



**Arkansas Electric
Cooperative Corporation**
We Are Arkansas

A photograph of a solar farm with rows of solar panels in a field under a cloudy sky. The image is framed by dark green geometric shapes in the corners.

ENVIRONMENTAL ASSESSMENT
ARKANSAS ELECTRIC COOPERATIVE CORPORATION
BAILEY SOLAR PROJECT

219 BROWN LANE, BRYANT, AR
WWW.GBMcASSOC.COM
501-847-7077

THIS REPORT WAS CREATED BY THE
GBMc & ASSOCIATES TEAM FOR
ARKANSAS ELECTRIC COOPERATIVE CORPORATION
SEPTEMBER 30, 2021 (Originally Submitted)
MARCH 21, 2022 (Revision Submitted)

ENVIRONMENTAL ASSESSMENT ARKANSAS ELECTRIC COOPERATIVE CORPORATION

Prepared for:

ARKANSAS ELECTRIC COOPERATIVE CORPORATION



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We Are Arkansas

Prepared by:

GBMc & Associates
219 Brown Lane
Bryant, AR 72022

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1.0 INTRODUCTION

1.1 Project Description

Arkansas Electric Cooperative Corporation (AECC), a generation and transmission cooperative, is proposing to construct a new solar photovoltaic (PV) electrical power generation station, known as the Bailey Solar Project (Project) which will be located near the City of Augusta in Woodruff County, Arkansas. The Project includes a 100-megawatt (MW) solar PV electrical power generation station, an approximate 0.5 Mile 34.5-kilovolt (kV) transmission line (T-Line), and related interconnection equipment. The Project will be on property adjacent to the existing Carl E. Bailey Generating Station (Existing Bailey Generating Station). The output of the Project will connect to the grid at the Existing Bailey Generating Station's switchyard.

The Project area is positioned on privately-owned land located southeast of the City of Augusta, Arkansas with a small portion within the city limits (Figure 1). Approximately 800 acres (Survey Area) was surveyed for environmental and human constraints. Evaluation of an area larger than the anticipated footprint allows AECC to design the Project to avoid such constraints/resources. As depicted in Figure 1, the preliminary design for the Project has a PV panel footprint of approximately 537 acres within a fenced area of approximately 630 acres. The Project will also include an approximately 0.5-mile T-line right-of-way (ROW). The geographic coordinates to the approximate center of the site are Latitude 35.260034° and Longitude -91.343868°. The Survey Area is roughly bound by Arkansas State Highway 33 on the east side, Horseshoe Lake on the south, and a Union Pacific Railroad track on the north. The Survey Area is roughly bound on the west side by Sixth Street and Woodruff County Roads 871 and 816.

The following factors were considered during the site selection of the Project area:

- Proximity to the Existing Bailey Generating Station and existing electrical infrastructure.
- Minimize impacts to 100- and 500-year floodplains, which are prevalent in the region.
- Preference for flat tracts of previously cleared land that would require minimal tree clearing and would reduce environmental impacts.
- Landowner cooperation. The original Project layout included parcels of land on the east side of Arkansas State Highway 33. Those properties were removed

from consideration at the landowner's request and new properties to the west were added to make up the current Project area.

The Project will include solar arrays installed within the boundary of the property. The facility will consist of the following major components, systems, and associated infrastructure:

- Solar panels and support structures/racking,
- Electrical collection system,
- Electrical invertors,
- Electrical transmission system,
- Access/internal road system, and
- Plant monitoring and control system.

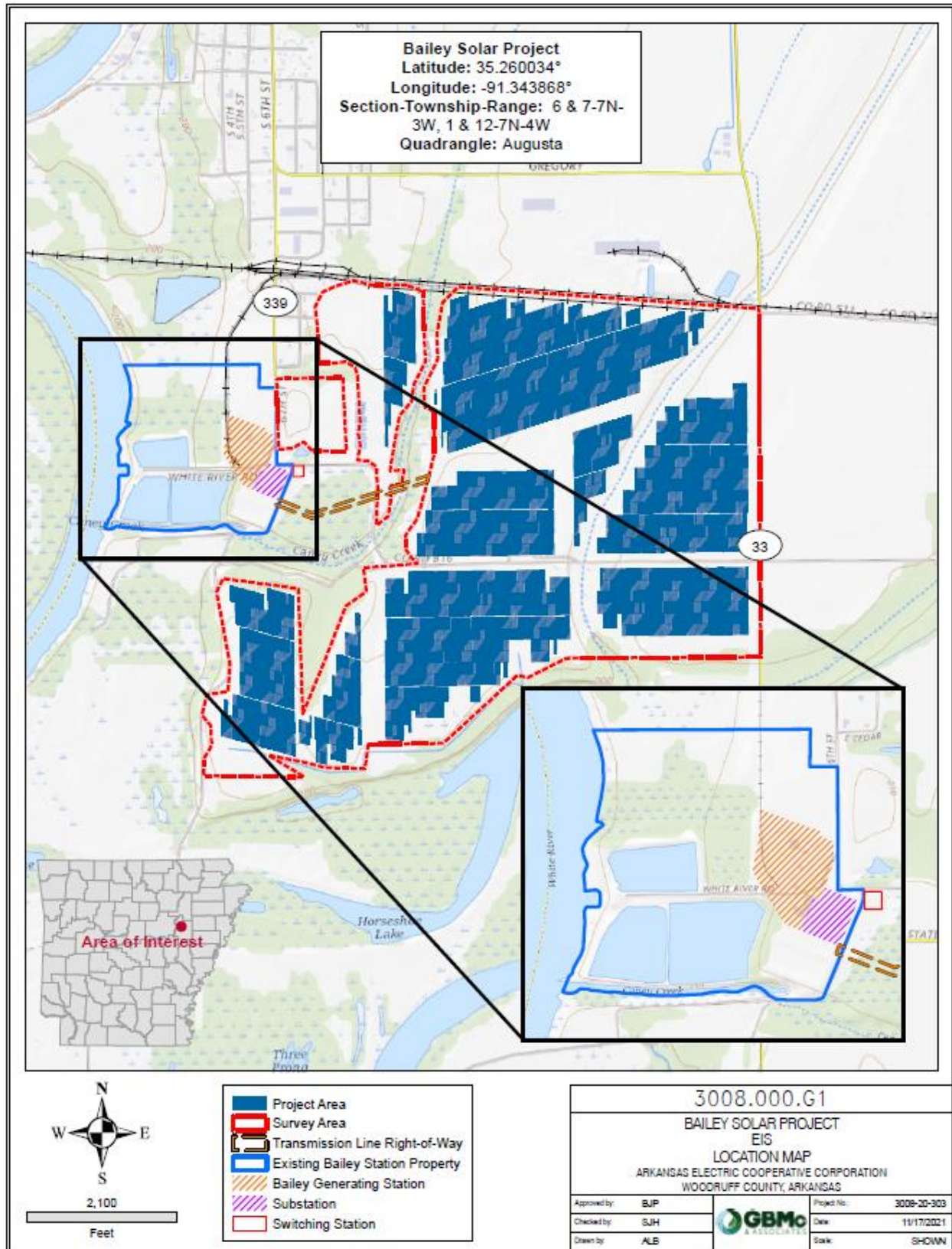


Figure 1. Project Survey Area Map

1.2 Purpose and Need

United States Department of Agriculture (USDA), Rural Development is a mission area that includes three federal agencies – Rural Business-Cooperative Service, Rural Housing Service, and Rural Utilities Service. The agencies have in excess of 50 programs that provide financial assistance and a variety of technical and educational assistance to eligible rural and tribal populations, eligible communities, individuals, cooperatives, and other entities with a goal of improving the quality of life, sustainability, infrastructure, economic opportunity, development, and security in rural America. Financial assistance can include direct loans, guaranteed loans, and grants in order to accomplish program objectives. AECC is seeking financial assistance from the Rural Utilities Service (RUS).

The Bailey Solar Project will be a renewable energy source powered by energy generated from sunlight through photovoltaics. The new solar project will provide a renewable electrical energy generation resource to meet growing electrical energy needs in the area improving availability of electric services to AECC's seventeen (17) member cooperatives. It will allow AECC to repurpose the Existing Bailey Generating Station plant site and reuse the existing grid point of interconnection location. Studies done by AECC demonstrate the levelized cost of energy produced by the Project would be economically beneficial to AECC's members.

GBMc & Associates (GBMc) was contracted by AECC to prepare an Environmental Assessment (EA) to support AECC's request for funding for the Project from RUS. The EA describes the Project purpose and need, evaluation of alternatives, description of the affected environment, environmental impacts, recommended mitigation measures, and cumulative effects. The EA was prepared from resources gathered by GBMc, AECC, and Environmental Solutions & Innovations, Inc. (ESI).

AECC will be responsible for determining and attaining necessary permits and approvals for construction. GBMc was contracted to conduct a desktop review and Jurisdictional Determination report for the proposed electrical facility. ESI was contracted to conduct a Desktop Cultural Resource Survey and a cultural resource field study of the Survey Area. The contents of this EA are largely composed of the findings of the desktop review and excerpts from the Jurisdictional Determination report and Desktop Cultural Resource Survey as well as a summary of the cultural resource field survey. A jurisdictional determination is performed to determine impacts to waters of the U.S., and a cultural resource survey is performed to determine potential impacts to archeological or historic sites.

1.3 Statutory and Regulatory Requirements

Major regulatory and statutory requirements for the Project are described in the following sections.

1.3.1 Clean Water Act

Section 404 of the Clean Water Act (CWA) provides regulatory requirements for activities that result in the placement of dredged or fill material in Waters of the United States (WOTUS). Such activities require a permit and if deemed necessary compensation for losses of WOTUS. USACE administers the regulatory portion of Section 404 with support from the U.S. Environmental Protection Agency (EPA).

Under section 401 of the CWA, an applicant must obtain certification from the state pollution control agency verifying compliance with the CWA. Section 401 requires water quality certifications for projects subject to federal permitting decisions to ensure that proposed projects activities would not violate state water quality standards. The Arkansas Department of Energy and Environment – Division of Environmental Quality (ADEQ) administers the 401-water quality certification program.

1.3.2 Endangered Species Act

Section 7 of the Endangered Species Act (ESA) requires federal agencies to confirm that their actions will not likely put at risk the continued existence of endangered or threatened species or result in the destruction of critical habitat of such species. Federally listed species known to occur, or that may occur, in the project region include the Eastern black rail, the ivory-billed woodpecker, the red knot, the piping plover, scaleshell mussel , pink mucket, rabbitsfoot, pondbery, and the monarch butterfly. Our analyses of the impacts of the project to threatened and endangered species can be found in section 3.6 These analyses serve as the biological assessment for compliance.

1.3.3 National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to consider how construction activities could potentially affect historic properties. Historic properties are defined in section 106 as any district, site, building, structure, or object that is included or eligible to be included on the National Register of Historic Places (NRHP).

Environmental Solutions & Innovations, Inc. performed a cultural resources desktop review that examined the Automated Management of Archeological Site Data in Arkansas (AMASDA). They found no cultural resources within the limits of the area of potential effect. Additional information on the cultural resources desktop review can be found in section 3.8.

1.4 Coordination, Consultation, and Correspondence

The following agencies or agency websites were consulted in preparation of this EA:

- United States Fish and Wildlife Service (USFWS) Information for Planning and Conservation (USFWS 2022)
- Arkansas Natural Heritage Commission (ANHC) Arkansas Heritage Program Biodiversity Database (ANHC 2021)
- National Wetland Inventory maps (USFWS 1984)
- Federal Emergency Management Agency (FEMA) National Flood Hazard Map (Effective Map: FEMA 1976. Preliminary Map: FEMA 2020);
- Web Soil Survey (USDA, 2021[b])
- National Land Cover Database (Homer et al. 2015)
- Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987)
- USACE Regional Supplements to the Corps of Engineers 1987 Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (USACE 2012)
- USDA – Natural Resources Conservation Service (NRCS)
- Arkansas Department of Parks, Heritage, and Tourism – Arkansas Historic Preservation Program
- Chickasaw Nation
- Choctaw Nation of Oklahoma
- Apache Tribe of Oklahoma
- Cherokee Nation
- Coushatta Tribe of Louisiana
- Muscogee (Creek) Nation
- Delaware Nation
- Eastern Shawnee Tribe of Oklahoma
- Osage Nation
- Quapaw Tribe of Indians

2.0 ALTERNATIVES EVALUATED INCLUDING THE PROPOSED ACTION

AECC evaluated various alternatives to meet the growing energy needs for the service area and to provide an alternative.

2.1 Proposed Action Alternative (Construct the Bailey Solar Project)

Under the Proposed Action Alternative, RUS would provide financial assistance to AECC to aid in construction of the Bailey Solar Project and associated infrastructure. The Bailey Solar Project would utilize a renewable energy source. Advances in renewable energy generation technologies, such as wind and solar, have resulted in these technologies being a viable option. The agricultural croplands of the Arkansas delta provide an optimal and economical location for solar facilities due to the large expanses of flat ground devoid of trees. Properties immediately east and south of the Existing Bailey Generating Station have sufficient areas above the 100 and 500-year floodplains to allow development. The T-Line required for the Proposed Site would have the least impacts of the alternative solar plant sites mentioned in Section 2.3. The Project could also be constructed within the time constraints for reusing the site's point of interconnection.

Most solar panels are expected to operate for 35 years or more. After the solar panels reach their useful life, the Project can either continue operation, be repowered, or be decommissioned. The panels may be reused or recycled at the end of their warranty. If the Project is decommissioned the site will be returned to its original conditions and agricultural activities may resume. Typical solar farms require very few paved areas, and they are covered with natural low-lying vegetation which protects and preserves agricultural soils.

2.2 Update or Repowering the Existing Bailey Generating Station

The Existing Bailey Generating Station is a 122 MW natural gas or fuel oil-fired steam electric plant located near Augusta, Arkansas. It was commissioned in 1966. Since that time, this technology has become dated and depends on non-renewable resources and has a high operating cost.

