, would be developed, implemented, and a copy kept onsite to provide

detailed instructions for potential spills. Hazardous materials would be stored and secured properly on site. Any spills would be contained within the Project Site and would not pose a threat to the general public. Emergency response for potential incidents at the Project Site would be provided by local and state emergency services (Section 3.13.1).

Potential public health and safety hazards could result from increased traffic on local roadways due to construction of the Project. Residential areas along roadways used by construction traffic to access the Project Site would experience increased commercial and industrial traffic. Awareness of these residences and establishment of traffic procedures to minimize potential safety concerns would be addressed in the health and safety plans followed by construction contractor(s).

The increased safety risk occurs during construction, which would be completed within approximately 18 months; the risks that have been identified are known, manageable risks.

During operation, solar PV systems generate electromagnetic fields (EMF). However, according to a study published by North Carolina State University (2017), solar PV technologies and solar inverters do not pose significant human health risks. EMF produced by electricity has enough energy to produce heat but not enough to remove electrons from a molecule or damage DNA. Distance from the EMF source, such as provided by the solar panel setbacks and security fencing proposed to surround separate portions of the Project, renders the exposure to EMF insignificant and, therefore, not harmful to human health. The strength of the EMF present at the perimeter of a solar facility is substantially lower than the typical exposures to EMF from household sources such as microwave ovens, computers, and cell phones (NIEHS 2024).

Public health and safety hazards could result from a fire during operation of the BESS. If a fire were to occur, flammable and toxic gases could be released. The BESS enclosures or containers would be furnished with fire suppression systems. Design of the BESS to minimize the potential for thermal runaway (i.e., overheating of the batteries) along with proper storage, handling and ventilation would be employed to reduce the risk of potential hazards (ACPA 2025).

Overall, impacts to public health and safety associated with construction and operation of the Proposed Action would be considered temporary and minor. With implementation of appropriate OSHA regulations, no adverse effects are anticipated public and occupational health and safety associated with decommissioning of the Project.

3.13.2.3 Reasonably Foreseeable Future Impacts

As with the past, present, and RFFAs, as described in Section 3.1, the Project would comply with OSHA regulations and health and safety plans to prevent or minimize the negative effects of worker-related accidents. The Project would also comply with SPCC plans (if required), hazardous material plans, and other waste management BMPs to avoid or minimize related health and safety issues. With proper planning and

implementation of BMPs, impacts from the Project and RFFAs in relation to public health and safety would not occur.

3.14 Transportation

3.14.1 Affected Environment

3.14.1.1 Roads

The area considered for transportation for the Project extends from the city of West Point in Clay County north on US-45 ALT and eastward approaching the city of Columbus in Lowndes County, approximately 14 miles southeast of the Project Site (see Figure 2-1). Major north-south highways in this area are US-45 ALT, which passes through West Point and US-45, which passes through Columbus. Mississippi Highway 50 (SR-50) traverses the area east to west and has intersections with US-45 ALT and US-45.

As shown on Figure 1-1, the western boundary of the Project Site is adjacent to the north-south US-45 ALT. US-45 ALT has intersections with Hazelwood Road, Yokohama Boulevard, East Industrial Access Road, and (SR-50). As shown in Figure 2-1, northern portions of the Project Site can be accessed from Hazelwood Road, central and southern sections from Yokohama Boulevard, and southern portions from East Industrial Access Road. SR-50 runs east-west through West Point and lies south of the Project Site. SR-50 has an intersection with Eshman Avenue, which becomes Old Aberdeen Road north of Yokohama Boulevard. East and west portions of the Project Site can be accessed by traveling north on Eshman Avenue/Old Aberdeen Road from SR-50. The northwesternmost portions of the Project Site can be reached by continuing north on US-45 ALT; the parcels east of the Canadian Pacific-Kansas City railroad can be accessed by traveling north on Old Aberdeen Road to Hazelwood Road and then continuing north on Payne Field Road and turning west onto Johnny Thomas Road. All are two-lane roads with the exception of US-45 ALT, which is a four-lane highway. The roads are paved with the exception of some sections of TVA Road that access the West Point Substation and Johnny Thomas Road, providing access to northern portions of the Project Site from Payne Field Road. In addition, a few private unpaved roads traverse the Project Site.

3.14.1.2 Road Traffic

Existing traffic volumes along several of the area's roadways were determined using existing MDOT 2024 Average Annual Daily Traffic (AADT) counts. The 2024 AADT count for select MDOT stations in the vicinity of the Project Site are presented in Table 3-10.

Table 3-10. Traffic Counts for Roadways at and near the Project Site.

Roadway	Count Site ID	2024 Average Annual Daily Traffic
US-45 ALT (at Hazelwood Road intersection)	130100	17,000
US-45 ALT In West Point	130090	22,000
Hazelwood Road	130613	310

Roadway	Count Site ID	2024 Average Annual Daily Traffic
Yokohama Boulevard (at Old Aberdeen Road)	138000	710
East Industrial Access Road	135317	450
SR-50 (west of Eshman Avenue)	130130	6,400
Eshman Avenue	135225	2,700
Old Aberdeen Road	130730	940
Payne Field Road	130733	600

Source: MDOT 2024

3.14.1.3 Rail and Air Traffic

Canadian Pacific-Kansas City (CPKC) rail lines lie north and northeast of West Point and converge in West Point before continuing southwest. The rail line from the north transects the Project Site and passes along the east side of TVA's West Point Substation (see Figure 2-1). The rail line that approaches West Point from the northeast crosses the Project Site near Old Aberdeen Road/Eshman Ave intersection with Yokohama Blvd. There is also a rail spur to the Yokohama Tire Manufacturing plant originating from the CPKC northeast branch rail. The Burlington Northern Santa Fe rail line is east of the Project Site and provides service to Columbus from the north. Short line railroads also serve areas outside of Columbus, but do not serve the Project Site (MDOT 2020).

The nearest airport is McCharen Field, an unattended general aviation airport open to the public on the south side of West Point approximately 3 miles from the closest portion of the Project Site (AirNav 2025). Approximately 9 miles east of the Project Site is a military airfield at Columbus Air Force Base. The Golden Triangle Regional Airport is located approximately 12 miles south of the Project Site. This airport provides commercial flights to regional and major airports.

3.14.1.4 Waterway Traffic

A port for barge traffic for agricultural products and general cargo is approximately 8 miles southeast of the Project Site on the Tennessee-Tombigbee Waterway. The Raymond D. Lucas Memorial Port is on Old Highway 50 which intersects SR-50 (MDOT 2025).

3.14.2 Environmental Consequences

3.14.2.1 No Action Alternative

Under the No Action Alternative, the Project would not be constructed; therefore, no Project-related transportation impacts would result. The current levels of traffic and conditions of use would continue.

3.14.2.2 Proposed Action Alternative

Construction activities would take approximately 18 months using crews totaling approximately 350 to 600 workers during the peak phases of construction. Construction activities would be conducted five days a week (Monday through Friday) and generally during daylight hours, though limited evening/night hours could be required in order to meet the construction schedule. Commuting traffic would peak at the beginning and end

of the construction day. Hope SB anticipates that shipments to/from the Project Site would be by truck and would occur throughout the workday. Construction materials and waste hauling vehicles during peak construction would be 30 to 40 semi-trailers per day.

As discussed above, the Project Site is accessible from various local roads including US-45 ALT, Hazelwood Road, Yokohama Boulevard, East Industrial Access Road, Eshman Avenue, Old Aberdeen Road, Johnny Thomas Road, and Payne Field Road. Interior roads would be constructed and maintained within the Project Site. Access to the northwesternmost portion of the Project Site would be provided through a new access point off US-45 ALT. Access points for interior roads on the northern portions of the Project Site would be from Hazelwood Road, Payne Field Road, and Johnny Thomas Road. Access to portions south of Yokohama Boulevard would be provided through some combination of (1) one or more new access points off Yokohama Boulevard, (2) one access point from East Industrial Access Road, and (3) potentially one or more access points from Eshman Avenue. Hope SB would obtain the appropriate driveway/access road permits from Clay County and from West Point for any within the city limits.

