Final ENVIRONMENTAL ASSESSMENT

Bluegrass Plains Solar Generating Facility Project
Cooperative Solar Farm Two
Fayette County, Kentucky

United States Department of Agriculture - Rural Utilities Service

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December 2024

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Abbreviations and Acronyms

°C	degrees Celsius
°F	degrees Fahrenheit
ACS	American Community Survey
APE	Area of Potential Effects
A-R	Agriculture Rural
BGEPA	Bald and Golden Eagle Protection Act
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO_2	carbon dioxide (CO_2)
COD	Commercial Operation Date
CPCN	Certificate for Public Convenience and Necessity
CWA	Clean Water Act
dBA	A-weighted decibel levels
DBH	diameter at breast height
DC	Direct Current
DNR	Department of Natural Resources
EA	Environmental Assessment
EEC	Energy and Environmental Cabinet
EIS	Environmental Impact Statement
EJ	Environmental Justice
EKPC	East Kentucky Power Cooperative, Inc.
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
FR	Federal Register
gen-tie	150-foot 138-kV transmission line
GHG	Greenhouse Gas
GIS	Geographic Information System
gpm	gallons per minute
IPaC	Information for Planning and Consultation
IWG	Interagency Working Group
KDOW	Kentucky Division of Water
KPDES	Kentucky Pollutant Discharge Elimination System

KRS	Kentucky Revised Statutes
kV	kilovolt
KY	Kentucky
LFUCG	Lexington Fayette Urban County Government
MBTA	Migratory Bird Treaty Act
MW	megawatt
MWac	megawatt alternating current
NAAQS	National Ambient Air Quality Standards
NAI	Natural Areas Inventory
NEPA	National Environmental Policy Act
NHD	National Hydrography Dataset
NHPA	National Historic Preservation Act
NLCD	National Land Cover Database
NLEB	Northern Long-eared Bat
NOA	Notice of Availability
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
O&M	Operations and Maintenance
OKNP	Office of Kentucky Nature Preserves
OSA	Office of the State Archaeologist
POI	Point of Interconnection
PPA	Power Purchase Agreement
Project	Bluegrass Plains Solar Generating Facility
PV	photovoltaic
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
RUS	Rural Utilities Service, U.S. Department of Agriculture
SHPO	State Historic Preservation Office
SPCC	Spill Prevention Control and Countermeasure
SWPPP	Stormwater Pollution Prevention Plan
THPO	Tribal Historic Preservation Officer
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WOTUS	Waters of the U.S.

1 Introduction and Purpose and Need

1.1 INTRODUCTION

East Kentucky Power Cooperative, Inc. (EKPC) of Winchester, Kentucky is a non-profit electric generation and transmission cooperative. EKPC provides electric generation capacity and electric energy to its 16 Owner-Member Electric Distribution Cooperatives. The distribution cooperatives serve a population of 1.1 million people and approximately 570,000 homes, farms, commercial, and industrial customers in 89 Kentucky counties located across the central and eastern portions of the Commonwealth. EKPC is also a member of the PJM Interconnection LLC (PJM), the regional transmission organization that coordinates the movement of wholesale electricity in all or parts of 13 states and the District of Columbia.

In total, EKPC owns and operates approximately 2,963 megawatts (MW) of net summer generating capacity and 3,265 MW of net winter generating capacity. EKPC owns and operates coal-fired generation at the John S. Cooper Station in Pulaski County, Kentucky (341 MW) and the Hugh L. Spurlock Station (1,346 MW) in Mason County, Kentucky. EKPC also owns and operates natural gas-fired generation at the J. K. Smith Station in Clark County, Kentucky (753 MW (summer)/989 MW (winter)) and the Bluegrass Generating Station in Oldham County, Kentucky (501 MW (summer)/567 MW (winter)), landfill gas-to-energy facilities in Boone County, Greenup County, Hardin County, Pendleton County, and Barren County (13 MW total), Makers Mark Solar Generating Facility (0.5 MW) in Marion County, Kentucky, and a Community Solar facility (8.5 MW) in Clark County, Kentucky. Finally, EKPC purchases hydropower from the Southeastern Power Administration at Laurel Dam in Laurel County, Kentucky (70 MW), and the Cumberland River system of dams in Kentucky and Tennessee (100 MW). EKPC also has 200 MWs of interruptible load and approximately 26 MWs in peak reduction mechanisms. EKPC's record peak demand of 3,754 MW occurred on January 17, 2024.

EKPC is proposing to construct the new 40-megawatt alternating current (MWac) photovoltaic (PV), Bluegrass Plains Solar Generating Facility (Project) on approximately 403 acres located in eastern Fayette County, Kentucky (Exhibit A - Figure 1). The new facility would be sited between U.S. 60 and Interstate 64, and to the north and east of the existing EKPC Avon 138 kilovolt (kV) Transmission Substation, which is located at 5481 Winchester Road, Lexington, Kentucky, 40509 (38.030093, -84.320932). The Project is expected to operate for the design life of the facility as an electric generation facility for a public utility.

EKPC is requesting financing assistance from the U.S. Department of Agriculture (USDA), Rural Utilities Service (RUS) for construction of a new proposed solar generating facility, the Bluegrass Plains Solar Project (proposed action). Because EKPC plans to apply for project financing assistance from RUS, the proposal constitutes a federal action subject to review in accordance with Rural Development's (RD) *Environmental Policy and Procedures* for implementing the National Environmental Policy Act (7 CFR Part 1970). RUS has determined that the proposed action requires the preparation of an Environmental Assessment (EA) due to the action not qualifying as a Categorical Exclusion, as listed in 7 CFR 1970 Subpart B.

On behalf of RUS, EKPC and Stantec Consulting Services Inc. has conducted an environmental investigation and analysis and prepared this report that can be adopted by RUS as an EA to meet their environmental regulations for complying with the National Environmental Policy Act of 1969, as amended (NEPA). The EA will serve as a detailed written record of the environmental analysis completed for the proposed action. The EA will either provide the basis for RUS to issue a Finding of No Significant Impact (FONSI), or alternatively determine that preparation of an Environmental Impact Statement (EIS) is required.

This EA incorporates a detailed description of the proposed action, including topographic maps and aerial photographs depicting the location of the project, and a discussion of the need and alternatives considered for the proposed action. A discussion of the affected environment within the proposed action area, the environmental impacts of the proposed action, and mitigation of environmental effects are included to support this EA.

1.2 PURPOSE AND NEED

1.2.1 Agency Purpose and Need

USDA Rural Development is a mission area that includes three federal agencies – Rural Business-Cooperative Service, Rural Housing Service, and the RUS. The agencies have more than 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 to accomplish program objectives.

The RUS is authorized to make loans and loan guarantees to finance the construction of electric distribution, transmission, and generation facilities, including system improvements and replacements required to furnish and improve electric service to rural areas, as well as demand side management, energy conservation programs, and on-grid and off-grid renewable energy systems.

RUS does not regulate the siting of generation and transmission infrastructure. The federal action related to the proposed project will be RUS's granting of financial assistance for construction of the Bluegrass Plains Solar Generating Facility project. RUS's decision of whether to grant the requested financing assistance will be made based on the environmental analysis outlined in the EA and subsequent engineering and financial reviews.

Issuance of this EA is not a decision on a loan application and, therefore, not an approval of the expenditure of federal funds. Issuance of the EA and any subsequent environmental findings is required in accordance with NEPA and RD's *Environmental Policies and Procedures* (7 CFR Part 1970). Legal challenges to the EA and any subsequent environmental findings may be filed in federal district court under the Administrative Procedure Act.

The Rural Electrification Act of 1936, as amended (7 USC §901 *et seq*.), authorizes the Secretary of Agriculture to make rural electrification and telecommunication loans, including specifying eligible borrowers, references, purposes, terms and conditions, and security requirements.

In addition, the Inflation Reduction Act (IRA; Public Law 117–169; Aug. 16, 2022) provided funding to assist rural electric cooperatives in boosting resilience, reliability, and affordability. The IRA's Powering Affordable Clean Energy (PACE) program made available $1 billion in funding to eligible applicants, including electric cooperatives, to help make clean, affordable, and reliable energy accessible to rural Americans. EKPC intends to apply for Project funding under the PACE program. In addition, in September 2024 the USDA announced EKPC is among a group of 16 cooperatives nationwide that will receive funding for clean energy projects through RUS's New Empowering Rural America (New ERA) program. The proposed solar Project, along with several others being planned by EKPC would result in significant carbon dioxide (CO2) reductions throughout Kentucky.

1.2.2 Applicant Purpose and Need

EKPC exists to serve its owner-members by safely delivering reliable, cost-competitive and sustainable energy. One of EKPC's strategic objectives is to actively manage its current and future asset portfolio to generate energy from appropriately diversified resources at competitive prices, and work with state and federal stakeholders to ensure high reliability and economic viability while mitigating evolving regulatory challenges. EKPC is committed to identifying solutions based on science, engineering and economics that ensure electric service continues to be highly reliable and available at an acceptable cost to the owner-members.

In 2020, EKPC established a sustainability plan that includes reducing CO_2 emissions and increasing new clean renewable energy generation resources. This sustainability plan recognizes increasing demand for

renewable energy, especially among commercial and industrial electric users, and increasing regulatory pressure for utilities to reduce emissions of greenhouse gases (GHG). In 2022, EKPC submitted an Integrated Resource Plan to the Kentucky Public Service Commission (PSC) with plans for the cooperative to add nearly 1,000 megawatts of new solar energy resources over the coming decade. As such, EKPC has established its Renewable Integration and Energy Efficiency Portfolio of Actions, which includes the development of multiple new renewable energy generation resources and energy efficiency projects. As part of this portfolio of actions, the proposed Bluegrass Plains Solar Generating Facility Project will contribute significantly to EKPC's Sustainability Plan goals of CO_2 reductions and commitment to adding new renewable energy sources to its generation portfolio, while transitioning to a clean energy future.

The proposed Project is also part of EKPC's long-term plan to meet the projected local and regional electricity demands, expected to increase by 1.1 percent annually for the period 2022 through 2036 (EKPC, 2022). EKPC continuously evaluates its resource portfolio compared to its forecasted load profile and considers how best to serve future load needs, while providing reliable power supply during extreme conditions. EKPC has sufficient capacity resources to meet its forecasted summer load peaks for several years, but the proposed Bluegrass Plains solar project provides additional economically and environmentally advantageous energy which improves the overall EKPC power supply portfolio. The addition of the proposed solar project helps EKPC move towards both its strategic and sustainability goals while also improving economic energy supply to its owner members. The Project will help satisfy the need for EKPC's increasing energy requirements and help meet sustainability goals on an economic basis, without resulting in excessive investment or wasteful duplication. The Project location is also advantageous and will allow EKPC to tie into its existing transmission network via a short generation tie (gen-tie) line that will connect to the existing EKPC Avon Substation.

1.3 PROJECT DESCRIPTION

Project activities analyzed in this EA include Project construction, operation and maintenance, and decommissioning. A brief description of Project components and activities are provided below.

1.3.1 Project Components

Project components include:

- PV modules/arrays (i.e., solar panels);
- Solar tracking support structures;
- Direct current (DC) collection cable and combiner boxes;
- Solar power inverters and medium voltage transformers;
- Electrical collection system (34.5-kV lines); and
- Project substation including breakers, switches, and main step-up transformer and an up to 150-foot gen-tie line to the existing point of interconnection (POI) at EKPC's Avon Substation.

Other facilities proposed as part of the Project will include:

- Internal access roads;
- Project substation to connect the gen-tie to the existing POI (EKPC's Avon Substation);
- Meteorological towers and weather data collectors;
- Generation Step-Up distribution power for operations control systems; and
- Communications cables or lines (buried).

PV technology utilizes the Sun's light energy and converts it directly into DC electrical energy within the PV panels (i.e., modules). The PV modules can be mounted together in different configurations, depending on the equipment selected, on a common support framework. The modules will be dark blue or black in color and are inherently designed to absorb light, thus limiting glare and light reflection. The modules will be mounted in arrays on single-axis trackers, which rotate along a north-south axis to track the Sun's movement from the east in the morning to the west in the evening. The arrays will generally be arranged in a linear pattern as allowed by topography and other environmental constraints. In the case of high winds or

heavy snowfall, the trackers move the modules to a position where the wind or snow will put a minimum strain on the racking and support system. The solar trackers will be powered by motors and will be directed by an actuator that responds to the Sun's direction.

The Project will utilize up to approximately 88,000 state-of-the-art single axis tracking PV modules that have been widely deployed at commercial scale solar facilities. Structures supporting the PV modules will consist of steel piles (e.g., cylindrical pipes, H-beams, or equivalent). The solar panels will be mounted on a galvanized steel and/or aluminum rack system, positioned approximately two to three feet above the finished grade, with a total height of up to 15 feet. The racking system foundation will consist of metal posts (pilings) pile-driven into the ground to a depth just below the frost level. Rows of solar panels will be spaced approximately 15 feet apart. The specific solar panel model will be chosen closer to construction. All required equipment will be manufactured off-site and delivered to the site for final assembly and installation. Photos of typical solar arrays are found in Exhibit B - Project Photographs and Typical Solar Arrays.

The Project will provide renewable energy to EKPC through the electrical transmission grid at EKPC's existing Avon Substation via a 150-foot, 138-kV transmission line (gen-tie). The Project will generate electricity using multiple arrays of PV panels electrically connected to associated power inverter units. The current from the power conversion units will be gathered by an internal electrical collection system and will end at the existing EKPC Avon 138-kV Switching Station in the southwest corner of the proposed solar facility. The existing 138-kV bus at the Avon switching station would be expanded to the east to facilitate interconnection of the new generating facility and installation of 16 new relays for the solar facility. This allows for approximately 40 MW electrical production within the Project area (Exhibit A – Figure 4). Based on the preliminary engineering design, EKPC has identified a roughly 403-acre Project Area for assessment of potential project affects. As the detailed civil engineering and equipment manufacturer selections are finalized, the final Limits of Disturbance (LOD) will be refined.

Access to the Project area will include one access road and gate from US 60 and a network of internal roads and gates (Exhibit A – Figures 4 and 14). Auxiliary roads inside the Project footprint will be approximately 20 feet wide and will likely use compacted native materials or gravel surface. Project access roads will be located around the perimeter and within the PV array to allow for Project maintenance and operation following construction. Access to all areas within the solar arrays is provided by access aisles. These aisles are not roads but clear spaces between the individual rows of solar panels that will be seeded with a mix of grasses and low growing herbaceous vegetation that will be mowed and maintained, as necessary, to allow for pedestrian and vehicle access to all areas of the site for maintenance and emergency response.

For public safety and security purposes, the perimeter of the Project will be surrounded by six-foot-tall game fencing. Secure access gates will be installed, and an on-site monitoring system will be managed remotely.

The Project may include a small operations and maintenance (O&M) building for the storage of spare parts and replacement equipment. The design and construction of the O&M building will be consistent with all applicable state and local building codes.

1.3.2 Construction

Construction of the Project is expected to take approximately 12 months beginning as early as late 2025 or early 2026 with an anticipated Commercial Operation Date (COD) of early 2027. Construction activities will include mobilization to the site, ground preparation (e.g., vegetation clearing, grading, earthwork, etc.), construction and installation of solar modules, trenching and installation of the electrical collection system (34.5-kV lines), commissioning and testing of Project infrastructure, and demobilization. All construction activities will be conducted in compliance with applicable local, state, and federal requirements. All required local, state, and federal construction permits will be obtained prior to commencement of Project activities.

The placement of Project solar modules will largely follow the natural contours of the Project site. Although localized grading and filling may be required, it is anticipated that only minimal earthwork and limited tree clearing will be necessary due to the existing topography and predominantly agricultural use of the site. In

addition, no off-site borrow or removal of soil will be needed. Lay-down yards and temporary staging areas will be interspersed throughout the site to allow for temporary storage of construction materials. The primary staging and laydown area will be in the roughly 15-acre portion of the Project Area west of the existing Avon substation and no panels will be installed in this area.

During construction of the Project, the on-site workforce will consist of laborers, craftsmen, supervisory personnel, support personnel, and construction management personnel. Construction typically requires a monthly average of approximately 75 employees on a daily basis during the construction period. It is possible that special or unforeseen circumstances may warrant an increased number of on-site workers for a short period of time; however, these increases are generally temporary and approximately two to three weeks in duration.

EKPC will be responsible for on-going road maintenance and dust control measures as required by project stormwater construction and land disturbance permits during all phases of construction. EKPC will immediately repair any damage to public roads or drainage systems stemming from Project activities.

Appropriate Best Management Practice (BMP) soil erosion and sedimentation control procedures will be implemented during and after construction in accordance with the requirements of the *Kentucky Pollutant Discharge Elimination System General Permit for Stormwater Discharges Associated with Construction Activities* (KYR10) from the KDOW, and local Land Disturbance Permit. As required by the permits, EKPC will submit an electronic Notice of Intent to the KDOW, prepare, and implement a Stormwater Pollution Prevention Plan (SWPPP) prior to the start of construction. The goal of this plan is to implement appropriate and adequate BMPs, which would include erosion prevention and sediment control measures, and other site management practices necessary to manage stormwater runoff during the construction period. These practices are primarily focused on controlling erosion and sediment transport, but also include controls such as good housekeeping practices aimed at other pollutants such as construction chemicals and solid waste. The plan describes the site management practices that will be utilized in order to effectively minimize such discharges for storm events up to and including a 2-year, 24-hour event.

The BMPs outlined in the SWPPP will be employed and maintained on site as recommended by the KDOW and will be inspected as required by the permit to ensure the BMPs are functioning effectively and preventing impacts to the Waters of the Commonwealth. To reduce the amount of time disturbed soils are exposed to wind and water erosion, required land clearing activities will not be initiated until absolutely necessary. EKPC will also implement enhanced BMPs in the critical areas of streams (i.e., within 25 feet as measured from the bank-full elevation of the channel, and on a positive slope toward a water of the Commonwealth). Any required disturbances in critical areas will be controlled using adequately protective alternative devices including, but not limited to, covering with turf mats/erosion control blankets, mulch, or straw, stabilization with tackifiers, or by track treading within 24 hours or “as soon as practicable” after completion of disturbance activities. After construction activities have ended, all disturbed areas will be seeded and covered and all BMPs will be removed once the areas are stabilized and revegetated. EKPC would then send a Notice of Termination to the KDOW to end coverage of the general permit. By initiating these measures, it is not anticipated the Project would have any adverse impacts on the water quality or aquatic resources of Waters of the Commonwealth.

1.3.3 Operation and Maintenance

Once constructed, the Project is expected to be in operation seven days per week, and 365 days per year. While the Project design has not been completed and the specific PV modules have not been selected, the Project is expected to operate (estimated 30 years) from COD (early 2027). Once operational, the facility will have up to three full-time employees on site for inspections, maintenance, and repairs. In addition, maintenance employees or contractors will be on site periodically, as needed, to conduct maintenance, which will generally include testing and maintenance of solar modules, invertors or other electrical equipment, road and fence repairs, mechanized vegetation management (including management of weeds or invasive species), and site security. It is anticipated that one to three vehicles at a time could be present at the site throughout the life of the Project for operations and maintenance activities. Operations and maintenance vehicles will consist primarily of light duty pickup trucks and utility vehicles.

Once operational, the Project will utilize fully shielded lighting, low-pressure sodium lamps, and motion sensors to minimize lighting during the overnight hours. Project signage will be limited to generation facility-approved signs that will be attached to the perimeter fencing and within the Project area. The signs will include site information including gate numbers (where appropriate), emergency contact information, and notifications/warnings (e.g., No Trespassing, High Voltage, Danger, etc.) and will not be illuminated, minimizing the effects of lighting from signage on the night skies and adjacent residents.

An approximately two-acre area within the Project area will be planted with a mix of low-growing native grasses and wildflowers intended to prevent erosion and provide habitat for local pollinators.

In order to optimize performance of the solar modules, and to maintain desirable vegetation at the site, vegetation growth will not exceed a height of 36 inches. EKPC will work with a professional contractor to manage vegetation height and to implement weed control measures during operation and maintenance of the Project. Weed control measures may include the use of approved herbicides, which will be stored off-site, and applied by licensed applicators in compliance with all local, state, and federal rules and regulations.

1.3.4 Decommissioning

Contingent upon RUS and Kentucky PSC approval of the project, EKPC will continue development of the project and planning for the facility, which will include a Decommissioning Plan that will account for module removal and disposal/recycling. As a regulated utility the PSC's jurisdiction over "service" helps assure that utility assets are appropriately decommissioned.

1.3.5 Proposed EKPC Substation Expansion

The Project will include the interconnection of the solar generation facility to EKPC's Avon Substation and any associated network upgrades to include expansion of the existing Avon substation to install a Generation Step-Up transformer and tie line into the existing transmission system on the property. The existing substation is located immediately west of the solar farm (Exhibit A – Figure 4). This site was previously developed by EKPC when the substation was built and no additional land acquisition will be required to accommodate the substation expansion. The Avon Substation currently has a fenced-in footprint approximately 6.5 acres in size. Following construction, the substation will continue to be fenced by a six-foot game fence.

1.4 PROJECT AGENCY AND TRIBAL COORDINATION

EKPC has coordinated with multiple federal, state, and local agencies regarding the Project. Below is a list of agencies to which project correspondence were sent. Copies of this project correspondence, and any agency responses received are included in Exhibit D – Agency Correspondence.

- USDA Natural Resources Conservation Service (NRCS), Resource Soil Scientist
- U.S. Army Corps of Engineers (USACE), Louisville District
- Office of Kentucky Nature Preserves (OKNP), Kentucky Biological Assessment Tool
- U.S. Fish and Wildlife Service, Kentucky Ecological Services Field Office
- Kentucky Public Service Commission
- Kentucky Heritage Council, State Historic Preservation Office
- Cherokee Nation
- Eastern Band of Cherokee Indians
- Eastern Shawnee Tribe of Oklahoma
- Osage Nation
- Lexington Historic Preservation Officer
- Blue Grass Trust

As the Project moved into the design phase, four structure locations were submitted for review and approval using the Federal Aviation Administration's (FAA) Notice Criteria Tool; none of the locations exceeded the FAA's Notice Criteria; therefore, additional coordination with the FAA was not required (see Notice Criteria Tool Forms in Exhibit D – Agency Correspondence). All agency coordination is included in the Administrative Record for this EA.

1.5 PUBLIC INVOLVEMENT

Public involvement was voluntarily integrated into the early planning stages of the project by EKPC through a number of processes including a press release, newspaper advertisements, U.S. Postal Service mailings, EKPC's website (https://www.ekpc.coop/cooperative-solar-farms), and a public meeting. Publicly available information from the Property Valuation Administrator (PVA) Office was used by EKPC to identify the landowners of those property parcels located in the vicinity of the proposed Project.

The public Open House meeting was held on May 16, 2024 at EKPC's offices, located at 4775 Lexington Road, Winchester, KY. The public was invited to the open house through notices placed in the Lexington Herald Leader, which is a newspaper local to the project area, on May 9 and 14, 2024. The notice included a brief description and location of the project, as well as particulars of the open house. EKPC also mailed an open house invitation and project information packet to the property owners in the vicinity of the Project area, as well as state and local officials. The project information packet was also posted on EKPC's website throughout this same timeframe.

The purpose of the open house was to give members of the public and individuals living near the proposed project area the opportunity to learn about the proposed project and to discuss their concerns regarding the proposal with EKPC staff.

At the open house, maps of the proposed project area depicting the preliminary project design were available to facilitate constructive discussion regarding the proposal. EKPC also solicited information from individuals concerning the proposed study area. Open House attendees provided information regarding the project vicinity and concerns regarding the project. All open house related documentation is included in Exhibit C – Public Meeting. Below is a summary of the issues and/or concerns raised by attendees regarding the proposed project:

- General opposition regarding land/property impacts
- General impacts to the environment
- Impacts to agricultural lands/prime farmlands/topsoil
- Proximity to residences/visual impacts
- Adjacent property value impacts

EKPC must also satisfy all requirements of the Kentucky Public Service Commission (PSC) – Certificate of Public Convenience and Necessity (CPCN) process for a Kentucky utility company seeking to construct a new generation project. EKPC filed an application with the Kentucky PSC for a CPCN to construct the new solar facility on April 26, 2024. There is also public involvement and a comment period associated with this process that is being completed concurrently with the NEPA review.

2 Alternatives Evaluated Including the Proposed Action

2.1 PROPOSED ACTION

The Proposed Action includes the construction, operation, and maintenance of the approximately 403-acre Project located in eastern Fayette County, Kentucky (Exhibit A - Figures 1 and 2). Details of the Project components and activities are described in Section 1.3 above.

The Project site was selected due to its location adjacent to EKPC's existing Avon Substation and multiple EKPC and Kentucky Utilities (KU) transmission line facilities within the southwest corner of the Project site (Exhibit A - Figure 2 and 3). This location at the junction of multiple transmission facilities would be the point of interconnection for the solar project into the PJM transmission system. A previous developer had started the upfront work for the project and secured a position in the PJM transmission study queue, which EKPC assumed when it acquired the development rights to the project. This position in the study queue makes this location highly desirable for a timely project, since it is very difficult to get a transmission queue position at this time. In addition, the Project location was selected because of sufficient access to available large tracts of private land, favorable solar resources, and appropriate terrain for a solar development.

The proposed Project is within the Lexington-Fayette Urban County Government's (LFUCG) Rural Service Boundary. The Lexington-Fayette Urban County Government is a fully merged city-county government that operates under a Mayor-Council form of government where executive and administrative functions are vested with the mayor and legislative authority rests with the Urban County Council (LFUCG 2024). The LFUCG's Comprehensive Plan, *Imagine Lexington 2045*, outlines guiding principles, goals, and objectives relevant to the long-term success and vitality of Lexington and Fayette County (LFUCG 2023). The Comprehensive Plan outlines multiple sustainability policies which include "encouraging renewable energy sources." The Proposed Action is consistent with this principle of sustainability as it will generate a clean source of renewable energy from the Sun and improve the environment by offsetting CO_2 emissions associated with traditional power generation.

2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the Project would not be constructed and potential impacts to the human and natural environment associated with Project activities (i.e., construction, operation and maintenance, and decommissioning) would not occur. Under the No Action Alternative, RUS would not provide funding for the Project and no changes would occur to the existing EKPC-owned Substation. Existing conditions would likely remain unchanged, and the land would continue to be used to produce row crops.

The No Action Alternative does not meet the purpose and need of the Project as it will not meet EKPC's sustainability plan goal to reduce carbon dioxide emissions and increase new clean renewable energy generation resources. The No Action Alternative would also not support EKPC's objective to diversify its generation portfolio and advance company efforts to fulfill the Strategic Plan and meet sustainability goals of increasing zero-emissions energy production while transitioning to a clean energy future; however, it was carried forward for detailed analysis as a comparison to the Proposed Action.

2.3 OTHER ALTERNATIVES CONSIDERED BUT DISMISSED

As mentioned above, the current Project location was selected due to its proximity to the EKPC-owned Avon Substation (Exhibit A - Figure 2 and 3), secured a position in the PJM transmission study queue, and because other key site selection criteria were met (see Section 2.1). As such, only the current Project location was carried forward for detailed analysis, and no other off-site locations were considered.

As documented in this EA, EKPC has concluded that the Project is not likely to have significant adverse effects on the environment. Available information from the PSC required Site Assessment Report, as well as EKPC's due diligence upon acquiring the Project from the previous developer, has provided a comprehensive basis for

this determination. No jurisdictional wetlands or floodplains will be impacted by the Project, stream crossings will be minimal and authorized by USACE Nationwide Permits, no adverse effects to cultural resources were identified, and no impacts to federally listed species will occur.

Furthermore, the Project layout has been developed to minimize onsite impacts to the extent possible. Solar panel arrays were arranged to take advantage of the relatively flat topography of the existing land and avoid steep slopes, wetlands, and water resources, and to limit proximity to houses. Therefore, this EA was prepared as a single-site action without assessment of an alternative site per §1970-C, Exhibit B, 2.3.2.2.

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3 Affected Environment and Environmental Consequences

3.1 LAND USE

With the prevalence of agriculture in Fayette County and throughout Kentucky, an important consideration under NEPA is the conversion of farmland to non-agricultural uses. The purpose of the Farmland Protection Policy Act (FPPA), 7 U.S.C. 4201, et seq., is "to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to assure that Federal programs are compatible with policies to protect farmland" (7 U.S.C. 4201(b)).

This section provides a discussion of current and future land use, important farmland, and formally classified lands, including managed conservation lands, within the Project area (Exhibit A). The land use analysis is based on publicly available state, regional, county, and municipal-level planning documents, as well as USDA soils data.

3.1.1 Affected Environment – Land Use

General Land Use

General land use within the Project area consists primarily of agricultural lands used for the production of row crops (i.e., corn or soybeans). Agricultural fields within the Project area are separated by perennial and intermittent streams with associated grassed and forested buffers, most of which are heavily infested with invasive plant species, e.g., bush honeysuckle and winter creeper. There are no roads in the Project area. The Project is bordered by Interstate 64/Rockwell Road to the north, Winchester Road/U.S. Route 60 to the south, and agricultural fields to the east and west.

There are no residences within the Project area. There are two rural residences located adjacent to the Project area along Winchester Road/U.S. Route 60 (Exhibit A – Figures 3 and 4).

The National Land Cover Dataset (NLCD) indicates the Project area is dominated by agriculture (Exhibit A - Figure 5). Additional land cover types mapped by NLCD include hay/pasture, deciduous forest, developed land, and mixed forest. A summary of the mapped land cover types within the 403-acre Project Area is provided in Table 3.1-1.

Table 3.1-1. National Land Cover Dataset Cover Types within Project Area Expressed as Acreage and Percentage of Bluegrass Plains Solar Project Area

NLCD Land Cover Type	Acreage	Percent of Project Area
Cultivated Crops and Herbaceous	332.3	82.4%
Deciduous Forest	64.9	16.1%
Developed	4.7	1.2%
Mixed Forest	1.1	0.3%
Total*	**403**	**100%**

*Total may not add up exactly due to rounding of decimal places.

The Project is located in eastern Fayette County, Kentucky within the LFUCG Rural Service Area. Therefore, the LFUCG's Comprehensive Plan*, Imagine Lexington 2045*, was reviewed to assess the Proposed Action's compatibility with policies and strategies regarding alternative energy sources and solar facility development within the LFUCG and to identify mapped existing land use and future land use for the Project area (LFUCG

2023). Table 3.1-2 outlines the goals, objectives, and strategies identified for renewable energy in the LFUCG's *Imagine Lexington 2045* Comprehensive Plan.

Table 3.1-2. LFUCG's *Imagine Lexington 2045* Comprehensive Plan

Objective	Policy	Action Item	Strategy
Plan Element: Theme B Protecting the Environment, Pillar II Sustainability			
Reaching Net Zero Greenhouse Gas Emissions. Reducing greenhouse gas emissions from all sectors, including transportation, buildings, industry, and waste management.	Sustainability Policy #1. Establish A Plan to Reduce Community-Wide Greenhouse Gas Emissions to Net Zero by 2050.	Use energy efficient, renewable energy, and low-carbon technologies.	LFUCG partnered with CivicLex to gather input from Lexington citizens for the 2045 Comp. Plan Update. Env. resiliency and climate change a top priority.
	Sustainability Policy #2. Establish a Plan to Reduce All LFUCG Facilities, Operations, and Fleets to Net Zero GHG Emissions.	Identify opportunities and commit funding for renewable energy generation (i.e., solar or wind).	--
	Sustainability Policy #5. Expand and Promote Energy Efficiency, Renewable Energy, and Electrification Initiatives.	Establish government and community targets for renewable energy.	LFUCG partnered with Kentucky Solar Energy Society to launch *Solarize Lexington* to help property owners install solar panels.
Plan Element: Theme E Urban and Rural Balance			
Accountability. Ensuring outlined vision is followed and placing safeguards and checks to protect integrity of the Comprehensive Plan.	Accountability Policy #1. Complete the New Process for Determining Long Term Land Use Decisions Involving the Urban Service Area and Rural Activity Centers.	Preservation of Lexington's quality agricultural soils.	Urban Service Area established policies meant to protect the irreplaceable soils that are located within the rural areas.
Stewardship. Preserving LFUCG's quality agricultural soils and the promotion of the region's historic farming culture.	Stewardship Policy #8. Ensure Future Developments is Economically, Environmentally, and Socially Sustainable.	Development should provide community-oriented places and services.	LFUCG Committed to env. sustainable land development patterns that support the goal of reaching net zero GHG emissions by 2050.
Stewardship. Preserving LFUCG's quality agricultural soils and the promotion of the region's historic farming culture.	Stewardship Policy #9. Follow and Implement the Recommendations of the 2007 Study of Fayette County's Small Rural Communities and the 2017 Rural Land Management Plan to Protect and Preserve Lexington's Rural Settlements.	Review buffering requirements for the Rural Service Area.	Approximately 25% of LFUCG's Rural Service Area is protected through the Purchase of Development Rights program, which protects farmland for food security and helps conserve environmentally sensitive lands.