AECC considered replacing the generating equipment with more modern, more efficient, combustion turbine equipment; however, for such a project to be economical, the size of the equipment would have to be significantly larger than the current site's infrastructure, which is limited by the 161 kV interconnection to no more than 165 MW. The site is also served by just a single gas pipeline which reduces the site reliability. If a new unit was constructed at the Existing Bailey Generating Station that was greater than 165 MW, it would require a new T-Line to be constructed in order to increase transmission capacity, and it's likely that additional pipeline capacity would need to be installed to serve the plant. Lastly, the Existing Bailey Generating Station property is almost entirely within the 100-year floodplain, so any new investment on the existing site is seen as a risk for insurance and financing purposes.

2.3 Construct a Solar Project on an Alternative Site

Properties within an approximate four-mile radius of the existing infrastructure at the Existing Bailey Generating Station were investigated for the potential to house the Bailey Solar Project. In addition to the Proposed Site, three alternative sites were identified that contained cleared, level ground of sufficient acreage to house the solar facility and landowners willing to discuss using their property for the project. Two of the alternative sites are located north of Augusta and a third is located east of the Proposed Site (Figures 2a and 2b).

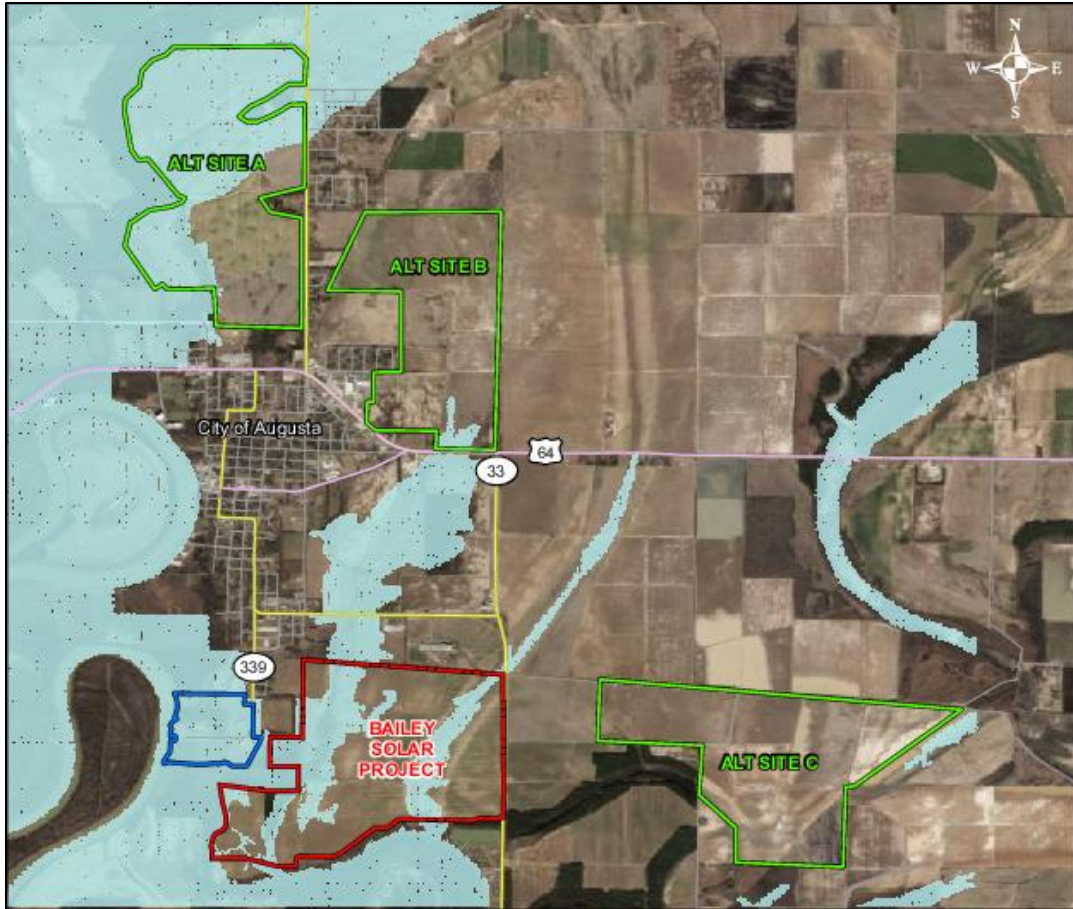


Figure 2a. Alternative Sites for the Bailey Solar Project (depicted in green) with effective floodplain (see Section 3.3 for effective floodplain description). The Survey Area is depicted in red. Existing Bailey Generating Station facility and substation depicted in blue.

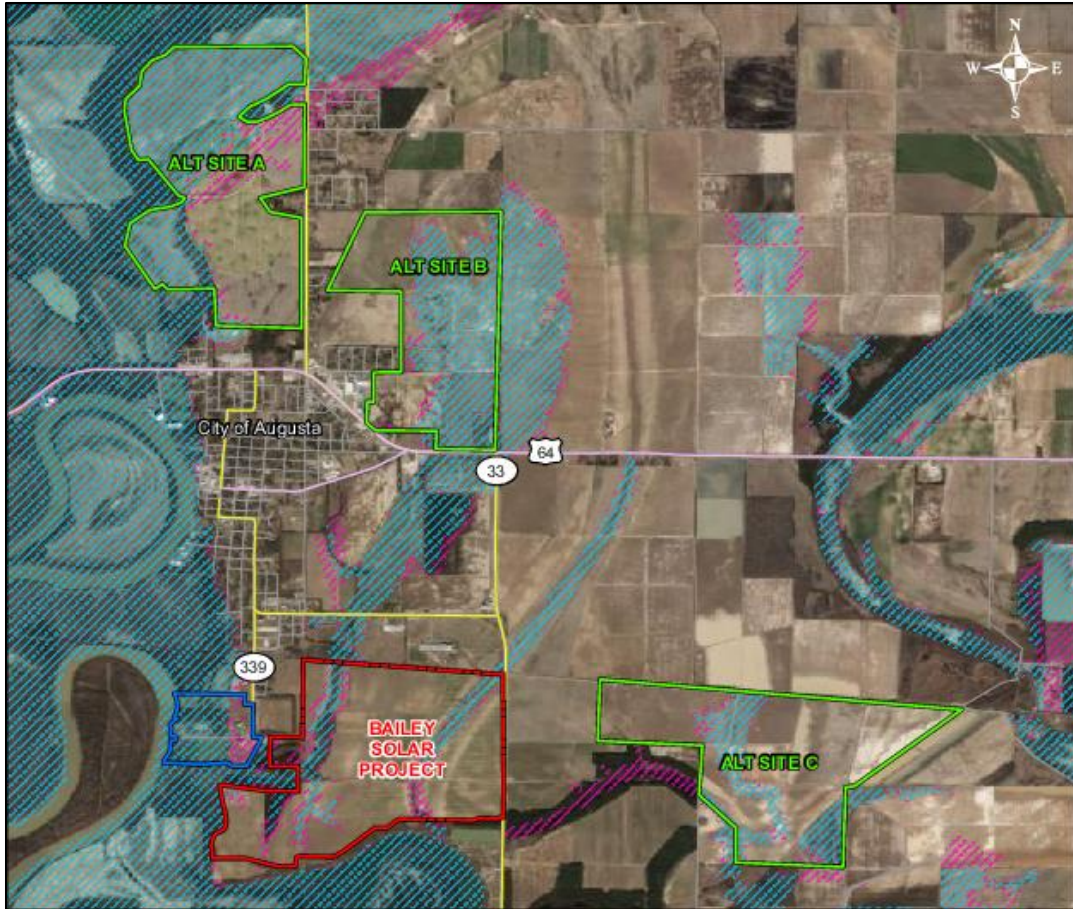


Figure 2b. Alternative Sites for the Bailey Solar Project (depicted in green) with preliminary floodplain (see Section 3.3 for preliminary floodplain description). The Survey Area is depicted in red. Existing Bailey Generating Station facility and substation depicted in blue.

The alternative sites north of Augusta (Sites A and B) are similar to the Proposed Site in that they are primarily level, row-cropped farmland which would require minimal clearing and soil disturbance for the actual solar plant. However, it would require a much longer T-Line compared to the T-Line for the Proposed Site. The respective alternative site T-Line would be routed through or around the City of Augusta to reach the interconnection located at the Existing Bailey Generating Station which is south of Augusta. The respective T-Line would traverse many more properties and cross both a state highway and a railroad. As shown in Figure 2a, a large portion of alternative site A is located in the 100-year floodplain based on the effective FEMA Flood Hazard Boundary Map (FM 05046A – Panel 9). While the effective FEMA Flood Hazard Boundary Map shows only a small portion of alternative Site B within the 100-year floodplain, the preliminary FEMA Flood Hazard Boundary Map (FM 05147C0100C) shows a large portion of the site within the 100 and 500-year floodplain as shown in Figure 2b. Based on the reasons discussed, the alternative sites north of Augusta would have more environmental and human impacts than the Proposed Site.

Similarly, alternative Site C is also level, row-cropped farmland which would require minimal clearing and soil disturbance for the solar facility. Site C is entirely above the 100-year floodplain as displayed on the effective Flood Hazard Boundary Map (FM 05046A – Panel 14), but based on the preliminary Flood Hazard Boundary Map, contains portions of the property within the 100- and 500-year floodplains. Alternative Site C would require a longer T-Line when compared to the T-Line for the Proposed Site. This alternative site T-Line would traverse more properties and cross a state highway. For those reasons, alternative Site C would have more environmental and human impacts relative to the Proposed Site.

2.4 No Action Alternative

Under the No Action Alternative, RUS would not provide financial assistance to the applicant, and the project would not be constructed. Load growth in the cooperatives' service territories is anticipated to continue in the coming years. The no action alternative would result in a failure to meet the increasing electrical energy needs within the AECC service area. Failure to meet increasing energy demands could result in a risk of service interruptions and higher costs for purchased power.

Also failing to repurpose or install new capacity at the Existing Bailey Generating Station would result in the loss in the existing point of interconnection and generator interconnection agreement.

2.5 Site Analysis and Selection

The Proposed Site was selected over the alternative sites based on the following considerations:

- The Proposed Site is closer to the Existing Bailey Generating Station and existing electrical infrastructure than the Alternative Sites.
- The length of the required T-Line would be much shorter for the Proposed Site.
- The Proposed Site would eliminate the need for crossing any railroads or state highways with electrical transmission or gathering lines.
- The Proposed Site is mostly located above the 100 and 500-year floodplains in opposition to alternative Sites A and B.

As discussed, the Proposed Project area as well as alternative sites evaluated contain both 100 and 500-year floodplains. Pursuant to Executive Order (EO) 11988 and Rural

Development Instruction (RD) 1970 Subpart F, “federal agencies are required 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 and indirect support of floodplain development wherever there is a practical alternative”.

RD 1970.256 outlines an Eight-Step Decision Making Process for Alternatives Consideration. This process is being implemented for the Proposed Project to evaluate impacts associated with occupancy and modification to floodplains.

AECC has determined that placement of pilings (poles for mounting solar arrays) in floodplains will be necessary for the Project. As discussed, floodplain avoidance strategies included evaluation of three additional site locations with a focus, among other things, of identifying a site that would result in the least impact to floodplains. The Proposed Site contains less acreage within the 100 and 500- year floodplain than alternative sites A and B and similar acreage to alternative site C. With floodplain impacts similar for the Proposed Site and alternative site C other factors were considered in selection of the Proposed Site for the Project.

Following selection of the Proposed Site, the Project footprint was designed to avoid impacts to floodplains to the extent possible. These strategies to avoid and minimize impacts to floodplains along with any development in floodplains being limited to placement of pilings should not result in significant impacts to the floodplains. Where pilings will be installed within the floodplain, the actual infrastructure (solar photovoltaic panels, conduit, etc.) will be elevated above the 500-year floodplain elevation.

Public notice for the Eight-Step Process will be coupled with the public notice for this EA. Preliminary public notice and final notice will be published and distributed in the manner specified in 7 CFR 1970.14. The preliminary notice period will be 14 days with the option to extend to 30 days. Final public notice will be published upon approval of the proposal and prior to commencement of construction. Comments and feedback will be assessed upon receipt as they provide any concerns or further ways to avoid or minimize impacts to floodplains. AECC will coordinate with the floodplain administrator for any permitting requirements prior to construction of the project.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

GBMc conducted an environmental review of the Survey Area to identify potential environmental impacts associated with the Project and to provide AECC with information sufficient to identify potential constraints to development of the proposed Project. The environmental review includes information gathered from publicly available sources. The following resources were used for the environmental review and Jurisdictional Determination report:

- USFWS Information for Planning and Conservation (USFWS 12-17-2021);
- ANHC Arkansas Heritage Program Biodiversity Database (ANHC 2021);
- National Wetland Inventory maps (USFWS 1984);
- FEMA National Flood Hazard Map
(Effective Map: FEMA 1988, Preliminary Map: 2020);
- Web Soil Survey (USDA, 2021);
- National Land Cover Database (Homer et al. 2015);
- Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987); and
- U.S. Army Corps of Engineers (USACE) Regional Supplements to the Corps of Engineers 1987 Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (USACE 2012).

The environmental review was intended to identify environmental resources, describe existing conditions in the Survey Area, determine potential issues, and to guide mitigation measures to avoid and minimize impacts. The environmental review is not considered a Phase I Environmental Site Assessment or survey for a specific species.

In addition to the review of the data sources listed above, GBMc conducted field investigations on January 13, 2021 and March 11, 2021. The purpose of the site visits was to identify and delineate any possible Waters of the U.S. (WOTUS), identify potential environmental impacts within the Project boundaries and proposed T-line ROW, and to generally characterize the natural and cultural resources.

3.1 Topography and Climate

3.1.1 Affected Environment

The Survey Area is of uniform elevation (200 to 220 feet above mean sea level). The Survey Area is located within the Mississippi Alluvial Plain ecoregion, which is generally characterized as a near level landscape predominantly utilized for agricultural row crop production. More specifically the Survey Area lies within the Western Lowlands Pleistocene Valley Trains eco region (Level IV Ecoregion 73g). Ecoregion 73g is defined by wide, flat to irregular terraces with relict patterns of braided channels. Hydrology in the area has been significantly altered with channelized streams and ditches designed to provide adequate drainage to the croplands dominating the area. This ecoregion is characterized by a mix of windblown silt deposits (loess) and alluvial sand, silt, and gravel deposits with some interspersed sand dunes. Streams and rivers in the area have very low gradients and fine-grained substrates. The Mississippi Alluvial Plain Ecoregion provides important habitat for fish and wildlife and includes the largest continuous system of wetlands in North America. The Survey Area land use is largely row crop agricultural land. The climate in the area consists of warm summers and mild spring, fall, and winter seasons. Mean annual precipitation is approximately 45 to 60 inches with the maximum precipitation occurring in winter and spring (USDA 2006).