Construction materials and workers are expected to arrive at the Project Site by US-45 ALT and then travel east on one of the three local roadways, Hazelwood Road, Yokohama Boulevard, or East Industrial Access Road. Alternatively, construction materials and workers could utilize SR-50 to access the area and travel north on Eshman Avenue/Old Aberdeen Road. The AADT counts for US-45 ALT were 17,000 and 22,000 north and south of the Project Site, respectively. SR-50 and Eshman Avenue counts were 6,400 and 2,700, respectively.

Assuming the maximum worker number of 600 and 40 material shipments per day, given the number of access routes for the Project Site and the existing volume of traffic the additional vehicles during the peak hours during peak construction activities would not be noticeable on US-45 ALT or SR-50 but could cause traffic congestion along local roads such as Hazelwood Road during peak commuting hours. These peak conditions would exist for short periods. Should substantial traffic congestion occur, Hope SB would implement staggered work shifts during daylight hours to assist traffic flow near Project Site access locations. Implementation of such mitigation measures would minimize potential adverse impacts to traffic and transportation to negligible levels.

In addition to traffic impacts, heavy shipping loads can adversely affect roadway infrastructure. Clay County's heavy-haul ordinance (Clay County 2012, 2014) was enacted to protect secondary county roads from damage arising from the repetitive hauling of heavy loads associated with specific, limited-duration contract projects. Under the ordinance, a permit is required for movements on county roads when gross vehicle weights exceed 50,000 pounds. The delivery and installation of oversized PV modules, racking, inverters, or similar renewable energy equipment may generate shipments that meet or exceed this threshold; consequently, Hope SB or its contractors should anticipate that a heavy-haul permit may be required and must coordinate with Clay County Public Works to obtain any necessary permits and route approvals prior to hauling.

In addition, the permit applicant may be required to install culverts and other roadway infrastructure, and the applicant assumes liability for damage to public roads. Abiding federal, state, and local heavy loads limits and the Clay County heavy loads ordinance would minimize the impacts on transportation infrastructure. Further, under the Clay County heavy loads ordinance, Hope SB would be responsible for repairing damage to local roads. Given compliance with heavy haul limits and repair to local roads in accordance with the Clay County ordinance, impacts on transportation infrastructure would be minimal.

Layout of the Project would also involve three overhead collection line crossings of the existing CPKC rail lines. Overhead collection lines installed on new utility poles mounted on either side of the railroad ROW avoid disturbance of the rail bed, and the installation would be coordinated with the railroad as necessary to minimize any disruption to freight operations along the rail route.

The Project would include several internal access roads to support both construction and long-term operations. One access road would cross the north–south CPKC rail line within the Project Site using an existing farm road crossing. An existing rail crossing on Old Aberdeen Road may also be used for construction vehicle access; if necessary, this crossing would be upgraded to accommodate construction equipment, which may require limited disturbance of the rail bed. All new or upgraded rail crossings would be designed in accordance with CPKC specifications, and construction activities would be closely coordinated with CPKC to minimize disruptions to freight movement. Given this coordination and the short duration of construction activities at the rail corridors, impacts on rail transportation – including service to the Tire Plant – are expected to be minor.

Hope SB anticipates that construction materials and equipment would be transported by truck. Potentially, some construction materials and equipment could be shipped by rail to City of West Point, Columbus, or to the Yokohama spur and then transferred to trucks for delivery to the Project Site. Use of rail, if any, could result in additional railcars being added to existing freight trains but would not be expected to impact rail freight operations.

The general aviation airfield at McCharen Field Airport, does support transient air traffic and could be used by workers and visitors during construction or operations. However, the use of private air carriers rather than common carriers would be infrequent if at all. There would be no transportation-related impacts to McCharen Field. The Golden Triangle Regional Airport provides common carrier commercial flights and could be used by workers and visitors during construction or operations. Any increase in the airport's passenger traffic attributable to the Project would be minor and beneficial to the regional airport.

The Raymond D. Lucas Memorial Port could potentially be used for receiving barge shipments of construction materials and equipment that are subsequently transferred to trucks for delivery to the Project Site. Barge shipments to support construction of the Project, if any, are not expected to have an effect on barge freight operations at the Port or the Tennessee-Tombigbee Waterway.

Once in operation, the Hope Solar and BESS Facility would have approximately 6 to 12 full-time operations and maintenance workers and have negligible impacts on traffic conditions or transportation infrastructure. If the facility were to be decommissioned or closed, a Decommissioning and Closure Plan would be developed and implemented. Impacts on traffic conditions or transportation infrastructure from decommissioning are expected to be minimal.

3.14.2.3 Reasonably Foreseeable Future Impacts

As discussed above, the proposed Project Site is bordered and intersected by existing local roads and railroads, and there are multiple routes of access to the Project Site. To the west of the Project Site is the Prairie Belt Powersite. Additional development within the Prairie Belt Powersite is reasonably foreseeable. Other reasonably foreseeable projects, as described in Section 3.1, include transmission line installation and upgrades, construction of other energy generation facilities and at Columbus Air Force Base, MDOT road and bridge work, and agricultural activities associated with planting and harvesting. If construction associated with these other projects takes place at the same time as the Proposed Action, or agricultural activities require farm vehicle use of local roads, it could result in traffic congestion. Additional construction workers commuting to the Project Site would also add to traffic congestion. The severity of the impacts would depend on the distance between the construction/development activities and the timing and level of construction activities. Cumulative transportation impacts from construction activities would be short-term, most obvious during peak commuting hours, and would subside after the approximate 18-month construction period is complete.

3.15 Socioeconomics and Demographics

3.15.1 Affected Environment

3.15.1.1 Population and Demographics

Clay County is part of the three-county “Golden Triangle” region (Clay, Lowndes, and Oktibbeha counties), which corresponds to TVA’s region of potential socioeconomic influence for the Project. Clay County is identified as the primary area of impact for analysis; however, data for Lowndes and Oktibbeha counties, City of West Point, and Mississippi are included for comparison.

According to the U.S. Census Bureau, Clay County had a population of 18,213 in 2024, reflecting an 11.7 percent decline since 2010 (USCB 2020, 2024). City of West Point accounted for 10,105 residents in 2020, or more than half of the county’s population. Clay County has experienced a larger long-term population decline than Lowndes County, Oktibbeha County, and Mississippi overall. Lowndes County declined by 4.3 percent between 2010 and 2024, while Mississippi’s statewide population decreased by 0.8 percent over the same period (USCB 2020, 2024). In contrast, Oktibbeha County increased by 9.0 percent from 2010 to 2024. Within Clay County, City of West Point experienced a 13.7 percent decline during the same timeframe (USCB 2020, 2024). These population changes are summarized in Table 3-11.

Clay County and the broader Golden Triangle region include small urban centers such as City of West Point that serve as local employment and service hubs. The area surrounding the Project Site is characterized by dispersed residential development and agricultural land uses.

Table 3-11. Population Trends in the Project Vicinity and Mississippi

Geography	2010 Population	2020 Population	2024 Population Estimate	% Change (2010 –2024)
Mississippi	2,967,297	2,961,279	2,943,045	-0.8
Clay County	20,634	18,636	18,213	-11.7
Lowndes County	59,779	58,879	57,210	-4.3
Oktibbeha County	47,671	51,788	51,965	+9.0
City of West Point	11,309	10,105	9,758	-13.7

Sources: USCB 2010, 2020, 2024.