Source: LFUCG 2023

Important Farmland

The Natural Resource Conservation Service (NRCS) Soil Scientist for the region of Kentucky where the Project is located was contacted to determine if any of the soils within the Project Area are classified as prime/statewide important farmland or hydric. The NRCS Soil Scientist provided the results of the Farmland Protection Policy Act (FPPA) site assessment for the proposed project. The information provided indicated, the Project area consists primarily of farmland classified as prime farmland, farmland of statewide importance, and prime farmland if drained (Exhibit A - Figure 6; USDA NRCS 2024). The total acreage of the Project site is 403; however, the total acres of prime/statewide important farmland to potentially be directly impacted by the project is 315.7 acres. According to the NRCS, the 87.3 acres not considered for conversion are either avoidance areas (wetland, stream, cemetery buffers) or within existing utility facilities (Avon substation, transmission line easements, gas line easement) and would not be impacted or are considered previously converted lands by the NRCS. In addition, according to the NLCD there are approximately 64.9 acres within the Project site containing trees and other woody stemmed vegetation that is not currently being farmed. The total acreage of prime farmland of each type within the Project area is provided in Table 3.1-3 below.

Table 3.1-3, Acreage of Important Farmland by Classification within the Bluegrass Plains Solar Project Area (see Exhibit A - Figure 6)

Farmland Classification within Bluegrass Plains Solar Project Area	Acreage
Prime And Unique Farmland	216.8
Statewide Important or Local Important Farmland	98.9
Avoidance Areas/Previously Converted Lands/Not prime farmland (water)	87.3
Total	**403**

Formally Classified Land

There are no formally classified lands (i.e., designated natural resource areas or public lands) within or immediately adjacent to the Project area (U.S. Geological Survey [USGS] GAP 2024; Exhibit A - Figure 7). The Brookfield Farm is located 1.4 miles southwest of the Project Area, and the Farm and Ranch Protections Program Land is located 1.1 miles northwest of the Project Area.

There are also no Office of Kentucky Nature Preserve (OKNP) areas located within a five-mile radius of the Project. The nearest nature preserve area is the Lower Howard's Creek Nature and Heritage Preserve, which is located approximately 6.5 miles south of the Project area (Exhibit A - Figure 7).

Airports

No airports are located within or immediately adjacent to the Project. There is a heliport located at the Creech Army Airfield near the community of Avon, Kentucky, approximately 2.2 miles north of the Project. The Lexington Blue Grass Airport, located approximately 15 miles west of the Project, is the closest municipal airport.

3.1.2 Environmental Consequences – Land Use

General Land Use and Important Farmland

Due to the presence of important farmland, an AD-1006 Farmland Conversion Impact Rating Form was completed for the Project area and submitted to the state USDA NRCS office (Exhibit D). Under the Proposed Action, up to 315.7 acres of prime/statewide important farmland could be directly converted (i.e., taken out of production) to accommodate construction and development of the Project. The proposed

project site has a relative Land Evaluation and Site Assessment (LESA) value of 91, as based on a scale of 0 to 100 points. According to the FPPA data provided by the NRCS, the percentage of farmland in Fayette County having the same or higher value is 38.51%. The percentage of Fayette County farmland to be converted as a result of the proposed action is 0.20%, which is considered minimal. Per the form, the Project has a total LESA value of 171 out of 260 (see completed form in Exhibit D). For Projects with scores greater than or equal to 160, which includes the Proposed Action, the FPPA recommends federal agencies consider the following measures specific to farmland impacts:

- Minimize impacts to farmland by limiting the degree or magnitude of the action and its implementation
- Rectify the impact by repairing, rehabilitating, or restoring the impacted environment
- Reduce the impact over time by preservation and maintenance operations during the life of the action.

Implementation of the Proposed Action will result in the conversion of farmland to non-agricultural use over the life of the Project. There are no practicable alternatives to the Proposed Action; however, EKPC will implement measures to minimize effects to farmland for potential future use, including minimization of erosion and sedimentation and revegetating with low growing grasses and herbaceous vegetation. Furthermore, if the Project is not redeveloped with modern equipment at the end of its anticipated 30-year life, the Project would be decommissioned. As a result, Project facilities would be removed, and land could once again be used for the production of agriculture at the discretion of the landowner.

Measures to avoid and minimize soil erosion and sedimentation, protect topsoil, and replenish nutrients in the underlying soil for future agricultural use, would include but may not be limited to the following:

- Given the existing topography and agricultural use of the site, only minimal grading is anticipated under the Proposed Action and no removal of topsoil from the site is expected.
- EKPC will implement measures to preserve and protect topsoil during construction, including separating topsoil from subsoil materials when earthmoving or excavation is taking place (i.e., grading, road construction, cable installation, foundation installation, etc.).
- As required, EKPC would identify the appropriate depth of topsoil that will be stripped and segregated from the subsoil during earthwork activities.
- Following activities that require segregation of topsoil/subsoil, the topsoil will be re- spread on top of the disturbed areas with the intent of maintaining the overall integrity and character of the prime farmland. Any excess topsoil will be re-spread on site rather than relocated off-site.
- EKPC would implement a SWPPP in compliance with Kentucky Division of Water requirements to ensure that all ground disturbance is stabilized to prevent erosion and sedimentation resulting from stormwater runoff. Following construction, areas disturbed by construction will be restored as per the SWPPP and KPDES requirements.
- Silt fencing will be installed on the downside of all disturbed areas, near waterways, and near drain tile inlets. This silt fencing would control soil erosion via stormwater runoff.
- Following construction, a section of the Project area will be planted with a mix of low-growing native grasses and wildflowers intended to prevent erosion and provide habitat for local pollinators.
- Construction materials imported to the Project site including any erosion control products, and seed mixes shall be free of invasive plant species, if possible.
- Measures will also be implemented to prevent the spread of invasive plant species, including construction equipment inspection and cleaning to remove visible plants, seeds, mud, and dirt clods

No farmland will be impacted as a result of the proposed expansion of the Avon Substation, as this area is considered previously converted by the NRCS.

Formally Classified Lands

No formally classified lands (i.e., designated natural resource areas or public lands) are located within or immediately adjacent to the Project area (Exhibit A - Figure 7). Therefore, no direct effects to formally

classified lands will occur as a result of the Proposed Action. The Brookfield Farm is located 1.4 miles southwest of the Project Area, and the Farm and Ranch Protections Program Land is located 1.1 miles northwest of the Project Area. The Lower Howard's Creek Nature and Heritage Preserve is located approximately 6.5 miles to the south. These lands are not within the Project nor within view from the Project; therefore, no indirect effects to the Preserves will occur as a result of the Proposed Action.

Airports

The requirements for filing with the FAA for proposed structures (e.g., solar panels, etc.) vary based on a number of factors, including, but not limited to, structure height, proximity to an airport, location, and frequencies emitted from the structure (CFR Title 14 Part 77.9). Four structure locations were submitted for review and approval using the FAA's Notice Criteria Tool; none of the locations exceeded the FAA's Notice Criteria; therefore, additional coordination with the FAA was not required.

The No Action Alternative would not have any direct or indirect effects to land use within the Project area because the Proposed Action would not occur.

3.2 FLOODPLAIN

Executive Order 11988, signed on May 24, 1977, requires federal agencies to avoid, to the extent possible, the long-term and short-term adverse impacts associated with the occupancy and modifications of floodplains, and to avoid the direct or indirect support of floodplain development whenever there is a practicable alternative. The preferred method for satisfying this requirement is to avoid sites within the floodplain. If an action must be located within the floodplain, the executive order requires that agencies minimize potential harm to people and property and to natural and beneficial floodplain values by incorporating current floodplain management standards into the project. Executive Order 11988 also outlines an 8-step decision-making process to evaluate and address floodplain impacts.

Executive Order 13690, signed on January 30, 2015, was issued to improve the nation's resilience to flooding and better prepare for the impacts of climate change. When avoiding floodplains is not possible, Executive Order 13690 calls for agencies to make efforts to improve the resilience of communities as part of federal actions. This order established the Federal Flood Risk Management Standard, which requires a higher vertical elevation and a greater horizontal extent to the floodplain be considered. The additional vertical and horizontal increments are calculated by one of three methods: climate-informed science approach, freeboard value approach, or 0.2 percent annual chance flood (i.e., 500-year flood) approach.

3.2.1 Affected Environment – Floodplain

Data from the Federal Emergency Management Agency (FEMA) was obtained for the Project to determine the acreage of 500-year floodplain, 100-year floodplain and 100-year floodway present within the Project area (Exhibit A - Figure 8).

The 500-year floodplain is defined by FEMA as the elevation on the terrain that has 0.2 percent annual chance of flooding (1 in 500 years). Floodplain management guidelines require federal agencies to apply the 0.2 percent probability of flood occurrence in a given year to the location of "critical actions." Critical actions (24 CFR §55.2) are those defined as an activity for which even a slight chance of flooding would be too great a risk because it might result in loss of life, injury, or property damage. No Project components are proposed within the 500-year floodplain (Exhibit A - Figure 8); therefore the 8-step decision-making process for alternatives does not apply.

The 100-year floodplain is defined by FEMA as the elevation on the terrain surrounding a river system at which a flood has a one percent chance of reaching in any given year. A regulatory floodway lies within the 100-year floodplain and is defined as the channel of a river or watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without increasing the water surface elevation more than a designed height. The Project area does not contain any 100-year floodplain or floodway (Exhibit A - Figure 8).

3.2.2 Environmental Consequences - Floodplain

Effects to floodplains were evaluated as part of this analysis in accordance with RUS guidance (7 CFR 1970, Subpart C). The Project area does not overlap with a 500-year floodplain, 100-year floodplain or 100-year floodway; therefore, no effects to the floodplain will occur as a result of the Project.

The No Action Alternative would not have any direct or indirect effects to floodplains within the Project area because the Proposed Action would not occur.

3.3 WETLANDS

Section 404 of the CWA, 33 U.S.C. §1344, which is administered by the USACE, regulates the placement of fill or dredged material into wetlands and other Waters of the United States. In addition, the purpose of Executive Order 11990, signed on May 24, 1977, is to "minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands." To meet these objectives, it requires federal agencies, in planning their actions, to consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided.

3.3.1 Affected Environment - Wetlands

The U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) indicates approximately 4.53 acres of wetland within the Project area (Exhibit A - Figure 11). Table 3.3-1 summarizes the mapped wetlands by type.

Table 3.3-1. Acreage of NWI-Indicated Wetlands within the Bluegrass Plains Solar Project Area

NWI Wetland Type	Acreage
Freshwater Pond (PAB4Hh and PUBHh)	2.8
Riverine (R4SBC and R5UBH)	1.8
Total	4.5

A formal wetland determination was conducted for the Project on November 27–30, 2023, using methods defined in the USACE Wetland Delineation Manual (Environmental Laboratory 1987), and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont (Version 2.0; USACE 2010). The study limits for the wetland delineation included the 403-acre project area, where 1.14 acres of wetland (0.71 acre of palustrine forested wetland and 0.44 acre of palustrine emergent wetland) were mapped within the wetland delineation study limits (Exhibit A - Figure 12).

3.3.2 Environmental Consequences - Wetlands

EKPC has committed to avoiding wetland impacts. As such, the final Project footprint will be configured to avoid wetlands with a 50-foot buffer, and no direct (permanent or temporary) impacts to wetlands will occur as a result of construction or operation of the solar development. Surface water runoff that could occur during construction activities also has the potential to contribute sediments and pollutants to wetlands immediately adjacent to or downstream of the Project area. However, given the avoidance measures implemented during Project design, and the implementation of BMPs and a SWPPP in compliance with KDOW requirements no significant stormwater issues are anticipated. Implementing the SWPPP would ensure that all ground disturbance is stabilized to prevent erosion and sedimentation into wetlands and streams. Following construction, areas disturbed by construction will be restored as per the SWPPP and KPDES requirements. Therefore, no reasonably foreseeable adverse direct or indirect effects to wetlands will occur as a result of the Proposed Action.

As the Project moves into final design, if currently unanticipated and unavoidable impacts to wetlands will occur, EKPC will coordinate with the USACE, KDOW, and the RUS to obtain a Joint CWA Section 404/401 permit, if needed, for the Project. All applicable permits will be obtained by EKPC prior to construction.

The No Action Alternative would not have any direct or indirect effects to wetlands within the Project area because the Proposed Action would not occur.

3.4 WATER RESOURCES

For the purposes of this analysis, water resources include both groundwater and surface water. Groundwater is the subsurface hydrologic resource that is used for potable water consumption, agricultural irrigation, and industrial applications. Groundwater is described in terms of depth to aquifer, aquifer or well capacity, and surrounding geologic composition. Surface water resources analyzed in this section include watersheds and streams.

Water service, for O&M workers and dust suppression, will be provided by a metered service connection to the Kentucky American Water main, which runs adjacent to the south property boundary along US 60. Portable toilets will be installed during construction; if long-term sanitary waste disposal is required, a septic system and associated leach field will be installed at the site.

Floodplain and wetlands are analyzed separately in Sections 3.2 and 3.3, respectively, and are therefore not included in this section.

3.4.1 Affected Environment – Water Resources

Groundwater

Groundwater is located within soil and rock formations beneath the ground surface. Aquifers provide a source of water to man-made wells and natural springs and consist of rock units that have sufficient permeability to allow for the flow of groundwater to these features.

Per the Kentucky Geological Survey, the Cambrian-Ordovician aquifer crosses the edge of the Project area. This aquifer is an important source of water in the midwest, and serves rural, public, and industrial users. The aquifer system is a leaky-artesian system in which movement of ground water is controlled partly by the internal confining units. In the northern outcrop area, unconfined conditions prevail in shallow parts of the aquifer system and where the system is thin. Much of the recharge in upland areas discharges to streams through local flow systems, which are no more than a few miles in length. The remainder of the recharge moves slowly downward to deeper formations and downgradient to form or join the regional flow system (USGS 1992).

Rural residences and farmsteads within and surrounding the Project area likely depend on private wells that draw from this aquifer for both drinking water and as a water source for farm operations.

The Environmental Protection Agency (EPA) defines a sole source aquifer as one that supplies at least 50 percent of the drinking water for its service area, and where there are no reasonably available alternative drinking water sources should the aquifer become contaminated. No sole source aquifers are located within the state of Kentucky (EPA 2021a).

Surface Water

Data from the USGS National Hydrography Dataset (NHD) indicate several segments of unnamed intermittent and perennial streams associated with grassed waterways and riparian corridors within and immediately adjacent to the Project area (Exhibit A - Figure 11). No lakes or ponds are mapped within the Project area (Exhibit A - Figure 11) and none were observed during the site visit (Stantec 2024a).

Concurrent with the wetland investigation (see Section 3.3), all mapped streams identified by USGS NHD, and the entire Project area, were investigated in the field on November 27-30, 2023, to determine if the streams were present and to assess their potential for consideration as Waters of the U.S. (WOTUS). For the purposes of the field investigation, streams that were observed to have a flow class of intermittent or perennial and had a surface water connection to other WOTUS on the day of the fieldwork were considered

to meet the Waters of the U.S. criteria. Ephemeral streams and isolated streams were considered non-jurisdictional and did not meet the criteria for WOTUS. Eight stream segments meeting WOTUS criteria were identified during the field investigation (S-10, S-13, S-18, S-25, S-26a, S-26b, S-27a, and S-27b; Stantec 2024a). The remaining 27 stream segments were determined to be ephemeral streams with no jurisdiction under the current WOTUS rules.

3.4.2 Environmental Consequences – Water Resources

Groundwater

No sole source aquifers are located within the state of Kentucky; therefore, no effects to sole source aquifers will occur as a result of the Proposed Action. Given the implementation of BMPs and a SWPPP to avoid and minimize the effects of stormwater runoff (see Surface Water discuss below), no adverse effects to the drinking water supply are anticipated as a result of the Proposed Action.

The Proposed Action will not require the addition of any new wells that will draw water from the aquifer system. However, other local sources of water, may be used as a source of water for dust control during construction, as well as module washing following construction of the Project. The depth of the grading will not intersect the depth of the groundwater. Further, fewer impervious surfaces would be present and percolation/groundwater recharge would not be affected. Therefore, no significant effects to the groundwater system are anticipated as a result of the Proposed Action.

Surface Water

No arrays or access roads will cross or occur within 50-feet of jurisdictional surface waters as a result of the Proposed Action (Exhibit A - Figure 12). Stormwater runoff that could occur during construction activities has the potential to contribute sediments and pollutants to streams immediately adjacent to or downstream of the Project area. However, construction activities will include implementation of BMPs to avoid potential impacts to streams resulting from stormwater runoff. In addition, EKPC will implement SWPPPs in compliance with KDOW requirements to ensure that all ground disturbance is stabilized to prevent erosion and sedimentation into streams. Following construction, areas disturbed by construction will be restored per the SWPPP and KPDES permit requirements. Given the avoidance measures implemented during Project design, and the implementation of BMPs and SWPPPs in compliance with KDOW requirements, no reasonably foreseeable adverse indirect effects to surface water will occur as a result of the Proposed Action.

The No Action Alternative would not have any direct or indirect effects to water resources within the Project area because the Proposed Action would not occur.

3.5 BIOLOGICAL RESOURCES

3.5.1 Affected Environment – Fish, Wildlife, and Vegetation

The Project is located within the Inner Bluegrass physiographic province of Kentucky. This region is a weakly dissected agricultural plain containing extensive karst, intermittent streams, and expanding urban-suburban areas (Kentucky Geological Survey 2016). However, no karst features were found at the Project Area. The original open woodlands, savannas, and swamp forests within this region have been largely replaced by agriculture and urban-suburban-industrial areas (Woods et al. 2002), as can be seen within the Project area, which is dominated by cultivated cropland. The Inner Bluegrass is part of the Western Mesophytic forest region described by Braun (1950). Though similar to the Mixed Mesophytic forest region to the east, the Western Mesophytic forest region was described by Braun (1950) as being more of a transition zone to the drier oak-hickory forest region that lies to the west. As such, historically, the Western Mesophytic forest region, like the Mixed Mesophytic region, was maturely dissected with strong relief with the uppermost forested slopes and ridgetops dominated by oak (*Quercus* spp.) and American chestnut (*Castanea dentata*), but a blight (fungus [*Cryphonectria parasitica*]) eliminated the chestnut component. American chestnuts have since been replaced in the canopies primarily by oaks, hickories (*Carya* spp.), and red maple (*Acer rubrum*). On some ridgetops and southern exposed points, pines, such as Virginia

(*Pinus virginiana*), and pitch (*P. rigida*), are mixed with oaks such as chestnut (*Q. montana*), black (*Q. velutina*), scarlet (*Q. coccinea*), and white (*Q. alba*). The more mesic slopes and ravines in the region are composed of mixed mesophytic communities dominated by an overstory of eastern hemlock (*Tsuga canadensis*), tulip poplar (*Liriodendron tulipifera*), American sycamore (*Platanus occidentalis*), sugar maple (*Acer saccharum*), black walnut (*Juglans nigra*), and American beech (*Fagus grandifolia*). These ravines are also frequently composed of dense, almost impenetrable shrub layers of great laurel (*Rhododendron maximum*) in mesic areas and mountain laurel (*Kalmia latifolia*) on drier slopes. However, the Western Mesophytic forest region does not include yellow buckeye (*Aesculus flava*) or American basswood (*Tilia americana*), both of which are indicators for the similar, though distinct, Mixed Mesophytic forest region.

Common Fish and Wildlife Resources

Approximately 82 percent of land within the Project area is currently used for the production of cultivated crops (Table 3.1- 1; Exhibit A - Figure 5). Therefore, the majority of the terrestrial wildlife found in the Project area likely consists of generalist species adapted to surviving in a highly agricultural environment. These species may include, but are not limited to, white-tailed deer (*Odocoileus virginianus)*, coyote (*Canis latrans)*, raccoon (*Procyon lotor),* opossum (*Didelphis virginiana),* squirrel (*Sciurus* spp*.),* voles (*Microtus* spp*.)*, mice (*Peromyscus* spp*.)*, songbirds, waterfowl, red-tailed hawk (*Buteo jamaicensis)*, and wild turkey (*Meleagris gallopavo)*. Other potential wildlife habitats within the Project area include road ditches, field edges, and fencerows and hedgerows, all of which provide varied sources of food, cover, and nesting.

Approximately 65 acres of woodlands are present within the Project area and may be used by common mammal and bird species for food and cover, although these areas are heavily infested with invasive plant species, e.g., bush honeysuckle and winter creeper. In addition to those listed above, common bird species with potential to occur within the Project area include, but are not limited to, American crow (*Corvus brachyrhynchos),* northern cardinal (*Cardinal cardinalis*), and red-winged blackbird (*Agelaius phoeniceus*). This habitat could be used by a number of bat species for roosting and/or foraging including the Indiana bat (*Myotis sodalis*), northern long-eared bat (NLEB) (*Myotis septentrionalis*), tricolored bat (*Perimyotis subflavus*), gray bat (*Myotis grisescens*), little brown bat (*Myotis lucifugus*), red bat (*Lasiurus borealis*), evening bat (*Nycticeus humeralis*), and big brown bat (*Eptesicus fuscus*) among others.

Streams within and immediately adjacent to the Project area provide habitat for aquatic species, including common fish, amphibians, and reptiles, and serve as a water source for other wildlife species. These streams, as well as wetlands, are likely used by amphibians such as the American toad (*Anaxyrus americanus*) and northern leopard frog (*Lithobates pipiens*), reptiles such as the common snapping turtle (*Chelydra serpentina*) and common garter snake (*Thamnophis sirtalis*), and waterfowl such as mallard (*Anas platyrhynchos*) and Canada goose (*Branta canadensis).* Mammals, such as beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*) and mink (*Mustela vison*), may also use wetlands and streams for food and cover.

3.5.2 Environmental Consequences – Fish, Wildlife, and Vegetation

Construction of the Project will include some minor grading of the site for installation of solar modules, access roads, security fencing, and other infrastructure, including the EKPC substation. This will result in conversion of up to 315.7 acres of farmland to non-agricultural uses (see Section 3.1). Herbaceous vegetation within any of the non-cropped areas such as narrow grassed swales and field edges within the Project area may also be cleared as a result of construction. Additionally, selective portions of deciduous and mixed forest may be cleared for solar panel infrastructure.

Following construction, a section of the Project area will be planted with a mix of low-growing native grasses and wildflowers intended to prevent erosion and provide habitat for local pollinators.

Common Fish and Wildlife Resources

The Project has several forested areas, typically found along fencerows, and riparian areas surrounding streams or wetlands. There are approximately 65 acres of deciduous and mixed forest within the Project.

These forested areas typically consisted of young, shrubby vegetation with high amounts of invasive plant species such as shrub honeysuckle (*Lonicera maackii*) and winter creeper (*Euonymus fortunei*). Some tree clearing is anticipated with the development of the Project but will be minimized to the extent practical. As such, minimal impacts to wildlife species that prefer woodland habitat are anticipated as a result of the Project. The solar arrays will be sited entirely within cropped areas, with the exception of access roads or collection line crossings of road ditches which have limited wildlife habitat value for those species that require grassland habitat.

Incidental injury and mortality from construction of the Project will be limited to slow-moving or burrowing species, such as small mammals, reptiles, and amphibians that may be unable to quickly move away from the active construction area. Construction activities conducted during the early growing season may prevent some wildlife from utilizing the site, such as killdeer (*Charadrius vociferus)*; however, construction activities are not anticipated to kill or harm a significant number of wildlife species. Mobile species and mature individuals present in the vicinity of the Project during construction are likely to move away from the Project area into other areas of suitable habitat.

Mortality of terrestrial wildlife may occur as a result of collision with vehicles (i.e., road kills) during construction; however, given the proximity of the Project to existing roadways, the risk of mortality to general wildlife resources is not anticipated to be significantly increased over existing conditions. Further information on the Migratory Bird Treaty Act is outlined in Section 3.5.5.

No stream crossings (temporary or permanent) are proposed as a result of the Proposed Action (see Section 3.4.2; Exhibit A – Figures 4 and 12).

Increased noise and human activity associated with construction may result in some short-term displacement of wildlife species that use agricultural fields and field edges, such as white-tailed deer, raccoon, and striped skunk (*Mephitis mephitis*). However, due to the existing disturbance from tractors, plows, and other agricultural equipment, most wildlife in the Project area is likely accustomed to a certain amount of noise and human disturbance. Therefore, impacts to wildlife as a result of construction noise are anticipated to be minor and limited to the duration of construction.

The Project will be operated remotely, with limited staff for routine operations and maintenance; therefore, any noise generated as a result of operation of the solar facility will likely have no effect on wildlife species. Following construction, a small section of the Project area will be planted with a mix of low-growing native grasses and wildflowers, which may provide habitat for smaller wildlife species, as well as birds and insects (including butterflies). Security fencing placed around the perimeter of the site will limit the use of the Project area by larger terrestrial species such as white-tailed deer causing most individuals to avoid the area or choose alternate travel corridors. However, travel corridors for these species will remain along streams and grassed buffers found immediately adjacent to the Project area (Exhibit A - Figure 2). Maintenance activities, including vegetation management, may have an effect on common wildlife species; however, impacts to these species are anticipated to be minor.

The No Action Alternative would not have any direct or indirect effects to fish, wildlife, and vegetation within the Project area because the Proposed Action would not occur.

3.5.3 Affected Environment – Threatened and Endangered Species

The federal ESA of 1973 (16 U.S.C. §§1531 et seq.) provides for the listing, conservation, and recovery of endangered species. Section 9 of the ESA prohibits the take of any endangered or threatened species listed under the ESA. In reference to fish and wildlife, the ESA defines “take” as “…to harass, pursue, hunt, shoot, wound, kill, trap, capture, or collect species listed as endangered or threatened, or to attempt to engage in any such conduct.” In reference to plants the ESA defines “take” as “…to collect, pick, cut, dig up, or destroy in any manner.” The no-take provisions under the act, which prohibit landowners from causing harm to listed species, apply only to animals. Plant species on private lands are, in general, protected only where a federal action (e.g., regulatory permit) is involved. In contrast, listed plants occurring on federal lands receive full protection under the ESA.

Per a review of the USFWS's Information for Planning and Consultation (IPaC) database, eight federally listed (threatened or endangered) animal species, two proposed endangered species, and one candidate species, have ranges that include the Project area (Exhibit D).

- Gray Bat (*Myotis grisescens*) – Endangered
- Indiana Bat (*Myotis sodalis*) – Endangered
- Northern Long-eared Bat (*Myotis septentrionalis*) – Endangered
- Tricolored Bat (*Perimyotis subflavus*) – Proposed Endangered
- Clubshell (*Pleurobema clava*) - Endangered
- Fanshell (*Cyprogenia stegaria*) – Endangered
- Longsolid (*Fusconaia subrotunda*) - Threatened
- Rabbitsfoot (*Quadrula cylindrica cylindrica*) – Threatened
- Salamander Mussel (*Simpsonaias ambigua*) – Proposed Endangered
- Monarch Butterfly (*Danaus plexippus*) – Candidate
- Short's Bladderpod (*Physaria globosa*) – Endangered

Determinations of effect for each of the federally listed species are provided below in Table 1.

Table 1. *Federally Listed Species Identified in Vicinity of the Bluegrass Plains Solar Project*

Group	Species	Common name	Legal Status*	Occurrence**	Comments
Mammals	*M. sodalis*	Indiana bat	E	P	Potential to occur in Fayette County if suitable habitat exists
	M. septentrionalis	Northern long-eared bat	E	K	Known Summer 1 habitat ~10 miles west of Project area in Fayette County
	M. grisescens	Gray bat	E	K	Known to occur in Fayette County if suitable habitat exists
	P. subflavus	Tricolored bat	PE	K	Known to occur in Fayette County if suitable habitat exists
Mussels***	*P. clava*	Clubshell	E	P	Historically known from the Kentucky River drainage
	C. stegaria	Fanshell	E	P	Historically known from the Kentucky River drainage
	F. subrotunda	Longsolid	T	P	Known from the Kentucky River ~25 miles south of the project area
	Q. c. cylindrica	Rabbitsfoot	T	P	Known from the upper reaches of the Kentucky River drainage 30+ miles SE of the Project area
	S. ambigua	Salamander Mussel	PE	P	Known from the Kentucky River ~25 miles south of the project area
Plant	*P. globosa*	Short's Bladderpod	E	P	Potential to occur in Fayette County if suitable habitat exists
Insect	*D. plexippus*	Monarch Butterfly	C	K	Known throughout the Project area

NOTES: Key to Notations

* E = Endangered, T = Threatened, P = Proposed, CH = Critical Habitat, EXPN = Experimental population, Non-essential

** K = Known occurrence record within the project area, P = Potential for the species to occur within the project area based upon historic range, proximity to known occurrence records, biological, and physiographic characteristics.

*** Freshwater mussel occurrence data based on Haag, W.R., and R.R Cicerello, 2016. *A Distributional Atlas of the Freshwater Mussels of KY. Scientific and Technical Series 8*. KY State Nature Preserves Commission, Frankfort, KY.

To determine the likelihood of these species being impacted by the Project, permitted Stantec and EKPC biologists conducted field surveys in 2023 and 2024 to determine the presence or probable absence of these species in the Project Area. Field surveys consisted of traversing the Project Area while making visual observations of existing habitat and site-specific conditions, conducting a presence/absence mist net survey, and conducting a mussel habitat assessment.

The Project is within the known range and contains suitable habitat for gray bats, Indiana bats, northern long-eared bats, and tricolored bats. These species are known to use a wide variety of forested habitats for roosting, foraging, and traveling, and may also utilize some adjacent and interspersed non-forested habitat such as emergent wetlands and edges of fields. These species have also been found roosting in structures such as bridges, barns, and sheds (particularly when suitable roost trees are unavailable). Therefore, a presence/absence survey for bats was conducted on the site from May 15 to 18, 2024. No federally listed bat species were captured during the survey and no caves or karst features were found during the habitat assessment conducted on the site. However, limited suitable roost tree clearing is expected on the site. As such, a determination of “may affect, not likely to adversely affect” is anticipated for this species.

The Project Area was also assessed with regard to potential impacts to the five federally listed freshwater mussel species. No stream crossings are planned for the Project. Further, a habitat assessment determined that the habitat within the site was likely unsuitable for these species as there was only one perennial stream present, and it will not be impacted by the Project. As such, a determination of “may affect, not likely to adversely affect” is anticipated for this species.

Short’s bladderpod are found in dry, open limestone ledges on river bluffs, talus of lower bluff slopes, and shale at cliff bases. They typically prefer south- to west-facing rocky slopes (more Sun exposure), and the tops, ledges, or bases of steep cliffs, often along major waterways. They are also common on thin, calcareous soils in cedar glades. The species has also been known to colonize artificial surfaces, such as roadcuts, downhill from natural or semi-natural bluffs. The blooming season occurs between March and May. No limestone ledges, river bluffs, glades, road cuts, talus or shale cliffs were found within the Project area. As such, a determination of “no effect” is anticipated for this species.