3.1.2 Environmental Consequences

Minimal adverse impacts are expected to topography and climate as a result of the project. The site will not require major grading. Utilization of a renewable resource for production of electrical energy will provide a positive benefit by reducing greenhouse gas generation associated with electrical energy production through burning of fossil fuels.

3.1.3 Mitigation

Mitigation strategies included selecting a flat already cleared site to minimize the need for grading and clearing of forested areas.

3.2 Soils

3.2.1 Affected Environment

The USDA-NRCS mapped the soil types within the Survey Area (USDA, 2021). Eleven soils have been mapped in the Survey Area (Table 2 and Figure 3). Of the 11 soil map units, 3 soil map units were considered hydric.

Dominant soil associations located in the proposed Survey Area include Overcup silt loam, 0 to 1 percent slopes (hydric rating of 100); Jackport silty clay loam, 0 to 1 percent slopes (hydric rating of 90); Teksob loam, 0 to 1 percent slopes (hydric rating of 10); and Teksob loam, 1 to 3 percent slopes (hydric rating of 10). Soil hydric ratings for these soils range from 10 to 100. The hydric rating indicates the percentage of map units that meet the criteria for hydric soils. A hydric rating of 0 indicates the soils are made up of almost entirely nonhydric soils with a very low (less than 1%) potential for minor hydric components in the lower positions on the landform. Hydric ratings of 100 indicate the soils are made up of almost entirely hydric components.

A total of 49.1 percent of the Survey Area is classified as prime farmland if drained including Jackport silty clay loam, 0 to 1 percent slopes and Overcup silt loam, 0 to 1 percent slopes. A total of 42.1 percent of the Survey Area is classified as prime farmland including Teksob loam, 0 to 1 percent slopes; Teksob loam, 1 to 3 percent slopes; Teksob loam, 3 to 8 percent slopes; Dundee silt loam, 0 to 1 percent slopes; Grubbs silt loam, 1 to 3 percent slopes; and Wiville fine sandy loam, 1 to 3 percent slopes. A total of 8.9 percent of the Survey Area is classified as farmland of statewide importance including Bulltown loamy fine sand, 1 to 8 percent slopes; Grubbs silt loam, 3 to 8 percent slopes, eroded; and Tuckerman loam, 0 to 1 percent slopes, frequently flooded. Details regarding each soil type are summarized in Table 2. Additional soils information is provided in Appendix A.

The NRCS evaluated the Survey Area for Prime Farmland and Farmland of Statewide Importance. They determined that there is Prime Farmland in the area, but because this activity will be an indirect conversion there will be no additional acres converted. This activity will not affect Prime Farmland or Farmland of Statewide Importance. The NRCS form AD-1006 and Prime Farmland Map are provided in Appendix D.

Table 1. Soil Map Units Acreages, Hydric Components, and Farmland Classification in the Survey Area.

Map Unit Symbol	Map Unit Name	Hydric Components (%)	Farmland Classification	Acres	Percent
BsA	Teksob loam, 0 to 1 percent slopes	10	All areas are prime farmland	94.5	11.9%
BsB	Teksob loam, 1 to 3 percent slopes	10	All areas are prime farmland	112.7	14.2%
BsC	Teksob loam, 3 to 8 percent slopes	10	All areas are prime farmland	26.1	3.3%
BuC	Bulltown loamy fine sand, 1 to 8 percent slopes	10	Farmland of statewide importance	7.4	0.9%
DuA	Dundee silt loam, 0 to 1 percent slopes	6	All areas are prime farmland	32.1	4.0%
GuB	Grubbs silt loam, 1 to 3 percent slopes	20	All areas are prime farmland	57.3	7.2%
GuC	Grubbs silt loam, 3 to 8 percent slopes, eroded	10	Farmland of statewide importance	22.7	2.9%
JpA	Jackport silty clay loam, 0 to 1 percent slopes	90	Prime farmland if drained	178.0	22.4%
OvA	Overcup silt loam, 0 to 1 percent slopes	100	Prime farmland if drained	212.8	26.7%
TrA	Tuckerman loam, 0 to 1 percent slopes, frequently flooded	100	Farmland of statewide importance	40.3	5.1%
WvB	Wiville fine sandy loam, 1 to 3 percent slopes	10	All areas are prime farmland	12.1	1.5%
Total				796.0	100%

Source: USDA, 2021.

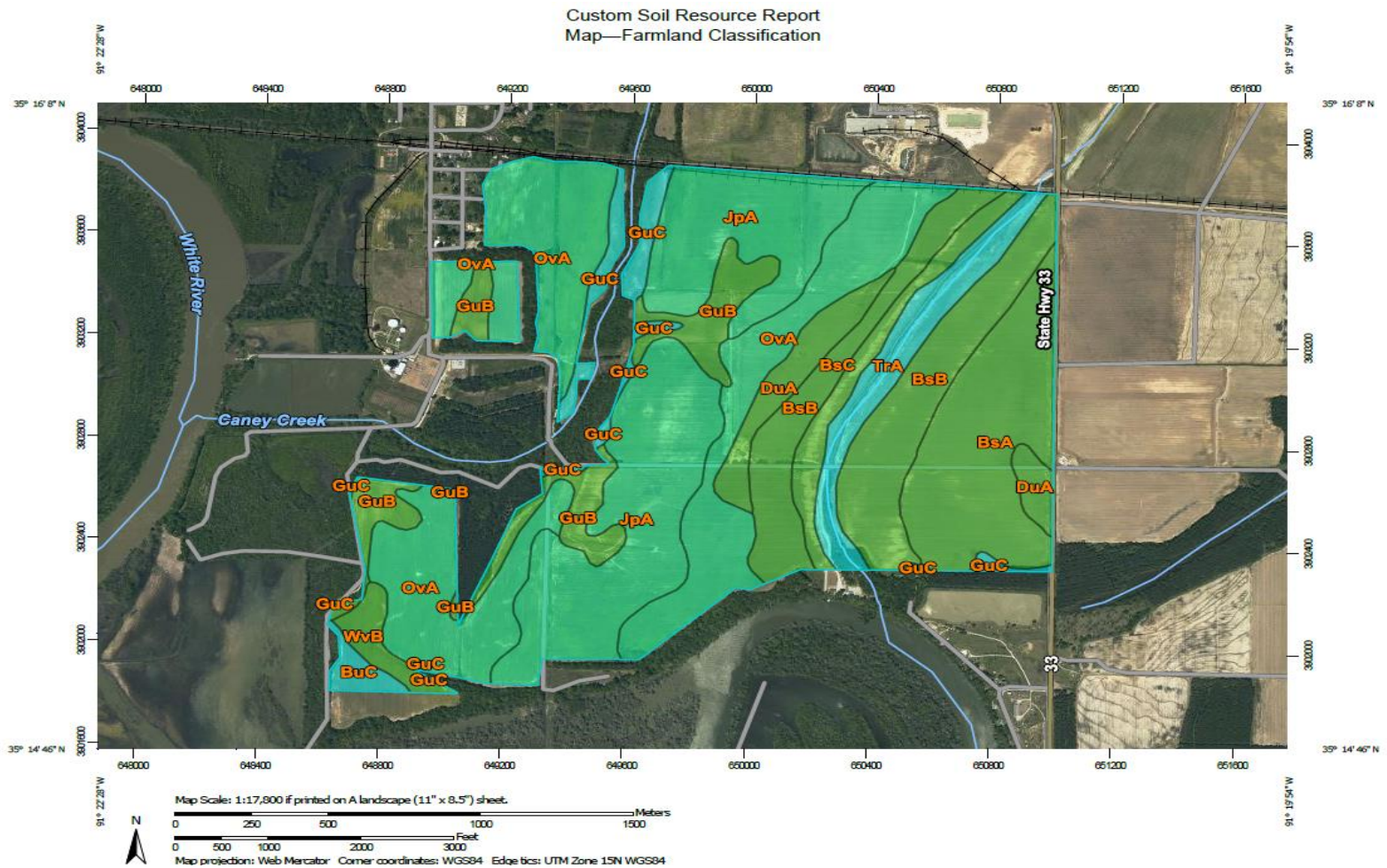


Figure 3a. Soil Map (USDA, 2021).

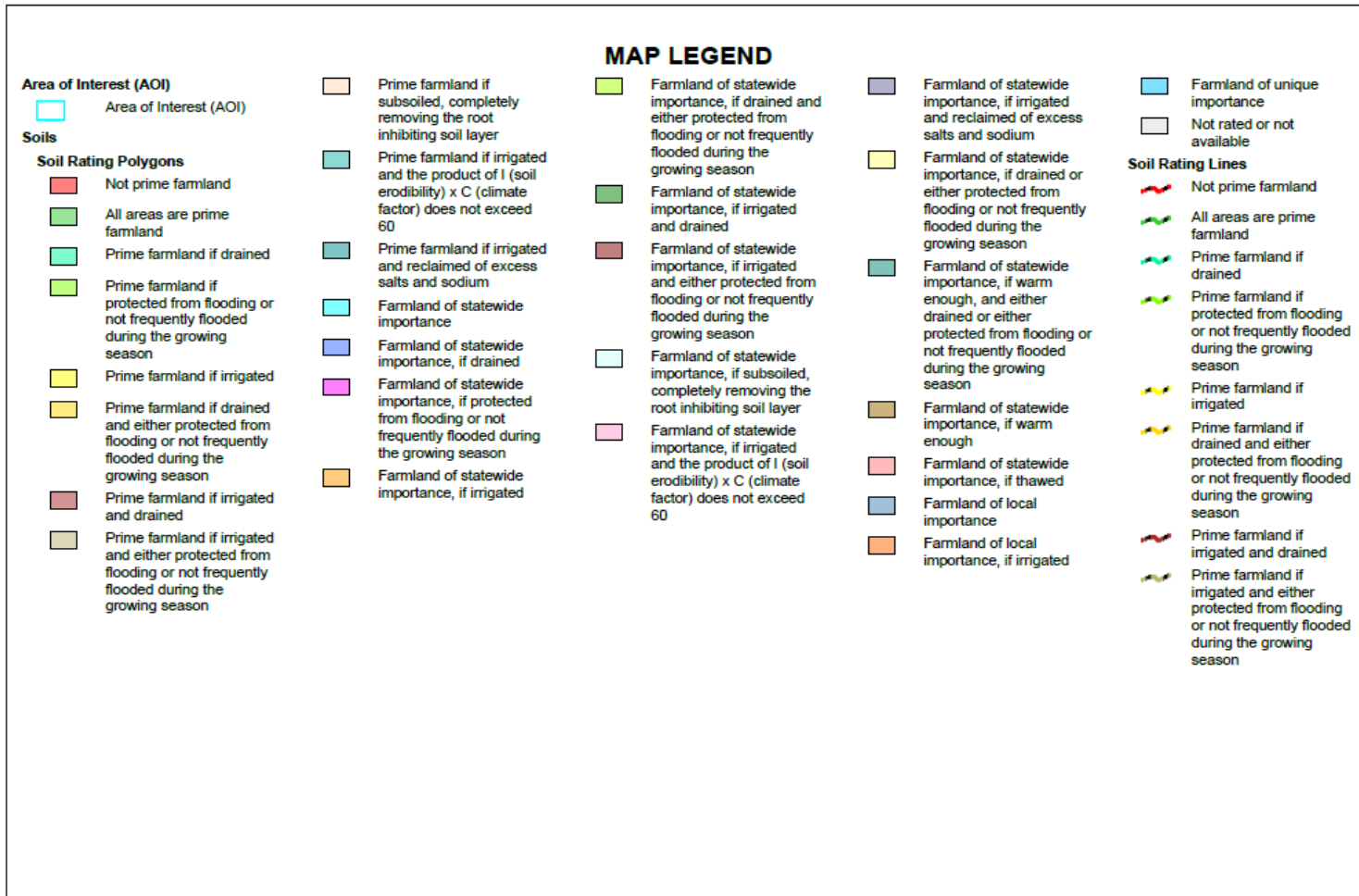


Figure 3b. Soil Map Legend (USDA, 2021).

3.2.2 Environmental Consequences

Temporary impacts to the soil may result from construction access during the wet season when soils are saturated resulting in potential rutting and exposing bare soils to precipitation and runoff waters. Implementation of sediment and erosion control measures will minimize the transport of soil off site. Upon completion of construction any disturbed areas will be restored and properly vegetated.

3.2.3 Mitigation

Utilization of sediment and erosion control measures will minimize adverse impacts to soils. Following construction, the site will be stabilized year-round with vegetation. This should be an improvement over current conditions of seasonal bare soils during winter months associated with common row crop agricultural practices.

3.3 Water Features

3.3.1 Affected Environment

The Project Area is within the Upper White-Village Watershed (HUC 11010013) and ultimately drains to the White River. Much of the hydrology within the watershed is influenced by man-made ditching and drainage for agriculture. National Wetland Inventory (NWI) maps indicate approximately 9.0 acres of wetlands within the Survey Area and approximately 2.5 acres of wetlands within the proposed T-line ROW.

GBMc performed a desktop survey for the Survey Area and then conducted field investigations on January 13, 2021 and March 11, 2021. A jurisdictional determination report was prepared and is included in Appendix B. The Survey Area was assessed from the desktop using aerial photographs, soil survey maps, topographic maps, and NWI maps. The desktop assessment was used to determine areas potentially containing WOTUS and to aid in the jurisdictional determination. Preliminary wetland identification for the Survey Area was accomplished using color characteristic of wetlands on aerial photographs, mapped hydric soils on the NRCS Web Soil Survey, areas identified as wetlands on NWI maps, and topographic features indicating drainage pathways.