Black or African American residents make up 60.1 percent of the county's population, compared to 35.8 percent statewide. In City of West Point, Black or African American residents account for 65.6 percent of the population, the highest share within the primary area of impact. Hispanic or Latino residents represent 0.2 percent of the population in Clay County and 0.1 percent in the City of West Point, while Asian residents comprise 0.3 percent and 0.6 percent of the populations, respectively. The racial and ethnic composition of City of West Point, surrounding counties, and Mississippi is summarized in Table 3-12.

Table 3-12. Racial and Ethnic Composition in the Project Vicinity and Mississippi

Geography	White (NH) %	Black / African American (NH) %	Hispanic / Latino %	Asian (NH)%	Some Other Race / Multiracial % (NH)	Total Minority %
Mississippi	54.9	35.8	4.0	1.2	3.6	45.1
Clay County	37.9	60.1	0.2	0.3	1.5	62.1
Lowndes County	49.8	43.8	2.2	1.0	3.2	50.2
Oktibbeha County	55.2	36.1	2.4	2.9	3.3	44.8
City of West Point	32.9	65.6	0.1	0.6	0.9	67.1

Sources: USCB 2023a
Note: Race categories (White, Black/African American, Asian, Some Other Race/Multiracial) represent non-Hispanic (NH) populations; Hispanic/Latino is shown separately. Some Other Race / Multiracial' includes respondents identifying as American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, Some Other Race, or Two or More Races, all non-Hispanic.

Clay County and City of West Point have higher poverty levels than the state average and Lowndes County. Oktibbeha County's poverty rates are even higher, likely influenced by the large student population in and around Mississippi State University. Poverty indicators for City of West Point, surrounding counties, and Mississippi are summarized in Table 3-13.

Table 3-13. Poverty Levels in the Project Vicinity and Mississippi

Geography	Persons Below Poverty %	Households Below Poverty %
Mississippi	17.5	16.8
Clay County	23.9	22.4
Lowndes County	14.7	14.5
Oktibbeha County	33.9	30.5
City of West Point	25.3	24.2

Sources: USCB 2023b, 2023c.

Educational attainment varies across City of West Point and the surrounding counties. Educational attainment indicators for City of West Point, surrounding counties, and Mississippi are summarized in Table 3-14.

Table 3-14. Educational Attainment in the Project Vicinity and Mississippi

Geography	High School Diploma or Higher %	Bachelor's Degree or Higher %
Mississippi	86.6	24.2
Clay County	82.8	18.2
Lowndes County	88.1	26.6
Oktibbeha County	91.0	45.8
City of West Point	80.4	15.4

Sources: USCB 2023b, 2023c.
Note: Educational attainment values reflect the percentage of the population age 25 and over with a high school diploma or higher and bachelor's degree or higher.

3.15.1.2 Employment and Income

Clay County's labor force totals 7,532 persons, and its unemployment rate of 6.7 percent is slightly higher than the statewide rate. In City of West Point, the unemployment rate is 10.4 percent, the highest within the primary area of impact. Employment and income indicators for City of West Point, surrounding counties, and Mississippi are summarized in In Clay County, the largest three employment industry categories are educational services, health care, and social assistance, which account for 21.5 percent of all jobs, followed by manufacturing at 19.5 percent and retail trade at 11.7 percent. City of West Point's employment profile closely aligns with Clay County, with manufacturing accounting for 19.7 percent of local jobs, educational services, health care, and social assistance accounting for 18.1 percent, and retail trade accounting for 14.9 percent (USCB 2023b). Employment indicators for City of West Point, surrounding counties, and Mississippi are summarized in Table 3-16.

Table 3-15.

In Clay County, the largest three employment industry categories are educational services, health care, and social assistance, which account for 21.5 percent of all jobs, followed by manufacturing at 19.5 percent and retail trade at 11.7 percent. City of West Point's employment profile closely aligns with Clay County, with manufacturing accounting for 19.7 percent of local jobs, educational services, health care, and social assistance accounting for 18.1 percent, and retail trade accounting for 14.9 percent

(USCB 2023b). Employment indicators for City of West Point, surrounding counties, and Mississippi are summarized in Table 3-16.

Table 3-15. Employment and Income in the Project Vicinity and Mississippi

Geography	Civilian Labor Force	Unemployment Rate %	Median Household Income ($)	Per Capita Income ($)
Mississippi	1,326,878	6.0	54,915	30,529
Clay County	7,532	6.7	39,904	24,734
Lowndes County	25,176	6.7	54,460	30,771
Oktibbeha County	23,876	6.1	43,482	28,906
City of West Point	3,872	10.4	35,055	22,496

Sources: USCB 2023b.
Note: Civilian labor force includes persons age 16 and older who are employed or actively seeking employment. Unemployment rate is the percentage of the civilian labor force that is unemployed. Median household income and per capita income are in 2023 inflation-adjusted dollars.

Table 3-16. Top Employment Industries in the Project Vicinity and Mississippi

Geography	Highest Industry %	Second Highest %	Third Highest %
Mississippi	E (25.1)	M (13.3)	R (11.4)
Clay County	E (21.5)	M (19.5)	R (11.7)
Lowndes County	E (24.5)	M (15.9)	R (12.2)
Oktibbeha County	E (34.6)	M (12.3)	R (11.5)
City of West Point	M (19.7)	E (18.1)	R (14.9)

Sources: USCB 2023b.
Note: E = Educational services, health care, and social assistance; M = Manufacturing; R = Retail trade. Percentages reflect the employed civilian labor force age 16 and over by industry sector. Categories are based on North American Industry Classification System groupings.

Clay County includes 157,471 acres of farmland, representing 60.0 percent of all county land. The county has 370 farms with an average size of 426 acres, and agricultural product sales totaled approximately $49.8 million in 2022. Lowndes County contains 105,787 acres of farmland, or 32.7 percent of county land, with 333 farms averaging 318 acres and the largest reported agricultural production value in the surrounding counties at approximately $296.8 million. Oktibbeha County includes 100,927 acres of farmland, or 34.4 percent of all county land, with 375 farms averaging 269 acres and approximately $21.3 million in agricultural product sales (USDA 2022, 2024). Data are not reported for West Point in the Census of Agriculture, which compiles data at the county level. Agricultural characteristics for the surrounding counties and the state are summarized in Table 3-17.

Table 3-17. Agricultural Characteristics in the Project Vicinity and Mississippi

Geography	Total Farmland Acres	% of County Land	Number of Farms	Average Farm Size (acres)	Market Value of Products ($)
Mississippi	10,251,497	34.1%	31,290	328	8,247,775,000
Clay County	157,471	60.0%	370	426	49,816,000
Lowndes County	105,787	32.7%	333	318	296,792,000

Geography	Total Farmland Acres	% of County Land	Number of Farms	Average Farm Size (acres)	Market Value of Products ($)
Oktibbeha County	100,927	34.4%	375	269	21,290,000
West Point	—	—	—	—	—

Sources: USDA 2022; USDA 2024.
Note: "% of County Land" is calculated by dividing farmland acreage by total county land area. Data for incorporated cities are not reported separately in the Census of Agriculture.
"—" indicates that no data is available.

3.15.2 Environmental Consequences

3.15.2.1 No Action Alternative

Under the No Action Alternative, no construction- or operations-related employment would occur, and no additional spending or tax revenue would be generated in Clay County, City of West Point, or the surrounding counties. Existing land uses within the Project Site would continue, and socioeconomic conditions in the primary area of impact would remain consistent with prevailing regional and statewide trends. As a result, the No Action Alternative would have no direct or indirect effects on population, employment, income, housing, or public services.

3.15.2.2 Proposed Action Alternative

Construction of the Project would result in short-term socioeconomic benefits in Clay County and nearby communities. Construction would require a temporary workforce ranging from approximately 350 to 600 workers over the 18-month construction period, with employment levels reaching the upper end of this range during peak phases of activity. Many construction positions are expected to be filled by workers residing in Clay, Lowndes, and Oktibbeha counties. Construction activity would increase demand for goods and services at local businesses, including restaurants, lodging establishments, and retail stores. Sales and use tax revenues would also increase during construction due to the purchase of construction materials and equipment, resulting in a one-time fiscal benefit to Clay County and the State of Mississippi.