The monarch butterfly (*Danaus plexippus*) is a candidate species that warrants listing under the ESA but is currently precluded by other higher-priority species on the USFWS’s National Working List. While not required by Section 7 of the ESA, impacts to candidate species are encouraged to be considered when conducting environmental reviews for projects; however, candidate species receive no statutory protection under the ESA. The Project area consists primarily of agricultural fields used for the production of row crops (Table 3.1-1; Exhibit A - Figure 5). Non-cropped areas within the Project area, including narrow grassed drainageways within crop fields and ditches along roadways and driveways, may provide habitat for the monarch butterfly, especially if milkweed species are present. Common milkweed is a species commonly observed in roadside communities in Kentucky; therefore, it is likely that milkweed species are present in proximity to the Project.

State-Listed Species

Listed species in Kentucky are protected under Kentucky’s Endangered Plants and Wildlife Law (Chapter 481B of the Code of Kentucky) and regulatory authority under State law lies with the Kentucky Department of Fish and Wildlife Resources and the Office of Kentucky Nature Preserves (OKNP).

The OKNP Natural Heritage Program database indicates records of three state-listed threatened and endangered species from Fayette County, including two birds of special concern (Henslow’s Sparrow [*Ammodramus henslowii*] and Lark Sparrow [*Chondestes grammacus*]), and one state-listed endangered plant (Water Stitchwort [*Stellaria fontinalis*]) (OKNP 2024). No suitable habitat was observed within the study limits for those state-listed animal or plant species with records from Fayette County. Non-cropped areas are limited to riparian forested areas, as well as roadside ditches and narrow grassed buffers associated with streams within the Project area, and area heavily impacted by invasive plant species. Given the low

quality of these communities, they are unlikely to provide suitable habitat for any of the state-listed species with records from Fayette County.

3.5.4 Environmental Consequences – Threatened and Endangered Species

Table 3.5-1 provides a summary of the Determinations of Effect for each of the federally listed species identified by the USFWS (Exhibit D).

Table 3.5-1. Summary of Determinations of Effect for Federally Listed Species Whose Ranges Include the Bluegrass Plains Solar Project Area

Species	Determination of Effect	Justification
Gray Bat	May affect, not likely to adversely affect	Presence / absence bat surveys indicated that the gray bat was not present within the Project. However, tree clearing of potential foraging habitat will occur.
Indiana bat	May affect, not likely to adversely affect	Presence / absence bat surveys indicated that the Indiana bat was not present within the Project. However, tree clearing of potential foraging/roosting habitat will occur within the Project
Northern Long-eared Bat	May affect, not likely to adversely affect	Presence / absence bat surveys indicated that the NLEB was not present within the Project. However, tree clearing of potential foraging/roosting habitat will occur within the Project.
Tricolored bat	Not likely to jeopardize the continued existence	Presence absence bat surveys indicated that the tricolored bat was not present within the Project. However, tree clearing of potential foraging/roosting habitat will occur within the Project
Clubshell	May affect, not likely to adversely affect	No suitable habitat within the Project area.
Fanshell	May affect, not likely to adversely affect	No suitable habitat within the Project area.
Longsolid	May affect, not likely to adversely affect	No suitable habitat within the Project area.
Rabbitsfoot	May affect, not likely to adversely affect	No suitable habitat within the Project area.
Salamander Mussel	Not likely to jeopardize the continue	No suitable habitat within the Project area.
Short's Bladderpod	May affect, not likely to adversely affect	No suitable habitat within the Project area.

Suitable habitat for the monarch butterfly, a federal candidate species, is present within and adjacent to the Project area. Construction activities may affect this species; however, the extent of Project effects to this species will depend upon location and timing of construction activities. Construction activities could result in the loss of vegetation that may be used by this species; however, impacts will be limited to those areas

of non-cropped vegetation within the Project area. In addition, there is a risk of mortality to this species as a result of construction equipment or vehicles used during operation of the Project. However, the risk of mortality as a result of vehicles is not anticipated to be significantly different than the risk currently posed by vehicles on existing public roads or in farm fields within and adjacent to the Project area.

Following construction, a section of the Project area will be planted with a mix of low-growing native grasses and wildflowers (including milkweeds) that will provide habitat for local pollinators, including the monarch butterfly, which may provide an overall beneficial effect to this species over the current conditions. In addition, areas outside of the planned perimeter fence not used for the production of row crops, if there are any, along with select areas inside the fence, will be seeded with grasses, sedges, and wildflowers that provide beneficial habitat for pollinator species. EKPC will evaluate and adopt, if feasible, additional measures to benefit pollinator species that may include maintaining an 18 inches or greater vegetation canopy, reduced mowings during the larval stage of butterflies (i.e., generally May through August), and avoiding mowing in some areas of the site during the larval stage.

After reviewing the information provided in the informal consultation request letter dated April 24, 2024 letter, the USFWS concurred with EKPC's findings and effects determinations in a letter dated August 30, 2024 that the Project "may affect but is not likely to adversely affect" the gray bat, Indiana bat, northern long-eared bat, clubshell, fanshell, longsolid, and Short's bladderpod. The USFWS further agreed that the proposed project is "not likely to jeopardize" the continued existence of the tricolored bat or salamander mussel. The lack of mussel habitat precludes any adverse effects to the salamander mussel.

State-Listed Species

No suitable habitat was observed within the study limits for those state-listed animal or plant species with records from Fayette County. Therefore, no adverse effects to state-listed species are anticipated as a result of the Proposed Action.

3.5.5 Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act

The Migratory Bird Treaty Act of 1918 (MBTA), 16 U.S.C. 703, *et seq*., prohibits the taking, killing, possession, transportation and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior.

The Bald and Golden Eagle Protection Act of 1940 (BGEPA) (16 U.S.C. 668-668d and 50 CFR 22.26) and its implementing regulations, provides additional protection to bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) such that it is unlawful to take an eagle. In this statute, the definition of "take" is to "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, or molest, or disturb." The term "disturb" is defined in 50 CFR 22.3 as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best available scientific information available: (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

The USFWS National Bald Eagle Management Guidelines state that bald eagle nests within 660 feet of construction activities may be at risk of disturbance during the breeding season (USFWS 2007b).

Affected Environment – MBTA and BGEPA

There is potential for migratory birds to be present within the Project area during the spring, summer, and fall. A few species may also overwinter in the Project vicinity. Agricultural fields used for the production of row crops comprise a majority of the Project area (see Section 3.1; Exhibit A - Figure 5). These crop fields provide limited stopover habitat for species protected by the MBTA during spring and fall migration. Non-cropped areas that provide suitable habitat for MBTA species are limited riparian forested area, narrow grassed waterways, field edges and road ditches or grassed buffers adjacent to roads and driveways within the Project area. In addition, streams, riparian corridors, wetlands, and woodlands immediately adjacent to

the Project area may provide suitable breeding and migration stopover habitat for bird species protected by the MBTA.

During the sites visit conducted in late 2023 – mid 2024, several riparian forested areas approximately 65 acres in size, were observed throughout the Project area (Stantec 2024a). This riparian forested area provides suitable nesting habitat for bird species that nest in trees. However, limited tree clearing will occur as a result of the Proposed Action and minor impacts to this woodland community would occur.

Bald and Golden Eagle

Bald eagles may be observed throughout Kentucky, especially in the winter months and along major river corridors and larger bodies of water. The Kentucky DNR Natural Areas Inventory database indicates this species is known from Fayette County; however, no suitable nesting habitat is present within or immediately adjacent to the Project area. Typical suitable nesting habitat includes large lakes, estuaries with tall trees for perching/nesting.

The golden eagle is protected under the Bald and Golden Eagle Protection Act (BGEPA) and the MBTA. The species is not currently listed in Kentucky, nor is it considered a breeding bird in Kentucky. Golden eagles can be found in Kentucky from November through March, most commonly in the bluffs of northeastern Kentucky.

Environmental Consequences – MBTA and BGEPA

The Project area is dominated by agricultural fields used for the production of row crops. Agricultural lands may provide suitable stopover habitat for some MBTA species. Conversion of these lands could eliminate stopover habitat within the Project area, if present. However, suitable stopover habitat is available in fields adjacent to the Project area; therefore, the Proposed Action is not expected to affect migratory pathways in the vicinity of the Project.

Some woody stemmed vegetation removal would occur as a result of the Proposed Action; however, tree removal would be limited and no significant impacts to suitable habitat for those MBTA species that nest in trees would occur.

Non-cropped areas comprise a small portion of the Project area and are limited to riparian forested areas, narrow grassed waterways within agricultural fields, field edges, and road ditches or grassed buffers along roads and driveways. Impacts to populations of migratory birds are not anticipated to be significant because active crop fields are generally not suitable for the ground-nesting birds, and the risks to grassland or other ground-nesting bird species will be limited to those non-cropped portions of the site. Nevertheless, depending upon the timing of construction activities, limited impacts to MBTA species could occur as a result of site development activities. However, birds are generally mobile and, if disturbed by construction activities, will likely be able to disperse to available suitable habitat outside of the Project area.

Bald and Golden Eagle

No suitable nesting habitat for the bald or golden eagle is present within or immediately adjacent to the Project area. Large rivers, lakes, and livestock operations serve as attractants for eagles, potentially drawing them into an area. However, no livestock operations, large rivers or lakes are found within or immediately adjacent to the Project area that are likely to attract eagles. Further, operation of the Project is not anticipated to pose a risk to bald or golden eagles. Therefore, no adverse effects to the bald or golden eagle are anticipated as a result of the Proposed Action.

In view of these findings, EKPC, on behalf of RUS, has fulfilled the requirements of Section 7 of the Endangered Species Act, the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act for this project. A copy of the USFWS concurrence letter is included in Exhibit D.

The No Action Alternative would not have any direct or indirect effects to threatened and endangered species, migratory birds, or eagles within the Project area because the Proposed Action would not occur.

3.6 CULTURAL RESOURCES

According to the NHPA of 1966, as amended, 16 U.S.C. 470, *et seq*., "the historical and cultural foundations of the Nation should be preserved as a living part of our community life and development in order to give a sense of orientation to the American people" (16 U.S.C 470(b)(2)). Further, the Federal government has a responsibility to "foster conditions under which our modern society and our prehistoric and historic resources can exist in productive harmony" (16 U.S.C. 470-1(1)). As a result of Section 106 of the NHPA and its implementing regulations, federal agencies are required to take into account the impact of federal undertakings upon historic properties in the area of the undertaking (16 U.S.C. 470f; 36 CFR. Part 800) (Revised January 2001).

In coordination with the State Historic Preservation Office (SHPO), the APE for this project was established to include the 403-acre archaeology survey area, where project ground disturbances are anticipated, as well as a 0.25-mile radius around the proposed solar array to encompass potential direct visual effects. The RUS does not anticipate any indirect effects to result from this project. The APE does not include any federal and/or tribal lands as defined pursuant to 36 CFR § 800.16(x).

3.6.1 Affected Environment – Cultural Resources

EKPC contracted Stantec Consulting Services Inc. (Stantec) to perform the cultural resources surveys to identify historic properties potentially affected by the proposed project. The enclosed reports titled *Phase I Archaeological Survey for the Bluegrass Plains Solar Project, Fayette County, Kentucky* (Blair and Simpson 2024) and *Cultural Historic Survey Report Bluegrass Plains Solar Project Fayette County, Kentucky* (Kennedy and Ryall 2024) describe the archaeological and cultural historic assessments of the proposed project's APE, respectively.

The archaeological survey report describes the results of a pedestrian reconnaissance within the proposed APE (Exhibit A - Figures 9 and 10). Prior to the survey, a records review was conducted at the Office of State Archaeology. The review indicated that one previously completed survey and one previously recorded site are located within a 2 km radius of the current project area. Neither of these previously recorded sites or surveys intersect with the current project area. The project area of 403-acre (163 ha) was subjected to a combination of pedestrian survey in areas with visibility greater than 50% and shovel testing in areas with less than 50%. To assist in pedestrian survey coverage, the agricultural fields were disced to improve surface visibility prior to surveys.

The cultural historic survey report describes the results of the investigation within the cultural historic APE (Exhibit A - Figures 9 and 10). The investigator's review of previously recorded resources indicated that two previously surveyed properties are within the APE. One site is individually listed in the NRHP and one site is listed in the NRHP as a contributing element to the NRHP listed Upper Reaches of Boone Creek Historic District (NRIS 09000569). A small corner of the Upper Reaches of Boone Creek Historic District extends into the southwestern edge of the APE. During the survey, the investigators assessed eighty-one (81) resources, including the two previously identified resources.

3.6.2 Environmental Consequences – Cultural Resources

As a result of this survey, 20 archaeological sites and 32 isolated finds were recorded. All sites (except one) and the isolated finds were fully delineated and recommended to be not eligible for the National Register of Historic Places (NRHP). One site may extend outside of the survey area and was recommended to not have been fully delineated. The investigators recommended that no significant deposits were identified at this site within the project APE. One cemetery was identified by the survey and a 50-foot buffer will be applied to ensure avoidance of any impacts to this site.

The investigators recommended that all of the newly identified cultural historic resources are not eligible for the NRHP. The investigators continued to recommend that an existing NRHP listed resource and the farmstead on Winchester Road, which is a contributing property to the Upper Reaches of Boone Creek Historic District, retain sufficient integrity and significance to remain listed in the NRHP. To minimize potential visual impacts to historic resources, the existing tree line along the boundary of the Project Area will remain, and where existing vegetative tree screening is scant or composed of deciduous species, a 15-foot buffer of evergreen vegetation is proposed to provide visual screening throughout the year. Therefore, the investigators recommended that these resources would not be adversely affected by the proposed project.

Based on these findings, the RUS submitted the survey reports and a recommended finding of no adverse effect in accordance with 36 CFR § 800.5(b) via email to the Kentucky Heritage Council (SHPO), the Cherokee Nation, the Eastern Band of Cherokee Indians, the Eastern Shawnee Tribe of Oklahoma, and the Osage Nation on August 5, 2024. On the recommendation of the SHPO, the RUS also sent their findings and supporting documentation to the Lexington-Fayette Urban County Government Historic Preservation Office and the Blue Grass Trust on September 9, 2024. In response to SHPO requests for clarification, Stantec submitted revised reports to the SHPO on September 17, 2024. The SHPO responded on October 17, 2024 and concurred with the recommended finding of no adverse effect for the project. The Cherokee Nation responded on September 6, 2024 and offered no objection to the project. The Lexington Historic Preservation Officer responded on September 23, 2024 and concurred with the recommended finding of no adverse effect for the project. No other responses were received by RUS within the 30-day comment period.

In accordance with 36 CFR § 800.5(c)(1), RUS concluded the Section 106 review process and proceeded based on the recommended finding of no adverse effect to historic properties for the project. Copies of the Section 106 consultation correspondence for this project are on file with the Agency but are not included in this report.

If the proposed project inadvertently uncovers an archaeological site or object(s) during construction, EKPC would cease construction activities in the vicinity of the findings immediately and contact RUS, the SHPO, tribes and appropriate federal and state authorities.

The No Action Alternative would not have any direct or indirect effects to archaeological resources or historic structures within the Project area because the Proposed Action would not occur.

3.7 AESTHETICS

3.7.1 Affected Environment – Aesthetics

The landscape within and surrounding the Project area is generally low-rolling, open terrain with steeper areas near streams and wetlands that will not be part of the buildable area. The landscape is also dominated by agricultural fields used for the production of row crops (i.e., corn and soybeans). Groups viewing the Project area include local residents, as well as people traveling on paved roads immediately adjacent to the Project (Interstate 64/Rockwell Road and Winchester Road/U.S. Route 60) (Exhibit A - Figure 14).

Viewshed Analysis

A Geographic Information System (GIS) viewpoint assessment (Site Compatibility with Scenic Surroundings within the 2024 Site Assessment Report) was conducted at five points along Winchester Road to determine those areas from which the Project is most likely to be visible to a six-foot tall person (i.e., the average height of a human male) (Tetra Tech 2024). Large portions of the site are not visible from surrounding roads or residential properties, and most of the site boundaries have existing vegetation (trees and/or brush) that ranges from 5 feet to 40 feet in height. Depending upon topography, forested areas may serve as visual barriers between the Project site and potential receptors (e.g., homes, businesses, natural or sensitive areas, etc.). A 15-foot-tall vegetative buffer will be installed at property lines where existing tree or shrub cover is scant to provide screening of the project from nearby residential structures. The PV panels for the proposed

Project will be less than 15 feet high at their highest tilt, which is lower than a typical single-story residential house.

Glint/Glare Analysis

The specific model of the PV solar modules to be used for the Project has not yet been determined; however, typically PV solar modules are dark blue or black in color, and have an anti-reflective coating designed to absorb light and reduce glare and light reflection. In general, PV solar modules tend to be less reflective than windows and water features. These anti-glare PV solar modules will be used for the Project to minimize glare impacts to vehicles travelling on Interstate 64/Rockwell Road and Winchester Road/U.S. Route 60. Given EKPC is a public "utility" as defined in statute 278.010(3)(a), EKPC must satisfy all requirements of the Kentucky Public Service Commission - CPCN process for a Kentucky utility company seeking to construct a new generation project. A Glint/Glare analysis is not required by the Public Service Commission for a CPCN Certificate. While no significant glint/glare issues are anticipated following construction of the Project, if any problems are identified, EKPC would work diligently to resolve the issue in a timely manner.

3.7.2 Environmental Consequences – Aesthetics

The Proposed Action will result in changes to the visual aesthetics within and adjacent to the Project area over the life of the Project. Individual reactions to aesthetic changes to the Project area are likely to range from no reaction or annoyance to strong reactions to the visual changes within the agricultural landscape. Reactions of individuals are likely to be influenced by numerous factors, including proximity to the Project area, how frequently the person will be in view of the Project area, and their perceived importance of the visual agricultural landscape. There is a possibility of some lighting changes from security lighting at night.

A viewpoint assessment indicates the Project is visible from various vantage points along Interstate 64/Rockwell Road and Winchester Road/U.S. Route 60 (Tetra Tech 2024). The Project will not be visible to the nearest cities of Lexington and Winchester. None of the managed conservation lands discussed in Section 3.1.1, are within the viewshed of the Project; therefore, no indirect visual effects to these conservation lands will occur as a result of the Proposed Action. The cultural historic survey did not identify any adverse effects to cultural resources as a result of the Proposed Action as discussed in Section 3.6.2. Given the agricultural land use in the vicinity of the Project and the existing vegetation, the viewshed is unlikely to be significantly affected, given the topography and vegetative screening that will provide a visual barrier from adjacent vantage points.

The solar facility will have minimal visual impact on the surrounding landscape.

The No Action Alternative would not have any direct or indirect effects to aesthetics within the Project area because the Proposed Action would not occur.

3.8 AIR QUALITY

The Clean Air Act 42 U.S.C. §7401 *et seq.* (1970) is a comprehensive federal law that regulates air emissions from stationary and mobile sources. Among other things, this law authorizes the EPA to establish National Ambient Air Quality Standards (NAAQS) to protect public health and public welfare and to regulate emissions of hazardous air pollutants.

3.8.1 Affected Environment – Air Quality

Potential air quality effects can be short-term (construction-related) or long-term (facility emissions, increased traffic). Pursuant to 401 KAR 63:010, fugitive dust emissions such as those generated during site preparation and construction are subject to specific requirements, and "no person shall cause or permit the discharge of visible fugitive dust emissions beyond the lot line of the property on which the emissions originate." Based on these requirements, the area of influence is considered to be the Project site boundary.

The Project area is not within a nonattainment area for any measured pollutant (Kentucky Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants | Green Book | US EPA). A nonattainment area is an area for which air quality measurements do not meet NAAQS criteria.

Construction of the proposed project would have vehicle, equipment, and fugitive dust impacts similar to any construction project of comparable size. Pursuant to 401 KAR 63:010, fugitive dust emissions are subject to specific requirements. Fugitive dust associated with construction, operation, and maintenance of the proposed solar facility project would be controlled following the Commonwealth of Kentucky's fugitive dust regulations.

3.8.2 Environmental Consequences – Air Quality

Dust associated with Project construction could potentially affect air quality in the area of influence; however, this source of air quality degradation is not anticipated to have a major effect on the area. Any dust associated with construction activities will be short-term, lasting only through the construction phase of the project, and areas denuded of vegetation will be small. As a result, the amount of air quality degradation associated with fugitive dust will be negligible. Once construction is complete, air quality is expected to return to ambient conditions in the immediate vicinity of the project. Minimal dust will be associated with the maintenance of the proposed action once construction activities are completed.

Mobile emission sources would range from passenger vehicles and trucks to large equipment used to install the solar panels. Vehicles and other equipment used during construction of the proposed action will emit exhaust gases containing particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide, and volatile organic compounds. The relatively small amount of traffic is not expected to contribute appreciably to ambient air pollutant concentrations in the area.

Exhaust from the engines of the machinery used to construct and maintain the proposed project could increase fugitive emissions in the proposed project area on a short-term basis. However, the components of the exhaust are volatile and would likely move out of the immediate project area in a short period of time. Likewise, the amount of ozone generated from these sources will be minimal and is not expected to significantly increase ozone levels in the immediate area. As a result, the amount of air quality degradation associated with the project would be negligible, and once construction is complete, the air quality in the area should return to pre-construction conditions.

The Project will produce zero emissions from electrical generation while in operation. Once operational, emissions from the Project will be limited to maintenance equipment used to repair the solar panels, worker transportation vehicles, and grounds keeping equipment such as mowers and trimmers. Adverse impacts to air quality are not anticipated as the Project will not release pollutants into the atmosphere, and in fact, will reduce fossil fuel use over the life of the Project through the generation of solar energy, a safe and reliable renewable energy source, and providing a long- term beneficial effect to local residents and customers within EKPC's service territory.

The No Action Alternative would not have any direct or indirect effects to air quality within the Project area because the Proposed Action would not occur.

3.8.3 Affected Environment – Greenhouse Gases

This section expands on Section 3.8.1 (Air Quality) and discusses potential environmental consequences related to greenhouse gases (GHG) and the potential implications for these emissions to influence climate change. The Council on Environmental Quality's (CEQ's) interim NEPA Guidance on Consideration of Greenhouse Gas Emissions and Climate Change was issued to "assist Federal agencies in their consideration of the effects of GHG emissions and climate change when evaluating proposed major Federal actions in accordance with NEPA" (CEQ, 2023). Under this guidance, agencies should consider: 1) the

potential effects of a proposed action on climate change, including by assessing both GHG emissions and reductions from the expected lifetime of the proposed action; and 2) the effects of climate change on a proposed action and its environmental impacts. Such considerations should include alternatives to the proposed action, including the no-action alternative.

CEQ's interim guidance notes that agencies should follow the rule of reason and the concept of proportionality in determining the level of effort for such analyses. By example, renewable energy projects may result in net GHG emission reductions or no net GHG increase. For such actions, agencies should generally quantify projected GHG emission reductions to determine the reasonably appropriate depth of analysis. "Absent exceptional circumstances, the relatively minor and short-term GHG emissions associated with construction of certain renewable energy projects, such as utility-scale solar and offshore wind, should not warrant a detailed analysis of lifetime GHG emissions." EKPC therefore limited its quantitative GHG impact analysis to comparisons of the reductions in GHG afforded by the solar generation with equivalent power generation through fossil fuel generation.

CEQ's guidance recommends that agencies use estimates of social cost of GHG (SC-GHG) to translate the potential impacts of GHG emissions on climate change to dollars. The SC-GHG is thus an estimate of the monetary value of the net harm to society associated with adding one metric ton of GHG to the atmosphere in a given year. These impacts include changes in net agricultural productivity, human health effects, property damage from increased flood risk natural disasters, disruption of energy systems, risk of conflict, environmental migration, and the value of ecosystem services (IWG, 2021).

The guidance also suggests providing comparisons or equivalents to help the public and decision makers understand GHG emissions in more familiar terms such as household emissions per year, annual average emissions from a certain number of cars on the road, or gallons of gasoline burned. EPA's GHG Equivalencies Calculator (EPA, 2024) was utilized to develop these comparisons.

3.8.4 Environmental Consequences – Greenhouse Gases

GHG emissions are aggregated across the global atmosphere and cumulatively contribute to climate change. The so-called "greenhouse" effect occurs when high-frequency solar radiation enters the earth's atmosphere, some of which is absorbed by the earth's surface. The earth emits this radiation back toward space as lower-frequency infrared radiation. GHG in the atmosphere are able to absorb this infrared radiation which warms the atmosphere. Increasing atmospheric temperature contributes to global warming, producing rising sea levels, increased storm intensity, and other effects.

Without this project, or under the No Action Alternative, the proposed solar generation project would not be constructed. Alternative generation sources using combustion of fossil fuels producing GHG emissions would likely be required to provide commensurate power to the system. EKPC has estimated that the proposed 40 MWac solar project would have a net generating capacity factor of 23.9 percent. Assuming a 30-year mid-point project life with 0.5 percent annual degradation in generating efficiency, the project would generate an average of 77,948 megawatt-hours (MWh) annually.

Under the no-action alternative, equivalent fossil fuel generation would contribute an estimated 88,383 metric tons of CO2-e (comprised of CO2, methane, and nitrous oxide) annually, or 2.65 million metric tons over the 30-year emissions estimate. Using EPA's GHG Equivalencies Calculator (EPA, 2024), this would be the equivalent of an additional 21,035 gasoline-powered vehicles on the road for one year or the average annual electricity usage of 17,443 households.

The dollar value assigned to SC-GHG varies based on the model used, the discount rate applied, and the emissions year (IWG, 2023). Based on a 3 percent discount rate over the period 2020-2050, the social cost of CO2 (in 2020 dollars) would be $56 per metric ton during the 2025 emissions year and $85 per metric ton during the 2050 emissions year (IWG, 2023). Using these values, the cost to society for the no-action alternative would range from $5.5 million in 2025 to $8.4 million in 2050.

Under the proposed action, the PV solar generation used to generate the projected 77,948 MWh annual output from the Project would eliminate the estimated GHG emissions produced by alternative fossil fuel generation and the associated social costs. This benefit would be slightly reduced by the potential removal of up to 35 acres of trees that may occur for site preparation and the associated loss of the trees' carbon sequestration potential. Using EPA's GHG Equivalencies Calculator, the 88,383 metric tons of CO2-e is the equivalent to the carbon sequestration by 103,190 acres of U.S. forests which yields a sequestration rate of 0.86 metric tons CO2-e per acre. Assuming the proposed Project removes the maximum estimated 35 acres of forested habitat on the site, an estimated 30.1 metric tons of sequestration capacity would be lost. The net benefit of GHG reduction from the proposed Project would therefore be 103,160 metric tons of CO2-e.

3.9 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

Executive Order 12898, Federal Actions to Address Environmental Justice (EJ) in Minority Populations and Low- Income Populations, states that "each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." The analysis pursuant to this executive order follows guidelines from the CEQ, Environmental Justice Guidance under the National Environmental Policy Act (CEQ 1997).

The USDA departmental regulation for EJ (Number 5600-002) states minority means a "person who is a member of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. The CEQ guidelines and the Federal Interagency Working Group on Environmental Justice (EJ IWG), of which the USDA is a member, state that minority populations should be identified where "… (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis". For this EA, minority EJ populations are identified when the minority population is over 50 percent of the specific focus area or the minority population is at least 10 percent higher than the reference (i.e., county) percentage.

The USDA departmental regulation defines a low-income population as "any readily identifiable group of low-income persons who live in geographic proximity to, and, if circumstances warrant, migrant farm workers and other geographically dispersed/transient persons who will be similarly affected by USDA programs or activities." CEQ guidelines and the USDA do not specifically state the percentage considered meaningful in the case of low-income populations, but the EJ IWG guidance describes methodologies to identify low-income populations, one of which being the "low-income threshold criteria." The "low-income threshold criteria" analysis utilizes US census poverty thresholds, US Department of Health and Human Services poverty guidelines, or other agency-specific poverty guidelines (such as federal program eligibility standards) to identify low-income populations. The US census poverty threshold was utilized for this EA, where populations are identified as low-income if the percent of residents in poverty is equal to or greater than the reference population (EJ IWG 2016).

The U.S. Census Bureau American Community Survey (ACS) 5-year estimates (2017–2021) and the 2020 U.S. Census were utilized for this analysis. Because new data is released every year, ACS data is useful in identifying current population characteristics such as race, income, language, age, education, and other demographic information.

A four-mile radius was used to create a buffer area around the limits of disturbance for the proposed Project. From this buffer, 11 census tract block groups were found to cross or are in the immediate vicinity of the four-mile buffer aera. A block group is collection of smaller 'blocks' within a single census tract. Census tract block groups are utilized for the identification of low-income and minority populations as they are the lowest level where published census and other comparative data is available.

3.9.1 Affected Environment – Socioeconomics and Environmental Justice

The Project is located in Fayette County, Kentucky approximately 10.4 miles east of Lexington, Kentucky in Census Tract 21067003918. Table 3.9-1 provides a summary of population trends and income data for Fayette County and the state of Kentucky.

Table 3.9-1. Socioeconomic Characteristics of Fayette County and the State of Kentucky

Socioeconomic Indicator	Fayette County	State of Kentucky
Population (2020 Census Data)[1]	322,570	4,505,836
Percent Change in Population (2010 Census to 2020 Census)[1]	9.0%	3.8%
Median Household Income (2017 to 2021; 2021 dollars)[2]	$61,526	$69,021
Persons in Poverty[2]	14.6%	11.5%

[1] U.S. Census Bureau. 2024a. 2020 Census Demographic Data Map Viewer.
[2] U.S. Census Bureau. 2024b. U.S. Census Bureau Quick Facts.

Fayette County has a total estimated population of 322,570, of which 3,065 (less than 1.0 percent) live in Census Tract 21067003918 (U.S. Census Bureau 2024a). This census tract, which includes the Project area, has a population density of 53.2 persons per square mile.

As of 2021, the median household income in Census Tract Block Group 210670039181 was $102,361, which is higher than Fayette County at $61,526 and the state of Kentucky at $55,454 (U.S. Census Bureau 2024b). Median household income for the census tract block groups was not available. As of 2021, the unemployment rate for Census Tract 210670039181 was 0.0 percent, which is lower than the unemployment rate of 3.3 percent reported for Fayette County and 3.1 percent reported for the state of Kentucky (U.S. Census Bureau 2024b). All census tract block groups have less of a low-income percentage than Fayette County and the state of Kentucky, as shown in Table 3.9-2 below.

Table 3.9-2. Census Tract Block Groups and Low-Income Criteria

Block Group	Persons in Poverty[1]
Fayette County	14.6%
210490205001	0.0%
210490206001	6.2%
210490206002	4.2%
210490206003	4.3%
210170303001	9.4%
210170303002	6.5%
210170303001	0.0%
210670039152	3.0%
210670039161	0.0%
210670039181	0.0%
210670039182	2.3%

[1] U.S. Census Bureau. 2023c. ACS Table DP03.

As of the 2017 Census of Agriculture, there were 622 farms in Fayette County constituting 114,624 acres (USDA 2017). As of 2021, the agriculture industry in Fayette County employed approximately 1.4 percent

of the Fayette County population (work in the agriculture, forestry, fishing and hunting, and mining industry) (U.S. Census Bureau 2024b).

Table 3.9-3 summarizes demographic data for the census tract block groups, Fayette County, and the state of Kentucky. These data were compiled using the ACS Five-Year Estimates for Hispanic or Latino Origin by Race. Demographic data for the census tracts indicate a predominantly white population (between 64.8 and 99.6 percent). The range is comparable in percentage in comparison to the white population in Fayette County (72.8 percent) and the state of Kentucky (88.5 percent) (U.S. Census Bureau 2024c). Out of the 11 census tract block groups within the buffer area, no census tract block groups were identified as an EJ community due to minorities. (See Table 3.9-3 below).