The Survey Area includes three separate areas of land (shown as Areas A, B, and C on Figure 4) and a proposed T-line ROW (also shown in Figure 4). The desktop assessment

indicated a high potential for streams and a moderate potential for wetlands on the areas of land. Aerial images indicated the site is predominantly farmland with a small patch of forest on the south side of the easternmost tract of land. The proposed T-line ROW is predominantly forested. NWI maps indicate four potential wetlands on the easternmost area (Area C) and one farmed wetland on the middle area of land (Area B). NWI maps indicate a large wetland complex and one stream on the proposed T-line ROW. Topographic maps also indicate one intermittent stream on the property and one intermittent stream on the proposed T-line ROW. Digital elevation models (DEM) and aerial images suggest that the two perennial streams do not currently exist as indicated on topographic maps.

The EPA and USACE announced on September 3, 2021, they have halted implementation of the Navigable Waters Protection Rule (NWPR) effective August 31, 2021 by reason of the United States District Court for the District of Arizona's August 30, 2021 order vacating and remanding the rule (*Pasqua Yaqui Tribe, et al. v. United States EPA, et al.*, No. CV-20-00266-TUC-RM). Until further notice, the agencies will interpret "waters of the United States" consistent with the pre-2015 regulatory regime.

Potential stream determination was based on the definition of "Waters of the U.S." as stated under the CWA following the *Rapanos v. United States*, and *Carabell v. United States* Supreme Court decision. This definition covers waterbodies that are currently, have in the past, or are susceptible for use in interstate or foreign commerce; all interstate waters; all other waters whose use, destruction, or degradation could affect interstate or foreign commerce; all impoundments of waters otherwise defined as WOTUS; any tributaries of WOTUS; territorial seas; and wetlands adjacent to WOTUS.

Wetlands

Wetland determination is typically based on the three diagnostic characteristics (wetland hydrology, hydrophytic vegetation, and hydric soils) outlined in the USACE Wetlands Delineation Manual (1987 Corps Manual) and the Regional Supplement to the USACE Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region. For an area to be considered a wetland, it is required, under most circumstances, to meet each of the three diagnostic criteria. Field investigations for the jurisdictional determination, conducted on January 13 and March 11, 2021, revealed that the Survey Area contains three wetlands (Figure 4). Given that W-1 and W-3 are isolated and do not abut or have direct hydrological surface connections to any jurisdictional WOTUS, it is likely that they would be considered non-jurisdictional. Given that W-2 abuts and has direct hydrologic surface connection to Caney Creek, it would likely be considered a jurisdictional WOTUS. Each of these wetlands fall under the Palustrine

classification, which are non-tidal wetlands such as freshwater marshes or swamps. Wetland W-1 is entirely forested and would be considered palustrine forested (PFO) in the Cowardin classification system. Wetlands W-2 and W-3 are herbaceous wetlands and would be considered palustrine emergent (PEM).

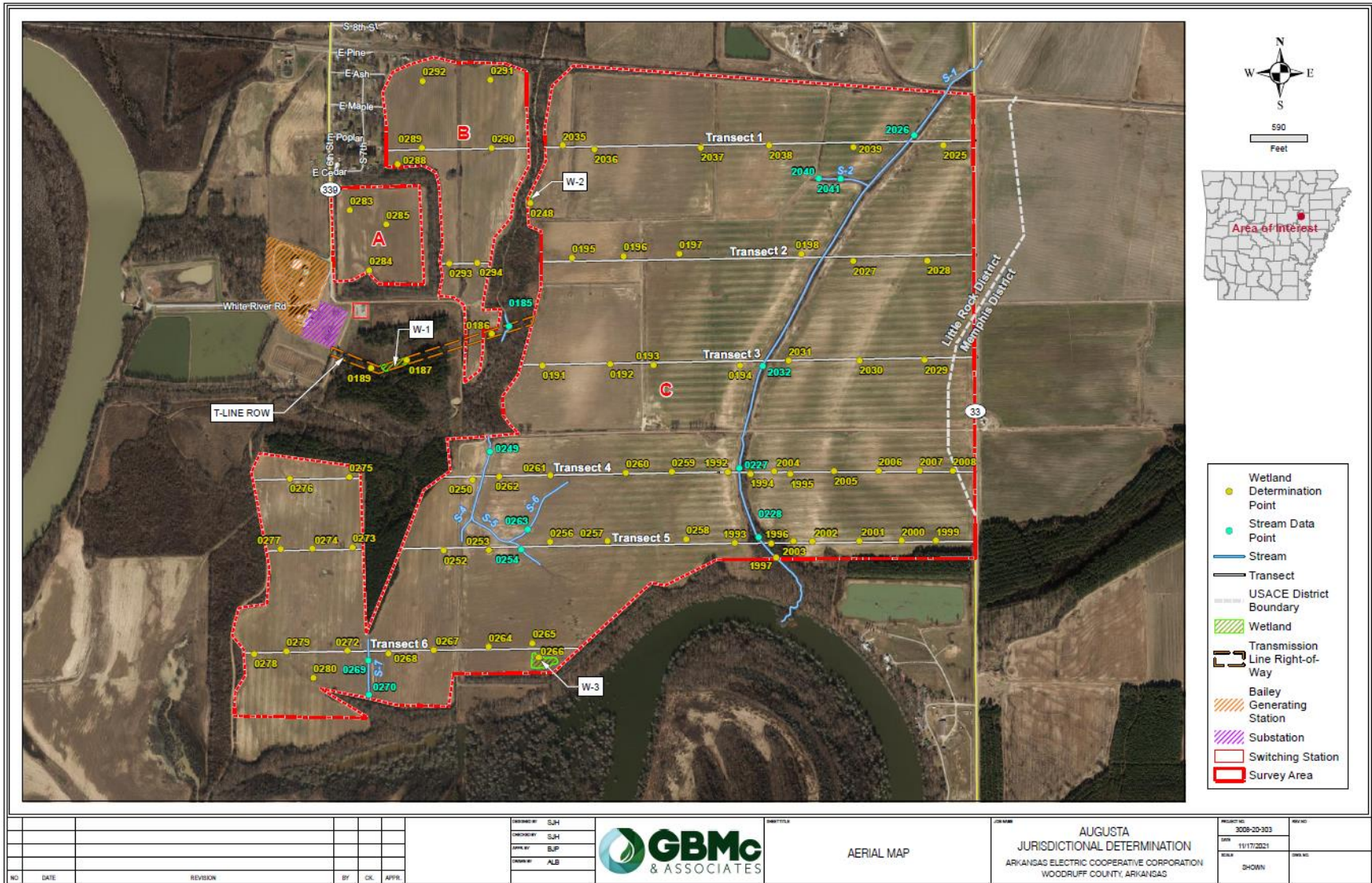


Figure 4. Delineated Features.

Streams

Two intermittent streams and five ephemeral streams were identified within the Survey Area (Table 2). All streams identified on the property flow offsite and eventually into a jurisdictional WOTUS (White River). All identified streams would likely be considered jurisdictional WOTUS by the USACE due to exhibiting connectivity to relatively permanent waters.

Table 2. Summary of Stream Findings.

Stream ID	Latitude	Longitude	Classification	Linear Feet
S-1	35.258176°	-91.347522°	Intermittent	5,645
S-2	35.263518°	-91.344680°	Ephemeral	572
S-3 (Caney Creek)	35.259443°	-91.356386°	Intermittent	109
S-4	35.255848°	-91.357133°	Ephemeral	1,167
S-5	35.253019°	-91.356098°	Ephemeral	915
S-6	35.253592°	-91.355859°	Ephemeral	912
S-7	35.249906°	-91.361523°	Ephemeral	616
Total				9,936

Floodplains

The effective FEMA Flood Hazard Boundary Map for the Project Area is FM050468A – Panel 14. FEMA has released a preliminary Floodplain Panel for the area (FM05147C0100C);

however, it has not been approved to date. The local floodplain administrator requested that the effective floodplain map (FM050468A) for the area be used until the preliminary panel is approved. Figure 5a provides an overlay of the Project Area and the effective 100-year floodplain while Figure 5b shows an overlay of the Project Area and the preliminary 100- and 500-year floodplains. As depicted on the effective Flood Hazard Boundary Map (Figure 5a) the Survey Area contains portions of the property within Flood Zone A. Flood Zone A is defined by FEMA as areas subject to inundation by the 1-percent annual chance flood event (also referred to as the 100-year floodplain) generally determined using approximate methodologies. The effective panel for the area does not provide detail for the 500-year floodplain. The preliminary Flood Hazard Boundary Map (Figure 5b) outlines the 100- and 500-year floodplains located within the Survey Area. The effective and preliminary floodplain maps generally coincide, with the preliminary map providing a detailed breakdown of the 100- and 500-year floodplains. The Project area was designed to avoid and minimize impacts to the floodplains to the extent possible.

Consistent with the requirements of EO 11988 and Rural Development Instruction 1970.256, projects considered critical action within a mapped 100-year (1%) floodplain must adhere to the standards for federal agencies by which to evaluate flood and floodplain impacts. To analyze the direct and indirect impacts associated with the occupancy and modification of the floodplain, the eight-step process pursuant to USDA rural development guidelines and procedures was performed to review. The proposed action does not meet the exceptions and therefore requires an eight-step analysis of the direct and indirect impacts associated with the occupancy and modification of the floodplain. The eight-step analysis was conducted and documented within the Eight-Step Decision Making Process for Alternatives Consideration. It was determined through the process, that the proposed project had been adapted in order to minimize effects on floodplain values and based on a review of the practical alternatives, the proposed action is selected as the final action. This determination was based on evaluation of hazards, mitigation and alternatives.