Following construction, the Project operation would support approximately 6 to 12 full-time operations and maintenance positions. These long-term positions, while modest in number, would provide steady employment and income within the region. Once operational, the Project would contribute recurring property tax revenue to Clay County, representing an ongoing economic benefit to county services and infrastructure. Operational expenditures are expected to be limited and would not generate substantial ongoing sales and use tax revenue.

Most of the construction workforce is expected to originate within the Golden Triangle region; therefore, only a small number of non-local workers may temporarily seek lodging in City of West Point or surrounding municipalities. Available lodging and rental housing in the region are sufficient to accommodate these workers, and no impacts on housing availability or affordability are anticipated. Construction and operation of the Project are not expected to place measurable demands on local utilities, emergency services, educational facilities, or other public services (see Sections 3.11 and 3.13). Economic benefits associated with both temporary and long-term employment, local spending, and property tax revenue would be shared broadly, and no adverse effects on employment, income, or housing are expected.

The conversion of 1,429 acres of agricultural land within the Project Site to solar use would represent a relatively small portion (approximately 1 percent) of total farmland in Clay County and would not meaningfully affect the county's overall agricultural output or market value.

3.15.2.3 Reasonably Foreseeable Future Impacts

When considered with other ongoing or reasonably foreseeable future renewable energy or infrastructure projects in the region, the Proposed Action Alternative would contribute to minor cumulative socioeconomic benefits, including temporary construction employment, limited long-term operations employment, and additional property tax revenue. These cumulative benefits would not alter long-term population, income, or poverty trends in Clay County or City of West Point, which continue to reflect broader economic conditions in northeastern Mississippi. No cumulative adverse impacts on employment, housing, or community services are anticipated.

Agricultural land conversion associated with solar development in the region would represent a relatively small share of total agricultural acreage and is not expected to meaningfully affect the regional agricultural economy. No irreversible or irretrievable commitments of socioeconomic resources would occur.

3.16 Unavoidable Adverse Environmental Impacts

Unavoidable adverse environmental impacts are the remaining, significant negative effects on people or the environment that persist after all feasible mitigation measures and BMPs have been applied. The Proposed Action could cause some unavoidable adverse environmental impacts. After implementing the mitigation measures and BMPs described in Section 2.5, certain adverse environmental impacts may remain and therefore could be considered unavoidable. These residual impacts are limited in scope and duration where feasible and considered minor, and would be minimized through design, construction controls, operational procedures, monitoring, and decommissioning planning.

Specifically, construction actions would temporarily affect air quality, GHG emissions, and visual aesthetics in the Project Site vicinity and temporarily increase noise, traffic, and health and safety risks. However, these impacts would be minimized in part by activities limited to daylight hours and staggering work shifts for traffic flow. Implementation of a health and safety plan would also minimize health and safety risks.

Minor, localized effects on soil erosion and sedimentation due to construction and operations would be minimized by establishment and maintenance of stream and wetland buffers, soil stabilization, and vegetation management measures. Construction of the Project would result in permanent impacts to approximately 408.0 linear feet of intermittent/perennial stream and 40.0 linear feet of ephemeral stream due to the installation or improvement of culverts for road crossings. These impacts to streams would require both a CWA 404 permit and CWA 401 certification. An approved jurisdictional determination from the USACE to determine jurisdictional waters would be acquired with the permit application. Most facilities, structures, and activities required for the Proposed Action would be located outside of the 100-year floodplain, with the exception of certain internal access roads, isolated placement of overhead utility structures, and select solar panels occupying approximately 50 acres. Minor direct and indirect impacts are anticipated due to construction activities and installation of Project fences, utility poles, and access roads.

The conversion of 1,700 acres of the Project Site from primarily agricultural land to industrial may cause minor, temporary direct impacts to land use during construction and moderate, long-term direct impacts to land use during operation due to the loss of crop and/or livestock production. The clearing of 113 acres of trees on the Project Site would cause long-term adverse effects to forest-dependent wildlife. The Project is not likely to directly affect any federally listed species and would have minimal to negligible impacts to state-listed species of conservation concern.

3.17 Relationship of Short-Term Uses and Long-Term Productivity

Short-term uses are those that generally occur on a year-to-year basis. Examples are wildlife use of forage, timber management, recreation, and uses of water resources. Long-term productivity is the capability of the land to provide resources, both market and nonmarket, for future generations. In this context, long-term impacts to site productivity would be those that last beyond the life of the Project. The Proposed Action would adversely affect current short- and long-term uses of the Project Site by converting a large part of it from agricultural and undeveloped land to a solar power generation and storage facility. The effects on long-term productivity would be minimal as existing land uses could be readily restored on the Project Site following the decommissioning and removal of the solar facility.

3.18 Irreversible and Irretrievable Commitments of Resources

Irreversible or irretrievable commitments of resources occur when resources would be consumed, committed, or lost because of a project. The commitment of a resource would be considered irretrievable when a project would directly eliminate the resource, its productivity, or its utility for the life of a project and possibly beyond. Project-related construction and operation activities would result in an irretrievable and irreversible commitment of natural and physical resources. The implementation of the Proposed Action would involve irreversible commitment of fuel and resource labor required for the construction, maintenance, and operation of the Project. Because removal of the solar arrays and associated onsite infrastructure could be accomplished rather easily, and the facility would not irreversibly alter the site, the Project Site could be returned to its original condition or used for other productive purposes once the solar facility is decommissioned. Most of the solar facility components could also be recycled after the facility is decommissioned.

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Appendix A – Scoping Documentation and Public Comments

(44 U.S.C. 3501 *et seq.*), the Securities and Exchange Commission (''Commission'') is soliciting comments on the collection of information summarized below. The Commission plans to submit this existing collection of information to the Office of Management and Budget for extension and approval.

The information collection activity will garner qualitative customer and stakeholder feedback in an efficient, timely manner, in accordance with the Commission's commitment to improving service delivery. By qualitative feedback we mean information that provides useful insights on perceptions and opinions but are not statistical surveys that yield quantitative results that can be generalized to the population of study. This feedback will provide insights into customer or stakeholder perceptions, experiences and expectations, provide an early warning of issues with service, or focus attention on areas where communication, training or changes in operations might improve delivery of products or services. These collections will allow for ongoing, collaborative and actionable communications between the SEC and its customers and stakeholders. It will also allow feedback to contribute directly to the improvement of program management.

Feedback collected under this generic clearance will provide useful information, but it will not yield data that can be generalized to the overall population. This type of generic clearance for qualitative information will not be used for quantitative information collections that are designed to yield reliably actionable results, such as monitoring trends over time or documenting program performance. Depending on the degree of influence the results are likely to have, such collections may still be eligible for submission for other generic mechanisms that are designed to yield quantitative results.

Below is the projected average annual estimates each year for the next three years:

Expected annual number of activities: 20.

Respondents: 30,000.

Annual responses: 30,000.

Frequency of response: Once per request.

Average minutes per response: 10.

Annual burden hours: 5,000.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number.

Written comments are invited on: (a) whether this collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility; (b) the accuracy of the agency's estimate of the burden imposed by the collection of information; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology.

The public may view and comment on this information collection request at: *https://www.reginfo.gov/public/do/PRAViewICR?ref_nbr=202501-3235-031or* send an email comment to *MBX.OMB.OIRA.SEC_desk_officer@omb.eop.gov* within 30 days of the day after publication of this notice by April 14, 2025.

Dated: March 7, 2025.

J. Matthew DeLesDernier,

Deputy Secretary.