Table 3.9-3. Demographic Data for State of Kentucky, Fayette County, and Census Tract Block Groups

Location	Total Population1	Total Population by Race (Percentage of Total Population)							
		White	Black	American Indian or Alaskan Native	Asian	Native Hawaiian or Pacific Islander	Other	Two or More Races	Total Minority
State of Kentucky	4,494,141	3,842,383 85.5%	361,703 8.0%	7,114 0.2%	68,737 1.5%	3,961 0.1%	51,365 1.1%	158,878 3.5%	651,758 14.5%
Fayette County	321,354	234,096 72.8%	46,891 14.6%	530 0.2%	12,841 4.0%	54 0.0%	9,688 3.0%	17,254 5.4%	87,258 27.2%
210490205001	825	729 87.3%	74 8.9%	0 0.0%	0 0.0%	0 0.0%	2 0.2%	30 3.6%	106 12.7%
210490206001	1,721	1,714 99.6%	7 0.4%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	7 0.4%
210490206002	1,474	1,300 88.2%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	43 2.9%	131 8.9%	174 11.8%
210490206003	1,243	1,195 96.1%	31 2.5%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	17 1.4%	48 3.9%
210170303001	1,685	1,092 64.8%	192 11.4%	0 0.0%	0 0.0%	0 0.0%	162 9.6%	239 14.2%	593 35.2%
210170303002	894	731 81.8%	0 0.0%	0 0.0%	35 3.9%	0 0.0%	30 3.4%	98 11.0%	163 18.2%
210670039151	1,586	1,119 70.6%	112 7.1%	0 0.0%	89 5.6%	33 2.1%	104 6.6%	129 8.1%	467 29.4%
210670039152	2,956	2,247 76.0%	296 10.0%	0 0.0%	333 11.3%	0 0.0%	0 0.0%	80 2.7%	709 24.0%
210670039161	586	539 92.0%	3 0.5%	11 1.9%	32 5.5%	0 0.0%	0 0.0%	1 0.2%	47 8.0%
210670039181	444	369 83.1%	74 16.7%	1 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	75 16.9%
210670039182	2,826	2,272 80.4%	167 5.9%	0 0.0%	22 0.8%	0 0.0%	15 0.5%	350 12.4%	554 19.6%

Source: U.S. Census Bureau. 2024d. ACS Table B03002.

3.9.2 Environmental Consequences – Socioeconomics and Environmental Justice

Under the Proposed Action, the Project will be located on land purchased by EKPC from willing sellers. No displacements will occur as a result of the Project. The income generated by the property sale would only

provide an economic benefit to the individual landowners. EKPC is not aware of any job losses that will occur as a result of the Project. Therefore, no long-term or negative socioeconomic effects to landowners within the Project area are anticipated as a result of the Project.

No adverse effects to minority or low-income populations are expected as a result of the Proposed Action and no adverse effects were identified during development of this EA that will disproportionately impact minority or low-income populations. In addition, the Project is not taking place within a census tract block group identified as an EJ community.

Construction of the Project is anticipated to begin in late 2025 or early 2026 and the Project is expected to begin operation by early 2027. During construction of the Project, the on-site workforce is anticipated to consist of approximately 75 employees monthly during the construction period, with labor requirements potentially peaking at approximately 100 workers. The construction labor force will likely consist of both local and regional contractors to be determined closer to construction. During construction, local businesses such as those in Lexington and surrounding communities, will likely benefit from increased sales and revenue associated with the addition of construction workers in the vicinity of the Project, resulting in a short-term, beneficial effect to the local economy.

Operation of the Project under the Proposed Action will contribute to a reduction in fossil fuel usage within EKPC's service territory over the life the Project through the generation of solar energy, which is expected to provide a long-term beneficial effect to local residents and customers within EKPC's service territory.

The No Action Alternative would not have any direct or indirect effects to socioeconomics and environmental justice within the Project area because the Proposed Action would not occur.

3.10 NOISE

3.10.1 Affected Environment – Noise

Tetra Tech performed an Acoustic Study to model the peak and average anticipated noise levels to determine the impact of the Project on noise sensitive receptors during construction and operation phases. The model used full octave band sound frequencies algorithms that account for site-specific ground, topography, and propagation under standardized meteorological conditions (Tetra Tech 2024, Exhibit E).

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound that interferes or disrupts normal activities. Although exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. Reaction of individuals to similar noise events is diverse and influenced by numerous factors, such as the type of noise, its perceived importance, the time of day during which the noise occurs, its duration, frequency, level, and community attitudes towards the source of noise.

Sound level measurements are often reported using the 'A-weighting' scale of a sound level meter. Since the human ear does not respond equally to all frequencies (or pitches), measured sound levels are often adjusted or weighted to correspond to the frequency response of human hearing and the human perception of loudness. A-weighting slightly boosts high frequency sound, while reducing low frequency components providing a better indicator of perceived loudness at relatively modest volumes. These measurements are called A-weighted decibel levels, (dBA). Table 3.10-1 illustrates ranges of A-weighted levels for common noise sources (Tetra Tech 2024, Exhibit E).

Table 3.10-1. Common Sound Level/Sources and Subjective Responses

Thresholds/Noise Sources	Sound Level (dBA)	Subjective Evaluations
Vacuum cleaner (10 ft)	70	Moderate
Passenger car at 65 miles per hour (25 feet)	65	
Large store air-conditioning unit (20 feet)	60	
Light auto traffic (100 feet)	50	Quiet
Quiet rural residential area with no activity	45	
Bedroom or quiet living room; bird calls	40	Faint
Typical wilderness area	35	
Quiet library, soft whisper (15 feet)	30	Very quiet
Wilderness with no wind or animal activity	25	Extremely Quiet
High-quality recording studio	20	
Acoustic test chamber	10	Just Audible
	0	Threshold of hearing

Source: Tetra Tech 2024, Exhibit E

Existing sources of noise in the vicinity of the Project are typical to those found in agricultural settings. Noise sources likely perceived at existing rural residences and farm operations include vehicle traffic on public roads and operation of farm equipment (e.g., tractors, plows, etc.) as well as natural sounds such as birds, insects and leaf or vegetation rustle during elevated wind conditions. Diurnal effects result in sound levels that are typically quieter during the night than during the daytime, except during periods when evening and nighttime insect noise dominate in warmer seasons (Tetra Tech 2024, Exhibit E).

3.10.2 Environmental Consequences - Noise

Construction of the Project as a result of the Proposed Action will generate noise that will likely be audible at homes and along public roads surrounding the Project area. Noise perceptible to surrounding residences and/or farm operations is anticipated to be similar to that of a typical road construction project. Audible sounds may include heavy truck traffic, earthmoving equipment, or pile driving. Noise levels will vary with each phase of construction depending on the construction activity and the amount or size of equipment used but is expected to be within accepted ranges and of short duration at any given location within the project. The majority of the noise producing activities will occur many hundreds to thousands of feet from the nearest noise sensitive receptors and occur primarily during daylight hours. Project effects to noise levels during construction are anticipated to be short-term and limited to the duration of Project construction activities. The loudest predicted sound levels during construction would be from pile driving, with resulting levels at noise sensitive receptors (e.g., residences) expected to range from approximately 45 to 67 dBA, which would be comparable to a passenger car at 65 miles per hour (25 feet), or large store air-conditioning unit (20 feet). No long-term or significant adverse effect to noise levels will occur as a result of Project construction under the Proposed Action.

The primary source of sound emissions from Project operation will be the PV inverters. The solar panels produce DC voltage which must be converted to alternating current voltage through a series of inverters. Solar energy facilities operate by converting solar radiation into electricity, meaning the Project will only produce electricity between sunrise and sunset. After sunset, the site no longer receives solar radiation, and the inverters will shift into stand-by mode. The specific model of equipment proposed for the Project will not be determined until closer to construction but industry standard equipment was used for the purposes of the noise model (Tetra Tech 2024, Exhibit E).

The results of the operational noise modeling showed there are no potential exceedances of the 55 dBA EPA noise guideline at any of the noise sensitive receptors, which corresponds to 48.6 dBA. The highest

predicted sound level is 43 dBA at a cemetery located within the Project boundary. It was included as a noise sensitive receptor in the acoustic modeling analysis to be mindful of the significance of a quiet environment. Besides the cemetery, the highest predicted sound level was at a noise sensitive receptor is 40 dBA, see noise receptor locations (Exhibit A – Figure 13). The EPA guideline limits identified are not legally enforceable requirements but serve as useful guidelines to determine the likelihood of adverse community noise impacts. In conclusion, the Project has been designed to operate in compliance with guideline limits (Tetra Tech 2024, Exhibit E).

The No Action Alternative would not have any direct or indirect effects to noise within the Project area because the Proposed Action would not occur.

3.11 TRANSPORTATION

3.11.1 Affected Environment – Transportation

The Project area is bordered by Interstate 64/Rockwell Road to the north, Winchester Road/U.S. Route 60 to the south, and agricultural fields to the east and west. Gravel and dirt roads within the Project area are currently used by farmers and those servicing the existing transmission station.

3.11.2 Environmental Consequences – Transportation

Access to the Project area will include one access road and gate from US 60 and a network of internal roads and gates. Prior to construction, EKPC will coordinate with the Kentucky Transportation Cabinet regarding the new entrance from the public roadway. All applicable permits related to transportation, including weight and size permits if required, will be obtained prior to construction. EKPC will be responsible for on-going road maintenance identified by state or local representatives during all phases of construction. EKPC will immediately repair any damage to public roads stemming from Project activities. Therefore, no long-term, adverse effects to county and local roads are anticipated as a result of construction activities under the Proposed Action.

Within the Project area, construction access will only be from Winchester Road (U.S. Route 60), which has ample capacity to support peak construction and operations (Exhibit A – Figure 14). During construction, a temporary increase in traffic volume is anticipated along the local roads. The increased traffic will occur primarily during daylight hours as a result of workers driving to and from the site, as well an increase in truck traffic to transport Project components, construction equipment, and construction materials to the Project area. Impacts to traffic patterns such as unreasonable congestion or unsafe conditions are not anticipated as a result of construction activities under the Proposed Action. Traffic will minimally increase over a period of approximately two to three months (Tetra Tech 2024, Exhibit F).

Once constructed, the Project will largely be operated remotely and will primarily be unattended. During the operational phase, Project-related traffic levels will significantly decrease with only occasional routine inspection and maintenance of the solar panels and associated equipment and vegetation maintenance. Project operations and maintenance traffic is expected to be minimal and will consist primarily of light duty trucks. Therefore, no adverse effects to county or local roads or traffic patterns are anticipated as a result of Project operation and maintenance under the Proposed Action.

The No Action Alternative would not have any direct or indirect effects to transportation within the Project area because the Proposed Action would not occur.

3.12 HUMAN HEALTH AND SAFETY

3.12.1 Affected Environment – Human Health and Safety

Hazardous Materials

Stantec, on behalf of EKPC, prepared a hazardous substances review utilizing the Environment Protection Agency's (EPA) Echo Facility Database. The hazardous substances review evaluated an approximately

403-acre study area that encompassed the current Project area. There are three hazardous waste sites with current violations within the LFUCG but none are within a four-mile radius of the Project site (EPA 2024).

EKPC also completed a Phase I Environmental Site Assessment (ESA) in accordance with the scope and limitations of ASTM's *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM E1527-21), recognized by the U.S. Environmental Protection Agency (USEPA) as compliant with *Standards and Practices for All Appropriate Inquiries* promulgated at 40 CFR Part 312.

The environmental condition of the property was assessed with respect to the range of contaminants within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. §9601, and petroleum products. This process is intended to satisfy one of the requirements for EKPC to qualify for landowner liability protections in accordance with all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial and customary practice as defined in 42 U.S.C. §9601 (35)(B).

The purpose of the Phase I ESA was to identify *recognized environmental conditions* (RECs) in connection with the subject property. A REC is defined by ASTM Standard Practice E1527-21 as the "presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment". The term is not intended to include *de minimis* conditions, which generally do not present a threat to human health or the environment and generally would not be the subject of an enforcement action if brought to the attention of appropriate government agencies. Conditions determined to be *de minimis* are not considered RECs.

Health and Safety

Residents within and surrounding the Project area are served by the Fayette County Sheriff's office and the Lexington Police Department, which provide public safety services throughout the LFUCG. The sheriff's office is located in downtown Lexington, Kentucky, approximately 9.5 miles west of the Project along Winchester Road. The closest Lexington Police station is the Lexington Police Department Central Sector station, located east of downtown and approximately 7.5 miles west of the Project but the East Sector station has jurisdiction, even though the East Sector station is over 16 miles southwest of the Project. The closest police station is the Kentucky State Police office located in Lexington, Kentucky, approximately 7 miles west.

There are currently 24 fire departments that serve communities in the LFUCG. The closest fire station is the Lexington Fire Department Station #2 and is located approximately seven miles west of the Project. The nearest hospital with an emergency room is located at CHI Saint Joseph Health in Lexington, approximately 6.5 miles southwest of the Project; however, there are 10 emergency medical providers that serve the LFUCG.

3.12.2 Environmental Consequences – Human Health and Safety

Hazardous Materials

The results of the hazardous substances review indicate no active waste sites in connection with the Project area (EPA 2024). Petroleum, oil, and lubricants will be used in the operation and maintenance of heavy construction equipment and vehicles during both construction and decommissioning, and some use of solvents and/or cleaners may occur as a result of Project operation and maintenance. In addition to implementation of a SWPPP to avoid and minimize effects to surface waters (i.e., streams) resulting from stormwater runoff or pollutants (see Section 3.4), EKPC will implement a Spill Prevention Control and Countermeasure (SPCC) Plan which will outline measures for cleanup and management of any potential fuel or pollutant spills as a result of the Project. In addition, EKPC developed a SPCC that outlines measures for cleanup and management of any potential spills of oil or other pollutants at the Avon Substation. These measures will continue to be implemented as part of the proposed substation expansion.

The model of PV solar modules to be used for the Project has not yet been determined; however, it is anticipated the modules will consist of state-of-the-art monocrystalline silicon that do not contain hazardous materials. Therefore, the installation and operation of these modules is not anticipated to result in contamination of soil or groundwater. Therefore, no significant risks to human health and safety resulting from hazardous materials are anticipated as a result of the Proposed Action.

A Phase I ESA was performed in conformance with the scope and limitations of ASTM Standard Practice E1527-21 for the proposed Bluegrass Plains Solar Generating Facility property. After a careful evaluation of past site uses; federal, state, and local agency records; and site inspection, no RECs, historical RECs, or controlled RECs, were identified in connection with the subject property due to current or past uses. The findings of the Phase I ESA also fail to provide any information that the subject property has been used for any activities other than agricultural or rural residential activities.

Emergency Services

Police and/or fire protection will be needed for the Project area in the event of an emergency. Prior to construction activities, EKPC will work with local emergency response agencies to develop an Emergency Management Plan for the Project. These agencies will include, but may not be limited to, the Fayette County Sheriff's Office, the Lexington Police Department, and the Lexington Fire Department. The plan will include Project-specific safety procedures and emergency contacts. Construction, operation and maintenance, and decommissioning of the Project under the Proposed Action is not anticipated to result in significant effects to emergency services within Fayette County.

For public safety and security purposes, the perimeter of the Project will be surrounded by fencing and have one access gate along Winchester Road. Internal roads and the secure gate will be installed, and an on-site monitoring system will be managed remotely.

No significant adverse effects to existing emergency services are anticipated as a result of the Proposed Action.

The No Action Alternative would not have any direct or indirect effects to human health and safety within the Project area because the Proposed Action would not occur.

4 Cumulative Effects

The Council on Environmental Quality (CEQ) defines cumulative effects as *the "effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from actions with individually minor but collectively significant effects taking place over a period of time* (40 CFR Part 1508.1(i)(3)).

Cumulative impacts occur when the effects of an action are added to the effects of other actions occurring in a specific geographic area and timeframe. The cumulative impact analysis presented below follows CEQ's guidelines (CEQ 1997).

Within the region of central Kentucky where the proposed action is located, past, present, or reasonably foreseeable activities and projects that could contribute to potential cumulative effects of the proposed action are:

- Private residential/agricultural activities
- Utility and ROW maintenance
- Road maintenance and improvement project
- Other solar generation projects

Bluegrass Plains Solar Generating Facility Project, Cooperative Solar Farm Two will result in positive socioeconomic impacts on the immediate Project area and surrounding community. Located within an area that needs additional electricity from EKPC, the Project will service Fayette County and surrounding areas. It is anticipated that the development project will result in positive health and economic effects including reduction of greenhouse gas emissions and air pollution from other sources, fewer potential safety hazards from producing other sources of energy, and creation of revenue and jobs for the local community.

EKPC attempted to identify activities that have occurred, are occurring, or are reasonably foreseeable within the project area that are relevant in the analysis of cumulative effects for the proposed action. No current or future private residential or major agricultural activities or projects were identified in the project vicinity, and the area does not contain any large commercial or industrial facilities. No major current or future utility projects were identified in the project vicinity based on a review of local utility plans. Minor utility ROW maintenance may occur in the project vicinity.

The Fayette County Planning Commission websites were reviewed to search for proposed projects within the immediate vicinity of the site. One other solar farm is being proposed by Silicon Ranch, for development along Haley Road on the north side of Interstate 64 in Fayette County. Some overlap between the two projects construction schedules could occur, with a slight increase in traffic during construction. However, the increase in traffic would be minor and temporary during the construction phase. Given planned Project BMPs, design features, and mitigation measures that would be implemented, cumulative impacts on environmental resources affected by the Project would not be significant.

The analysis conducted in this EA for the Bluegrass Plains Solar Generating Facility Project has not identified any significant environmental effects associated with the proposed project. The minor effects that would likely occur as a result of the proposed project are not likely to combine with the effects of other known anticipated actions in the area to create cumulatively significant effects.

5 Summary of Mitigation

EKPC intends to implement BMPs and other measures to avoid and minimize Project effects as a result of the Proposed Action. Avoidance and minimization measures for individual resources are described in the appropriate subsections of Chapter 3 and are summarized below. Other BMPs and minimization measures may be incorporated as the Project moves forward into final design.

- The Project will comply with all applicable federal, state, and local laws, regulations, and ordinances. All required federal, state, and local permits will be obtained prior to commencement of Project activities.
- The Project will comply with setback requirements set forth by the Kentucky PSC.
- BMPs will be implemented during construction to avoid and minimize soil erosion and sedimentation.
- EKPC will implement SWPPPs in compliance with KDOW requirements to ensure that all ground disturbance is stabilized to prevent erosion and sedimentation resulting from stormwater runoff. Following construction, areas disturbed by construction will be restored as per the SWPPP and KPDES requirements.
- A section of the Project area will be planted with a mix of low-growing native grasses and wildflowers intended to prevent erosion, replenish soil nutrients, and provide habitat for local pollinators.
- The current Project area was sited to avoid floodplains. No impacts to the 100 or 500-year floodplain would occur.
- A 15-foot-tall vegetative buffer will be installed at property lines where existing tree or shrub cover is scant to provide screening of the project from nearby residential structures.
- The current Project area was sited to avoid impacts to wetlands and streams and no USACE permitting will be required for the Project.
- Prior to construction, EKPC will coordinate with appropriate state and local representatives to conduct a pre-construction survey of public roads that may be impacted by construction of the Project to determine existing road conditions. EKPC will maintain or restore the roads to previous or better condition. All applicable permits related to transportation, including weight and size permits if required, will be obtained prior to construction.
- EKPC will implement a SPCC Plan which will outline measures for cleanup and management of any potential fuel or pollutant spills as a result of the Project. Existing measures in the SPCC for the EKPC-owned substation will continue to be implemented by EKPC.
- EKPC will work with local emergency response agencies to develop an Emergency Management Plan for the Project.
- For public safety and security purposes, the perimeter of the Project will be surrounded by fencing. One access gate will be installed, and an on-site monitoring system will be managed remotely.

Given the implementation of the avoidance and minimization measures listed above, no compensatory mitigation is warranted for any of the resources evaluated in Chapter 3 of this EA; therefore, no compensatory mitigation measures are proposed for the Project.

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6 Agency Correspondence

As described in Section 1.4, EKPC coordinated with federal, state, and local agencies regarding the project to solicit comments regarding potential impacts associated with the Project. Copies of this project correspondence, and any agency responses received are included in Exhibit D – Agency Correspondence. Project coordination occurred with the following agencies:

- USDA Natural Resources Conservation Service (NRCS), Resource Soil Scientist
- U.S. Army Corps of Engineers (USACE), Louisville District
- Office of Kentucky Nature Preserves (OKNP), Kentucky Biological Assessment Tool
- U.S. Fish and Wildlife Service, Kentucky Ecological Services Field Office
- Kentucky Public Service Commission
- Kentucky Heritage Council, State Historic Preservation Office
- Cherokee Nation
- Eastern Band of Cherokee Indians
- Eastern Shawnee Tribe of Oklahoma
- Osage Nation
- Lexington Historic Preservation Officer
- Blue Grass Trust

7 References

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8 List of Preparers

Name	Title
USDA. Rural Utility Service	
Suzanne Kopich	Environmental Lead
Chris Gunn	Archaeologist
East Kentucky Power Cooperative, Inc.	
Josh Young	Manager, Natural Resources and Environmental Communications
Stantec Consulting Services, Inc.	
Jaclyn Martin	NEPA Specialist/Stantec Project Manager
Clayton Pennington	Stantec Deputy Project Manager
Shane Kelley	NEPA and Resource Specialist – Natural Resources
Rachel Kennedy	NEPA and Resource Specialist – Historic Architecture
Duane Simpson	NEPA and Resource Specialist – Archaeology
Lisel Ballmer	NEPA Specialist

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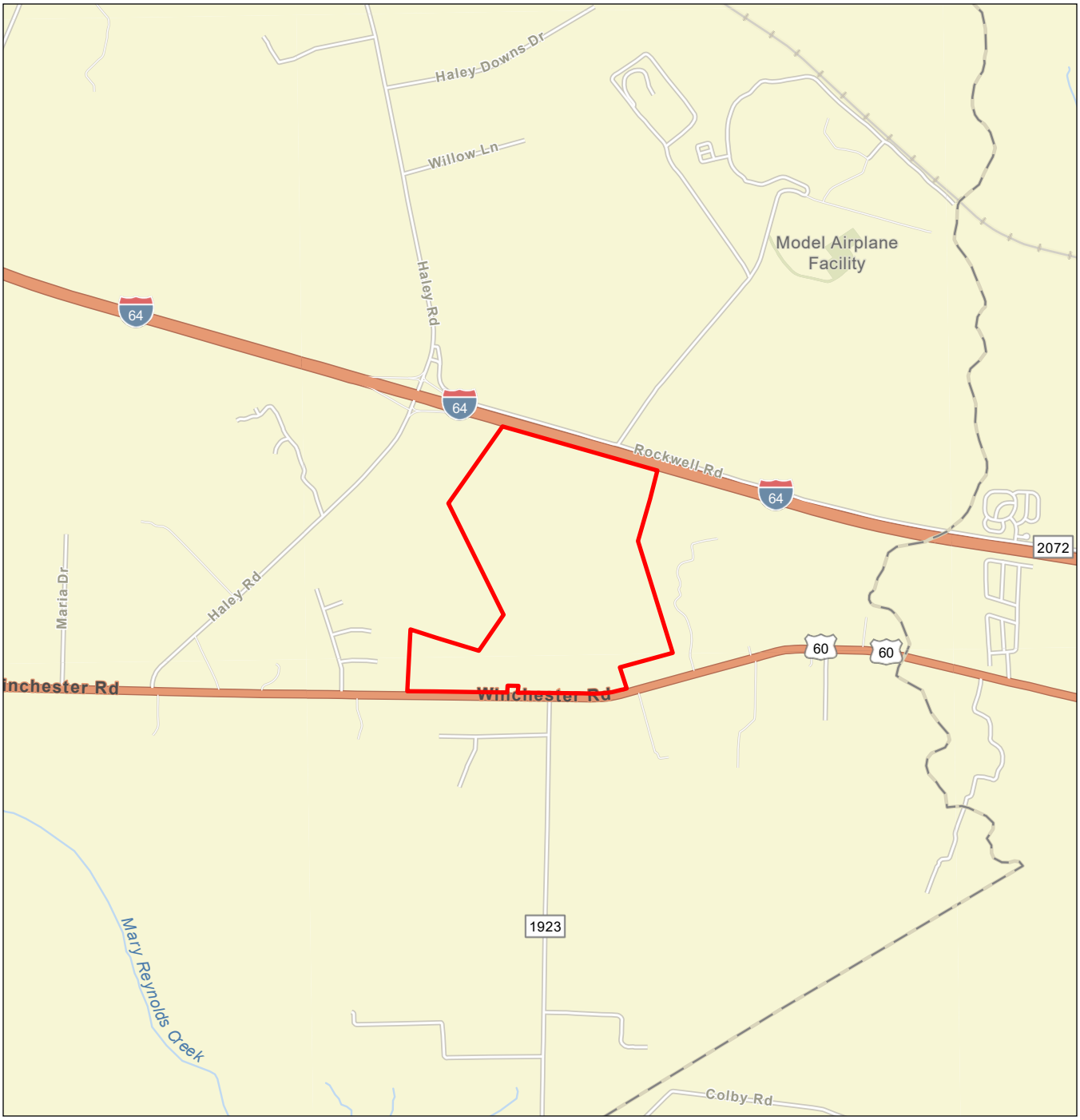
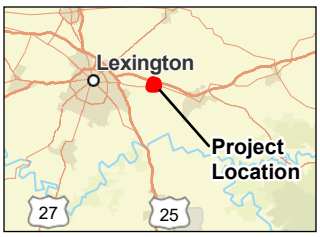
EXHIBIT A – PROJECT MAPS





Project Boundary (403.07 ac)

0 1,500 3,000 Feet

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N

Stantec

Project Location
Fayette Co., KY

Prepared by pmarsey on 6/4/2024

Client/Project
172608286
East Kentucky Power Cooperative
Bluegrass Plains Solar Project
Environmental Assessment

Figure No.
1

Title
Project Vicinity Map

Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
2. Data Sources:
3. Background: LFUCG, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, LFUCG, Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, NPS, USFWS

Figure 1

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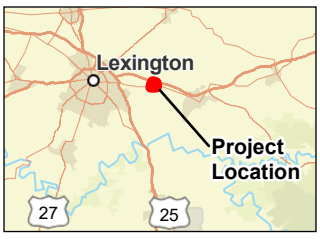

Project Boundary (403.07 ac)

0 500 1,000 Feet

(At original document size of 8.5x11)
1:12,000

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Notes
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2. Data Sources:
3. Background: Esri Community Maps Contributors, LFUCG, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, LFUCG, Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA,

Figure 2

Stantec

Project Location
Fayette Co., KY

Prepared by pmarsey on 6/4/2024

Client/Project
172608286
East Kentucky Power Cooperative
Bluegrass Plains Solar Project
Environmental Assessment

Figure No.
2

Title
Project Location Map

U:\1726\172608286\03_data\gis_cad\Bluegrass Solar\Bluegrass Solar.aprx Revised: 2024-06-04 By: pmarsey

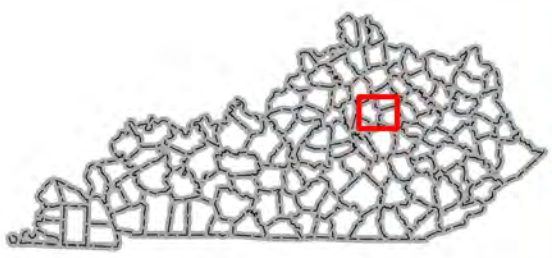
Bluegrass Plains Solar Generating Facility

Project Overview Map

- Project Boundary
- Limits of Disturbance
- Cemetery Buffer
- Stream/Wetland Avoidance
- Avon Substation
- EKPC Transmission Lines
- KU Transmission Lines
- Gas Pipeline

N

0 300 600 1,200 Feet



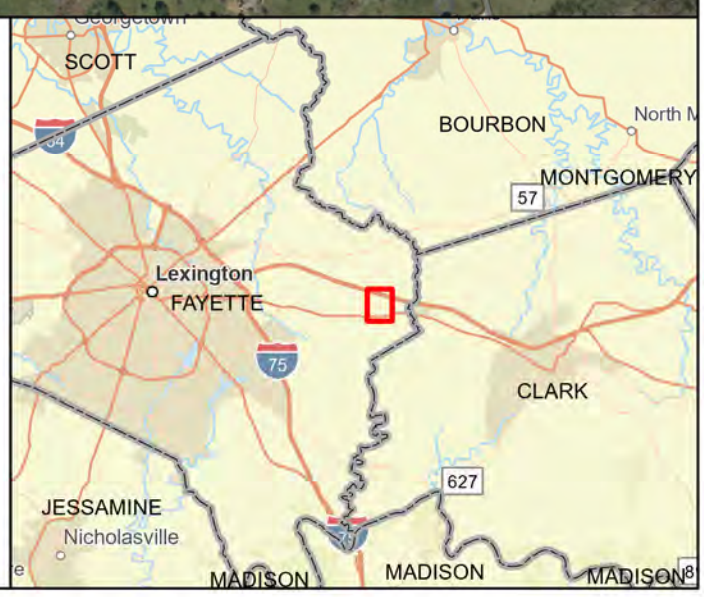
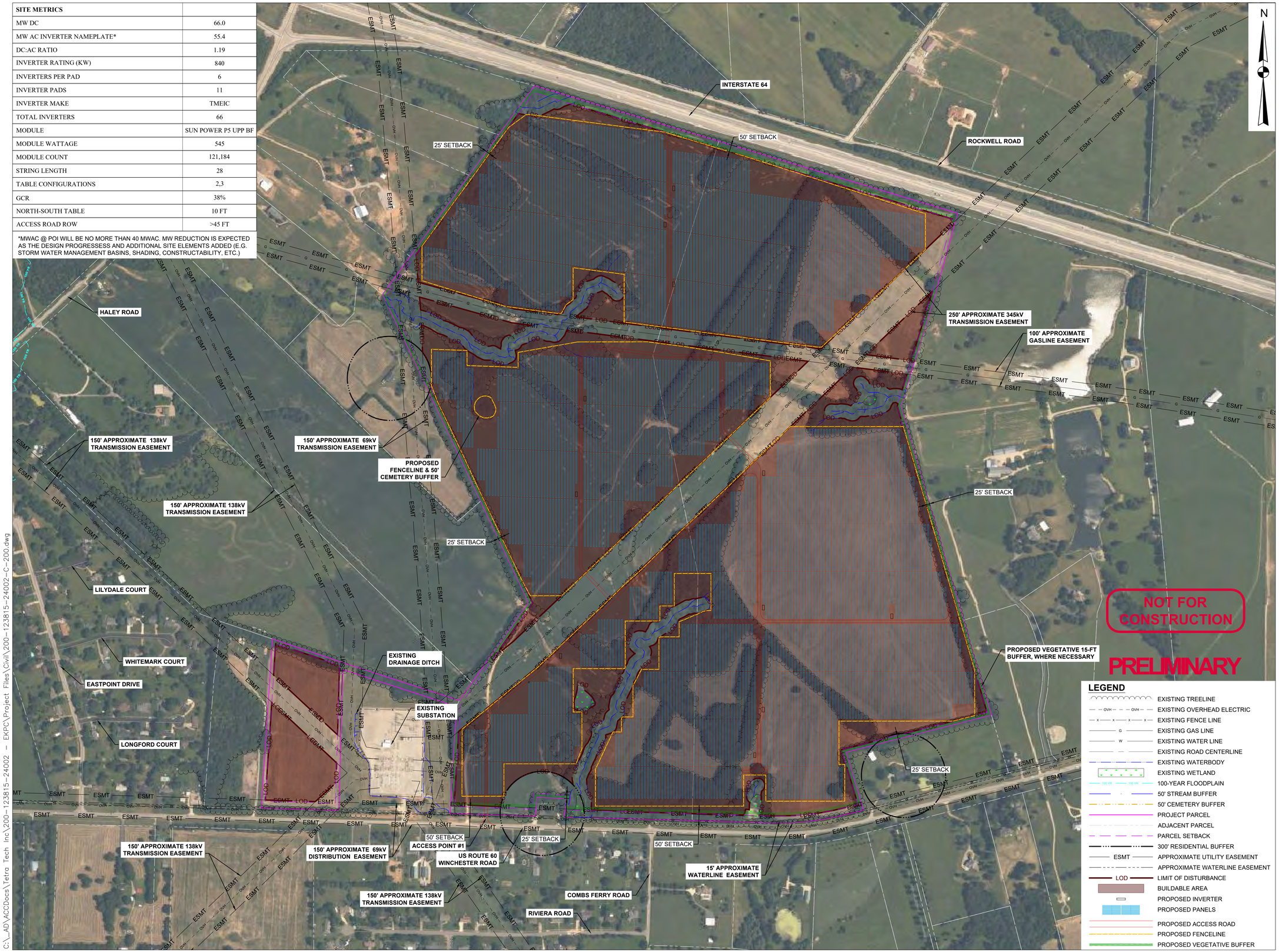


Figure 3

SITE METRICS	
MW DC	66.0
MW AC INVERTER NAMEPLATE*	55.4
DC:AC RATIO	1.19
INVERTER RATING (KW)	840
INVERTERS PER PAD	6
INVERTER PADS	11
INVERTER MAKE	TMEIC
TOTAL INVERTERS	66
MODULE	SUN POWER P5 UPP BF
MODULE WATTAGE	545
MODULE COUNT	121,184
STRING LENGTH	28
TABLE CONFIGURATIONS	2,3
GCR	38%
NORTH-SOUTH TABLE	10 FT
ACCESS ROAD ROW	>45 FT

*MWAC @ POI WILL BE NO MORE THAN 40 MWAC. MW REDUCTION IS EXPECTED AS THE DESIGN PROGRESSESS AND ADDITIONAL SITE ELEMENTS ADDED (E.G. STORM WATER MANAGEMENT BASINS, SHADING, CONSTRUCTABILITY, ETC.)