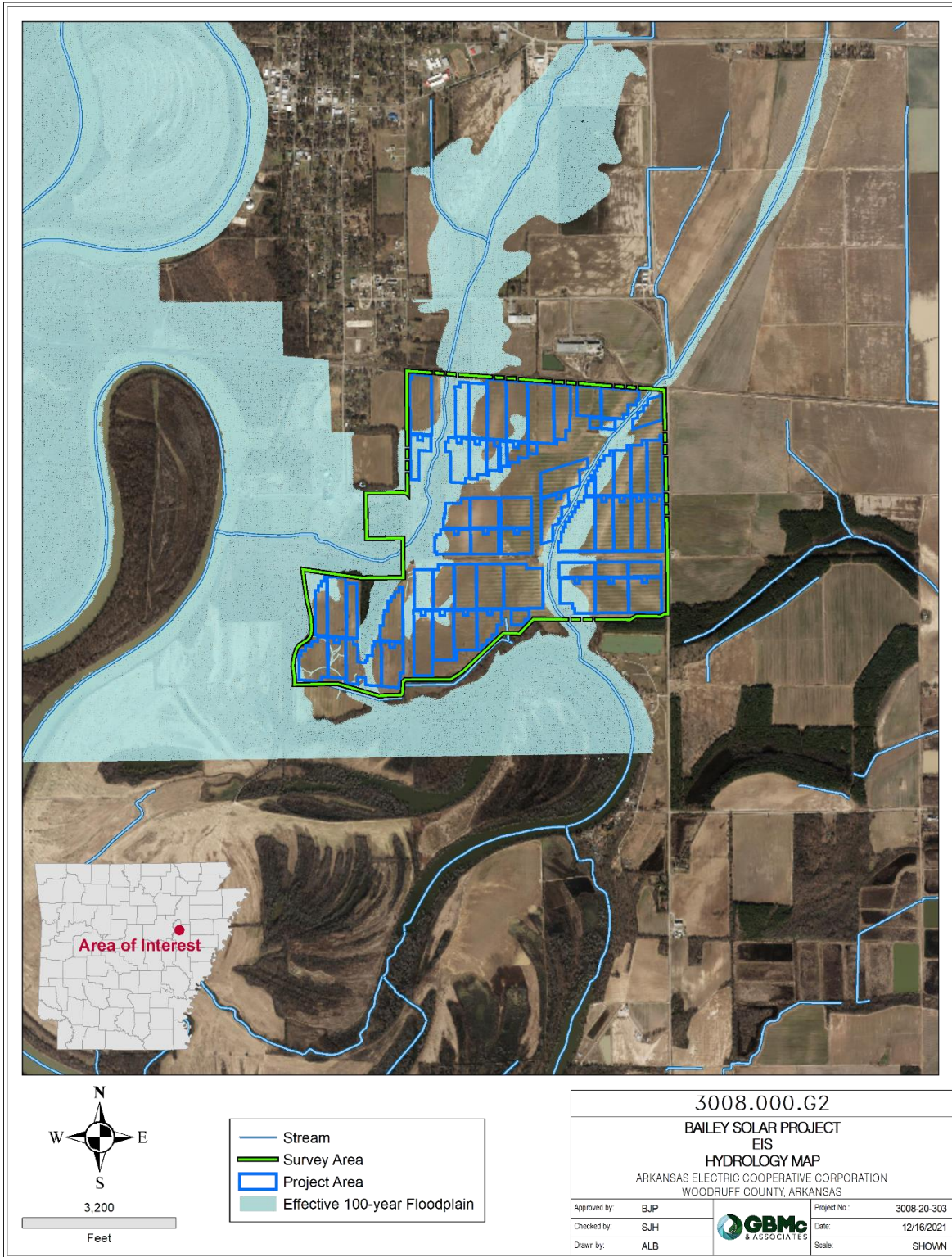


Figure 5a. Effective Floodplain Map

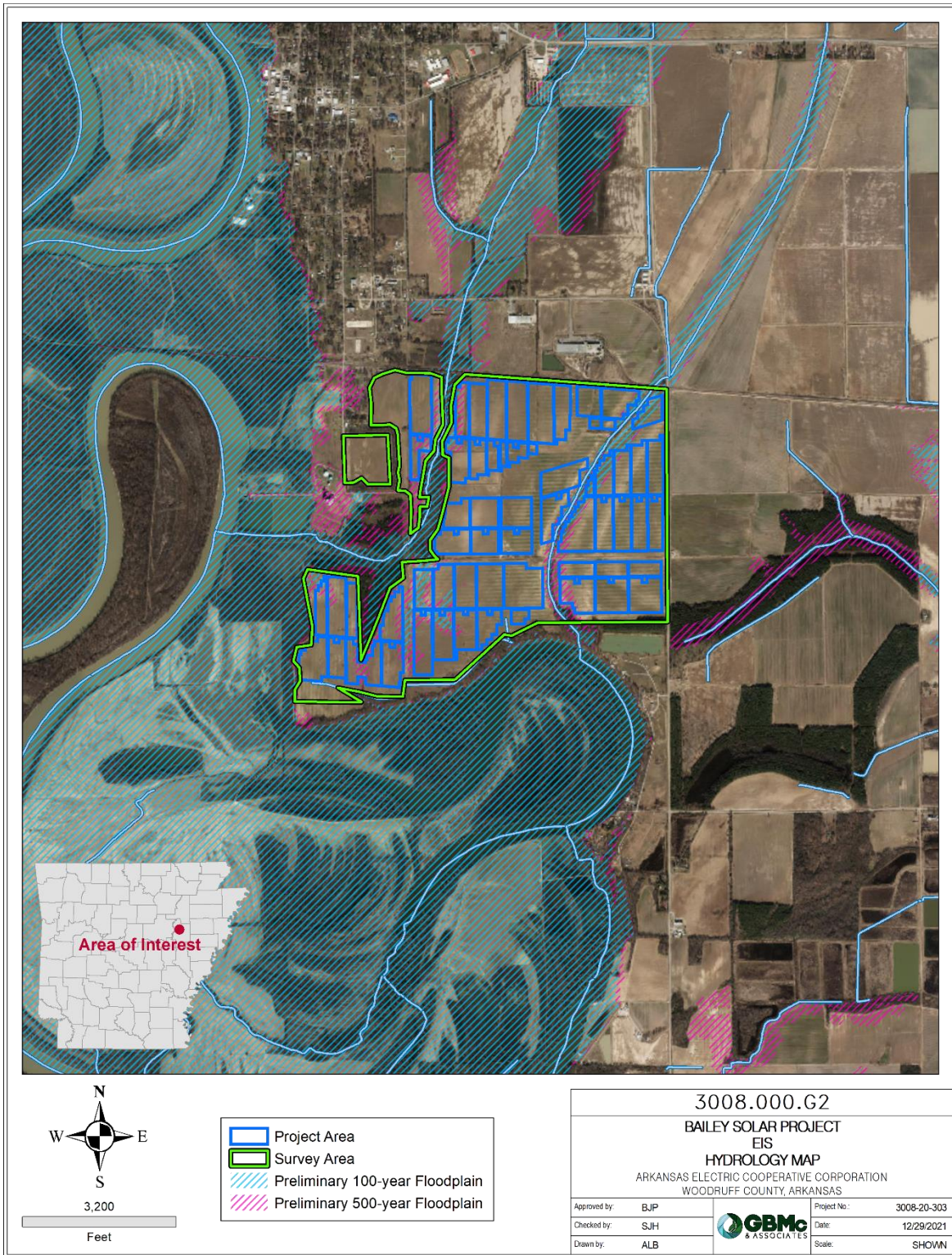


Figure 5b. Preliminary Floodplain Map

Eight-Step Decision Making Process for Alternatives Consideration

§ 1970.256 Eight-Step Decision Making Process for Alternatives Consideration.

Executive Order 11988, in Section 2(a), outlines an eight-step decision-making process for floodplain impacts. Executive Order 11988 sets out the floodplain management decision-making process to be followed by the Agency for all actions involving new construction or substantial improvement in the floodplain. The specific floodplain area to be considered is described in § 1970.257.

The Agency also uses the eight-step decision-making process for actions that involve purchase or repair of existing structures or facilities identified in § 1970.258 which may impose risk to health and welfare. Refer to Exhibit A for a flow chart diagram of the Eight-Step Decision Making Process for Alternatives Consideration. While the process is linear, as information is gathered throughout the decision-making process and as additional information is needed, it may be necessary to revisit or reconsider any of the steps.

(a) Step 1. DETERMINE IF THE PROPOSED ACTION IS IN A FLOODPLAIN. Determine whether the proposed action is located within the floodplain) and whether the action has the potential to affect or be affected by a floodplain. If the action will not occur within the floodplain and no impact to the floodplain is anticipated, then no further action is necessary. If the action occurs in the floodplain or if floodplain impact is anticipated, continue to step 2.

The effective FEMA Flood Hazard Boundary Map for the Project Area is FM050468A –Panel 14. FEMA has released a preliminary Floodplain Panel for the area (FM05147C0100C); however, it has not been approved to date. The local floodplain administrator requested that the effective floodplain map (FM050468A) for the area be used until the preliminary panel is approved. Figure 5a provides an overlay of the Project Area and the effective 100-year floodplain while Figure 5b shows an overlay of the Project Area and the preliminary 100- and 500-year floodplains. As depicted on the effective Flood Hazard Boundary Map (Figure 5a) the Survey Area contains portions of the property within Flood Zone A. Flood Zone A is defined by FEMA as areas subject to inundation by the 1-percent annual chance flood event (also referred to as the 100-year floodplain) generally determined using approximate methodologies. The effective panel for the area does not provide detail for the 500-year floodplain. The preliminary

Flood Hazard Boundary Map (Figure 5b) outlines the 100- and 500-year floodplains located within the Survey Area. The effective and preliminary floodplain maps generally coincide, with the preliminary map providing a detailed breakdown of the 100- and 500-year floodplains. The Project area was designed to avoid and minimize impacts to the floodplains to the extent possible.

(b) Step 2. PRELIMINARY PUBLIC NOTICE and PRIVATE PARTY NOTIFICATION. Notify the public at the earliest possible time of the Agency's intent to carry out an action in the floodplain and involve the affected and interested public in the decision-making process. The Preliminary Public Notice requirements for particular actions and Private Party Notice requirements are outlined in § 1970.261 and Exhibit B.

The preliminary public notice for the 8-step analysis will be included with the public notice for the Environmental Assessment. This notice will be published twice as required – in consecutive weekly publications of the *Woodruff County Monitor*. The preliminary notice will include the following language:

“The Federal Emergency Management Agency (FEMA) Flood Hazard Boundary Maps indicate that there are 100-year (areas subject to inundation by the 1-percent annual chance flood event) and 500-year (areas subject to inundation by the 0.2-percent annual chance flood event) floodplains located in the project area. If implemented, the proposed project will result in placement of pilings (mounting structures/poles for solar arrays) in floodplains. AECC estimates an aggregate piling footprint of less than one-tenth of an acre in the 100-year floodplain and less than two-tenths of an acre in the 500-year floodplain. These pilings are located in the southwest corner of the property, adjacent to the unnamed tributary that bisects the property, and adjacent to Caney Creek in the northwest corner of the property. In accordance with Executive Order 11988, Floodplain Management and USDA Departmental Regulation 9500-3, Land use Policy, the purpose of this notice is to inform the public of this proposed effect and request comments concerning the proposal, alternative sites or actions that would avoid these impacts, and methods that could be used to minimize these impacts.”

(c) Step 3. SEARCH FOR PRACTICABLE ALTERNATIVES. Identify and evaluate practicable alternatives to locating the proposed action in the floodplain including off-site and on-site alternatives, alternative configurations, other avoidance actions and the “no action”

alternative, as appropriate. All proposals with impact to floodplains should at least document the “no action” alternative. If a practicable alternative exists outside the floodplain, the Agency must consider that alternative. Alternative site analyses are not required to be completed by the Agency for existing single-family housing within the guaranteed single family housing programs, but are required for those direct single family housing programs listed in § 1970.258(b).

Properties within an approximate four-mile radius of the existing infrastructure at the Existing Bailey Generating Station were investigated for the potential to house the Bailey Solar Project. In addition to the Proposed Site, three alternative sites were identified that contained cleared, level ground of sufficient acreage to house the solar facility and landowners willing to discuss using their property for the project. Two of the alternative sites are located north of Augusta and a third is located east of the Proposed Site (Figures 2a and 2b).

The alternative sites north of Augusta (Sites A and B) are similar to the Proposed Site in that they are primarily level, row-cropped farmland which would require minimal clearing and soil disturbance for the actual solar plant. However, it would require a much longer transmission line compared to the transmission line for the Proposed Site. The respective alternative site transmission line would be routed through or around the City of Augusta to reach the interconnection located at the Existing Bailey Generating Station which is south of Augusta. The respective transmission line would traverse many more properties and cross both a state highway and a railroad. As shown in Figure 2a, a large portion of alternative site A is located in the 100-year floodplain based on the effective FEMA Flood Hazard Boundary Map (FM 05046A – Panel 9). While the effective FEMA Flood Hazard Boundary Map shows only a small portion of alternative Site B within the 100-year floodplain, the preliminary FEMA Flood Hazard Boundary Map (FM 05147C0100C) shows a large portion of the site within the 100 and 500-year floodplain as shown in Figure 2b. Based on the reasons discussed, the alternative sites north of Augusta would have more environmental and human impacts than the Proposed Site.

Similarly, alternative Site C is also level, row-cropped farmland which would require minimal clearing and soil disturbance for the solar facility. Site C is entirely above the 100-year floodplain as displayed on the effective Flood Hazard Boundary Map (FM 05046A – Panel 14), but based on the preliminary Flood

Hazard Boundary Map, contains portions of the property within the 100- and 500-year floodplains. Alternative Site C would require a longer transmission line when compared to the transmission line for the Proposed Site. This alternative site transmission line would traverse more properties and cross a state highway. For those reasons, alternative Site C would have more environmental and human impacts relative to the Proposed Site.

(d) Step 4. IDENTIFY ADVERSE IMPACTS AND BENEFICIAL VALUES/FUNCTIONS. Identify the potential direct, indirect, and cumulative impacts associated with the proposed action. Identify the floodplain's beneficial functions and values such as water quality improvement, water filtration, floodwater storage, fish and wildlife habitat, aesthetics, and biological productivity. Then analyze the impacts to the following factors: 1) Natural environment (topography, water sources, habitat areas, etc.), 2) Social concerns (aesthetics, historic and cultural values, land use patterns, etc.) 3) Economic and engineering aspects (costs of construction, transportation, access, ingress, egress, etc.), and 4) Legal considerations (permits, leases, deed restrictions, setbacks, etc.)

Construction and operation of the proposed Project should not result in significant adverse impacts on hydrology. The solar array and supporting infrastructure will be designed to avoid waters and floodplains to the extent practicable. Aside from pilings no fill will be placed in any WOTUS or floodplains. Where encroachment on floodplains is necessary, pilings will be installed, and the actual infrastructure (solar photovoltaic panels, conduit, etc.) will be elevated above the 500-year floodplain elevation.

(e) Step 5. MITIGATE ADVERSE IMPACTS. Mitigation can take the form of avoidance, minimization of floodplain impacts, or compensation for impacts, and can include all efforts to minimize the adverse impacts to floodplains identified under Step 4. Avoidance can often be accomplished by reviewing alternative layouts, designs, and configurations. Mitigation also employs on-site evaluation of those factors evaluated in Step 4, including the presence of other natural or cultural resources, economic constraints, engineering constraints, transportation constraints, traffic constraints, site access, site buffer setbacks, etc. Agency environmental staff or the applicant should ensure documentation in the environmental file of any efforts to avoid, minimize, and mitigate adverse impacts to the floodplain, including restoration, preservation or enhancement of the natural and beneficial values of the floodplain. Additional avoidance, minimization, and mitigation measures are listed in § 1970.260.

Mitigation strategies for protection of WOTUS and floodplains were initiated during the site selection process. Properties within an approximate 4-mile radius of the existing substation were reviewed for various constraints and opportunities associated with the project including the presence of floodplains and WOTUS. Four potential sites were identified with landowners receptive to relinquishing land for the Project. The Proposed Site contains the most favorable conditions regarding floodplain impacts with significantly less floodplain area on the property than either alternative Sites A or B. The proportion of floodplain on the Proposed Site and alternative Site C are similar, but other factors such as proximity to the existing substation, number of property owners impacted, and avoidance of state highway crossings resulted in selection of the Proposed Site.

Upon selection of the Proposed Site further mitigation strategies included designing the infrastructure to avoid impacts to WOTUS and floodplains. No fill will be placed in WOTUS, and except for pilings, no fill will be placed in floodplains. Indirect impacts will be minimum as the Project will not require significant topography altering earthwork. Drainage pathways and streams will remain intact. The site will benefit from the presence of year-round vegetation to stabilize the soil and reduce the amount of sediment running off the site as is common in row crop agricultural fields that commonly maintain bare soil outside of the active crop production season. Reduction of sediment runoff will reduce potential fill in adjacent waterways and floodplains long term.

Compensatory mitigation for WOTUS or floodplains is not anticipated for this project. The project has been designed to avoid any discharge to WOTUS. While the project layout was designed to avoid most of the floodplains on the site some encroachment was unavoidable. Floodplain encroachment is limited to pilings and all infrastructure will be elevated above the 500-year floodplain. The limited floodplain encroachment should have little or no impacts on the floodplain. The local floodplain administrator has been notified and will continue to be consulted throughout design and construction to ensure that the project complies with any floodplain regulations.

(f) Step 6. RE-EVALUATE ALTERNATIVES. Re-evaluate the proposed action to determine if it is still practicable in light of the remaining exposure to flood hazards, extent to which the action will aggravate hazards and the potential to disrupt floodplain values.

Alternatives preliminarily rejected at Step 3 should also be re-evaluated as to whether they are practicable in light of the information gained in Steps 4 and 5. The Agency may deny financial assistance for a project that occurs in or affects a floodplain if the Agency determines there are practicable alternatives which would accomplish the proposed action's purpose and need without floodplain impact, or if there is not a significant need for the proposal, regardless of whether the applicant has an issued permit for the floodplain impacts.

The alternative sites were re-evaluated, and it was determined that there are no practicable alternatives to the Proposed Site. The Proposed Site was selected over the alternative sites based on the following considerations:

- The Proposed Site is closer in proximity to the Existing Bailey Generating Station and existing electrical infrastructure.
- The length of the required transmission line would be much shorter for the Proposed Site.
- The Proposed Site would eliminate the need for crossing any railroads or state highways with electrical transmission or gathering lines.
- The Proposed Site is mostly located above the 100 and 500-year floodplains in opposition to alternative Sites A and B.

(g) Step 7. FINAL PUBLIC NOTICE. Prepare and provide the public with a finding and public explanation of the Agency's final decision that the floodplain impact is the only practicable alternative as specified in § 1970.261 (Public Notification Requirements) and that there is a significant need for the proposed action (Exhibit B).