[FR Doc. 2025–03965 Filed 3–12–25; 8:45 am]

BILLING CODE 8011–01–P

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–102541]

Notice of Designation of Entity To Maintain and Operate the Lost and Stolen Securities Program

AGENCY: Securities and Exchange Commission.

ACTION: Notice of designation.

SUMMARY: The Securities and Exchange Commission has designated an entity to maintain and operate the Lost and Stolen Securities Program.

FOR FURTHER INFORMATION CONTACT: Bryant Eng, Special Counsel; Cate Whiting, Senior Counsel; Kevin Schopp, Senior Special Counsel; Moshe Rothman, Assistant Director; Office of Clearance and Settlement, Division of Trading and Markets, (202) 551–5500, *tradingandmarkets@sec.gov*.

SUPPLEMENTARY INFORMATION: The Securities and Exchange Commission (''Commission'') has designated Accenture Federal Services LLC (''Accenture'') to maintain and operate the Lost and Stolen Securities Program (''LSSP'') on the Commission's behalf, effective as of January 1, 2025.

The Commission established the LSSP in 1977, pursuant to Section 17(f)(1) of the Securities Exchange Act of 1934 [1] (the ''Exchange Act'') and Rule 17f–1 thereunder.[2] Section 17(f)(1) and Rule 17f–1 require certain financial institutions, including banks, clearing agencies, exchanges, broker-dealers, and transfer agents (''Reporting Institutions''), to (1) report securities certificates that they discover to be missing, lost, stolen, or counterfeit [3] and (2) make inquiries about securities certificates that come into their possession to determine if they are missing, lost, stolen, or counterfeit. Reporting Institutions must make these reports and inquiries to the Commission or other person designated by the Commission.

In 1977, pursuant to Section 17(f)(1), the Commission designated an entity to maintain and operate the LSSP on the Commission's behalf.[4] That designee and its successors maintained and operated the LSSP on the Commission's behalf through the end of 2024. On July 21, 2023, the Commission issued a solicitation for services in support of the LSSP.[5] Pursuant to that solicitation, the Commission selected and entered into a contract with Accenture to maintain and operate the LSSP.[6]

Accordingly, the Commission has designated Accenture to maintain and operate the LSSP pursuant to Section 17(f)(1) of the Act [7] and Rule 17f–1 thereunder,[8] effective as of January 1, 2025. This designation supersedes all previous designations.

By the Commission.

Dated: March 7, 2025.

J. Matthew DeLesDernier,

Deputy Secretary.

[FR Doc. 2025–03972 Filed 3–12–25; 8:45 am]

BILLING CODE 8011–01–P

TENNESSEE VALLEY AUTHORITY

Hope Solar and Storage Project

AGENCY: Tennessee Valley Authority.

[1] 15 U.S.C. 78q(f)(1).

[2] 17 CFR 240.17f–1.

[3] Securities certificate means any physical instrument that represents or purports to represent ownership in a security that was printed by or on behalf of the issuer thereof and shall include any such instrument that is or was: printed but not issued; issued and outstanding, including treasury securities; cancelled; and counterfeit or reasonably believed to be counterfeit. 17 CFR 240.17f–1(a)(6).

[4] *See* Designation of Entity to Receive Reports and Inquiries, Exchange Act Release No. 13538, 42 FR 26495 (May 24, 1977).

[5] *See* Lost and Stolen Securities Program (LSSP), *https://sam.gov/opp/5616f351e4dd41d09d19d7accf511471/view.*

[6] *See* Lost and Stolen Securities Program (LSSP), Award Notices, *https://sam.gov/opp/5616f351e4dd41d09d19d7accf511471/view.*

[7] 15 U.S.C. 78q(f)(1).

[8] 17 CFR 240.17f–1.

ACTION: Notice of intent.

SUMMARY: The Tennessee Valley Authority (TVA) intends to prepare an environmental document for the purchase of electricity generated by the proposed Hope Solar and Storage Project in Clay County, Mississippi. The environmental review will assess the potential environmental effects of constructing, operating, and maintaining the proposed 200-megawatt (MW) alternating current (AC) solar photovoltaic (PV) facility and up to 200 MW Battery Energy Storage System (BESS). The proposed solar facility and BESS system would occupy a portion of the 2,427-acre Project Study Area. Public comments are invited concerning the scope of the review, alternatives being considered, and environmental issues that should be addressed as a part of this review. TVA is also requesting data, information, and analysis relevant to the proposed action from the public; affected federal, state, tribal, and local governments, agencies, and offices; the scientific community; industry; or any other interested party.

DATES: The public scoping period begins with the publication of this Notice of Intent in the **Federal Register**. To ensure consideration, comments must be postmarked, emailed, or submitted online no later than April 10, 2025.

ADDRESSES: Written comments should be sent to Elizabeth Smith, NEPA Specialist, Tennessee Valley Authority, 400 West Summit Hill Drive, WT 11B, Knoxville, Tennessee 37902. Comments may be submitted online at: *www.tva.gov/nepa,* or by email to *nepa@tva.gov.* Please note that TVA encourages comments submitted electronically.

FOR FURTHER INFORMATION CONTACT: Elizabeth Smith by email at *esmith14@tva.gov,* by phone at (865) 632–3053, or by mail at the address above.

SUPPLEMENTARY INFORMATION: The unique identification number is EISX–455–00–000–1731928656. This notice is provided in accordance with TVA's procedures for implementing the NEPA (18 CFR 1318). TVA is an agency and instrumentality of the United States, established by an act of Congress in 1933, to foster the social and economic welfare of the people of the Tennessee Valley region and to promote the proper use and conservation of the region's natural resources. One component of this mission is the generation, transmission, and sale of reliable and affordable electric energy.

Background

In June 2019, TVA completed the final 2019 Integrated Resource Plan (IRP) and associated EIS. The IRP is a comprehensive study of how TVA will meet the demand for electricity in its service territory over the next 20 years. The 2019 IRP recommends solar expansion and anticipates growth in all scenarios analyzed, with most scenarios anticipating 5,000–8,000 MW and one anticipating up to 14,000 MW by 2038.

TVA is considering entering into a Power Purchase Agreement (PPA) with Origis to purchase 200 MW AC of power and up to 200 MW of BESS generated by the proposed Hope Solar and Storage Project, hereafter referred to as the Project. The proposed 200 MW AC solar PV facility and 200 MW BESS system would occupy a portion of the 2,427-acre Project Study Area which is located in Clay County, Mississippi. The project site is north of West Point, Mississippi, and west of US Highway 45 Alternate. The project site is mostly farmland with areas of woody wetlands, deciduous forest, and hay/pasture. The land surplus is to accommodate relocating the array if any areas need to be avoided as a result of the NEPA review. A map showing the project site is available at *www.tva.gov/nepa.*

Preliminary Proposed Action and Alternatives

In addition to a No Action Alternative, TVA will evaluate the action alternative of purchasing power from the proposed Hope Solar and Storage Project under the terms of a PPA. In evaluating alternatives, TVA considered other solar proposals, prior to selecting the Hope Solar and Storage site for further evaluation. Part of the screening process included a review of transmission options, including key connection points to TVA's transmission system. The Hope Solar and Storage site stood out as a viable option for connectivity to TVA's existing West Point Substation. Environmental and cultural considerations are also included in TVA's screening. For the proposed site, the solar developer plans to consider the establishment of an alternative footprint so that impacts to cultural and/or biological resources could be avoided. The environmental review will also evaluate ways to mitigate impacts that cannot be avoided. The description and analysis of these alternatives in the review will inform decision makers, other agencies, and the public about the potential for environmental impacts associated with the proposed solar facility. TVA solicits comments on whether there are other alternatives that should be assessed in the environmental review.