LEGEND

- EXISTING TREELINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING FENCE LINE
- EXISTING GAS LINE
- EXISTING WATER LINE
- EXISTING ROAD CENTERLINE
- EXISTING WATERBODY
- EXISTING WETLAND
- 100-YEAR FLOODPLAIN
- 50' STREAM BUFFER
- 50' CEMETERY BUFFER
- PROJECT PARCEL
- ADJACENT PARCEL
- PARCEL SETBACK
- 300' RESIDENTIAL BUFFER
- APPROXIMATE UTILITY EASEMENT
- APPROXIMATE WATERLINE EASEMENT
- LIMIT OF DISTURBANCE
- BUILDABLE AREA
- PROPOSED INVERTER
- PROPOSED PANELS
- PROPOSED ACCESS ROAD
- PROPOSED FENCELINE
- PROPOSED VEGETATIVE BUFFER

C:_AD\ACCDocs\Tetra Tech Inc\200-123815-24002 - EKPC\Project Files\Civil\200-123815-24002-C-200.dwg

EAST KENTUCKY POWER COOPERATIVE
A Touchstone Energy Cooperative

TETRA TECH

TETRA TECH, INC.
4101 COX ROAD,
SUITE 100
GLEN ALLEN, VA 23060
TEL: (804) 290-4321
FAX: (804) 270-2739

STAMP:

COMMONWEALTH OF KENTUCKY
HERBERT R. LEMASTER
19309
LICENSED
PROFESSIONAL ENGINEER
4-25-2024

BLUEGRASS PLAINS SOLAR PROJECT

EKPC
FAYETTE COUNTY
KENTUCKY

PROJECT NUMBERS:
200-123815-24002

SHEET TITLE:
SITE PLAN OVERALL SHEET

SHEET SIZE: ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

NO.	REVISION	DATE	INIT.
A	SUBMITTAL	01-19-24	DAM
B	RE-SUBMITTAL	03-11-24	DAM
C	RE-SUBMITTAL	04-03-24	DAM

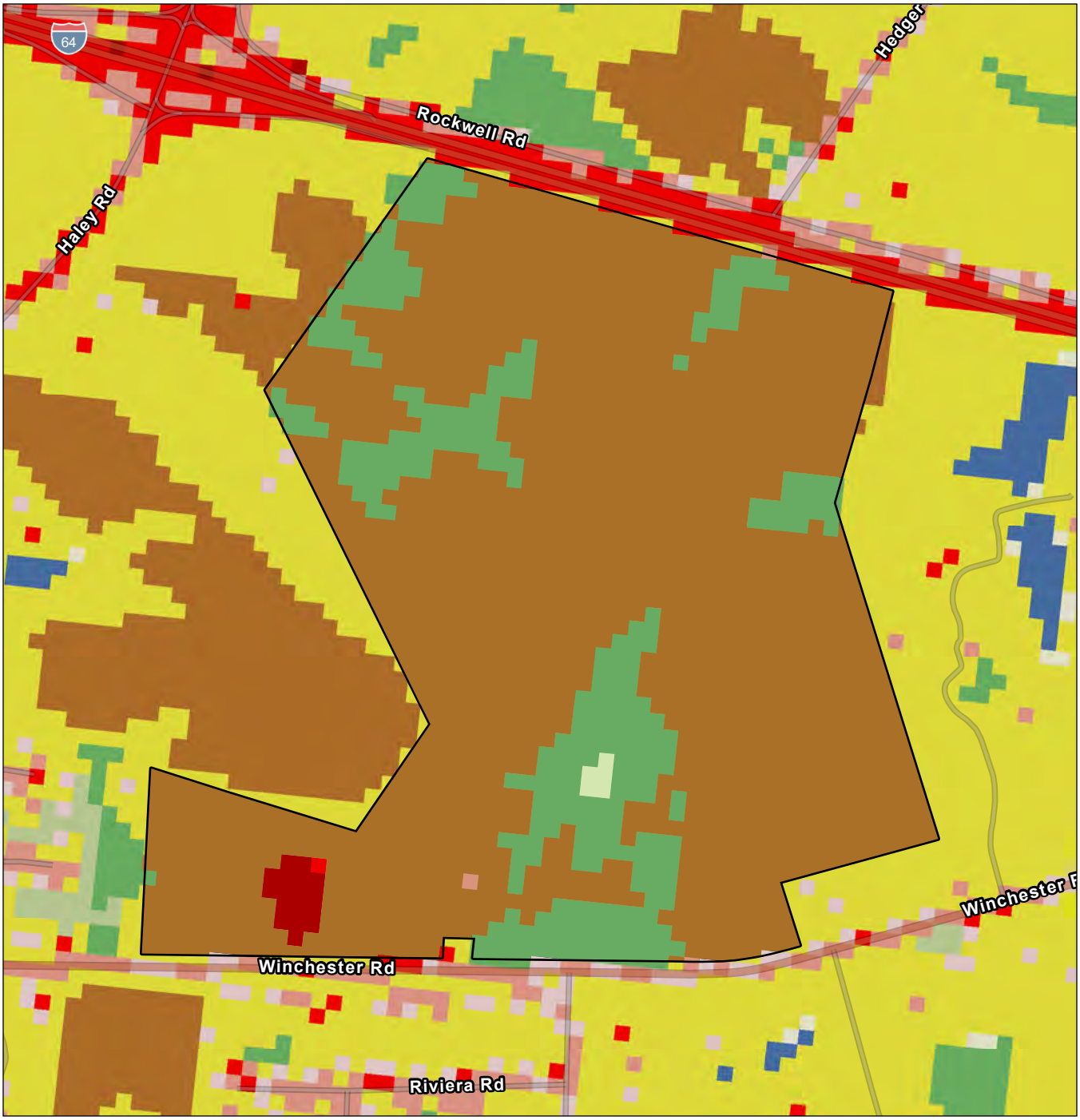
Kentucky 811
Know what's below. 811 before you dig.

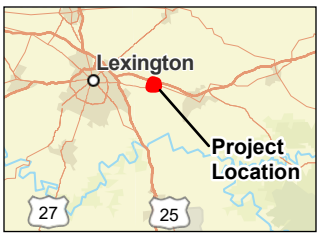
DATE:	04/03/2024
DRAWN BY:	JZ
ENGINEER:	AED
APPROVED BY:	DAM

PROJECT PHASE:
INITIAL SITE PLAN

SCALE:
1" = 300'

SHEET NO.:
Figure 4





- Project Boundary (403.07 ac)
- Open Water
- Developed, Open Space
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed, High Intensity
- Barren Land (Rock/Sand/Clay)
- Deciduous Forest
- Evergreen Forest
- Mixed Forest
- Shrub/Scrub
- Grassland/Herbaceous
- Pasture/Hay
- Cultivated Crops
- Woody Wetlands
- Emergent Herbaceous Wetlands

0 500 1,000 Feet

(At original document size of 8.5x11)
1:12,000

N

Notes

1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
2. Data Sources: NLCD (2021)
3. Background: Esri Community Maps Contributors, LFUCG, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, LFUCG, Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA,

Figure 5

Stantec

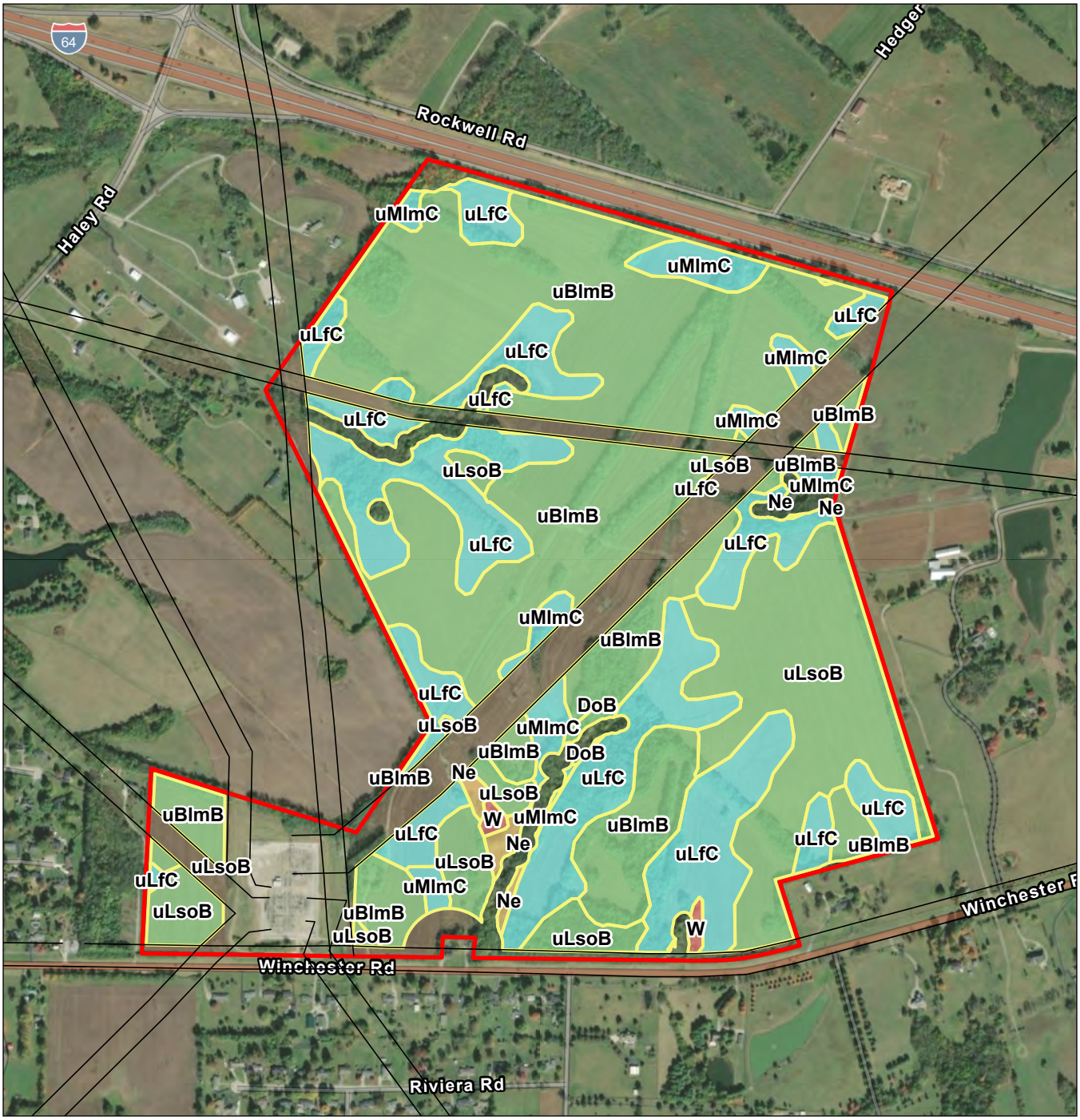
Project Location
Fayette Co., KY

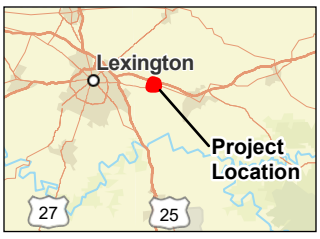
Prepared by pmarsey on 7/29/2024

Client/Project
172608286
East Kentucky Power Cooperative
Bluegrass Plains Solar Project
Environmental Assessment

Figure No.
3

Title
National Landcover Dataset





Notes

1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
2. Data Sources: USDA-NRCS
3. Background: Esri Community Maps Contributors, LFUCG, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, LFUCG, Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA,

- Project Boundary (403.07 ac)
- DoB - Donerail silt loam, 2 to 6 percent slopes (0.92 ac)
- Ne - Newark silt loam, 0 to 2 percent slopes, occasionally flooded (2.73 ac)
- uBlmB - Bluegrass-Maury silt loams, 2 to 6 percent slopes (151.51 ac)
- uLfC - Lowell-Faywood silt loams, 6 to 12 percent slopes (84.94 ac)
- uLsoB - Lowell-Sandview silt loams, 2 to 6 percent slopes (61.48 ac)
- uMlmC - Maury-Bluegrass silt loams, 6 to 12 percent slopes (13.95 ac)
- W - Water (1.32 ac)

Prime Farmland Classification

- All areas are prime farmland (213.90 ac)
- Farmland of statewide importance (98.88 ac)
- Prime farmland if drained (2.73 ac)
- Not prime farmland (1.32 ac)
- Existing Utility Easement

Figure 6

0 500 1,000 Feet
(At original document size of 8.5x11)
1:12,000

N

Stantec

Project Location
Fayette Co., KY

Prepared by pmarsey on 7/29/2024

Client/Project
172608286
East Kentucky Power Cooperative
Bluegrass Plains Solar Project
Environmental Assessment

Figure No.
4

Title
NRCS Soil Survey Data Prime Farmland Classification

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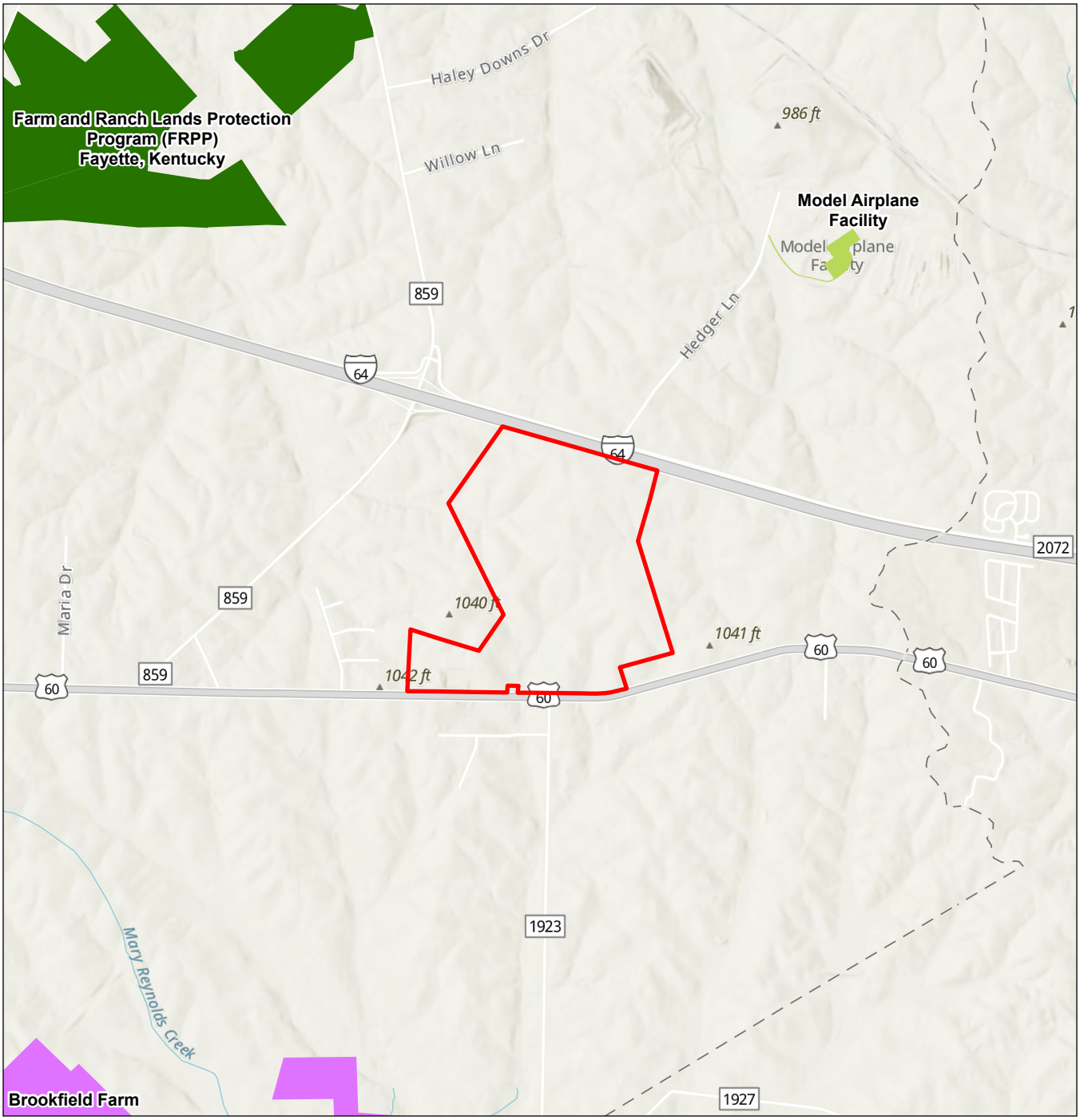
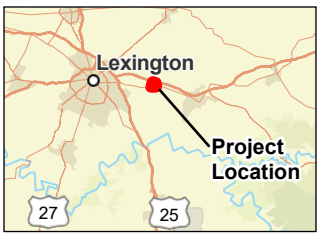




Project Boundary (403.07 ac)
Natural Resources Conservation Service (NRCS)
Non-Governmental Organization
County / Regional Agency Land

0 750 1,500 Feet
(At original document size of 8.5x11)
1:36,000

N

Stantec

Project Location
Fayette Co., KY

Prepared by pmarsey on 8/2/2024

Client/Project 172608286
East Kentucky Power Cooperative
Bluegrass Plains Solar Project
Environmental Assessment

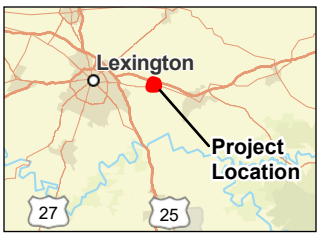
Figure No.
5

Title
Managed Conservation Lands

Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
2. Data Sources: USGS-PADUS
3. Background: Esri, NASA, NGA, USGS, FEMA, LFUCG, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, LFUCG, Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA,

Figure 7

U:\172\172608286\03_data\gis_cad\Bluegrass Solar\Bluegrass Solar.aprx Revised: 2024-08-02 By: pmarsey



Project Boundary (403.07 ac)
100-Year Floodplain

0 750 1,500 Feet
(At original document size of 8.5x11)
1:18,000

N

Stantec

Project Location
Fayette Co., KY

Prepared by pmarsey on 6/4/2024

Client/Project
172608286
East Kentucky Power Cooperative
Bluegrass Plains Solar Project
Environmental Assessment

Figure No.
6

Title
FEMA Flood Hazard Area

Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
2. Data Sources: FEMA (2024)
3. Background: Esri Community Maps Contributors, LFUCG, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, LFUCG, Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA,

Figure 8

U:\1726\172608286\03_data\gis_cad\Bluegrass Solar\Bluegrass Solar.aprx Revised: 2024-06-04 By: pmarsey

Bluegrass Plains Solar Project

Cultural Resources APE Overview Map

Cultural Resources APE

Archaeology Survey Area

Existing EKPC Transmission Lines

Existing KU Transmission LInes

Existing EKPC Substation

N

0 0.25 0.5 1 Miles

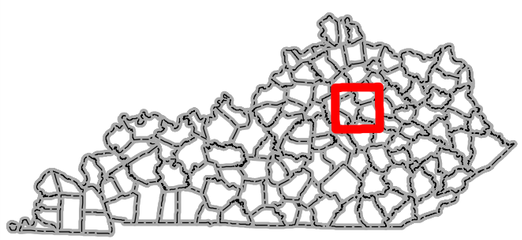
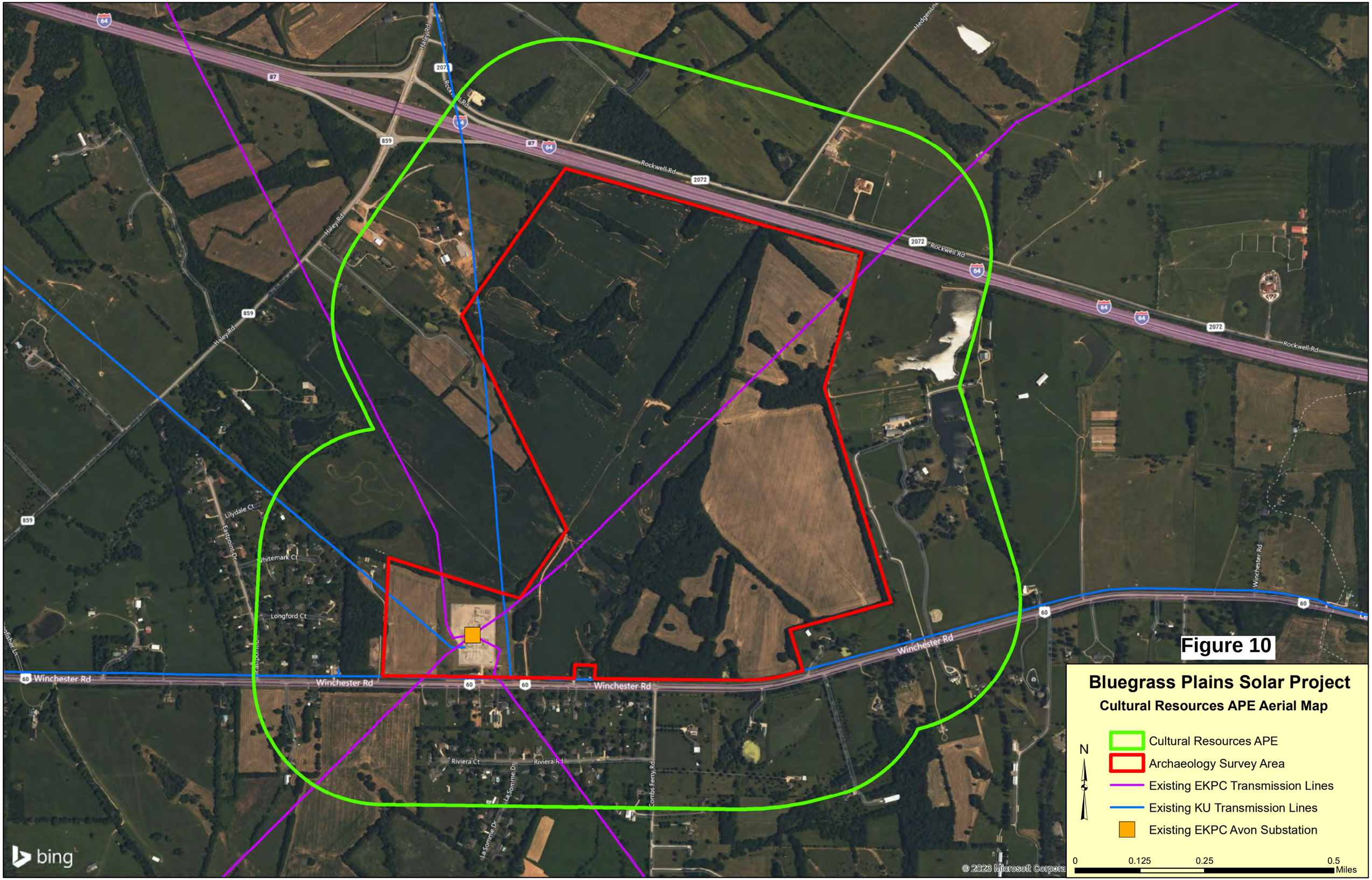
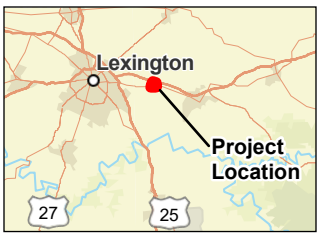


Figure 9

Avon Substation

Columbus
Uttingertown
Chilesburg
Winchester Rd
Rockwell Rd
Wyandotte
Old Pine Grove
Hedger Ln
Haley Rd
Riviera Ct
Riviera Rd
Clintonville Rd
Wayland Dr
Lexington Rd
FAYETTE
Venable Rd
David Fork
N Cleveland Rd


Rockwell Rd
Haley Rd
Winchester Rd
Riviera Ct
Riviera Rd
La Sommie Dr
Combs Ferry Rd
Lilydale Ct
Eastpoint Dr
Whitemark Ct
Longford Ct
Hedgerun
2072
859
60
64
87
bing
© 2023 Microsoft Corporation
Figure 10
Bluegrass Plains Solar Project
Cultural Resources APE Aerial Map
N
Cultural Resources APE
Archaeology Survey Area
Existing EKPC Transmission Lines
Existing KU Transmission Lines
Existing EKPC Avon Substation
0
0.125
0.25
0.5
Miles



Project Boundary (403.07 ac)

NHD Flowline

NWI Wetlands

Freshwater Pond

Riverine

0 500 1,000 Feet

(At original document size of 8.5x11)
1:12,000

N

Notes

1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
2. Data Sources: USFWS, USGS
3. Background: Esri Community Maps Contributors, LFUCG, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, LFUCG, Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA,

Figure 11

Stantec

Project Location
Fayette Co., KY

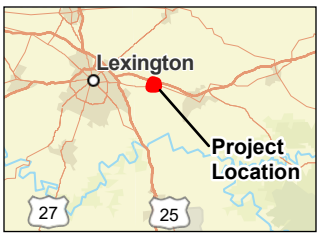
Prepared by pmarsey on 6/12/2024

Client/Project
172608286
East Kentucky Power Cooperative
Bluegrass Plains Solar Project
Environmental Assessment

Figure No.
7

Title
National Wetland Inventory and National Hydrography Dataset

U:\172\172608286\03_data\gis_cad\Bluegrass Solar\Bluegrass Solar.aprx Revised: 2024-06-12 By: pmarsey



Project Boundary (403.07 ac)
Perennial Stream
Intermittent Stream
Ephemeral Stream
PEM Wetland
PFO Wetland

0 500 1,000 Feet
(At original document size of 8.5x11)
1:12,000

N

Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
2. Data Sources: Stantec
3. Background: Esri Community Maps Contributors, LFUCG, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, LFUCG, Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA,

Figure 12

Stantec

Project Location
Fayette Co., KY

Prepared by pmarsey on 6/12/2024

Client/Project
172608286
East Kentucky Power Cooperative
Bluegrass Plains Solar Project
Environmental Assessment

Figure No.
8

Title
Delineated Features

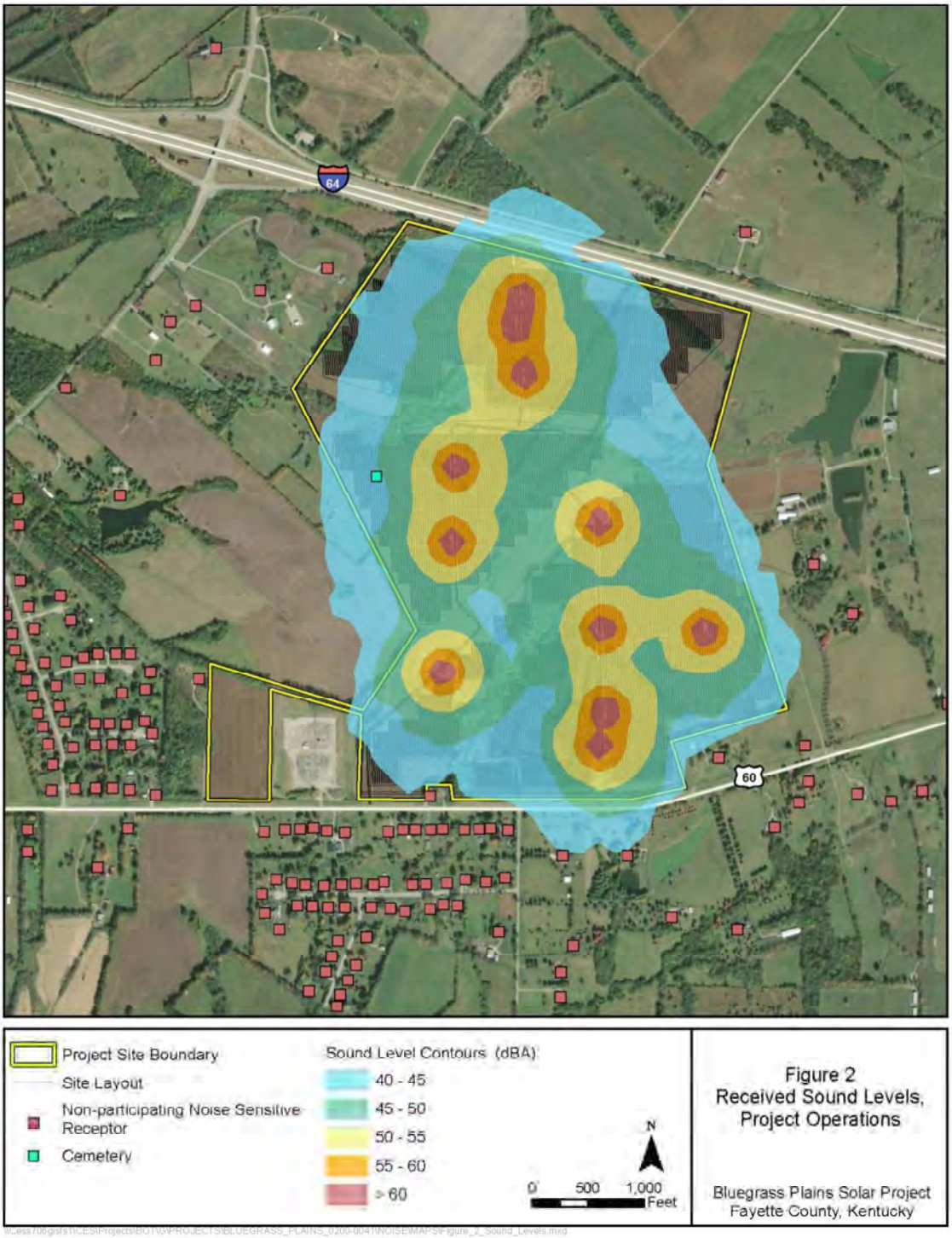
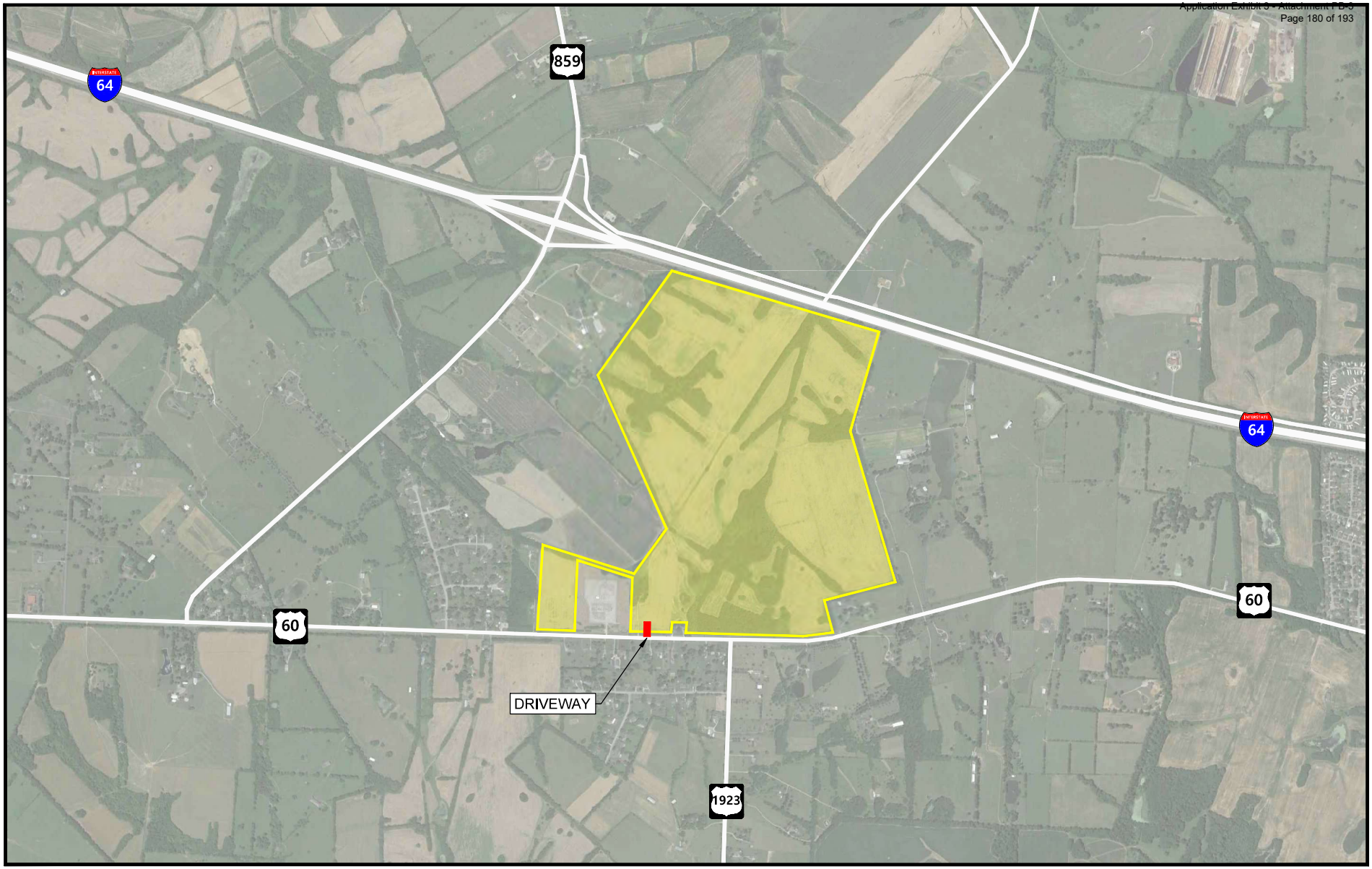