(h) Step 8. IMPLEMENT PROPOSED ACTION WITH APPROPRIATE MITIGATION. When floodplain (or other important resource) impacts would occur from an Agency action, but permits/authorizations are not yet issued, the Agency can complete an EA/EIS and publish a FONSI/ROD evaluating the proposed impacts with an indication within the EA/EIS, the FONSI/ROD, and the letter of conditions, that permit(s) and authorization(s) are pending and that any associated mitigation will be a requirement in the letter of conditions.

(1) However, the EA/EIS, FONSI/ROD, and Letter of Conditions shall indicate that no construction shall commence until after the permit(s) is/are issued. The EA/EIS, FONSI/ROD, and Letter of Conditions should also state that the applicant

is required to send a revised project description to the Agency for evaluation should the impacts associated with the proposal vary significantly from those evaluated in the EA/EIS, and the agency will need to supplement to the EA/EIS.

(2) Per RD Instruction 1806-B flood insurance is a requirement ONLY when a structure is located within the FEMA FIRM designated 100-year floodplain; flood insurance is not currently a requirement for structures located outside of the FEMA FIRM 100-year floodplain.

3.3.2 Environmental Consequences

Construction and operation of the proposed Project should not result in significant adverse impacts on hydrology. The solar array and supporting infrastructure will be designed to avoid waters and floodplains to the extent practicable. Aside from pilings no fill will be placed in any WOTUS or floodplains. Where encroachment on floodplains is necessary, pilings will be installed, and the actual infrastructure (solar photovoltaic panels, conduit, etc.) will be elevated above the 500-year floodplain elevation.

Significant earthwork is not anticipated for the project as the Project Site is already level. Best management practices (BMPs) and a storm water pollution prevention plan (SWPPP) will be utilized to ensure the streams and waterways within the Project Area are not adversely affected by sediment runoff.

A desktop review indicated that wetlands and other WOTUS are present in the Survey Area. Field delineations of wetlands occurred on January 13 and March 11, 2021. The solar array and supporting infrastructure has been designed to avoid WOTUS to the extent practicable. Should any jurisdictional wetlands need to be impacted, impacts would be limited to installation of pilings and appropriate permits from the USACE will be obtained for any work activities within wetlands.

3.3.3 Mitigation

Mitigation strategies for protection of WOTUS and floodplains were initiated during the site selection process. Properties within an approximate 4-mile radius of the existing substation were reviewed for various constraints and opportunities associated with the project including

the presence of floodplains and WOTUS. Four potential sites were identified with landowners receptive to relinquishing land for the Project. The Proposed Site contains the most favorable conditions regarding floodplain impacts with significantly less floodplain area on the property than either alternative Sites A or B. The proportion of floodplain on the Proposed Site and alternative Site C are similar, but other factors such as proximity to the existing substation, number of property owners impacted, and avoidance of state highway crossings resulted in selection of the Proposed Site.

Upon selection of the Proposed Site further mitigation strategies included designing the infrastructure to avoid impacts to WOTUS and floodplains. No fill will be placed in WOTUS, and except for pilings, no fill will be placed in floodplains. Indirect impacts will be minimum as the Project will not require significant topography altering earthwork. Drainage pathways and streams will remain intact. The site will benefit from the presence of year-round vegetation to stabilize the soil and reduce the amount of sediment running off the site as is common in row crop agricultural fields that commonly maintain bare soil outside of the active crop production season. Reduction of sediment runoff will reduce potential fill in adjacent waterways and floodplains long term.

Compensatory mitigation for WOTUS or floodplains is not anticipated for this project. The project has been designed to avoid any discharge to WOTUS. While the project layout was designed to avoid most of the floodplains on the site some encroachment was unavoidable. Floodplain encroachment is limited to pilings and all infrastructure will be elevated above the 500-year floodplain. The limited floodplain encroachment should have little or no impacts on the floodplain. The local floodplain administrator has been notified and will continue to be consulted throughout design and construction to ensure that the project complies with any floodplain regulations.

3.4 Vegetation

3.4.1 Affected Environment

Vegetation in the Survey Area consists of mostly cultivated agricultural lands and fallow fields (Figure 6). The agricultural land in the Survey Area is cropland primarily consisting of cotton (*Gossypium hirsutum*) and soybeans (*Glycine max*). Vegetation occurring in fallow fields included broomsedge (*Andropogon virginicus*), hairy buttercup (*Ranunculus sardous*), and spiny pigweed (*Amaranthus spinosus*). Vegetation occurring in the palustrine emergent wetland areas included hairy buttercup (*Ranunculus sardous*) and marsh flatsedge (*Cyperus pseudovegetus*).

Minor amounts of forested areas in the Survey Area are associated with fence lines, drainages, and riparian areas. These forested corridors are dominated by willow oak (*Quercus phellos*), sweetgum (*Liquidambar styraciflua*), Chinese privet (*Ligustrum sinense*), and American elm (*Ulmus americana*).

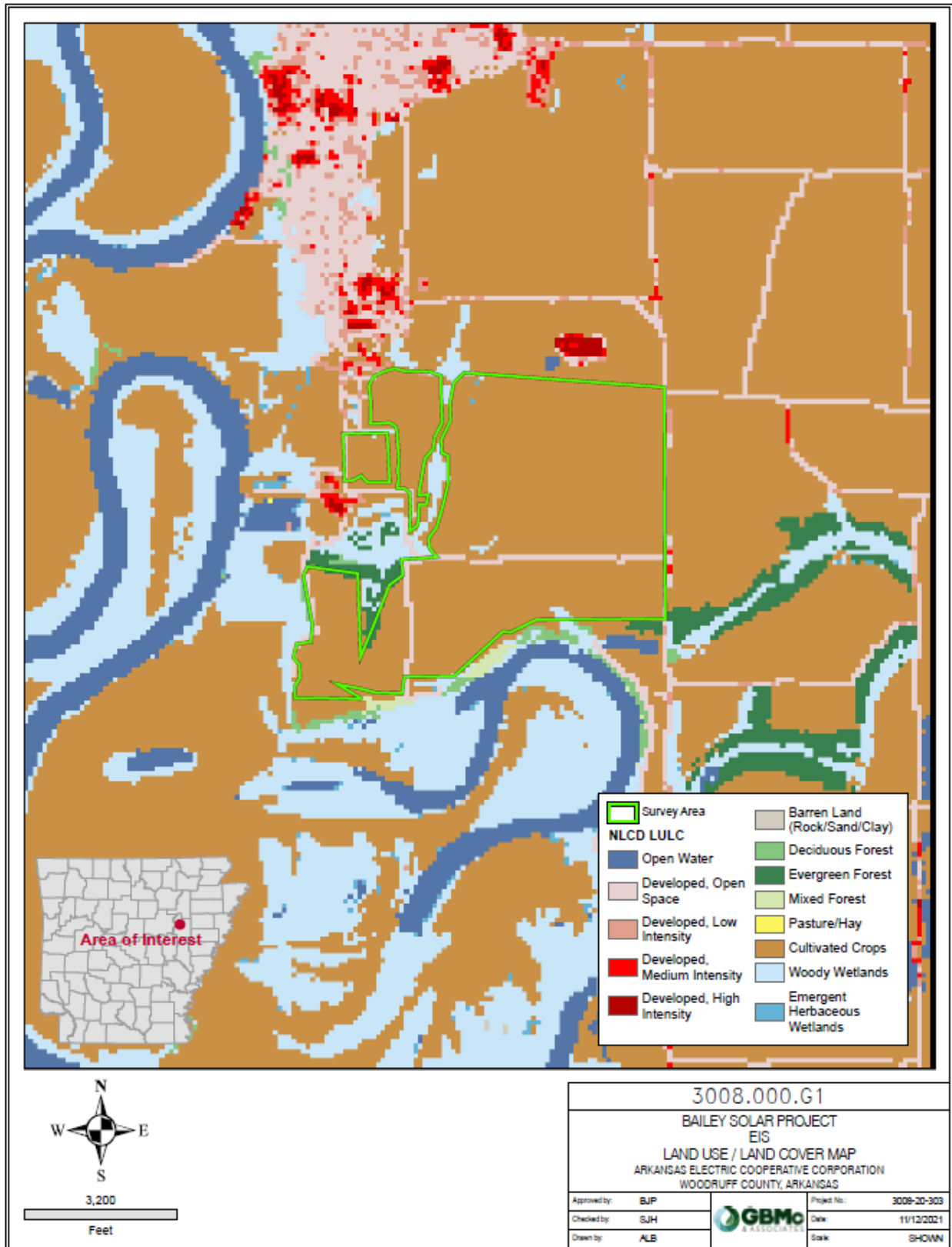


Figure 6. Survey Area Land Cover.

3.4.2 Environmental Consequences

Disturbance and loss of vegetation will likely result from the construction of the solar facility. However, by utilizing existing cleared property (i.e. agricultural fields) disturbances and losses will be minimized. Furthermore, many of these agriculture fields are routinely cultivated for row crop agriculture production and remain devoid of vegetation during prolonged periods of the year. Upon completion of construction the Project area will be maintained with herbaceous vegetation which will provide year-round ground cover to stabilize the soil.

The T-line will require clearing trees in the ROW to control vegetation hazards growing beneath the line and to prevent tree falls on the line. Trees in the ROW will be cut at ground level, leaving the roots in place for erosion control. Once T-line construction is complete, grasses and low-growth vegetation will be established in the ROW for permanent stabilization.

3.4.3 Mitigation

Temporary disturbance of vegetation at the solar site is anticipated during the construction phase but will benefit from year-round herbaceous vegetation following completion of construction. There will be a permanent loss of approximately 2.6 acres of forestland for the construction of the T-line. The proposed T-line will be constructed side by side to an existing T-Line which will reduce any further habitat fragmentation. Constructing adjacent to the existing T-Line will also reduce the amount of clearing necessary as a portion of the exiting ROW can be used as part of the new ROW.

3.5 Wildlife

3.5.1 Affected Environment

Most of the property is utilized as row crop agricultural land. These areas are continually disturbed which impairs the suitability for wildlife habitat. There is a small forested riparian area on the south side of the property and the T-line is predominantly forested. Forested areas provide favorable habitat for wildlife such as white tail deer, rabbits, squirrels, and migratory birds. Approximately 1.1 acres of herbaceous and forested wetlands exist on the property and within the T-line ROW. The wetland areas provide potential habitat for amphibians and crayfish. Other than the forested areas and wetlands, no ecologically important features were observed during the field reconnaissance that would provide favorable wildlife habitat.

3.5.2 Environmental Consequences

Limited impacts to wildlife are expected. The proposed Project area is primarily located in previously cleared areas and will require a minimum amount of deforestation. The majority of the proposed Project is located in areas that are currently disturbed due to row crop farming practices. Temporary wildlife displacement resulting from disturbance during Project construction will likely be the most common occurrence. Following construction, the herbaceous vegetation that is replanted will provide suitable habitat for small mammals, birds, and insects.

3.5.3 Mitigation

Minor adverse impacts are unavoidable at the solar site during the construction phase but will be short lived as the herbaceous vegetation will provide suitable and more diverse habitat for small mammals, birds, and insects compared to the monoculture habitat provided by typical farming practices. There will be a permanent loss of approximately 2.6 acres of forested habitat for the construction of the T-line. The proposed T-line will be constructed side by side to an existing T-line which will reduce any further habitat fragmentation. Once construction is complete, the T-line ROW will be maintained as herbaceous and/or scrub shrub habitat.

3.6 Threatened and Endangered Species

3.6.1 Affected Environment

Plant Species

The USFWS Information for Planning and Conservation (IPaC) system was reviewed regarding the occurrence of rare plants and animals, outstanding natural communities, natural or scenic rivers, or other elements of special concern within or near the Survey Area (Appendix C). A review of the IPaC revealed that one federally protected plant species has the potential to occur within the vicinity of the Survey Area, the pondberry (*Lindera melissifolia*).

The ANHC also maintains a list of endangered, threatened, inventory element species, collectively referred to as Elements of Special Concern (ANHC 2020). A review of the ANHC list indicates that in Woodruff County the pondberry is listed as state endangered and the rein orchid (*Platanthera flava*) is listed as state threatened.

Pondberry occurs in wetland habitats and along the margins of ponds, depressions (e.g., sinkholes), and sphagnum bogs. Pondberry is often associated with bottomland hardwood forests where it grows in shaded areas but may also be found in full sun. Significant threats to the pondberry include drainage ditching and land use conversion (i.e. draining of wetlands, deforestation, land clearing for agriculture, urban expansion, etc.). Livestock grazing and silviculture operations also has a significant effect on the pondberry. The Survey Area is already cleared land with existing drainage ditches in the vicinity, so the habitat has already been converted to one not preferred by the pondberry.

The rein orchid generally occurs in high quality natural areas. Habitats include moist woodlands, wet to moist meadows, wet to moist sand prairies, low sandy areas along slow-moving or stagnant rivers, margins of interdunal sandy swales, and seeps. Both plant species have a low or unlikely potential to occur within the Survey Area area due lack of suitable habitat given that the area has been previously cleared and converted to agricultural land.

Animal Species

According to the Information for IPaC (USFWS, 2021), there are seven potentially occurring animal species listed as federally endangered or threatened and one candidate species within the Survey Area. No critical habitats were found in the Survey Area. Table 3 provides a summary of species identified in the IPaC and ANHC reviews as having potential habitation within the Survey Area. Construction activities are not expected to negatively impact any of the listed species. If any of the species are found within the project areas, USFWS will be contacted, and appropriate conservation actions will occur. A copy of the IPaC report is located in Appendix C.

Table 3. Federally Listed Species with the Potential to Occur in the Survey Area.