Project Purpose and Need

TVA is a corporate agency of the United States (U.S.) and the largest public power provider in the country. Through its partnership with 153 local power companies, TVA supplies electricity across 80,000 square miles for 10 million people, 750,000 businesses, and 56 large industrial customers, including military installations and the U.S. Department of Energy facilities in Oak Ridge, Tennessee. TVA's service area includes most of Tennessee and parts of six adjacent states. Since 1933, TVA's mission has been to serve the people of the Tennessee Valley region to make life better.

TVA produces or obtains electricity from a diverse portfolio of energy sources, including solar, hydroelectric, wind, biomass, fossil fuel, and nuclear. In June 2019, TVA completed an Integrated Resource Plan (IRP) and associated environmental impact statement. The 2019 IRP identified the various resources that TVA intends to use to meet the energy needs of the TVA region over the 20-year planning period while achieving TVA's objectives to deliver reliable, low-cost, and cleaner energy with fewer environmental impacts. The 2019 IRP recommends the expansion of solar generating capacity of up to 14,000 MW by 2038 (TVA 2019) and is currently in the process of updating the IRP. With the demand for solar energy increasing, TVA has an expansion target of 10,000 MW of solar by 2035 (TVA 2021). The Hope Solar and Storage Project would provide cost effective renewable energy consistent with the 2019 IRP and TVA goals.

To meet these goals, public scoping is integral to the process for implementing NEPA and ensures that (1) issues are identified early and properly studied, (2) issues of little significance do not consume substantial time and effort, and (3) the analysis of identified issues is thorough and balanced. This environmental review will identify the purpose and need of the project and will contain descriptions of the existing environmental and socioeconomic resources within the area that could be affected by the proposed solar facility and BESS system, including the documented historical, cultural, and environmental resources. Evaluation of potential environmental impacts to these resources will include, but not be limited to, air quality and greenhouse gas emissions, surface water, groundwater, wetlands, floodplains, vegetation, wildlife, threatened and

endangered species, land use, natural areas and parks and recreation, geology, soils, prime farmland, visual resources, noise, cultural resources, socioeconomics, solid and hazardous waste, public and occupational health and safety, utilities, and transportation.

Based on a preliminary evaluation of these resources, potential impacts to cultural resources through construction of the facility are possible. Impacts to vegetation and wildlife due to the conversion of deciduous forest of various ages to early maintained grass-dominated fields may occur. Impacts to water resources would likely be minor with the use of best management practices and avoidance of siting project components in or near streams, wetlands, and riparian areas to the extent feasible. Land use would be impacted by the conversion of farmland to industrial use and the elimination of current farming operations. This would also result in visual impacts. Beneficial impacts are expected by facilitating the development of renewable energy and thereby increasing local job opportunities, as well as improving regional air quality and reducing carbon emissions. The environmental review will analyze measures that would avoid, minimize, or mitigate environmental effects. The final range of issues to be addressed in the environmental review will be determined, in part, from scoping comments received.

Request for Identification of Potential Alternatives, Information, and Analyses Relevant to the Proposed Action

Public scoping is integral to the process for implementing NEPA and ensures that issues are identified early and properly studied, issues of little significance do not consume substantial time and effort, and the analysis of those issues is thorough and balanced. The final range of issues to be addressed in the environmental review will be determined, in part, from scoping comments received. TVA is particularly interested in public input on other reasonable alternatives that should be considered in the review. The preliminary identification of reasonable alternatives and environmental issues in this notice is not meant to be exhaustive or final.

Public Participation

The public is invited to submit comments on the scope of this environmental review no later than the date identified in the **DATES** section of this notice. Federal, state, and local agencies and Native American Tribes are also invited to provide comments. Information about this project is available on the TVA web page at *www.tva.gov/nepa,* including a link to an online public comment page. Any comments received, including names and addresses, will become part of the administrative record and will be available for public inspection. After consideration of comments received during the scoping period, TVA will develop and distribute a scoping document that will summarize public and agency comments that were received and identify the schedule for completing this process. Following analysis of the issues, TVA will prepare the draft environmental document for public review and comment; expected to be released early 2026. TVA anticipates the final environmental document in summer 2026. In finalizing the document and in making its final decision, TVA will consider the comments that it receives on the draft.

Dawn Booker,

Senior Manager, NEPA Compliance.

[FR Doc. 2025–04066 Filed 3–10–25; 4:15 pm]

BILLING CODE 8120–08–P

DEPARTMENT OF THE TREASURY

Office of the Comptroller of the Currency

Agency Information Collection Activities: Information Collection Renewal; Comment Request; Interagency Statement on Complex Structured Finance Transactions

AGENCY: Office of the Comptroller of the Currency (OCC), Treasury.

ACTION: Notice and request for comment.

SUMMARY: The OCC, as part of its continuing effort to reduce paperwork and respondent burden, invites comment on a continuing information collection, as required by the Paperwork Reduction Act of 1995 (PRA). In accordance with the requirements of the PRA, the OCC may not conduct or sponsor, and the respondent is not required to respond to, an information collection unless it displays a currently valid Office of Management and Budget (OMB) control number. The OCC is soliciting comment concerning the renewal of its information collection titled, ''Interagency Statement on Complex Structured Finance Transactions.''

DATES: Comments must be received by May 12, 2025.

ADDRESSES: Commenters are encouraged to submit comments by email, if possible. You may submit comments by any of the following methods:

- *Email: prainfo@occ.treas.gov.*
- *Mail:* Chief Counsel's Office, Attention: Comment Processing, Office of the Comptroller of the Currency, Attention: 1557–0229, 400 7th Street SW, Suite 3E–218, Washington, DC 20219.
- *Hand Delivery/Courier:* 400 7th Street SW, Suite 3E–218, Washington, DC 20219.
- *Fax:* (571) 293–4835.

Instructions: You must include ''OCC'' as the agency name and ''1557–0229'' in your comment. In general, the OCC will publish comments on *www.reginfo.gov* without change, including any business or personal information provided, such as name and address information, email addresses, or phone numbers. Comments received, including attachments and other supporting materials, are part of the public record and subject to public disclosure. Do not include any information in your comment or supporting materials that you consider confidential or inappropriate for public disclosure.

Following the close of this notice's 60-day comment period, the OCC will publish a second notice with a 30-day comment period. You may review comments and other related materials that pertain to this information collection beginning on the date of publication of the second notice for this collection by the method set forth in the next bullet.

- *Viewing Comments Electronically:* Go to *www.reginfo.gov.* Hover over the ''Information Collection Review'' tab and click on ''Information Collection Review'' from the drop-down menu. From the ''Currently under Review'' drop-down menu, select ''Department of Treasury'' and then click ''submit.'' This information collection can be located by searching OMB control number ''1557–0229'' or ''Interagency Statement on Complex Structured Finance Transactions.'' Upon finding the appropriate information collection, click on the related ''ICR Reference Number.'' On the next screen, select ''View Supporting Statement and Other Documents'' and then click on the link to any comment listed at the bottom of the screen.
- For assistance in navigating *www.reginfo.gov,* please contact the Regulatory Information Service Center at (202) 482–7340.