Figure 2. Project Operation, Received Sound Levels



TETRA TECH

ROADWAYS
PROJECT BOUNDARY
PROJECT DRIVEWAY

Bluegrass Plains Solar
Fayette County, KY

SITE LOCUS

FIGURE
14

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EXHIBIT B – PROJECT PHOTOGRAPHS & TYPICAL SOLAR ARRAYS

Photograph 1. View north across proposed Bluegrass Plain Solar site

Photograph 2. View south across proposed Bluegrass Plain Solar site

Photograph 3. View east across proposed Bluegrass Plain Solar site

Photograph 4. View west across proposed Bluegrass Plain Solar site

Photograph 5. View of adjacent property to the north containing Interstate 64

Photograph 6. View of existing gravel road on property, looking south toward Hwy 60

Photograph 7. View west of EKPC's Avon substation

Photograph 8. View of EKPC's Spurlock – Avon 345 kV transmission line

Photograph 9. Representative view of perennial stream in northwest portion of site

Photograph 10. Isolated wetland in central portion of project site

Photograph 11. Representative view of forested portion of southern project area

Photograph 12. Representative view of tree-lined fencerow in central project area

Typical Solar Arrays

Typical Solar Arrays

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EXHIBIT C – PUBLIC MEETING

PressRelease

EAST KENTUCKY POWER COOPERATIVE

A Touchstone Energy® Cooperative

For immediate release: April 29, 2024

EKPC announces plans for solar farms in Fayette, Marion counties

Cooperative cuts carbon emissions while meeting growing demand for renewables

East Kentucky Power Cooperative (EKPC) today announced plans to add 136 megawatts (MW) of solar capacity with two new solar farms in Kentucky, one in Fayette County and another in Marion County.

"This is a big step forward in providing renewable energy options for homes and businesses in Kentucky," said Tony Campbell, CEO of EKPC, a not-for-profit electric cooperative based in Winchester, Ky. "These solar farms will help to diversify EKPC's electric-generating fleet, providing carbon-free electricity and helping to meet the growing demand for sustainable energy, especially among businesses and industries."

Together, the two solar farms will produce enough electricity to meet the annual power needs of 15,500 typical Kentucky homes.

- **Cooperative Solar Farm Two - Fayette.** The Fayette County facility will have capacity to generate 40 MW of electricity on 387 acres. It will be located in eastern Fayette County, between Interstate 64 and U.S. 60. It is approximately 3.5 miles west of EKPC's main campus, where the cooperative established its first solar farm in 2017.
- **Cooperative Solar Farm Three - Marion.** The Marion County facility will have capacity to generate 96 MW of electricity on 635 acres. It is located just north of Lebanon, on the east side of Ky. 55.

For more information about each project, visit EKPC's web site at www.ekpc.coop.

EKPC has filed an application with the Kentucky Public Service Commission for review and approval of the proposed projects. The total cost of developing the two solar farms is estimated at $335.4 million.

In addition to diversifying EKPC's generating fleet and lowering its carbon footprint, these solar farms will help meet the energy needs of commercial and industrial members, which increasingly are seeking renewable power for their facilities. The solar farms also will provide low-cost power during periods of summer peak demand, helping to keep costs competitive.

The Fayette and Marion solar farms will diversify EKPC's generating fleet and provide low-cost energy, said Don Mosier, EKPC's Chief Operating Officer and Executive Vice President. Meanwhile,

EKPC continues its focus on ensuring reliable, flexible electric capacity, regardless of weather conditions.

“While renewable energy will be a growing part of the generating portfolio, EKPC’s fossil fleet continues to play a vital role in ensuring 24/7/365 energy capacity for the homes and businesses served by our owner-member cooperatives,” Mosier said.

These projects resulted from solicitations for solar proposals. Each project was initiated by a private developer. Importantly, both projects are in the final stages of review for interconnection to the high-voltage transmission grid. The review process can take years to complete.

EKPC owns and operates Cooperative Solar Farm One, a 60-acre, 10-megawatt facility located at the cooperative’s main campus on U.S. 60 between Lexington and Winchester.

— END —

East Kentucky Power Cooperative is a not-for-profit, member-owned cooperative providing wholesale electricity to 16 owner-member distribution cooperatives that serve 1.1 million Kentucky residents at 565,000 homes, farms, businesses and industries across 89 counties. EKPC provides power through coal-fueled plants located in Mason and Pulaski counties; natural gas-fueled plants in Clark and Oldham counties; renewable energy plants in Barren, Boone, Clark, Greenup, Hardin and Pendleton counties; and nearly 3,000 miles of transmission lines. Together, EKPC and its 16 owner-member cooperatives are known as Kentucky's Touchstone Energy Cooperatives. Visit EKPC at www.ekpc.coop.

For more information, contact:

Nick Comer, External Affairs Manager
Office (general): (859) 744-4812, ext. 450
Office (direct): (859) 745-9450
Mobile: (859) 333-8735
nick.comer@ekpc.coop

Forecast improves, tornado watch issued for others

BY CHRISTOPHER LEACH
cleach@herald-leader.com

A severe storm including possible damaging winds, large hail, tornadoes and flash flooding was expected to hit Western Kentucky Wednesday, according to the National Weather Service.

Multiple Western Kentucky counties along with areas in Illinois, Missouri and Tennessee were under a moderate risk for severe weather in the NWS' Wednesday severe weather outlook. The moderate risk zone is the second highest risk zone in the NWS' severe weather outlook.

A tornado watch was issued for Ballard, Caldwell, Calloway, Carlisle, Christian, Crittenden, Fulton, Graves, Hickman, Hopkins, Livingston, Lyon, Marshall, McCracken Muhlenberg, Todd and Trigg counties, according to the NWS. The watch was in effect until at least 5 p.m. CST.

Potential impacts from the storms are damage to homes, vehicles, trees, power lines and injuries to those caught outside in a storm, according to the NWS.

Western Kentucky University announced it was closing all of its campuses at noon CST in preparation for the storms.

LEXINGTON HAS NO DAMAGE FROM OVERNIGHT STORMS

A strong storm hit Lexington in the early morning hours Wednesday. No damage was reported but the LG&E & KU power outage map showed 19 outages affecting 205 customers as of 1 p.m. Wednesday.

There previously was an outage in the Versailles Road area near the Blue Grass Airport but power in the area has since been restored. The Blue Grass Airport's flight status board showed all flights are running on time.

Gov. Andy Beshear said no injuries were reported from Tuesday's storms.

"I'm thankful for our first responders, who helped keep everyone safe," Beshear said in a post on X.

On Tuesday night, WKYT meteorologist Chris Bailey reported a possible tornado near Natural Bridge State Park, but the NWS has not confirmed a touchdown. He later posted pictures on social media of trees down in the area.

Beshear confirmed there were several downed trees at Natural Bridge State Park but it is still operational.

Lexington was under a slight risk of severe weather for Wednesday. Hazards included heavy rainfall, thunderstorms and hail, but forecasters didn't rule out the chances of a severe storm

Virtually all of Kentucky, including Lexington, was under a flood watch through Thursday morning. The NWS said flooding from the excessive rainfall is possible in areas near rivers, creeks, streams and other low-lying and flood-prone locations.

The northeastern parts of Fayette County received over an inch of rain between 8 a.m. Tuesday and 8 a.m. Wednesday, according to the NWS.

Christopher Leach: @ChrisLeachHL

Court may enter debate over care for trans youth

Los Angeles Times

The Supreme Court may be on the verge of deciding whether to jump into the national debate over medical treatment for transgender youths.

As soon as Thursday justices may vote behind closed doors on whether to grant an appeal that seeks to block a new Tennessee law prohibiting medical treatments that enable a "minor to identify with, or live as, a purported identity inconsistent with the minor's sex."

They have been in no hurry to act, however, and it's possible they will put off the issue again.

At stake is the fate of a wave of a new state laws in the South and Midwest that bar transgender teens and their parents from obtaining puberty blockers and other hormones prescribed by a doctor.

Obituaries

Alan Joel Leavitt
March 22, 1936 - May 6, 2024

Lexington, **Kentucky** - Alan Joel Leavitt, 88, well known Standardbred breeder, passed away May 6th. Alan was a graduate of Andover Academy and Harvard University. He served as a director of the U.S.T.A., the Hambletonian Society and as a member of the Kentucky Racing Commission. In 2008 he was elected to the Harness Racing Living Hall of Fame. He was a recipient of the USWA President's award and the Proximity award for achievement. Alan is survived by his wife, Margaret and his three children, Josephine, Harris, and David Leavitt. Services will be private. www.milwardfuneral.com

Obituaries

OBITUARY INDEX

View and place obituaries at kentucky.com

Contact our obituary staff at 859-231-3215 or hlobits@herald-leader.com

NAME, AGE	CITY	DEATH	ARRANGEMENTS
Allen, Jeffrey, Moore	Harrodsburg	May 06	Ransdell Funeral Chapel
Barnes Blair, Doris, 84	Russell Springs	May 06	Bernard Funeral Home
Bell Stovall, Arthur, 101	**Wilmore**	**May 06**	**Clark Legacy Ctr**
Bisesi, Janet, 83	London	May 05	House-Rawlings Funeral Home
Burden, Kathy, 48	Mt. Olivet	May 05	Robertson County Funeral Home
Collier, Sr., Jerry Lester, 74	London	May 06	Bowling Funeral Home
Dawson, Sarah Cox, 66	**Lexington**	**May 01**	**Kerr Brothers Funeral Home - Harrodsburg Rd.**
Doudna, Faye Barrett, 89	Stanford	May 06	Fox & Friend Funeral Home
Elam, Gregory, 70	**Lancaster**	**May 04**	**Preston Pruitt-Spurlin Funeral Home**
Fryman, Carolyn, 81	Cynthiana	May 07	Ware Funeral Home
Hamilton, Charles W., 95	Sadieville	May 05	Tucker, Yocum, & Wilson Funeral Home
Hobbs, Don, 79	Richmond	May 05	Oldham, Roberts & Powell Funeral Home
Ishmael, David Anthony, 56	Sussex, WI	Apr 25	Tucker, Yocum, & Wilson Funeral Home
Leavitt, Alan Joel, 88	**Lexington**	**May 06**	**Milward Bdwy**
Maxey, Norma Sue, 81	London	May 06	House-Rawlings Funeral Home
May, Jane, 89	Lancaster	May 04	Ramsey-Young Funeral Home
Moore, Vickie Phipps, 61	Barbourville	May 05	Knox Funeral Home
Morrow, Jack, 77	Richmond	May 02	Oldham, Roberts & Powell Funeral Home
Rednour, Tony E., 87	London	May 05	House-Rawlings Funeral Home
Sams, Bobby Rhea, 80	Lexington	May 05	Kerr Brothers - Harrodsburg Road
Sizemore, Eva, 93	London	May 07	Bowling Funeral Home
Swope, Marian Ann, 76	**Lexington**	**May 05**	**Kerr Brothers Funeral Home - Harrodsburg Rd.**
Walters, James, 82	**Winchester**	**May 05**	**Rolan G Taylor Funeral Home**
Worley, Joe, 78	Whitley City	May 06	McCreary County Funeral Home

Bold listings indicate expanded obituaries

Dr. Marian Ann Swope
September 6, 1947 - May 5, 2024

Lexington, **Kentucky** - Dr. Marian Ann Swope, 76, passed away May 5, 2024. She worked for over 35 years for the University of Kentucky. Visitation 6 – 8 PM Fri. May 10th and Sat. 10 – 11 AM. A Funeral Mass will be 11:15 AM on Sat., May 11, 2024, at St. Peter Claver Catholic Church, 485 W. Fourth St., Lexington, KY 40508.

KerrBrothers FuneralHome.com

Gregory Elam
August 17, 1953 - May 4, 2024

Lancaster, **Kentucky** - Gregory "Tim" Elam, 70, of Lancaster, passed away May 4, 2024 at Ephraim McDowell Regional Medical Center. He was born on August 17, 1953 in Hamilton, Ohio to the late Charles and Daisy Elam. Tim worked for Trane in Lexington for many years. He loved the outdoors, camping and shooting targets. He also enjoyed inventing and building. Most of all, he was a wonderful father and Papaw. He is survived by his two daughters, Lisa Crowe (Jerry) of Lexington and Kristy Hughes (Steve) of Lancaster; loving companion of many years, Jean Crowley; grandchildren, Austin Lamb of Richmond, Hunter Lamb of Richmond, and Sarah Hughes of Louisville; three step-grandchildren, and multiple great-grandchildren. Tim is preceded in death by his parents and his brother, Vaughn Elam. Funeral services will be 1pm Thursday, May 9, 2024 at Spurlin Funeral Home with Bro. Jonathan Grizzell officiating. Burial will follow in Danville Memorial Gardens. Visitation will be from 11am until time of service on Thursday. Pallbearers will be Steve Hughes, Jerry Crowe, Austin Lamb, Joey Beckelhymer, David Hill, and Travis Mills. www.spurlinfuneralhomelancaster.com

James Walters
September 9, 1941 - May 5, 2024

Winchester, **Kentucky** - James Walters, 82, widower of Nancy M Perry Walters, passed away Sunday, May 5, 2024. He was born September 9, 1941 to the late Arthur and Nettie Lanter Walters in Harrison Co., KY. He worked for the Scott Co. Sherrifs office for five years and retired from Yellow Freight & Trucking Co. James is survived by his children: Jimmy Dean Walters (Linda Matthews), Lisa Anderson (Fred), Leslie Kenner (Dennis); grandchildren: Wade T. Anderson (Megan), Billy Tom Sargent (Katie); great-grandson, Hayden Anderson: step-children: Vincent Isaacs (Jennifer) and David Brush (Talia): step-grandchildren; Seth, Kieran, Kaelan, Ila M., Jasper, Amira and Everett Brush, Gabrielle Lankford and Michaela Isaacs, and step great-grandchild, Jameson Lankford: brothers; Arthur Walters (Freda), Bobby Walters: sister, Josephine White (Woody). Special neighbors of James, Kenneth and Jean Henry and Todd Faulconer, In addition to his parents he is preceded in death by a brother, Melvin Walters. His service will be on Saturday, May 11, at 1:00 pm at Rolan G. Taylor Funeral Home, Winchester with visitation from 11:00 am until the hour of service. Burial in Boonesboro Cemetery, Winchester.

Sarah Cox Dawson
March 4, 1958 - May 1, 2024

Lexington, **Kentucky** - Sarah Cox Dawson, 66, wife of 25 years to Robert "R.R." Dawson, passed away on May 1, 2024. Sarah was born in Versailles, KY, on March 4, 1958, to Miriam Tutt Cox of Versailles and the late James Robert Cox Jr.

Sarah graduated from Woodford County High School. She then went on to get a degree from Western University in 1979, where she was on the tennis team. Sarah was an instructor for high-performance driving with both the Porsche Club and the Corvette Club. Sarah worked for I-TEL Corporation for many years as a custom programmer.

In addition to her husband and mother, she is survived by, her son Philip Robert "P.R." Gerrow Jr.; Stepdaughter Nancy (Adam) Jones; and sister Lindsey (Rick) Cox.

There will be a private service at a later date. Kerr Brothers Funeral Home – Harrodsburg Rd. is in charge of arrangements.

KerrBrothers FuneralHome.com

Arthur Bell Stovall
October 11, 1922 - May 6, 2024

Wilmore, **Kentucky** - Arthur Bell Stovall, age 101, beloved husband, father, grandfather, great grandfather, great-great grandfather & friend passed on May 6, 2024. Art was born on October 11, 1922 in Como, MS. to McKinley Brooks & Mamie Montgomery Stovall. He met & married his young 16 year old bride, Vilva Brown, in 1942 before enlisting in the U.S. Army Air Corps. Art served in the 5th South Pacific Theater in WWII. They raised their daughters in Memphis, TN. & enjoyed taking their girls to watch Art play baseball. He was athletic all of his life & played golf until the age 96. After Art's retirement from Metropolitan Life Insurance, he & Vilva moved to Lexington, KY to be close to their daughters & grandchildren. They were long-time members of Whitehaven United Methodist (Memphis) & Centenary United Methodist Church (Lexington). Art was involved in Methodist Men's Bible Study, the Masons, & the Kiwanis Club. For 74 years he & Vilva showed how prayer & faith can lead to a life full of joy. The twinkle in his eyes reflected the love he had for his wife, Vilva, children & grandchildren. Arthur is preceded in death by his wife Vilva Brown Stovall of 74 years & Nancy Clayton Stovall of 3 years, his parents, his siblings, and a daughter, Jeanie. Surviving daughters, Terri (Glen) Bagby of Lexington, and Laurie (Al) Lichaa of Tucson, AZ. His grandchildren Randy (Meredith) Hooker, Jan (fiancé Billy Wedgworth) Hooker, Kelly (Heather) McGugan, Kevin (Leah) McGugan, Joe (Holly) Lichaa, Eric (Leigh) Lichaa, Jessica(Wayne Johnson) Lichaa, ten great-grandchildren, & one great-great grandchild. Visitation May 10, 2024 Friday 10:00 am at Clark Legacy Center Brannon Road with service at 11:00 am. A celebration of Art's life will be held at Wesley Village at a later time. Gifts in memory suggested to Wesley Village, Wilmore, KY. Burial in Bluegrass Memorial Gardens, Jessamine County, KY. clarklegacycenter.com

JOSEPH REY AU

Shelby Valley coach Jason Booher, left, gives state tournament MVP Elisha Justice a hug after the Wildcats defeated Ballard 73-61 at Rupp Arena in the 2010 finals.

FROM PAGE 1A

STORY

to find meaning from an event that led to such a senseless loss of life has galvanized Booher's path.

On Feb. 29, Booher, the Mercer County Schools superintendent, successfully ran the Tokyo Marathon.

By finishing the 26.2-mile race in Japan, Booher has completed all six of the world's major marathons — also including Berlin, Boston, Chicago, London and New York City.

"There were 27 (people) lost in the bus crash," Booher says. "When I realized a marathon is 26.2 miles, I thought, 'I can run a (race) segment for each (person lost) and turn that into something that, hopefully, inspires others and shares the message of the Carrollton bus crash.'"

A MARATHON MAN

Booher, 49, is familiar to basketball fans in Kentucky from his time as one of the commonwealth's most-accomplished high school coaches.

In 2010, he directed Shelby Valley, led by star guard Elisha Justice, to the state championship.

Three years later, Booher coached Holmes, with star guard James "Beetle" Bolden, to the state quarterfinals, where the Bulldogs fell in overtime to eventual state champion Madison Central.

Once Booher's career transitioned from coaching into school administration, he sought a new outlet for his competitiveness.

In his coaching days, Booher says he would run two to three miles just to stay in shape.

While in high school, Harrison Booher, Jason's son, became an accomplished cross country runner. Inspired by his son's distance running, Booher decided he wanted to try a marathon.

For his second completed marathon, in Erie, Pennsylvania, Booher ran a time of 3:35. "I've been running Boston (Marathon) qualifying times ever since," he says. "But it took me about five years to get there, where I could run fast for a long time."

Photo provided

The shirt containing the names of all 27 people who died in the Carrollton bus crash that Jason Booher wears to run in marathons.

To fit his training regimen into his work schedule, Booher rises to run while most are asleep. On Monday through Thursday, he gets up around 5 a.m. and runs eight to 10 miles daily.

He takes Fridays off, then on Saturdays he trains at distance, running between 13 and 20 miles.

Booher then takes Sundays off.

Having completed all six of the world's major marathons, Booher, a military child who was born in Germany, says his favorite was Berlin.

The most challenging was Boston. "It is by far the hardest because it is so hilly," Booher says.

CREATING POSITIVES AFTER TRAGEDY

The danger of drunk driving is the message Booher seeks to deliver through his marathon running.

When tested after the wreck, the driver of the pickup truck who initiated the Carrollton bus crash, Larry Mahoney, had a blood alcohol level of 0.24 percent, well above the 0.10 drunk driving threshold that then existed in Kentucky.

Subsequently, Mahoney was found guilty of 27 counts of manslaughter.

Booher says he is reminded daily of the deadly crash he survived when he sees school buses.

In the initial aftermath of the crash, Booher said he struggled because he could not see where the loss of so many lives had led to any positive change.

Now, when he sees school buses, the changes in safety requirements that the state of Kentucky mandated after Carrollton are apparent.

Among the many enhancements, there are now nine emergency exits — front and back doors; a side safety exit; four emergency windows; two roof exits — required on school buses in the commonwealth.

In another change, the blood alcohol level that constitutes drunk driving in Kentucky has been lowered. In 1988 was 0.10; it is now 0.08.

"And there are a couple of us survivors who go around (as public speakers) and spread the word about the consequences of drunk driving," Booher says. "So the education piece is a positive. That's three big positives that have come out of (the Carrolton bus crash) — I can say that now."

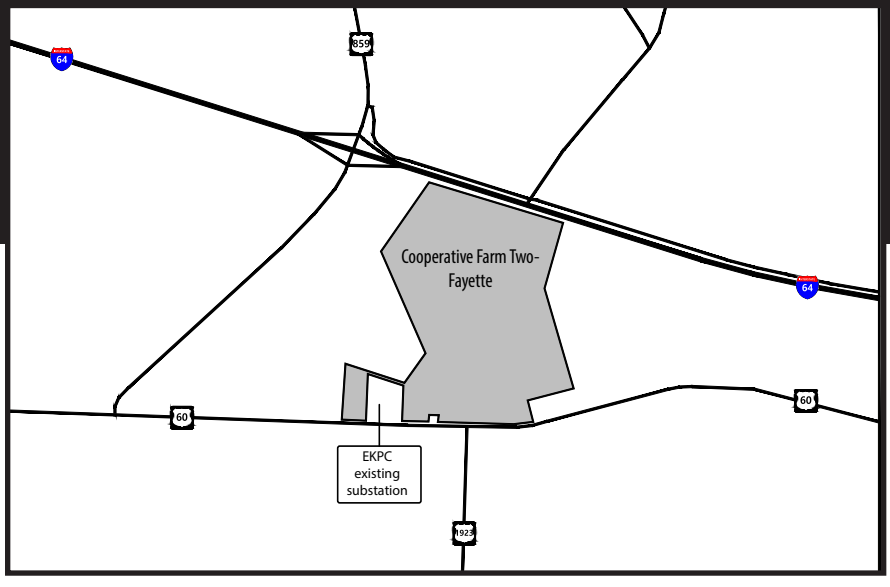
When he runs marathons, Booher dedicates each mile of the races to one of those who died in the Carrollton bus crash. He always runs the final segment of his races for Witt, his best friend from the first grade until the night of the crash.

Among those trapped in the aisle, Witt did not make it off the burning bus.

"When I look back now," Booher says, "I just try to look at all the positives, the good memories I had with all those friends I lost, especially Chad."

Mark Story: 859-444-4731, @markcstory

We want you involved . . .



to learn more about Cooperative Solar Farm Two – Fayette, a planned project to build a solar farm in eastern Fayette County, Ky. along Interstate 64. This 387-acre solar farm will generate 40 megawatts of electricity, enough to serve the annual electricity needs of 4,560 typical Kentucky homes.

A public open house meeting will be held Thursday, May 16, 2024, from 5:30 p.m. to 7:30 p.m. at the offices of East Kentucky Power Cooperative, 4775 Lexington Road, Winchester, Ky.

This project will help to diversify EKPC's fleet of electric-generating resources, providing a resource to meet growing demand for electricity, especially demand from industrial and commercial users seeking to lower their carbon footprint. This project will help EKPC comply with increasing government regulatory pressure to reduce the carbon intensity of its generation portfolio. This solar project will provide a cost-competitive resource to meet these goals.

For more information about this project, please visit EKPC's web site at www.ekpc.coop

EAST KENTUCKY POWER COOPERATIVE

A Touchstone Energy® Cooperative

EAST KENTUCKY POWER COOPERATIVE

April 26, 2024

Name
Address Line 1
Address Line 2

Dear NAME:

East Kentucky Power Cooperative (EKPC) plans to establish a 40-megawatt renewable-energy solar farm in eastern Fayette County, Ky. This solar farm will be located between U.S. 60 and Interstate 64 adjacent to EKPC's existing transmission substation, approximately 1.5 miles west of the Fayette/Clark County line.

You are being contacted because records on file with the local property valuation administrator's office indicate you own property in the vicinity of the planned solar farm. EKPC would like to share more information about its plans, and provide an opportunity for you to learn more and provide feedback.

Enclosed is a packet of information about the planned project. This information also is posted on EKPC's web site.

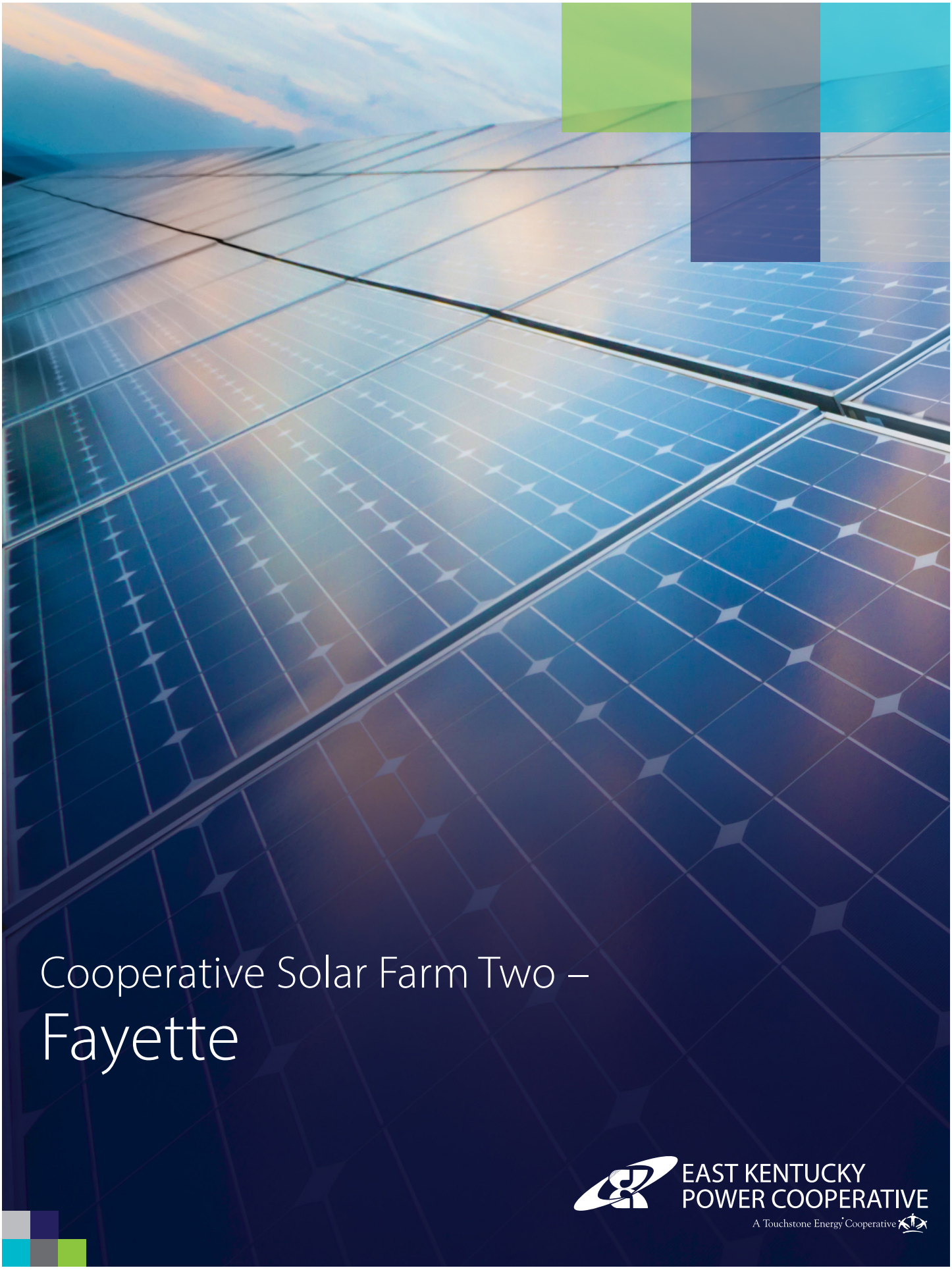
You are invited to an open house meeting on **Thursday, May 16, from 5:30 p.m. to 7:30 p.m., at EKPC's offices, located at 4775 Lexington Road, Winchester, KY**. The open house format is informal. You will be able to talk one-on-one with people from EKPC who are involved with the project. You can attend any time during the scheduled hours of the open house so we can hear from you.