Common Name	Scientific Name	Wildlife Type	Listing	Preferred Habitat	Existing Habitat	Occurrence Potential
Eastern Black Rail	<i>Laterallus jamaicensis spp. jamaicensis</i>	Bird	Federally Threatened	Migratory. Salt and brackish marshes or in upland areas of these marshes, wet sedge meadows, shrubby wetlands, marshes.	<p>The solar panels will be located entirely on property that is currently utilized for row crop agriculture. This habitat makes up the majority of the Project Area.</p> <p>The new T-Line ROW will be located partially in an existing T-Line ROW and partially in a bottomland hardwood forest adjacent to the existing T-Line. The existing T-Line ROW is routinely mowed and ranges from herbaceous to scrubby vegetation. The bottomland hardwood forest portion contains saplings and mature trees in a fringe or border setting adjacent to the existing ROW.</p>	Unlikely
Ivory-billed Woodpecker	<i>Campephilus principalis</i>	Bird	Federally Endangered	Cypress swamps and mature bottomland forest.		Unlikely
Piping Plover	<i>Charadrius melodus</i>	Bird	Federally Threatened	Migratory. Sandy or gravelly beaches and sandbars or alkaline wetlands.		Unlikely
Red Knot	<i>Calidris canutus rufa</i>	Bird	Federally Threatened	Migratory. Prefers open sandy beaches and mudflats.		Unlikely
Pink Mucket	<i>Lampsilis abrupta</i>	Aquatic Invertebrate	Federally Endangered	Large stream reaches where flowing water covers beds of cobble, gravel and sand.		Unlikely
Rabbitsfoot	<i>Quadrula cylindrica cylindrica</i>	Aquatic Invertebrate	Federally Threatened	Small to medium sized streams with gravel and sand substrate. May inhabit some larger rivers. Found in shallow water areas along the bank and adjacent runs and shoals with reduced water velocity.		Unlikely
Scaleshell Mussel	<i>Leptodea leptodon</i>	Aquatic Invertebrate	Federally Endangered	Medium-sized to large rivers and can be found in riffles with a slow or moderate current.		Unlikely
Monarch Butterfly	<i>Danaus plexippus</i>	Insect	Candidate	Migratory. Open fields and meadows with milkweed.		Unlikely

The USFWS and ANHC lists a total of nine listed species and one candidate species as potentially occurring within the vicinity of the Survey Area. The majority of the Survey Area is disturbed agricultural land and would not provide suitable habitat for the eastern black rail, ivory-billed woodpecker, piping plover, red knot, or monarch butterfly. The scaleshell mussel, pink mucket, and rabbitsfoot are aquatic species that occur in perennial waterbodies and would not likely occur in the intermittent and ephemeral streams in the Survey Area. The Project is outside of the geographic range of the northern long-eared bat (NLEB) and Indiana bat consultation areas.

While not listed on the T&E species list, bald and golden eagles are protected by the Bald and Golden Eagle Protection Act (Eagle Act) and the Migratory Bird Treaty Act (MBTA). The Project Area is outside of the geographic breeding range of bald eagles and golden eagles. Bald eagles nest and perch in mature old-growth trees near large waterbodies that provide an adequate food supply (USFWS, 2007). Bald or golden eagles may pass through the vicinity of Project Area; however, the land has been historically cleared for agricultural production and trees on the property are relatively young and would not provide suitable habitat or nesting sites for bald eagles. Waterbodies within the Project Area are not likely capable of supporting an adequate food supply for bald or golden eagles.

3.6.2 Environmental Consequences

Six federally and/or state protected wildlife species and two listed plant species have the potential to occur within the vicinity of the Survey Area. However, the Survey Area lacks suitable habitat for any of the listed species. Native vegetation will be allowed to establish around the solar panels and along the fringes of the property. Vegetation around the solar panels will be mowed at a frequency to maintain such a level to prevent encroachment or interference with the panels and allow easy access to the area for routine maintenance activities. Vegetation along the perimeter of the project area may be mowed less frequently to allow natural establishment of flowering which will provide ground cover that will benefit pollinator species such as honeybees and butterflies. Construction and operation of the Project will not likely have significant adverse impacts on threatened and endangered species.

3.6.3 Mitigation

No compensatory mitigation is anticipated as no adverse impacts are likely for threatened and endangered species. Transforming the project area from a monoculture row

crop agricultural field and allowing natural vegetation to establish will provide a more diverse habitat for multiple species as well as year round ground cover even if in a dormant stage.

3.7 Invasive Species

3.7.1 Affected Environment

The Project site includes primarily row crop farmland, and invasive plants, noxious weeds, or other invasive species are not known to exist within the project site. Some relatively common invasive plants may be present along the fringes of the project area (such as Japanese honeysuckle), but the subject site in general does not appear to have an abundance of invasive species and consists primarily of early successional native growth.

3.7.2 Environmental Consequences

Due to the minimized need for earthwork and thus fill material necessary from offsite, as well as the lack of aquatic habitats within the Project site, and the maintenance of any such vegetation at the site during operation, the Project will not promote the introduction or growth of invasive species and is anticipated to have no effect upon native species in the APE.

3.7.3 Mitigation

No mitigation is anticipated as no adverse impacts are likely due to invasive species.

3.8 Land Use

3.8.1 Affected Environment

The Project area is located just south of the City of Augusta in Woodruff County. The Project area primarily consists of undeveloped agricultural land and does not include any structures. The proposed T-line ROW is primarily forested. The project area is roughly bound by Arkansas State Highway 33 on the east side, Horseshoe Lake on the south, and a Union Pacific Railroad track on the north. The project area is roughly bound on the west side by Sixth Street and Woodruff County Roads 871 and 816.

The Project area consists primarily of agricultural lands with forested areas to the south and along the proposed T-line ROW. Typical crops grown in the region include corn, rice, soybeans, grain sorghum, cotton, and winter wheat. The USDA – NRCS was contacted to determine whether the Survey Area contained land designated as a Prime Farmland or Farmland of Statewide Importance. The NRCS stated that the area contains Prime Farmland, but the activity will not affect Prime Farmland or Farmland of Statewide Importance. The response from NRCS is provided in Appendix D.

3.8.2 Environmental Consequences

The proposed activity will result in transformation of the property from row crop agricultural to a solar photovoltaic electrical energy generation facility.

3.8.3 Mitigation

The landowner is supportive of the Project and will be compensated for the loss of agriculturally productive land.

3.9 Cultural and Historic Resources

3.9.1 Affected Environment

Environmental Solutions & Innovations, Inc. performed a desktop cultural resource survey of the Survey Area. The survey involved a geospatial inquiry using the Arkansas Archaeological Survey's online Automated Management of Archeological Site Data in Arkansas system, information from the NRHP, a literature review, a review of local soils, and analysis of historic General Land Office (GLO) maps and other cartographic sources.

ESI completed the Automated Management of Archeological Site Data in Arkansas records search on March 16, 2021. The search identified three cultural resources and two previous cultural resource surveys within a 1-mile radius of the Project's area of potential effects (APE). The previously identified archaeological resources comprise two precontact sites and one site associated with the historic period. None of the resources identified are located within the limits of the APE and no further investigation of these sites was conducted. Of the two previous cultural resource surveys, one survey identified no resources within the APE or its 1-mile buffer, and the other did not have a formal report on file with the Arkansas Archaeological Survey. The background research indicated that four architectural resources are

situated within one mile of the proposed project area. These include one church and three buildings associated with a larger high school campus. None of these architectural resources fall within the proposed project's APE.

ESI performed a field survey for archaeological resources within the proposed project APE between January 2021 and March 2021. The results of the archaeological survey were presented in Bailey Solar Project Cultural Resource Survey, Woodruff County, Arkansas prepared by Environmental Solutions and Innovations, Inc. (Greene 2021). ESI completed identification and assessment of architectural resources within the proposed project's APE in January 2022. The results of the architectural survey are presented in Architectural Resources Survey for the Proposed Bailey Solar Project in Woodruff County, Arkansas prepared by Environmental Solutions and Innovations, Inc. (Bray 2022). Because these reports contain confidential information pertaining to the locations of cultural resources, they are not included in the EA but are included within the project documentation held by the USDA-RD.

The archaeological assessment included pedestrian reconnaissance and subsurface evaluation. Survey methods were selected based on observed field conditions and levels of previous survey. The survey considered the entire APE. Based on the results of the survey, ESI identified 28 new archeological sites and 18 isolated finds. Of the 28 archeological sites documented during the survey, one was recommended eligible for listing in the National Register of Historic Places (NRHP), and 27 sites were recommended not eligible, and the isolated finds were recommended to be not eligible for the NRHP.

The architectural resources assessment considered resources within the footprint of the proposed project and within a 0.25-mile radius of that footprint. The results of the survey indicated that there are no architectural resources within the proposed project footprint itself and identified eight historic resources within the remainder of the APE. These eight resources comprise six residences with construction dates ranging from the 1940s to 1970s, one industrial site constructed in the 1960s, and a portion of a historic rail line constructed in 1872. ESI recommended that all eight resources are not eligible for the NRHP.

ESI submitted its findings and recommendations on eligibility of architectural and cultural historical resources to the Arkansas State Historic Preservation Office (AR-SHPO) on May 13, 2021, and January 28, 2022, respectively. AR-SHPO concurred with the eligibility recommendations of architectural and cultural historical resources on July 1, 2021, and February 16, 2022.

During assessment of the proposed project's effects to historic properties, ESI engaged the following Native American tribes on the project's potential to affect historic properties: the Apache Tribe of Oklahoma, Cherokee Nation, Chickasaw Nation, Choctaw Nation of Oklahoma, Coushatta Tribe of Louisiana, Delaware Nation of Oklahoma, Eastern Shawnee Tribe of Oklahoma, Muscogee (Creek) Nation, Osage Nation, and Quapaw Tribe of Indians. The findings and eligibility recommendations of the archaeological survey were submitted to these tribal groups June 2, 2021. Two of the consulting tribes responded that the proposed project is outside of their respective areas of interest. No responses were received from the remaining Native American parties.

3.9.2 Environmental Consequences

Efforts to identify historic properties within the proposed project's APE included background research, field survey, and consultation on the NRHP eligibility of resources. Through these efforts, 28 archaeological sites, 18 archaeological isolated finds, and eight cultural historical resources were identified in the APE. Of these resources, one archaeological site in the APE was recommended as eligible for the NRHP and the remaining resources were recommended as not eligible for the NRHP. The AR-SHPO agreed with these recommendations. Consulting Native American tribes provided no responses on the eligibility of resources. The USDA has therefore determined that one historic property exists within the proposed project's APE.

During the implementation of the proposed project, the site will be avoided. The location of this resource will be excluded from development, will be contained within the overall perimeter fence and will be demarcated by temporary fencing placed 50 feet from the boundary of the site during construction. Additionally, the site area will be monitored by archaeologists during construction. AR-SHPO agreed with these protective measures in its July 1, 2021 response. No response on the adequacy of these measures was received from consulting tribes.

On the basis of these measures, and in consideration of the findings of the cultural resources research and surveys, AR-SHPO agreed with the recommendation that the proposed project would result in no effect to historic properties (Appendix E). No responses were received from consulting Native American tribes concerning the proposed project's effects to historic properties.

On the basis of this agreement between parties, the USDA has determined that, with these protective measures implemented, the project will result in no effect to historic properties.

3.9.3 Mitigation

Following a desktop and field cultural resources survey, only one site was identified within the Survey Area that is recommended as eligible for inclusion in the NRHP. Recommendations provided in the cultural resources survey prepared by EIS with appropriate concurrence by SHPO and Tribes will be followed during the construction process including creating a 50-foot buffer around the area with orange construction fencing and archeological monitoring of the site during construction associated with the undertaking.

3.10 Urban, Residential, and Recreation Areas

3.10.1 Affected Environment

The closest residential area is the City of Augusta, located northwest of the Survey Area. Augusta is the county seat of Woodruff County and has an estimated population of 1,947 (U.S. Census Bureau, 2021). The middle tract of the Survey Area abuts a small residential neighborhood. A hunting lodge is located outside of the south boundary of the Survey Area. Most of the activity in the community of Augusta and the majority of Augusta's residences are visually and physically separated from the solar Survey Area by forested buffers.

The City of Augusta, north of the Survey Area, hosts Stanley Park which offers baseball fields and an archery range (ADPHT, 2021). Stanley Park is located approximately 2 miles northwest of the Survey Area.

Crenshaw Landing is located approximately 0.3 miles south of the Survey Area. Crenshaw Landing hosts a campground, a bait shop, canteen, and boat landing. Crenshaw Landing is available for events such as family reunions, church functions and weddings.

3.10.2 Environmental Consequences

The proposed Project is located in an area of the county that is primarily used for agricultural purposes. The middle area of land abuts a residential neighborhood in the City of

Augusta. A hunting lodge is located to the south of the Project boundary. No structures are expected to be impacted.

The area outside of the Survey Area includes rural land, an industrial facility, and a residential neighborhood. These areas will experience temporary short-term impacts as a result of construction activities (*e.g.*, dust, traffic, potential ground disturbance, and noise disruption). However, long-term impacts will be minimal.

No recreational areas are expected to be adversely impacted by the construction and operation of the solar facility.

3.10.3 Mitigation

Outside of the construction phase, no adverse impacts are anticipated. Temporary impacts during the construction phase will be similar to those experienced with typical farming practices. Utilization of sediment and erosion controls will minimize the temporary impacts.

3.11 Transportation / Utilities

3.11.1 Affected Environment

Arkansas Highway 33 provides access to the east side of the Project area. County Road 816 cuts across the middle section of the largest and easternmost area of the property (Area C). State Highway 339 and County Road 871 provide access to the west side of the property. Access in and out of the Project area may be heavy during construction but will be limited to construction related traffic.

The Woodruff County Airport is located approximately 3.6 miles (19,008 feet) from the Project area. The airport is owned and operated by Woodruff County. The airport is separated from the Project area by agricultural lands and forests. Public notification has been published throughout the community and the county judge has been notified about the project. Neither the county nor any representatives from the airport have voiced concerns regarding glint and glare.

3.11.2 Environmental Consequences

The Project area is largely bound by state highways and county roads. No permanent impacts are anticipated for these roads.

3.11.3 Mitigation

Outside of the construction phase, no adverse impacts are anticipated. Temporary impacts during the construction phase will be similar to those experienced with typical farming practices.

3.12 Population

3.12.1 Affected Environment

This section contains population data for Woodruff County, Arkansas, which also includes data for the City of Augusta for which such information is available. In addition, this section includes data for employment by industry for the State of Arkansas and Woodruff County (Table 4).

The population of Woodruff County has experienced moderate decline over the past decade. The population of Woodruff County was 7,264 in 2010 (U.S. Census Bureau, 2010) and the estimated population in 2019 was 6,320 (U.S. Census Bureau, 2019). Between 2010 and 2019, the population fell by approximately 13.0 percent. The largest city in Woodruff County is Augusta at 1,947 (U.S. Census Bureau, 2019). Smaller communities in Woodruff County include Patterson, McCrory, Hunter, and Cotton Plant.