FOR FURTHER INFORMATION CONTACT: Shaquita Merritt, Clearance Officer, (202) 649–5490, Chief Counsel's Office, Office of the Comptroller of the

Hope Solar EIS Scoping Documentation – Public Comments Summary

Comment No.	Document	Topic	Public / Agency Comment	Commenter	TVA Response	Addressed in Draft EIS
1	NOI	Environmental Justice/Human Health	Concern about electromagnetic radiation causing cancer or other health issues.	Gene Brown	Comment noted.	See Section 3.13.2.2
2	NOI	Socioeconomic/Environmental Justice	Concern about quality of life of nearby property occupants.	Gene Brown	Comment noted.	See Section 3.15.2.2
3	NOI	Environmental Concern (Soil and Water Resources)	Concern about land and water system protections from battery leakage into soil from normal or weather-related damage/wear.	Gene Brown	Comment noted.	See Section 3.12.2.2
4	NOI	Environmental Concern (Soil and Water Resources)	Concerns regarding heavy metal leakages into soil and water systems.	Gene Brown	Comment noted.	See Section 3.12.2.2
5	NOI	Decommissioning/Waste Management	Concern regarding the decommissioning/disposal of panels.	Gene Brown	Comment noted.	See Sections 2.2.5 and 3.12.2.2
6	NOI	Communication/Public Outreach	Concern about lack of communication with TVA.	Gene Brown	Comment noted.	See Section 1.3
7	NOI	Property/Economic Concern	Concern about potential impacts to value of neighboring properties.	Gene Brown	Comment noted.	See Section 3.15.2.2
8	NOI	Energy Efficiency	Concern about effectiveness of panels due to unfavorable weather and seasonal conditions including cloud coverage, pollen, dust, and debris.	Gene Brown	Comment noted.	See Section 2.2.1
9	NOI	Decommissioning/Waste Management	Concern about future of panels should government funding cease to continue.	Gene Brown	Comment noted.	See Sections 2.2.5 and 3.12.2.2
10	NOI	Environmental Concern (Water Resources)	Notification that the CWA requires appropriate and practicable steps to minimize potential adverse impacts of the discharge on the aquatic ecosystem, and that compensatory mitigation is required to offset any unavoidable aquatic impacts.	Ntale Kajumba, U.S. Environmental Protection Agency (EPA)	Comment noted.	See Sections 1.4.1 and 3.4.2.2
11	NOI	Environmental Concern (Water Resources)	The 2024 CWA Section 303(d) list for Mississippi identifies impaired	Ntale Kajumba, EPA	Comment noted.	See Section 3.4.1.3 and 3.4.2.2

			waterbodies (e.g. Mcgee Creek) that receive waters from the project study area. The NEPA document discussion should acknowledge the most recent water quality data and any potential impacts from the proposed project as required by 42 U.S.C. Section 4332(2)(C)(i).			

From: gene brown <genebrowns3@att.net>
Sent: Wednesday, April 9, 2025 12:48 PM
To: Smith, Elizabeth <esmith14@tva.gov>
Subject: Clay County, MS TVA Project

Elizabeth,

I have searched the web page that I was given by the mail out that I received to respond to the Clay County, MS TVA solar project. I am not sure if the difficulty in finding the response area was intentional as seeing that on the mail out the location is claimed to be on the west side of highway 45A. Which is on the opposite from my property. When I have been told by the neighboring land owner and several other community leaders that it will actually be on the east side of the highway. And, according to what I'm told the project will be right next to my property. So, that being the case I several concerns.

1. What environmental studies has TVA done to show that electromagnetic radiation does not cause cancer or any other negative health issues?

2. What environmental studies has TVA done to show that such a project will not harm the quality of life of its neighbors?

3. What environmental studies has TVA done to protect the land and water system from battery leakage into the soil whether it be from normal wear or weather-related damage from fires, storms or tornados?

4. What environmental studies has TVA done on heavy metal leakage into the soil and water systems?

5. What environmental studies has TVA done on the end result of disposing of the panels when they are no longer usable?

This is only my environmental issues. Other issues I have are:

6. Since when has TVA became unneighborly? I live close to the TVA substation and when 911 hit we were approached and informed of why we would be seeing more TVA police presence. When additional construction was going to take place TVA sent representatives by to let us know what was going on and even sent guys to check and make sure our shop would not be affected by any additional electric current. I guess it is a new generation with respect easing out the door.

7. Has TVA done any kind of projection on how its project will affect its neighbors land prices or does TVA just not care?

8. The mailer I received says this will be a 200-megawatt facility. TVA know this is only on a very good day in the first year. What happens on those weeklong cloudy days? What happens in the spring during the pollen season? What happens after the first year when dust and debris begins build up on the panels? You all know that these panels will not be cost effective and will not produce the energy you claim on a regular basis.

9. And, final question is what will happen when the government money stops? I believe TVA will abandon the panels before digging in their own pockets knowing good and well that they are not cost effective.

Thanks,
Gene Brown

REGION 4
ATLANTA, GA 30303

Ms. Elizabeth Smith
NEPA Specialist
Tennessee Valley Authority
400 West Summit Hill Drive, WT 11B
Knoxville, Tennessee 37902

Re: EPA Scoping Comments on the Hope Solar and Storage Project, Clay County, Mississippi

Dear Ms. Smith:

The U.S. Environmental Protection Agency (EPA) reviewed the Tennessee Valley Authority's (TVA) notice of intent on the preparation of a National Environmental Policy Act (NEPA) document to evaluate the purchase of electricity generated by the proposed Hope Solar and Storage Project, in accordance with Section 309 of the Clean Air Act and Section 102(2)(C) of NEPA. The TVA proposes to enter into a power purchase agreement with Origis Energy to purchase 200-megawatts of (MW) alternating current (AC) power and up to 200 MW of battery energy storage system (BESS) capacity generated by the proposed project. The 200 MW AC solar photovoltaic facility and 200 MW BESS system would occupy a portion of the 2,427-acre project study area.

In June 2019, the TVA completed an Integrated Resource Plan (IRP) and associated environmental impact statement. The 2019 IRP recommended the expansion of solar generating capacity of up to 14,000 MW by 2038. The TVA has an expansion target of 10,000 MW of solar by 2035. The proposed project would provide energy consistent with the 2019 IRP.

Based on the EPA's review of available information, the following comments are provided for your consideration.

(1) **Clean Water Act (CWA) Section 404:** 40 C.F.R. § 230.10(d) requires the applicant include appropriate and practicable steps to minimize potential adverse impacts of the discharge on the aquatic ecosystem. Potential actions to minimize adverse effects are set forth in 40 C.F.R. § Part 230, subpart H. Compensatory mitigation is required to offset aquatic impacts resulting from any unavoidable impacts consistent with 40 C.F.R. Part 230, Subpart J, including 40 C.F.R. § 230.91(c), 40 C.F.R. § 230.93(a), and 40 C.F.R. § 230.93(b)(1).

(2) **Impaired Streams**: The 2024 CWA Section 303(d) list for Mississippi identifies impaired waterbodies (e.g. Mcgee Creek) that receive waters from the project study area. The NEPA

document discussion should acknowledge the most recent water quality data and any potential impacts from the proposed project as required by 42 U.S.C. Section 4332(2)(C)(i).

The EPA appreciates the opportunity to provide scoping comments on the proposed project. If you have any questions regarding our comments, please contact Ntale Kajumba, NEPA Section Chief at 404 562-9620 or at Kajumba.ntale@epa.gov or Douglas White of the NEPA Section at (404) 562-8586 or at white.douglas@epa.gov.

Sincerely,

Ntale Kajumba
Manager
NEPA Section

Appendix B – Cultural Resources – Correspondence and Supporting Information

CULTURAL RESOURCES SURVEY FOR THE HOPE SOLAR FARM

Clay County, Mississippi

NEW SOUTH ASSOCIATES

ARCHAEOLOGISTS · HISTORIANS

MDAH
MISSISSIPPI DEPARTMENT OF
ARCHIVES & HISTORY

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

January 31, 2025

Mr. Derek Reaux
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902

RE: Research Design for the Cultural Resources Survey of the Proposed Hope Solar Farm, (TVA) MDAH Project Log #01-078-25, Clay County

Dear Mr. Reaux:

We have reviewed the January 6, 2025, research design, by Danny Gregory, Principal Investigator, with New South Associates, Inc., received on January 10, 2025, for the above referenced undertaking pursuant to our responsibilities under Section 106 of the National Historic Preservation Act and 36 CFR Part 800.

After review, MDAH concurs with the proposed research design. We look forward to receiving the completed report.

If you have any questions, please do not hesitate to contact us at (601) 576-6940.