We look forward to seeing you there.

Sincerely,
Nick Comer
External Affairs Manager

4775 Lexington Road 40391
P.O. Box 707, Winchester,
Kentucky 40392-0707

Tel. (859) 744-4812
Fax: (859) 744-6008
http://www.ekpc.com



Cooperative Solar Farm Two – Fayette

EAST KENTUCKY POWER COOPERATIVE

A Touchstone Energy® Cooperative

About Cooperative Solar Farm Two – Fayette

EKPC plans to develop a 387-acre solar farm in eastern Fayette County, Ky., along Interstate 64. This solar farm will generate 40 megawatts of electricity, enough to serve the annual electricity needs of 4,560 typical Kentucky homes.

Why does EKPC need to build this project?

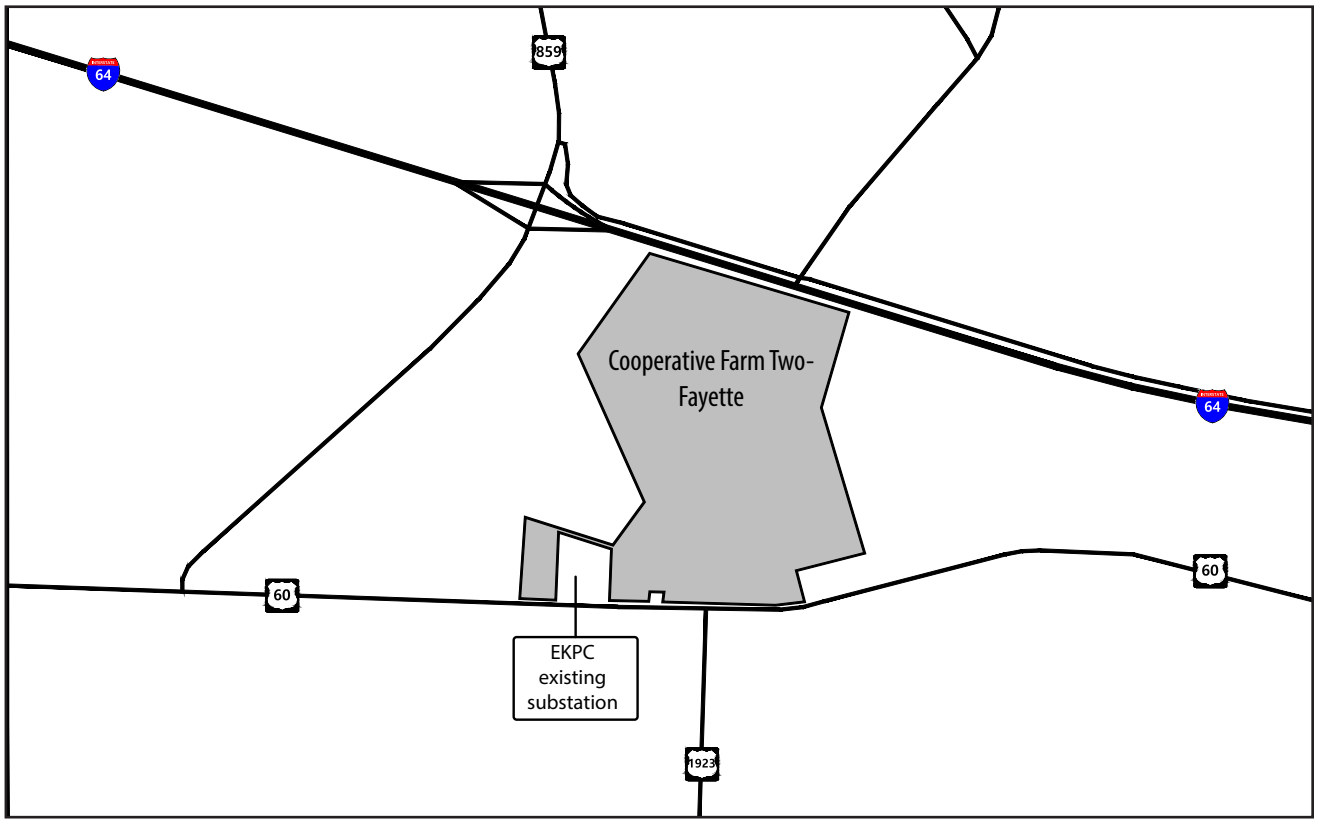
This project will help to diversify EKPC's fleet of electric-generating resources, providing a resource to meet growing demand for electricity, especially demand from industrial and commercial users seeking to lower their carbon footprint. This project will help EKPC comply with increasing government regulatory pressure to reduce the carbon intensity of its generation portfolio. This solar project will provide a cost-competitive resource to meet these goals.

What approvals must be secured for this project?

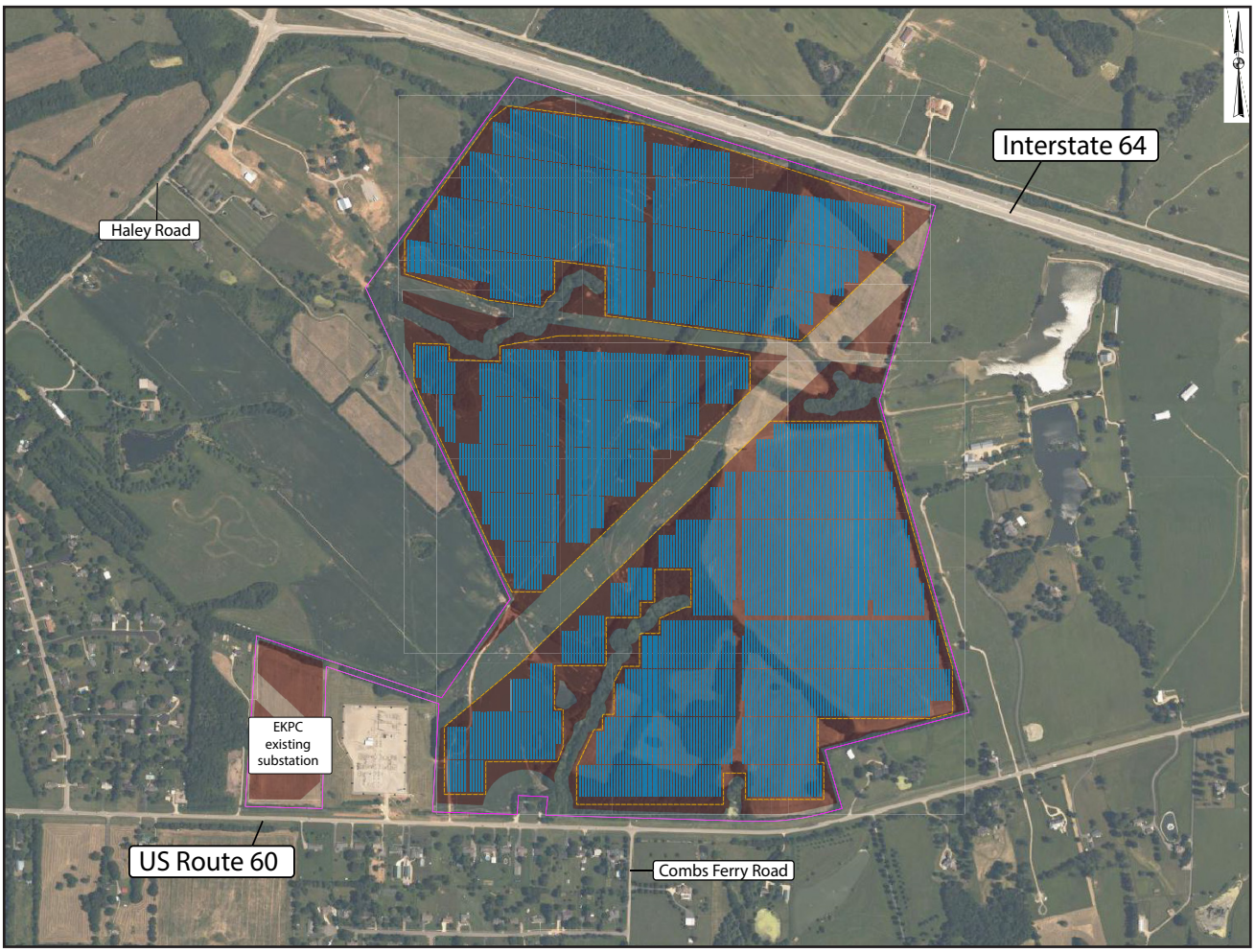
The Kentucky Public Service Commission must grant a Certificate of Public Convenience and Necessity (CPCN) for this project to be constructed. The Rural Utilities Service, an agency that administers the U.S. Department of Agriculture's Rural Development Programs (USDA Rural Development), must ensure that EKPC meets appropriate environmental obligations including compliance with the National Environmental Policy Act, the National Historic Preservation Act and the Endangered Species Act.

Location of Cooperative Solar Farm Two – Fayette

Cooperative Solar Farm Two – Fayette will be located on 387 acres of property in the eastern portion of Fayette County, located between Interstate 64 and U.S. 60, approximately 1.5 miles west of the Fayette/Clark county line.



Cooperative Solar Farm Two - Fayette



Cooperative Solar Farm Two - Fayette will feature photovoltaic (PV) solar panels mounted on single-axis tracking systems supported by steel posts. When operating, the solar panels will move to track the sun from east to west over the course of the day. The solar farm will have capacity to generate 40 megawatts of electricity at alternating current (AC). That is enough to serve the annual electricity needs of 4,560 typical Kentucky homes.

Project Schedule

Application filed with Kentucky PSC for Certificate of Public Convenience and Necessity	April 26, 2024
Informational public meeting	May 16, 2024
Begin construction	Fourth quarter 2025
Complete construction	First quarter 2027
Facility commissioned	June 2027

FAQs

Project background

Why is EKPC building a solar farm?
Deploying an increasingly diverse portfolio of generating resources is vital to maintaining reliable, cost-competitive and sustainable electric service for Kentucky's homes, businesses, factories and other energy users. In 2020, EKPC established a sustainability plan that included targets for reducing carbon dioxide emissions and increasing renewables. This sustainability plan recognizes increasing demand for renewable energy, especially among commercial and industrial electric users, and also increasing regulatory pressure for utilities to reduce emissions of carbon dioxide. In 2022, EKPC submitted an Integrated Resource Plan to the Kentucky Public Service Commission with plans for the cooperative to add about 1,000 megawatts of new solar energy resources over the coming decade.

Does EKPC plan to close any of its existing power plants as it adds new solar farms?
EKPC has no present plans to close existing power plants. EKPC has advocated for the United States to maintain reliable electric-generating resources that are available 24/7/365, regardless of weather conditions, while the nation transitions to lower carbon intensity.

Why is this solar farm in Fayette County?
This project resulted from a solicitation for proposals EKPC issued to obtain renewable sources of electric generation. This particular project met EKPC's need for a resource to provide cost-competitive renewable power. The location of Cooperative Solar Farm Two - Fayette provides flexibility to deliver solar energy across much of Kentucky without expensive investments in new transmission line facilities and equipment. Access to electric transmission lines to deliver the electricity to homes and businesses is a vital part of any power plant. The Cooperative Solar Farm Two - Fayette site adjoins a substation with access to several high-voltage transmission lines.

Is EKPC receiving government funds for this project?
As a not-for-profit electric cooperative, EKPC qualifies for low-interest financing from the U.S. Department of Agriculture for capital expenditures like this project. This solar farm project also qualifies for direct-payment federal investment tax credits. In addition, EKPC plans to submit an application for grant funding through the 2022 Inflation Reduction Act (IRA) passed by Congress. EKPC plans to proceed with this project regardless of the outcome of its request for IRA funding. All of these sources of funding help to reduce the cost of the project and keep electric rates competitive for electric cooperative members.

Solar farm operations

What type of solar panels will be used?
EKPC plans to use photovoltaic (PV) solar panels mounted on single-axis tracking systems supported by steel posts. When operating, the solar panels will move to track the sun from east to west over the course of the day.

How tall are the solar panels?
When mounted on racks and at maximum tilt, the top edge of the solar panels will be approximately 15 feet above the ground.

Will EKPC provide visual screening around the solar farm?
Much of the site is not visible from surrounding roads or residential properties due to existing vegetation. Existing tree lines along the site boundaries will remain; where tree screening is scant or composed of deciduous species, a 15-foot vegetative buffer will be installed to provide visual screening throughout the year.

What type of ground cover will be used?
EKPC plans to sow grasses around and between the solar panels. Occasional mowing is expected during warm weather months to maintain the height of the grass and to prevent trees and shrubs from growing near the panels.

Will there be a fence around the solar farm?
Yes, in order to maintain security and safety, EKPC plans to install a fence around the solar farm.

Will there be light from the solar farm?
EKPC does not anticipate installing security lighting. Anti-glare photovoltaic panels will be used to minimize glare impacts.

Will there be sound from the solar farm?
Once the solar farm is in operation, there will be minimal sound from the solar farm. Acoustic studies of solar farms indicate sound levels are consistent with agricultural and residential areas.

How will EKPC access the solar farm?
There will be a single entry point from U.S. 60. It will be located just east of EKPC's existing substation. The entry will be gated. Once the facility is built and operating, there will be very little traffic into and out of the solar farm site.

How long does EKPC expect to operate the solar farm?
EKPC expects to operate this solar farm for at least 25 years.

Construction

How much construction traffic will there be?
During a two- to three-month peak period of construction, EKPC anticipates approximately 75 workers will be on-site daily. During this period, it is estimated there will be an average of five deliveries to the site per day.

How many people will be employed during construction?
At peak construction, approximately 75 workers will be employed at the site.

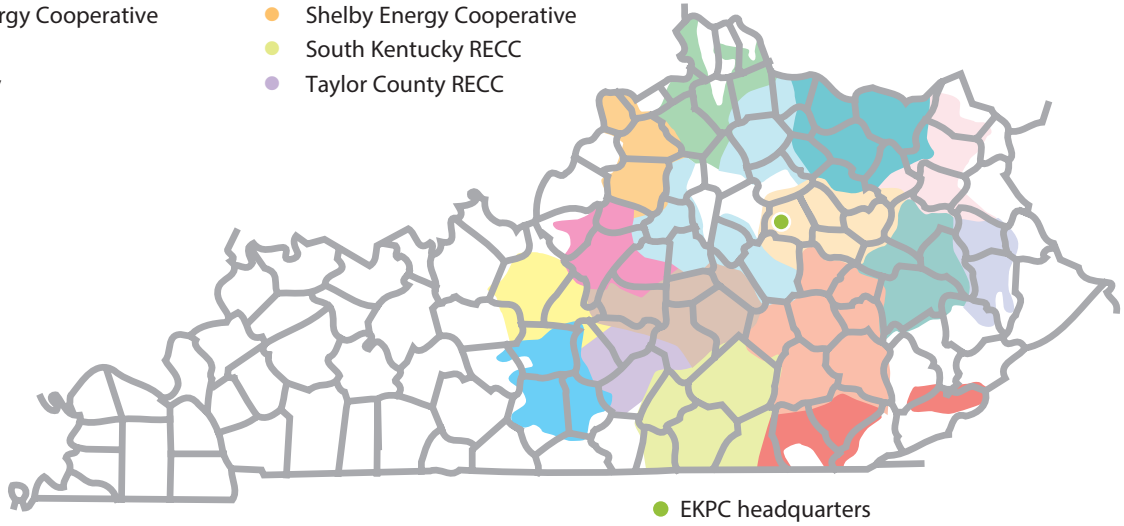
Will there be sound from construction solar farm?
During construction, metal posts will be placed in the ground; these racks of solar panels will be mounted on the posts. Placing the posts will generate sound as they are driven into the ground. Contractors will perform this task only during daylight hours, Monday through Friday.

About EKPC

EKPC is a not-for-profit generation and transmission utility with headquarters in Winchester. EKPC generates electric power and transports it to 16 locally-owned cooperatives that distribute it to homes, farms, businesses and industries in 89 Kentucky counties, serving 1.1 million people. Together, EKPC and its owner-member cooperatives are known as Kentucky's Touchstone Energy Cooperatives.

EKPC's 16 owner-member cooperatives include:

- Big Sandy RECC
- Blue Grass Energy Cooperative
- Clark Energy Cooperative
- Cumberland Valley Electric
- Farmers RECC
- Fleming-Mason Energy Cooperative
- Grayson RECC
- Inter-County Energy
- Jackson Energy Cooperative
- Licking Valley RECC
- Nolin RECC
- Owen Electric Cooperative
- Salt River Electric Cooperative
- Shelby Energy Cooperative
- South Kentucky RECC
- Taylor County RECC



Kentucky's Touchstone Energy® Cooperatives

EAST KENTUCKY POWER COOPERATIVE
A Touchstone Energy® Cooperative

4775 Lexington Road, 40391
P.O. Box 707,
Winchester, KY 40392-0707
Telephone: 859-744-4812
Fax: 859-744-6008
www.ekpc.coop

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EXHIBIT D – AGENCY COORESPONDENCE

Sarah Sams

From: Sarah Sams
Sent: Monday, May 6, 2024 1:11 PM
To: 'Brown, Perri - FPAC-NRCS, KY'
Cc: Josh Young; Chris Carpenter
Subject: Data Request - Bluegrass Plains Solar Generating Facility Project
Attachments: Bluegrass Plains Solar_Project Overview Map_050624.pdf; BluegrassPlains_AD1006.pdf; NRCS Shapefiles_050624.zip

Good afternoon Perri,

EKPC is proposing to construct the Bluegrass Plains Solar Generating Facility, a 40-megawatt alternating current (MW) photovoltaic (PV) electrical generating facility encompassing 403 acres in eastern Fayette County, Kentucky. The new facility would be sited to the north and east of the existing EKPC Avon 138/345 kV Transmission Substation, which is located at 5481 Winchester Road, Lexington, KY 40509. The proposed solar project will contribute significantly to EKPC's Sustainability Plan goals of CO2 reductions and commitment to adding new renewable energy sources to its generation portfolio. Based on the preliminary engineering design, the proposed 40 MW facility would require an approximately 317-acre Limits of Disturbance for installation of the solar equipment and ancillary facilities. This would include the up to 15-foot tall PV solar tracking panels, associated ground-mounted racking structure, access roads, inverters, medium voltage transformers, buried electrical collection cabling, a step-up transformer, a short span of transmission line from the collector system to the existing substation, security fencing, laydown areas, and an operations and maintenance building.

The proposed project would primarily involve the installation of PV solar panels with an aboveground height of no more than 15-feet, and all electrical collection cabling between the panel locations would be buried. The short transmission line span from the solar collection system and proposed substation work to tie into the existing Avon substation would be of comparable size/dimensions and located adjacent to the existing substation and multiple EKPC and Kentucky Utilities transmission lines that converge in the southwestern most portion of the APE. Vegetation clearing necessary for construction of proposed solar panels would be minimized and all remaining vegetation will be retained to serve as a visual buffer to the surrounding areas. In addition, vegetation screening would be added to mitigate project visibility to adjacent properties and roadways.

I have included an AD-1006 form for the site land conversion. The Total Acres In Site is 403 acres and the Total Acres to be Converted Directly is 317 acres. The 86-acre difference is not listed as indirect conversion because those areas are either avoidance areas (wetlands, archaeology sites) or previously converted land (substation, transmission line). Please let me know if there are any questions or issues with this or the form.

Additionally, EKPC would like to know if the project would impact any hydric soils or areas designated as floodplain. Attached are project maps showing the location of the project and a shape file of the proposed solar generating facility area of potential effect.

If you need any additional information or with to discuss this project further, please contact me or Josh Young (859-745-9799, josh.young@ekpc.coop).

Best,

Sarah Sams (she/her)
Environmental Scientist
East Kentucky Power Cooperative

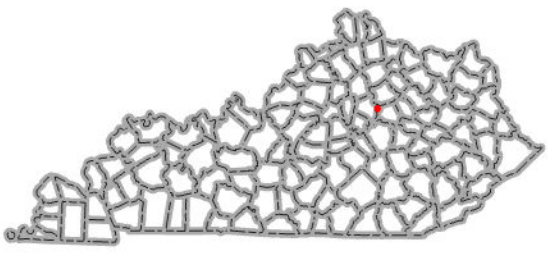
Bluegrass Plains Solar Generating Facility

Project Overview Map

Limits of Disturbance
Study Area
EKPC Transmission Lines
Existing Substation

N

0 0.05 0.1 0.2 Miles



USDA United States Department of Agriculture

Farm Production and Conservation

Natural Resources Conservation Service

Owensboro Service Center
3100 Alvey Park Drive W
Owensboro, KY 42303

May 7, 2024

Sarah Sams
East KY Power Cooperative
4775 Lexington Road
Winchester, KY 40391

RE: Bluegrass Plains Solar Generating Facility Project

Dear Sarah:

Enclosed is the Farmland Protection Policy Act (FPPA) site assessment for the proposed project in Fayette County, Kentucky. The Natural Resources Conservation Service (NRCS) is mandated to provide information on the soils and/or impact to farmland according to the Farmland Protection Policy Act (P.L. 97-98) for projects that will be utilizing federal monies. Based on the information contained in your request, it was determined that the proposed project has the potential to impact *Prime* and/or *Statewide Important Farmland*.

The proposed project site has a relative LESA value of **91**, as based on a scale of 0 to 100 points *(see AD-1006)*. The percentage of farmland in Fayette County having the same or higher value is 38.51%. The percentage of Fayette County farmland to be converted as a result of the proposed action is 0.20%.

Lastly, the proposed project contains 2.7 acres of the HYDRIC soil: Ne—Newark silt loam. Further information on this can be found within the enclosed Fayette County Hydric Soils List from the Fayette County, Kentucky Soil Survey.

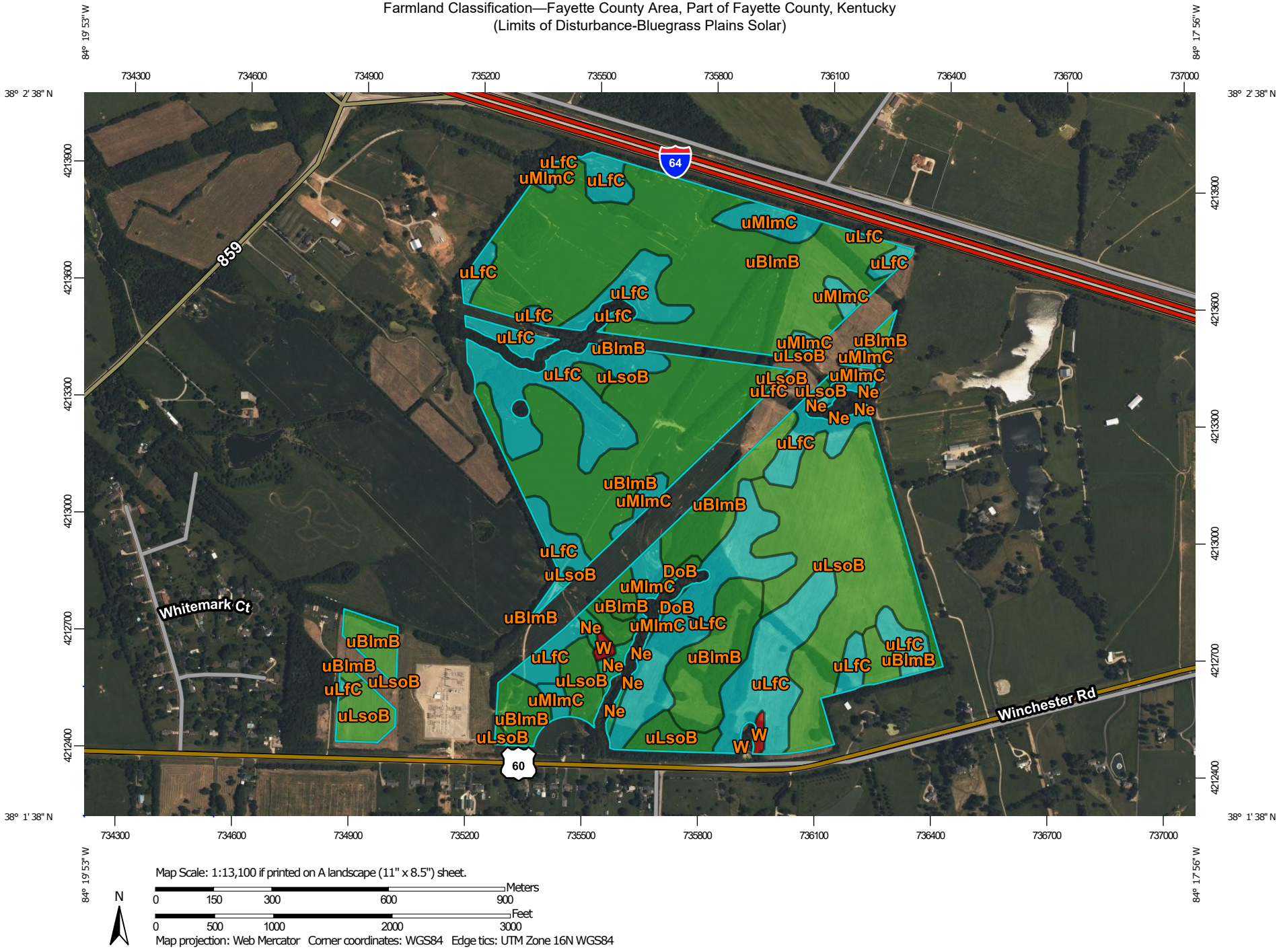
If I may be of additional assistance, please do not hesitate to contact me.

Sincerely,

Perri P. Brown

Perri P. Brown
Resource Soil Scientist
Perri.Brown@usda.gov

Farmland Classification—Fayette County Area, Part of Fayette County, Kentucky
(Limits of Disturbance-Bluegrass Plains Solar)



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
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- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Soil Rating Points

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
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- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated

- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
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- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Fayette County Area, Part of Fayette County, Kentucky
Survey Area Data: Version 20, Sep 10, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 27, 2019—Sep 22, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
DoB	Donerail silt loam, 2 to 6 percent slopes	All areas are prime farmland	0.9	0.3%
Ne	Newark silt loam, 0 to 2 percent slopes, occasionally flooded	Prime farmland if drained	2.7	0.9%
uBlmB	Bluegrass-Maury silt loams, 2 to 6 percent slopes	All areas are prime farmland	151.5	47.8%
uLfC	Lowell-Faywood silt loams, 6 to 12 percent slopes	Farmland of statewide importance	84.9	26.8%
uLsoB	Lowell-Sandview silt loams, 2 to 6 percent slopes	All areas are prime farmland	61.7	19.5%
uMlmC	Maury-Bluegrass silt loams, 6 to 12 percent slopes	Farmland of statewide importance	14.0	4.4%
W	Water	Not prime farmland	1.3	0.4%
Totals for Area of Interest			**316.9**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request 5/6/24	
Name of Project Bluegrass Plains Solar Project		Federal Agency Involved Rural Utilities Service	
Proposed Land Use Solar Facility		County and State Fayette County, KY	
PART II *(To be completed by NRCS)*		Date Request Received By NRCS 5/6/2024	Person Completing Form: Perri Brown
Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☑ NO ☐	Acres Irrigated	Average Farm Size 184 ac.
Major Crop(s) Corn	Farmable Land In Govt. Jurisdiction Acres: 92.40 % 165,664 ac.	Amount of Farmland As Defined in FPPA Acres: 88.55 % 158,760 ac.	
Name of Land Evaluation System Used Fayette County LESA	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS 5/7/2024	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	317			
B. Total Acres To Be Converted Indirectly	0			
C. Total Acres In Site	403			
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	216.80			
B. Total Acres Statewide Important or Local Important Farmland	98.90			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.20			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	38.51			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	91			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	14			
2. Perimeter In Non-urban Use	(10)	9			
3. Percent Of Site Being Farmed	(20)	18			
4. Protection Provided By State and Local Government	(20)	0			
5. Distance From Urban Built-up Area	(15)	15			
6. Distance To Urban Support Services	(15)	0			
7. Size Of Present Farm Unit Compared To Average	(10)	10			
8. Creation Of Non-farmable Farmland	(10)	9			
9. Availability Of Farm Support Services	(5)	5			
10. On-Farm Investments	(20)	0			
11. Effects Of Conversion On Farm Support Services	(10)	0			
12. Compatibility With Existing Agricultural Use	(10)	0			
TOTAL SITE ASSESSMENT POINTS	160	80	0	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	91	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	80	0	0	0
TOTAL POINTS ***(Total of above 2 lines)***	260	171	0	0	0

Site Selected: Bluegrass Plains	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☑

Reason For Selection:

Bluegrass Plains in Fayette County, KY was identified for development into a solar facility. Chosen for its location adjacent to existing electrical infrastructure, generation of renewable energy, near an urban area, and outside of PDR Protected Farms etc. conserved lands in Lexington-Fayette County, KY.

Name of Federal agency representative completing this form: EKPC on behalf of RUS	Date: 5/8/24

(See Instructions on reverse side)

Form AD-1006 (03-02)

Hydric Soils

Fayette County Area, Part of Fayette County, Kentucky

[This report lists only those map unit components that are rated as hydric. Dashes (---) in any column indicate that the data were not included in the database. Definitions of hydric criteria codes are included at the end of the report]

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
Du:					
Dunning silty clay loam, 0 to 2 percent slopes, occasionally flooded	Dunning, occasionally flooded	90	Flood plains	Yes	2
	Melvin, occasionally flooded	5	Flood plains	Yes	2
HcA:					
Huntington silty clay loam, 0 to 4 percent slopes, clayey substratum, occasionally flooded	Dunning, occasionally flooded	1	Flood plains	Yes	2
HsA:					
Huntington silt loam, 0 to 2 percent slopes, clayey substratum, occasionally flooded	Dunning, occasionally flooded	1	Flood plains	Yes	2
Lc:					
Lawrence silt loam, 0 to 2 percent slopes, rarely flooded	Robertsville, rarely flooded	4	Stream terraces	Yes	2
Ld:					
Lindside silt loam, 0 to 2 percent slopes, occasionally flooded	Melvin, occasionally flooded	2	Flood plains	Yes	2
LpB:					
Loudon silt loam, phosphatic, 2 to 6 percent slopes (lawrence)	Melvin, occasionally flooded	1	Drainageways	Yes	2
Mt:					
Melvin silt loam, 0 to 2 percent slopes, occasionally flooded	Melvin, occasionally flooded	90	Flood plains	Yes	2
	Dunning, occasionally flooded	1	Flood plains	Yes	2
Ne:					
Newark silt loam, 0 to 2 percent slopes, occasionally flooded	Melvin, ocassionally flooded	2	Flood plains	Yes	2

Josh Young

From: Mullins, Ellen <Ellen.Mullins@stantec.com>
Sent: Monday, March 4, 2024 8:52 AM
To: celrl.door.to.the.corps@usace.army.mil
Cc: Kelley, Shane; Josh Young; Baldridge, David E CIV USARMY CELRL (USA)
Subject: Jurisdictional Determination Request Submittal - Bluegrass Plains Solar, Fayette County, KY
Attachments: Eng_Form_6247_2023Nov17_BluegrassPrairie_signed_02142024.pdf; EKPC_Bluegrass_Plains_Delineation_20231219.zip

Good afternoon,

Stantec is submitting the attached Jurisdictional Request on behalf East Kentucky Power Cooperative. This AJD Package includes: 1) ENG-6247 form, 2) wetland delineation report, and 3) packaged shapefiles of Bluegrass Plains' site boundary and delineated waters.

The wetland delineation report was too large for email so is linked here: rpt_Bluegrass_Plains_EKPC_Delineation_Report_Final_20240117.pdf
If you cannot access the download via link above, please indicate what email address I should add to the link's member access, or alternately please send DoDSAFE link to me at ellen.mullins@stantec.com if you'd prefer me to upload there.