Employment and income information for Woodruff County and the State of Arkansas is provided in Table 6. The largest industry for Woodruff County is healthcare with agriculture ranking second. The largest industry for the State of Arkansas is healthcare and social assistance. The State of Arkansas showed a 4.2 percent unemployment rate in December 2020, and Woodruff County showed a 4.6 percent unemployment rate in December 2020 (ADWS, 2020). The estimated median household income in 2019 was \$47,597 in the State of Arkansas (U.S. Census Bureau, 2019).

Table 4. Employment by Industry.

Industry	Arkansas		Woodruff County	
	Count	Percentage	Count	Percentage
Healthcare and Social Assistance	184k	14.5	445	17.5
Manufacturing	172k	13.6	308	12.1
Retail	170k	13.4	301	11.8
Education	125k	9.8	169	6.6
Hospitality	87.3k	6.9	96	3.8
Construction	83.1k	6.6	185	7.3
Other Services	61.4k	4.9	104	4.1
Government (Not Otherwise Classified)	57.7k	4.9	115	4.5
Transportation	53.7k	4.2	108	4.2
Professional, Scientific, and Technical Services	47.4k	3.7	23	0.9
Administration, Support, and Waste Management Services	43.7k	3.4	28	1.1
Finance and Insurance	43.0k	3.4	83	3.3
Agriculture, Forestry, Fishing, and Hunting	30.8k	2.4	407	16.0
Wholesalers	30.2k	2.4	91	3.6
Information	21.3k	1.7	20	0.8
Real Estate	17.1k	1.4	3	0.1
Entertainment, Arts, and Recreation	15.2k	1.2	19	0.7
Utilities	14.8k	1.2	45	1.8
Oil and Gas, and Mining	7,962	0.6	0	0.0
Management of Companies	1,231	0.1	0	0.0

Source: U.S. Census Bureau 2018 as cited in Cedar Lake Ventures, Inc. 2018

3.12.2 Environmental Consequences

Construction and operation of the proposed Project will not directly result in a long-term change in population size or demographic in the area. Construction may result in specialized workers relocating to the area. There will be no significant effect on employment and income by the construction and operation of the Project. Workers will likely commute to and from the work site on a daily or weekly basis or set up temporary residences in the area. The purchases of lodging, food, fuel, and other merchandise by the workers may result in a slight increase in retail sales in the general vicinity of the Project during the construction phase.

3.12.3 Mitigation

No mitigation is anticipated as no adverse impacts are anticipated as a result of the Project.

3.13 Noise

3.13.1 Affected Environment

Noise ordinances for Woodruff County, Arkansas, could not be found online. The Project site is primarily bordered by undeveloped agricultural lands and forests on most sides; therefore, noise should not be an issue in these areas. However, the northwest side of the middle area of land abuts a residential neighborhood. In general, solar facilities only create noticeable noise during construction, with extremely minimal noise associated with operation.

3.13.2 Environmental Consequences

Temporary impacts may be experienced during the construction phase.

3.13.3 Mitigation

Noises associated with construction activities are unavoidable. Measures shall be taken as necessary to minimize noises such as working during typical workday hours.

3.14 Air Quality

3.14.1 Affected Environment

Standards for particulate matter and ozone have been set by the U.S. EPA. National Primary and Secondary Air Quality Standards are set forth in Title 40, Code of Federal Regulations, Part 50. Primary standards are levels of air quality judged necessary to protect the public health, while secondary standards are levels judged necessary to protect the quality of life, damage to property, aesthetics, and other factors related to public welfare.

Atmospheric air quality standards for particulate matter and ozone established by the State of Arkansas are equivalent to the national standards.

Areas of Arkansas are classified by the EPA as to air quality attainment status (Title 40, CFR Part 81) for planning purposes. The study area is entirely within areas having air quality, which is presently equal to, or better than, the Federal and State standards.

Some relatively pristine areas have been designated by the 1977 amendments to the Federal Clean Air Act as Class I areas. These areas have very stringent requirements covering the allowable increase in air pollutant concentration. No Class I areas exist in Woodruff County. The nearest Class I area is the Upper Buffalo Wilderness Area which is about 120 east of the study area.

3.14.2 Environmental Consequences

AECC does not anticipate negative impacts to air quality due to construction and operation of the Project. Establishment of year-round vegetative groundcover in opposition to periods of exposed soil common with typical row crop agriculture practices may minimize the generation of airborne soil particles (dust) having a positive impact on air quality.

3.14.3 Mitigation

Permanent adverse impacts are not anticipated as a result of the project. Dust control measures (e.g., wetting soil during dry periods) will be used as necessary to minimize generation of airborne dust.

4.0 CUMULATIVE EFFECTS

Resource	Past Actions	Present Actions	Proposed Action	Future Actions	Cumulative Effect
Climate	Dependence on fossil fuels and linked to climate change	Continued dependence on non-renewable energy; some investment in renewable energy	New solar project will provide a renewable electrical energy generation resource	Reduce dependence non-renewable energy and pursue renewable energy sources	Potential positive cumulative effects to climate impacts through use of renewable resources for electrical energy production
Soils	Land cleared for agricultural production	Seasonal bare soil from agricultural practices	Temporary disturbance due to construction. Year-round vegetative cover with proposed project	Continued seasonal bare soil from agricultural practices in the region	Project will not add to cumulative effects of seasonally bare soil in the area, potential long-term improvements with year-round vegetation cover
Water Features	Large reduction in wetland areas and channelization of waterways	Small annual loss of wetlands and channelization of waterways. Protection and mitigation of WOTUS through the CWA	Minor temporary disturbance mitigated by use of SWPPP and BMPs. No permanent disturbance of wetlands or streams	Continued impacts to wetlands in streams from regional growth and development. Continued protection and mitigation of WOTUS through the CWA	Project will not significantly add to cumulative adverse effects to water features and will benefit through minimization of sediment in runoff due to year-round vegetative ground cover.
Vegetation	Land cleared for agricultural production	Agricultural areas left seasonally bare, native vegetation removed	Year-round vegetation cover in the Project Area. Clearing 2.6 acres of forestland for T-line construction	Continued agricultural practices in the region will leave land seasonally bare and cleared of native vegetation	Cumulative loss of agricultural crops. Year-round natural vegetative cover in the Project Area. Cumulative loss of forested area for T-line construction
Wildlife	Wildlife habitat cleared for agricultural production	Continued loss of habitat and habitat fragmentation due to	Year-round herbaceous habitat in the Project Area. Clearing 2.6 acres of	Continues agricultural practices in the region, loss of habitat, and habitat fragmentation	Cumulative loss of forested habitat. Year-round improvement to herbaceous habitat for small mammals, birds, and insects

Resource	Past Actions	Present Actions	Proposed Action	Future Actions	Cumulative Effect
		regional growth and development	forested habitat for T-line construction		
Threatened and Endangered Species	Loss of species populations and habitat	Species protected and monitored. Some continued loss	Utilize Project area that does not utilize T&E habitat	Continue to protect and monitor T&E species and habitat	No significant cumulative effect.
Land Use	Land cleared for agricultural production	Regional land use dominated by agricultural production	Convert farmland to solar facility	Continued agricultural production in the region. Potential loss of farmland for development	Cumulative loss of farmland.
Cultural and Historic Resources	Loss of cultural and historic resources	Conservation and protection of cultural and historic resources	Utilize Project Area that avoids cultural and historic resources	Continued conservation protection of cultural and historic resources	No significant cumulative effect.
Urban, Residential, and Recreation Resources	Development of neighborhoods in the City of Augusta, rural areas, industrial areas, and hunting/fishing recreational areas	Continued development in the City of Augusta, rural areas, industrial areas, and hunting/fishing recreational areas.	Conversion of farmland to solar facility. Short term impacts as a result of construction (e.g., dust, traffic, potential ground disturbance, and noise disruption)	Continued development around the City of Augusta	Cumulative loss of land for development around the City of Augusta. No significant cumulative effect to recreational areas
Transportation / Utilities	State highways and county roads built around the City of Augusta	State highways and county roads maintained	Conversion of farmland to solar facility. Temporary increase in traffic during construction phase	State highways and county roads maintained	No significant cumulative effect, temporary increase in traffic during construction phase
Population	Population primarily in/around the City of Augusta	Population of Woodruff County has experienced moderate decline over the past decade	Conversion of farmland to solar facility, temporary relocation of specialized workers to the area during construction	Population expected to stay the same course	No significant cumulative effect.

Resource	Past Actions	Present Actions	Proposed Action	Future Actions	Cumulative Effect
Noise	No identifiable noise issues	No identifiable noise issues	Conversion of farmland to solar facility. Temporary increase in noise during construction phase	Noise levels are expected to remain the same in the area	No significant cumulative effect.
Air Quality	Land cleared for agricultural production. Wind born dust generation from seasonal bare soil	Land cleared for agricultural production. Wind born dust generation from seasonal bare soil	Conversion of farmland to solar facility. Year-round vegetation cover. Temporary increase in dust during construction phase.	Continued agricultural production and seasonally bare soil in the region	Minimum short term impacts during construction, but potential long-term improvements in wind born dust generation from current seasonal bare soil compared to year-round vegetative cover with proposed project

As summarized in the above table, AECC does not anticipate any significant long-term impacts associated with the project. While cropland will be taken out of production, landowners will be monetarily compensated for this loss. Temporary impacts will be encountered during the construction stages but will be mitigated as discussed in Section 3.0.

To evaluate any cumulative impacts the Solar Project may have in conjunction with other planned projects in the area, AECC reached out to the Woodruff County Judge's Office to determine if any other projects were planned in the region. The judge's office informed AECC that Woodruff County does not have a Planning / Zoning branch, and to their knowledge no other projects are planned for the county. Woodruff County is a rural farming community with limited development or growth. With no knowledge of any additional projects in the area, the Bailey Solar Project would not result in any significant Cumulative Impacts.

5.0 SUMMARY OF MITIGATION

The proposed site was selected to minimize impacts to both human and environmental resources. The following factors were considered during the site selection of the Project area:

- Proximity to the Existing Bailey Generating Station and existing electrical infrastructure. Of the alternative sites evaluated, the proposed site is nearest to the point of interchange.
- Minimize impacts to the 100- and 500-year floodplains, which are prevalent in the area. The proposed site would result in the least impact to the 100- and 500-year floodplains.
- Preference for flat tracts of previously cleared land that would require minimal tree clearing and would reduce environmental impacts.
- Landowner cooperation. Property for the site has been identified through negotiations with local landowners. The original Project layout included parcels of land on the east side of Arkansas State Highway 33. Those properties were removed from consideration at the landowner's request and new properties to the west were added to make up the current Survey Area.

Construction projects that require soil disturbance generally have some level of associated environmental and socioeconomic impacts. These impacts can be mitigated through careful project planning and implementation. The key to mitigating project impacts is focused in two areas: (1) avoidance of critical areas and (2) minimization of the construction footprint

(area of land disturbance). The following section describes the mitigation measures recommended for this Project.

Mitigation for land clearing impacts will center around the SWPPP. The SWPPP for the Project will govern how construction activities on the site are conducted and what BMPs are utilized to prevent soil erosion and sedimentation. The SWPPP will include guidelines for:

- Construction staging,
- Soil stabilization BMPs,
- Sediment control BMPs, and
- Vegetation replanting and mulching.

Water quality impacts will also be mitigated largely by the SWPPP. The soil and erosion control BMPs will be designed for protection of water quality with a focus on reduction and/or elimination of sedimentation into streams and wetlands. In addition, stream side buffer zones will be left intact to a width of at least 25 ft where possible.

Wetlands will be avoided to the extent practicable, but if impacts are unavoidable, impacts will be minimized. Where wetland impacts are unavoidable the impacts will be appropriately permitted and offset through purchase of mitigation credits. Impacts to threatened and endangered species are not believed to be a significant concern in the Project Area.

Clearing of forested land and large trees in the Project area will be avoided and minimized to the extent practicable. Access, in most areas, will be limited to the duration of the construction project. However, long term access at select locations will be required for future maintenance needs. The most significant impact to human resources includes the loss of farmable cropland. Landowners have been and will be monetarily compensated for their loss.

While impacts to cultural resources or threatened and endangered species is not anticipated, construction will cease, and the appropriate agencies notified should these trust resources be encountered. A post review discovery plan for cultural resources will be put in place and construction and operating staff will be educated about the plan.

6.0 COORDINATION, CONSULTATION, AND CORRESPONDENCE

The following agencies or agency websites were consulted in preparation of this EA:

- USFWS Information for Planning and Conservation (USFWS 2022)
- ANHC Arkansas Heritage Program Biodiversity Database (ANHC 2018)
- National Wetland Inventory maps (USFWS 1984)
- FEMA National Flood Hazard Map
(Effective Map: FEMA 1976. Preliminary Map: FEMA 2020);
- Web Soil Survey (USDA, n.d.[b])
- National Land Cover Database (Homer et al. 2015)
- Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987)
- USACE Regional Supplements to the Corps of Engineers 1987 Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (USACE 2012)
- USDA – NRCS
- Arkansas Department of Parks, Heritage, and Tourism – Arkansas Historic Preservation Program
- Chickasaw Nation
- Choctaw Nation of Oklahoma
- Apache Tribe of Oklahoma
- Cherokee Nation
- Coushatta Tribe of Louisiana
- Muscogee (Creek) Nation
- Delaware Nation
- Eastern Shawnee Tribe of Oklahoma
- Osage Nation
- Quapaw Tribe of Indians

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8.0 LIST OF PREPARERS

This EA was completed by the following GBMc and AECC personnel:

Brad Phillips
Principal / Senior Scientist
GBMc and Associates

Sarah Hallett
Environmental Scientist
GBMc and Associates

Stephen Cain
Manager, Environmental Compliance
Arkansas Electric Cooperative Corporation

This EA was reviewed by the following USDA RUS personnel:

Kristen Bastis, MA, RPA
Environmental Protection Specialist/Archaeologist
Rural Utilities Service

Christopher M. Gunn, Ph.D.
Archaeologist
Rural Utilities Service