Sincerely,

Amy D. Morgan
Review and Compliance Officer

FOR: Katie Blount
State Historic Preservation Officer

Appendix C – Water Resources – Supporting Information

Wetland Delineation Report

Hope Solar Project
Clay County, Mississippi

May 27, 2026

Prepared for

Origis Energy

800 Brickell Avenue, Suite 1000
Miami, Florida 33131

Prepared by

TETRA TECH

117 Hearthstone Drive
Aiken, South Carolina 29803

Appendix D – Biological Resources - Supporting Information

Protected Species and Ecological Assessment

Hope Solar Project

Clay County, Mississippi

May 15, 2026

Prepared for

Origis Energy

800 Brickell Avenue, Suite 1000
Miami, Florida 33131

Prepared by

TETRA TECH

117 Hearthstone Drive
Aiken, South Carolina 29803

Appendix E – Public Notice and Responses to Public Comments on Draft Environmental Impact Statement

Appendix F Symbols, Acronyms, Abbreviations, and Glossary of Terms

Symbols, Acronyms, Abbreviations, and Glossary of Terms

AADT	Average annual daily traffic
AC	alternating current
AMSL	above mean sea level
APE	Area of Potential Effects
BESS	battery energy storage system
BMP	best management practice
CFR	Code of Federal Regulations
CH_4	methane
CO_2	carbon dioxide
CPKC	Canadian Pacific-Kansas City Railway
CWA	Clean Water Act
dBA	A-weighted decibel
Dbh	diameter at breast height
DC	direct current
DSM	Digital surface model
EIS	Environmental Impact Statement
EMF	electromagnetic fields
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
gen-tie	generation-tie line
GHG	greenhouse gas
Hope SB	Hope SB, LLC
HUC	hydrologic unit code
IRP	Integrated Resource Plan
kV	kilovolt
Ldn	day-night sound level
Leg	equivalent sound level
Li-ion	lithium ion
MBTA	Migratory Bird Treaty Act
MDAH	Mississippi Department of Archives and History
MDEQ	Mississippi Department of Environmental Quality
MDOT	Mississippi Department of Transportation
MW	megawatt
MWh	megawatt-hours
MYA	million years ago
N_2O	nitrous oxide
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NOI	Notice of Intent
NPDES	National Pollution Discharge Elimination System

NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSA	New South Associates, Inc.
NWP	Nationwide Permit
O&M	Operations and Maintenance
OHWM	ordinary high-water mark
OSHA	Occupational Safety and Health Administration
PEM	Palustrine emergent
PFO	Palustrine forested
PM	particulate matter
POI	Point of Interconnection
PPA	Power Purchase Agreement
Project	Hope Solar and Storage Project
Project Area	Hope Solar and Storage Project Area; Project Site and surrounding area
Project Site	Hope Solar and Storage Project Site; footprint of project
PSS	Palustrine scrub-shrub
PUB	Palustrine unconsolidated bottom
PV	photovoltaic
RCRA	Resource Conservation and Recovery Act
RFFA	Reasonably Foreseeable Future Action
ROW	right-of-way
SHPO	State Historic Preservation Office
SO_2	sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasures
SWPPP	Stormwater Pollution Prevention Plan
tpy	Tons per year
TVA	Tennessee Valley Authority
TVARAM	Tennessee Valley Authority Rapid Assessment Method
US-45 ALT	US Highway 45 Alternate
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	Volatile organic compound
WOTUS	Waters of the U.S.

Appendix G List of Preparers

List of Preparers

Table G presents the members of the Project team and summarizes the expertise of each member and their contributions to the Environmental Impact Statement.

Table G-Error! No text of specified style in document.**-1. List of Preparers**

Name/Education	Experience	Project Role
TVA		
Elizabeth Smith B.A. Environmental Studies	18 years in NEPA documentation, regulatory compliance, and project management	NEPA Specialist
Emily Kathryn McCann M.S. Wetland Ecology B.S. Professional Biology	9 years of experience in field biology, including wetland delineations, environmental reviews, NEPA and ESA compliance, and consulting with Federal agencies	Biologist, Wetlands, Solar Lead
Zach Buecker B.S. Biology	15 years of experience with wetland/stream assessments, wetland/stream regulations, NEPA and CWA compliance	Surface Water
Cory Chapman B.S. Wildlife and Fisheries Science	8 years of experience in field biology, including aquatic T&E surveys and hydrologic determinations; 4 years of experience with ESA and NEPA compliance	Biologist
Julia Prins M.S. Environmental Science B.S. Environmental Science	4 years of experience in floristic surveys, threatened and endangered plant species, and invasive plant species. 2 years of experience in ESA and NEPA compliance	Botanist
Chloe Sweda B.S. Earth and Environmental Sciences	6.5 years in Natural Resource Management	Natural Areas
Tim Zimmerman M.S. Environmental Engineering, Water Resources B.S. Civil Engineering	18 years water resources, civil, and environmental engineering including 13 years River Management and 0.5 years Floodplains and Flood Risk	Floodplains and Flood Risk
Jesse Troxler M.S. Wildlife and Fisheries Science, B.S. Wildlife and Fisheries Science	20 years of experience in wildlife monitoring and research. 10 years of experience in ESA and NEPA compliance	Terrestrial Zoologist
Derek Reaux Ph.D., M.A., B.A. Anthropology	13 years of experience in archaeological research and cultural resource management	Archaeologist, Cultural Resource Compliance

Name/Education	Experience	Project Role
Tetra Tech		
Chandler Dangle MS, Forestry BS, Forest Resources	10 years of environmental assessment, NEPA documentation, hydrology, soils, wetlands, and permitting	Project Manager, Field Survey Coordination, Document Preparation and Review
Marijke Maxwell MS, Environmental Science and Policy BS, Wildlife Ecology and Conservation	15 years of environmental assessment, wetlands, permitting, and NEPA documentation	Deputy Project Manager, Document Preparation and Review.
Lisa Matis MS, Mechanical Engineering, BS, Chemical Engineering	More than 30 years in NEPA documentation, regulatory compliance, and permitting	Project Manager, Senior Technical Reviewer
Philip Moore MS, Wildlife and Fisheries Biology, Post Graduate Study, Zoology, BA, English	More than 30 years in NEPA documentation, project management, technical writing, protected species evaluations and surveys, and field assessments	Document Preparation, Senior Technical Reviewer
Emily McMahan MS, Environmental Management and Conservation MS, Marine Spatial Planning and Management BS, Environmental Biology	More than 10 years of environmental assessments, marine biology, planning, and permitting	Document Preparation
Jen Sojka MS, Biological Sciences BA, Biology	10 years in field biology including NEPA documentation, permitting, and environmental assessments	Document Preparation
Steve Thompson BLA, Landscape Architecture	Over 10 years as landscape architect, visualization modeling and assessments	Visual Analysis, Document Preparation
Troy Enright BS, Environmental Science	More than 20 years in NEPA documentation, noise and air analysis and permitting	Document Preparation
Mary Hoganson MS, Biology, BS; Biology	More than 20 years in NEPA documentation, environmental analysis areas include cumulative impacts, alternatives, waste management, transportation, noise, and air	Document Preparation
Robert Jacoby, RAP MA, Historic Preservation BA, Anthropology,	More than 35 years of experience in historic preservation, archeological research projects and cultural resources sensitivity assessments	Document Preparation

Name/Education	Experience	Project Role
Giles Kingsley BA, Geography/ Anthropology	9 years in GIS analysis	Mapping and Analysis
Hal Mitchell BS, Wildlife Biology	15 years of experience conducting habitat evaluations, wildlife surveys, and studies of special-status species	Field surveys, Technical Reviewer
Jeff Golladay MS, Biology BA, Environmental Studies	9 years of experience conducting wetland delineations, permitting, and habitat evaluations.	Field surveys, Technical Reviewer