Please contact me if you have any questions or need any additional information to process this request.
Thank You,

Ellen Mullins
Environmental Project Manager

Phone: (859) 948-5664
Ellen.Mullins@stantec.com

Stantec
3052 Beaumont Centre Circle
Lexington KY 40513-1703

Chris Carpenter

From: Josh Young
Sent: Wednesday, October 25, 2023 10:30 AM
To: 'khc.section106@ky.gov'
Cc: Chris Carpenter; 'Gunn, Christopher - RD, KY'
Subject: Bluegrass Plains Solar Generating Facility, Fayette County, Kentucky
Attachments: Bluegrass Plains Solar - Cultural Resources APE Maps 10-25-23.pdf

To whom it may concern,

East Kentucky Power Cooperative, Inc. (EKPC) plans to request financing assistance from the USDA Rural Utilities Service (RUS) to construct the proposed Bluegrass Plains Solar Generating Facility project in eastern Fayette County, Kentucky. If RUS elects to fund this project, it would be considered an undertaking subject to Section 106 of the National Historic Preservation Act, 16 U.S.C. § 470f, and its implementing regulations, "Protection of Historic Properties" (36 CFR Part 800). As a part of this process, we would like to coordinate development of the cultural historic and archaeological area of potential effects (APE). Attached are maps depicting the location of the proposed project and APE.

Project Description
EKPC is proposing to construct a 40-megawatt (MW) photovoltaic (PV) electrical generating facility, encompassing 403 acres in eastern Fayette County, Kentucky. The new facility would be sited to the north and east of the existing EKPC Avon 138/345 kV Transmission Substation, which is located at 5481 Winchester Road, Lexington, KY 40509. EKPC is currently finalizing the design/layout for the solar array but has identified the 403-acre limits of disturbance where activities associated with final panel installation, ancillary equipment, transmission interconnection, and equipment staging areas would occur. This would include the up to 15-foot tall PV solar panels, associated ground-mounted racking structure, access roads, inverters, medium voltage transformers, buried electrical collection cabling, a step-up transformer, a short span of transmission line from the collector system to the existing substation, security fencing, laydown areas, and an operations and maintenance building.

EKPC makes the following recommendations regarding the cultural resource APEs for the project:

Cultural Historic APE
The proposed project would primarily involve the installation of PV solar panels with an aboveground height of no more than 15-feet, and all electrical collection cabling between the panel locations would be buried. The short transmission line span from the solar collection system and proposed substation work to tie into the existing Avon substation would be of comparable size/dimensions and located adjacent to the existing substation and multiple EKPC and Kentucky Utilities transmission lines that converge in the southwestern most portion of the APE. Vegetation clearing necessary for construction of proposed solar panels would be minimized and all remaining vegetation will be retained to serve as a visual buffer to the surrounding areas. In addition, vegetation screening would be added to mitigate project visibility to adjacent properties and roadways. Taking into consideration the scale and nature of the proposed project, existing electrical infrastructure currently present, vegetative buffers that will be retained, and vegetation screening that would be planted, EKPC believes there is minimal potential for the project to effect aboveground cultural resources. Therefore, EKPC is proposing to investigate the area within a 0.25 mile buffer of the proposed project area for this Cultural Historic Survey. In addition, resources located in close proximity to the perimeter of the APE will also be evaluated for potential effects. EKPC believes this APE is appropriate to evaluate the potential effect on cultural historic resources from the proposed project. Furthermore, viewshed modeling to refine the visual impact part of the APE may be utilized in the event it could be beneficial in assessing potential affects to any identified historic resources. The proposed undertaking would be presented in the full Cultural Historic format, with survey forms provided for all resources within the APE.

Archaeological APE
For archaeological resources, EKPC is proposing to conduct a Phase I archaeological investigation within the identified 403-acre Archaeology Survey Area that encompasses all areas where potential project ground disturbances may occur. EKPC believes this APE is appropriate to evaluate the potential effect on archaeological resources from the proposed project. Deep testing will be conducted within any alluvial soils encountered within the project area per KHC Specifications for Fieldwork.

We would appreciate your feedback on these APEs as soon as possible and will coordinate field work with our consultant accordingly.

Please let us know if there are questions or any additional information required.

Sincerely,

Josh Young
East Kentucky Power Cooperative, Inc.
Natural Resources and Environmental Communications
4775 Lexington Road
Winchester, KY 40391
Office: (859) 745-9799
Cell: (859) 749-0553
josh.young@ekpc.coop

the Reason I Go Home Tonight

EKPC SAFETY IS RIGHT.

Bluegrass Plains Solar Project

Cultural Resources APE Overview Map

Cultural Resources APE

Archaeology Survey Area

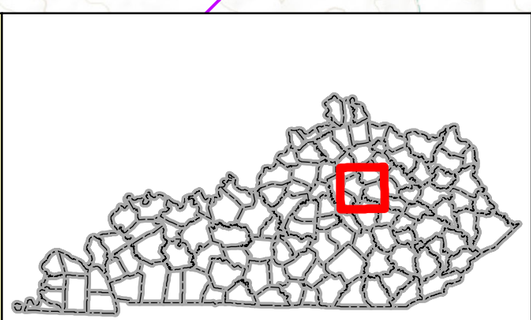
Existing EKPC Transmission Lines

Existing KU Transmission LInes

Existing EKPC Substation

N

0 0.25 0.5 1 Miles



Avon Substation

Wyandotte

Columbus

Uttingertown

Chilesburg

Old Pine Grove

Rockwell Rd

Winchester Rd

Hedger Ln

Haley Rd

Clintonville Rd

Wayland Dr

Riviera Ct

Riviera Rd

Constitution Dr

Mt Vernon Dr

Laura Dr

Robyn Dr

Verna Dr

Lofgren Ct

CLARK

FAYETTE

Venable Rd

David Fork

N Cleveland Rd

Maria Dr

Kingfisher Ln

Eastpoint Dr

La Sorrente Dr

1032 ft

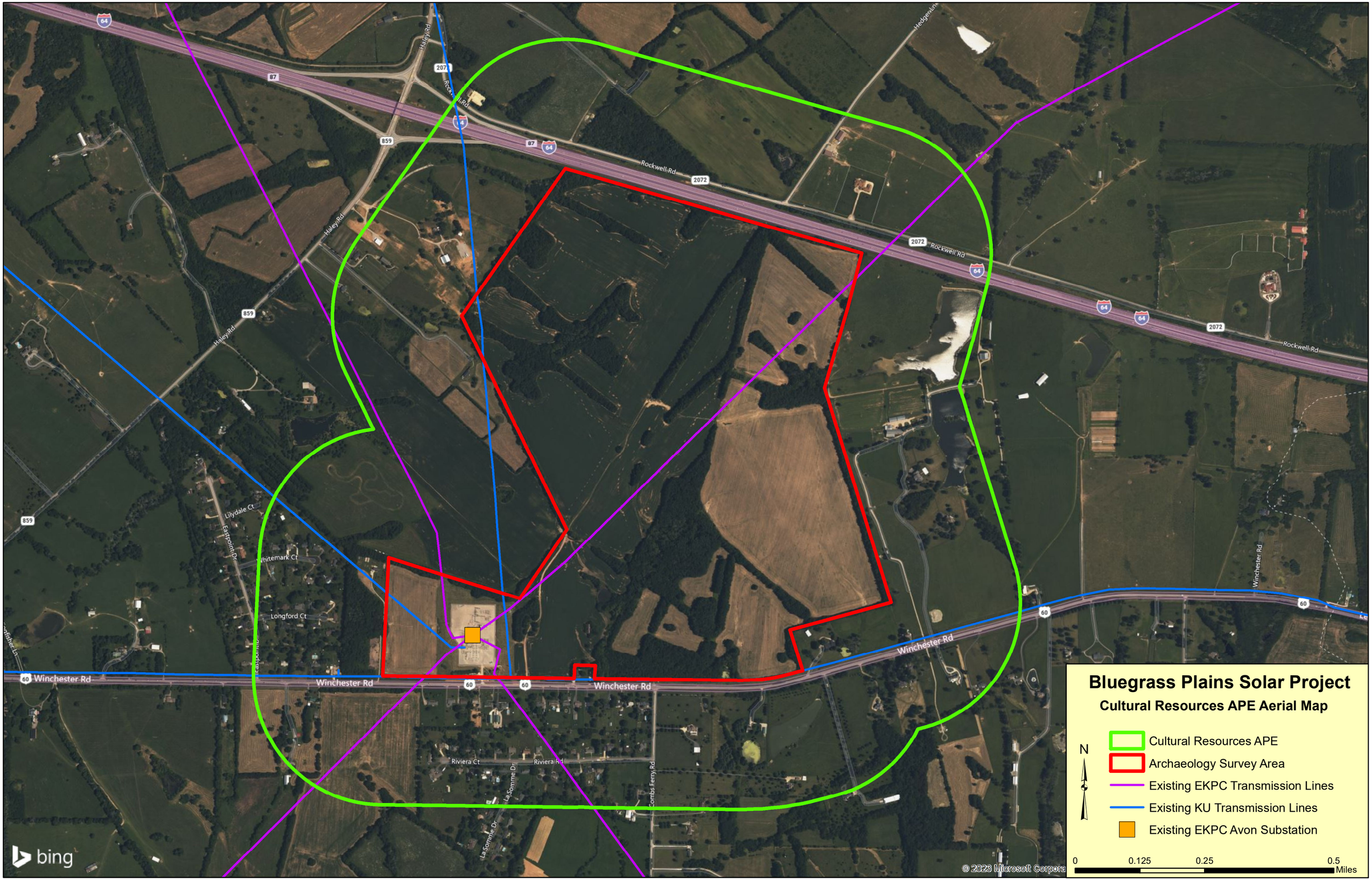
1049 ft

1040 ft

1041 ft

1042 ft

1000 ft


Haley Rd
Rockwell Rd
Hedgerun
87
64
859
2072
Rockwell Rd
Haley Rd
859
64
64
2072
Rockwell Rd
Lilydale Ct
Eastpointe Dr
Whitemark Ct
Longford Ct
Winchester Rd
60
Winchester Rd
60
60
Winchester Rd
Winchester Rd
60
Riviera Ct
Riviera Rd
La Somme Dr
Combs Ferry Rd
La Somme Dr
Winchester Rd
bing
© 2023 Microsoft Corpora
Bluegrass Plains Solar Project
Cultural Resources APE Aerial Map
N
Cultural Resources APE
Archaeology Survey Area
Existing EKPC Transmission Lines
Existing KU Transmission Lines
Existing EKPC Avon Substation
0
0.125
0.25
0.5
Miles

Josh Young

From: Hutchins, Patricia (Heritage Council) <patricia.hutchins@ky.gov>
Sent: Thursday, November 30, 2023 12:19 PM
To: Josh Young
Subject: Bluegrass Plains Solar Generating Facility, Fayette County

Good afternoon,

Apologies for the delay on this one.
We concur with the APE and level of effort for both above-ground and below-ground resources for this project, KHC 233385.

Thank you,
Patti

Patricia E. Hutchins
Archaeology Review Coordinator
Kentucky Heritage Council
410 High Street
Frankfort, Kentucky 40601
Email: patricia.hutchins@ky.gov

TEAM KENTUCKY

Important Note about Section 106 Submissions:
In order for your Section 106 submission to be accepted, distributed, and reviewed all documents must be sent via email to our dedicated address: khc.section106@ky.gov.

For additional information on how and what to submit for Section 106 review, please visit our webpage: https://heritage.ky.gov/compliance/Pages/overview.aspx

Stantec Consulting Services Inc.
9200 Shelbyville Road Suite 800
Louisville KY 40222-5136

Stantec

July 11, 2024

IPaC Project Code: 2024-0029791

Seth Bishop
U.S. Fish and Wildlife Service
USFWS Consultation Biologist
Seth_Bishop@fws.gov

Dear Seth Bishop,

Reference: Bluegrass Plains Solar Project – Request for Section 7(a)(2) Concurrence
Project Code: 2024-0029791

East Kentucky Power Cooperative (EKPC) is proposing to construct the Bluegrass Plains Solar Generating Facility, a 40-megawatt alternating current (MW) photovoltaic (PV) electrical generating facility encompassing 403 acres in eastern Fayette County, Kentucky. The new facility would be sited to the north and east of the existing EKPC Avon 138/345 kV Transmission Substation, which is located at 5481 Winchester Road, Lexington, KY 40509 (38.030093, -84.320932). The proposed solar project will contribute significantly to EKPC's Sustainability Plan goals of CO2 reductions and commitment to adding new renewable energy sources to its generation portfolio. Based on the preliminary engineering design, the proposed 40 MW facility would require an approximately 317-acre Limits of Disturbance for installation of the solar equipment and ancillary facilities. This would include the up to 15-foot-tall PV solar tracking panels, associated ground-mounted racking structure, access roads, inverters, medium voltage transformers, buried electrical collection cabling, a step-up transformer, a short span of transmission line from the collector system to the existing substation, security fencing, laydown areas, and an operations and maintenance building.

The proposed project would primarily involve the installation of PV solar panels with an aboveground height of no more than 15-feet, and all electrical collection cabling between the panel locations would be buried. The short transmission line span from the solar collection system and proposed substation work to tie into the existing Avon substation would be of comparable size/dimensions and located adjacent to the existing substation and multiple EKPC and Kentucky Utilities transmission lines that converge in the southwestern most portion of the APE. Vegetation clearing necessary for construction of proposed solar panels would be minimized and all remaining vegetation will be retained to serve as a visual buffer to the surrounding areas. In addition, vegetation screening would be added to mitigate project visibility to adjacent properties and roadways.

EKPC plans to request financing and seek environmental approval from the U.S. Department of Agriculture (USDA), Rural Utilities Service (RUS) for construction of the proposed solar facility. Because EKPC plans to apply for project financing assistance from RUS, the proposal constitutes a Federal action subject to review in accordance with Rural Development's (RD) Environmental Policy and Procedures for

implementing the National Environmental Policy Act (7 CFR Part 1970). On behalf of RUS, EKPC/Stantec have conducted a biological assessment and respectfully submits this Request for Informal Consultation to the U.S. Fish and Wildlife Service, Kentucky Field Office (USFWS KFO) in accordance with Section 7 of the Endangered Species Act (16 U.S.C. 1531 et seq.).

An official IPaC species list indicated the potential for three (3) endangered bat species, one (1) proposed endangered bat species, two (2) endangered mollusk species, two (2) threatened mollusk species, one (1) proposed endangered mollusk species, one (1) candidate insect species, and one (1) endangered plant species (**Attachment A**). EKPC contracted Stantec to conduct a Phase 1 Habitat Assessment survey within the Project for all listed species. Additionally, Stantec conducted a Phase 2 presence/probable absence mist net survey during the summer of 2024 to determine if federally listed bat species are present or likely absent from the Project area. Stantec is requesting concurrence on its findings on behalf of EKPC for determinations on each listed species with potential to occur within the Project.

The habitat assessment determined that potential roosting habitat for the Indiana bat (*Myotis sodalis*), northern long-eared bat (*Myotis septentrionalis*), and tricolored bat (*Perimyotis subflavus*) was present within the Project. Development of the Project site will include 66 acres of tree clearing within suitable summer bat habitat. The forested area contains deciduous forest and mixed forest, including trees with exfoliating bark (e.g., shagbark hickory [*Carya ovata*]) and snags with solar exposure, which could serve as suitable maternity roost trees for Indiana and northern long-eared bats. Numerous live trees that could be suitable roosting habitat for the tricolored bat were also observed. In addition to forested habitats, other vegetative communities may provide foraging opportunities for bats, including shrub-scrub and herbaceous areas; forested wetlands; open water; and the edges of hay/pasture fields. No caves were observed in the Project area and a search of the Kentucky Speleological Survey database indicated the closest known cave is approximately 40 miles south of the Project area. An old barn was present onsite; however, no sign of bat usage was observed during the surveys.

During the mist net survey, 10 net nights of effort were conducted and no Indiana, northern long-eared, tricolored, or gray bats were captured. Stantec recommends a determination of “May Affect, Not Likely to Adversely Affect” for Indiana, northern long-eared, and gray bat.

The tricolored bat was proposed for federal listing as endangered on September 13, 2022, with this listing expected to be finalized by the end of 2024. Construction of the proposed Project is not anticipated to start within this timeframe; therefore, Project impacts to suitable tricolored bat habitat are likely to occur after the formal listing of this species as endangered. Due to the lack of caves, rock shelters, or abandoned underground mines that could provide suitable winter roosting habitat for the tricolored bat, as well as the likely absence of the species indicated by summer mist-netting efforts, Stantec, on behalf of EKPC, requests an Informal Conference on the tricolored bat with a recommended “Not Likely to Jeopardize the Continued Existence” finding for the Project. Once listed, Stantec and/or EKPC will plan to follow up with the Kentucky Field Office to request a conversion to Informal Consultation for this species.

Reference: Bluegrass Plains Solar Project – Request for Section 7(a)(2) Concurrence - Project Code: 2024-0029791

The IPaC also identified the potential presence of the following mollusk species: clubshell (*Pleurobema clava*, Endangered), fanshell (*Cyprogenia stegaria*, Endangered), longsolid (*Fusconaia subrotunda*, Threatened), rabbitsfoot (*Quadrula cylindrica cylindrica*, Threatened), and salamander mussel (*Simpsonaias ambigua*, Proposed Endangered).

In addition to the habitat assessment, Stantec conducted a formal waters delineation for the Project and found seven wetlands, seventeen streams, and five open water features. One named stream, Fowler Creek, was identified. It was approximately 10 feet wide with an intermittent flow and is not likely to provide suitable habitat for the listed mollusk species. Stantec also determined that the other water features within the Project were not likely to provide habitat for listed mollusk species. At this time, no waterbody impacts are anticipated for the Project.

Although no direct effects to mollusk habitat are anticipated, suitable habitat is ultimately located downstream of the project area. To avoid and minimize potential indirect impacts to mollusk habitat associated with water quality degradation from the project, EKPC will prepare, implement, and maintain a Storm Water Pollution Prevention Plan (SWPPP) that outlines how and where Best Management Practices (BMPs) will be used to prevent or reduce the discharge of pollutants into Waters of the Commonwealth. The plan describes the site management practices that will be utilized in order to effectively minimize such discharges for storm events up to and including a two-year, 24-hour event.

Due to the lack of potential habitat, no proposed impacts to waterbodies for the Project, and implementation of the Project SWPPP, Stantec recommends a determination of “May Affect, Not Likely to Adversely Affect” for the clubshell, fanshell, longsolid, and rabbitsfoot mussel. Stantec, on behalf of EKPC, also requests an Informal Conference on the salamander mussel with a recommended “Not Likely to Jeopardize the Continued Existence” finding for the Project.

One endangered plant species was identified in the IPaC, Short’s bladderpod (*Physaria globosa*). This species is typically found on river bluffs, talus slopes, and shale at cliff bases, often along major waterways. It can also be found along artificial surfaces such as roadcuts. The Project is relatively flat with undulating hills. No river bluffs, talus slopes, shale, or road cuts were present within the Project to provide suitable habitat for the species. As such, Stantec recommends a determination of “May Affect, Not Likely to Adversely Affect” for this species.

Reference: **Bluegrass Plains Solar Project – Request for Section 7(a)(2) Concurrence - Project Code: 2024-0029791**

Stantec generated Indiana bat (**Attachment B**), northern long-eared bat (**Attachment C),** and Kentucky (**Attachment D**) determination key consistency letters and respectfully requests concurrence on the above-described determinations with the USFWS Kentucky Field Office on behalf of EKPC for the Bluegrass Plains Solar Project.

Sincerely,

STANTEC CONSULTING SERVICES INC.

Shane Kelley TN-QHP
Natural Resource Team Lead, Associate
9200 Shelbyville Road Suite 800
Louisville KY 40222-5136
Mobile: (502) 269-8994
shane.kelley@stantec.com

Attachment A: USFWS Official IPaC
Attachment B: USFWS Indiana Bat Determination Key Consistency Letter
Attachment C: USFWS Northern Long-eared Bat Determination Key Consistency Letter
Attachment D: USFWS Kentucky Determination Key Consistency Letter

Stantec Consulting Services Inc.
9200 Shelbyville Road Suite 800
Louisville KY 40222-5136

Stantec

Attachment A

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Kentucky Ecological Services Field Office
J C Watts Federal Building, Room 265
330 West Broadway
Frankfort, KY 40601-8670
Phone: (502) 695-0467 Fax: (502) 695-1024
Email Address: kentuckyes@fws.gov

In Reply Refer To: 07/10/2024 18:20:27 UTC
Project Code: 2024-0029791
Project Name: Bluegrass Plains

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the

human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do..

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of

this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

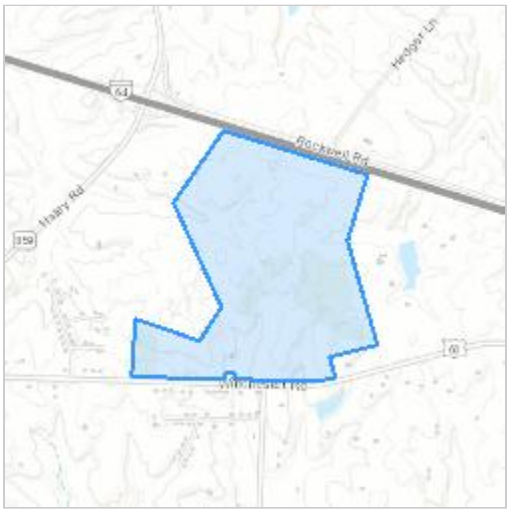
This species list is provided by:

Kentucky Ecological Services Field Office
J C Watts Federal Building, Room 265
330 West Broadway
Frankfort, KY 40601-8670
(502) 695-0467

PROJECT SUMMARY

Project Code: 2024-0029791
Project Name: Bluegrass Plains
Project Type: Power Gen - Solar
Project Description: Utility scale solar
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.0349302,-84.31322572730085,14z



Counties: Fayette County, Kentucky

ENDANGERED SPECIES ACT SPECIES

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 5 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME STATUS

Gray Bat *Myotis grisescens* Endangered

No critical habitat has been designated for this species.
This species only needs to be considered under the following conditions:
- The project area includes potential gray bat habitat.

Species profile: https://ecos.fws.gov/ecp/species/6329
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/ALSVSMZZYNDGBOTPWA6QMQCGRA/documents/generated/6422.pdf

Indiana Bat *Myotis sodalis* Endangered

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
This species only needs to be considered under the following conditions:
- The project area includes 'potential' habitat. All activities in this location should consider possible effects to this species.

Species profile: https://ecos.fws.gov/ecp/species/5949
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/ALSVSMZZYNDGBOTPWA6QMQCGRA/documents/generated/6422.pdf

Northern Long-eared Bat *Myotis septentrionalis* Endangered

No critical habitat has been designated for this species.
This species only needs to be considered under the following conditions:
- This species only needs to be considered if the project includes wind turbine operations.

Species profile: https://ecos.fws.gov/ecp/species/9045
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/ALSVSMZZYNDGBOTPWA6QMQCGRA/documents/generated/6422.pdf

CLAMS

NAME STATUS

Clubshell *Pleurobema clava* Endangered

Population: Wherever found; Except where listed as Experimental Populations
No critical habitat has been designated for this species.
This species only needs to be considered under the following conditions:
- The species may be affected by projects that significantly impact the Kentucky River mainstem and/or any of its following tributaries: Dix River, Eagle Creek, Elkhorn Creek, North Fork Elkhorn Creek, and South Fork Kentucky River.

Species profile: https://ecos.fws.gov/ecp/species/3789
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/ALSVSMZZYNDGBOTPWA6QMQCGRA/documents/generated/5639.pdf

Fanshell *Cyprogenia stegaria* Endangered

No critical habitat has been designated for this species.
This species only needs to be considered under the following conditions:

NAME STATUS

- The species may be affected by projects that significantly impact the Kentucky River mainstem and/or any of its following tributaries: Dix River, Eagle Creek, Elkhorn Creek, North Fork Elkhorn Creek, and South Fork Kentucky River.

Species profile: https://ecos.fws.gov/ecp/species/4822
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/ALSVSMZZYNDGBOTPWA6QMQCGRA/documents/generated/5639.pdf

Longsolid *Fusconaia subrotunda* — Threatened
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/9880

Salamander Mussel *Simpsonaias ambigua* — Proposed Endangered
There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/6208

INSECTS

NAME STATUS

Monarch Butterfly *Danaus plexippus* — Candidate
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

FLOWERING PLANTS

NAME STATUS

Short's Bladderpod *Physaria globosa* — Endangered
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/7206

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Stantec
Name: Kristen Clemens
Address: 3052 Beaumont Centre Circle
City: Lexington
State: KY
Zip: 40513
Email kristen.clemens@stantec.com
Phone: 8598065332

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Department of Agriculture

Stantec Consulting Services Inc.
9200 Shelbyville Road Suite 800
Louisville KY 40222-5136

Stantec

Attachment B

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Kentucky Ecological Services Field Office
J C Watts Federal Building, Room 265
330 West Broadway
Frankfort, KY 40601-8670
Phone: (502) 695-0467 Fax: (502) 695-1024
Email Address: kentuckyes@fws.gov

In Reply Refer To: 07/10/2024 17:59:52 UTC
Project code: 2024-0029791
Project Name: Bluegrass Plains

Subject: Consistency letter for the project named 'Bluegrass Plains' for the endangered Indiana bat and its critical habitat in the proposed project location, pursuant to the Indiana Bat Determination Key (DKey)

Dear Kristen Clemens:

The U.S. Fish and Wildlife Service (Service) received on **July 10, 2024** your effect determination(s) for the 'Bluegrass Plains' using the Indiana Bat DKey within the Information for Planning and Consultation (IPaC) system. The Service developed this system in accordance with the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

You have agreed to the following conservation measures:

- Wait for the Field Office to review and approve the Indiana bat survey proposal before proceeding with the survey.

Based on your answers and the assistance of the Service's Indiana Bat DKey, you made the following effect determination(s) for the proposed Action:

Species	Listing Status	Determination
Indiana Bat (*Myotis sodalis*)	Endangered	May affect

Consultation Status

May Affect Determinations: Species with May Affect determinations are those for which the DKey was unable to provide a conclusion or those for which you were either unsure about the determination or you chose to make a "may affect" determination. If the DKey was unable to provide a conclusion, this does not necessarily mean that the project is likely to adversely affect the species. If you think the project may affect the species or want additional technical assistance, please follow the instructions in the "Additional Coordination" section below. If a federal action agency chooses to make a "no effect" determination for the species, there is no

statutory requirement to request concurrence with that determination; however, the federal action agency should document the supporting information for this determination in their files. This documentation would typically demonstrate a lack of suitable habitat within the action area, show that no impacts to suitable habitat would occur, or provide information that the species is not reasonably certain to occur in the action area even though suitable habitat is present.

In addition to the Indiana bat, the following species and/or critical habitats may also occur in your project area and **are not** covered by this conclusion:

- Clubshell *Pleurobema clava* Endangered
- Fanshell *Cyprogenia stegaria* Endangered
- Gray Bat *Myotis grisescens* Endangered
- Longsolid *Fusconaia subrotunda* Threatened
- Monarch Butterfly *Danaus plexippus* Candidate
- Northern Long-eared Bat *Myotis septentrionalis* Endangered
- Salamander Mussel *Simpsonaias ambigua* Proposed Endangered
- Short's Bladderpod *Physaria globosa* Endangered

To address effects to other federally listed or proposed species and/or their designated critical habitat, you can request project-specific review by following the instructions in the “Next Steps” section of your species list letter, or you may use another determination key, if available.

Additional Coordination

To request additional technical assistance or consultation, please contact the Kentucky Ecological Services Field Office . When you contact the office, please provide all relevant site-specific information regarding the proposed Action. The Kentucky Ecological Services Field Office will respond within 30 to 60 days of your submittal.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

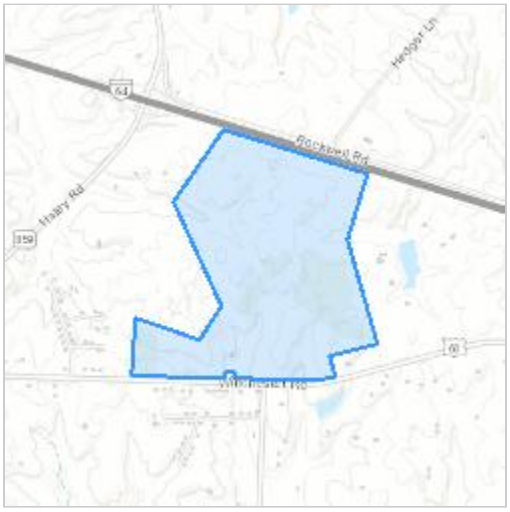
Bluegrass Plains

2. Description

The following description was provided for the project 'Bluegrass Plains':

> Utility scale solar

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.0349302,-84.31322572730085,14z



QUALIFICATION INTERVIEW

1. Will the proposed action involve Federal funding, permitting, or authorization, or will it be carried out by a Federal Agency?

   Yes

2. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) the lead Federal Agency for this action.

   No

3. Are you the lead Federal Action Agency or designated non-federal representative requesting concurrence on behalf of the lead Federal Action Agency?

   Yes

4. [Semantic] Is the Action Area within 1/2-mile of a known Indiana bat hibernaculum?

   Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact the Field Office listed in the letterhead of this letter.

   Automatically answered
   No

5. Will the proposed Action involve construction or operation of wind turbines?

   No

6. Will the proposed Action involve blasting, other than a fireworks display?

   No

7. Will the proposed Action involve a new point source discharge from a facility other than a water treatment plant or storm water system?

   No

8. Will the proposed Action involve the creation of a new water-borne contaminant source (e.g., leachate pond, pits containing chemicals that are not NSF/ANSI 60 compliant)?

   Note: For information regarding NSF/ANSI 60 please visit https://www.nsf.org/knowledge-library/nsf-ansi-standard-60-drinking-water-treatment-chemicals-health-effects

   No

9. Will the proposed Action include the removal, replacement, repair and/or maintenance of an existing bridge?

   No

10. Will the proposed Action involve perennial stream loss that would require an individual permit under 404 of the Clean Water Act?

    No

11. Will the proposed Action involve discharge of sediment into a stream?

    No

12. Does the Action Area contain any caves (including their associated sinkholes, fissures, or other karst features), rockshelters, underground quarries, or abandoned mine portals (including associated underground workings)?

    No

13. Will the proposed project result in the removal of trees?

    Yes

14. Did a **FWS-approved** habitat model applicable to the project site determine the project site to be of low probability for use by Indiana bats?

    Note: This question will most commonly be answered "no." If the answer to this question is "yes", you will be required to upload your **Habitat Model Report**

    No

15. Will the proposed project result in the removal of potentially suitable summer habitat for the Indiana bat? Suitable summer habitat for Indiana bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel. This includes forests and woodlots, linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree (live tree and/or snag ≥5 inches diameter at breast height (dbh) (12.7 centimeter) that has exfoliating bark, cracks, crevices, and/or hollows) and are located within 1,000 feet (305 meters) of other forested/wooded habitat. See the Indiana Bat Summer Survey Guidelines for addition description (https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines).

    Note: If "no" upload a document with photos representative of the forested habitat to be removed.

    Yes

16. Will the proposed Action remove any suitable (primary or alternate) Indiana bat roost trees? *Suitable Indiana bat roost trees are live trees and/or snags ≥5 inches diameter at breast height (dbh) (12.7 centimeter) that have exfoliating bark, cracks, crevices, and/or hollows.*

    Note: If "no" upload a document with photos representative of the forested habitat to be removed.

    Yes

17. Will the proposed Action remove any suitable primary roost trees?

    Suitable Indiana bat primary maternity roost tree refers to a dead tree or snag that is nine inches or greater in diameter at breast height and has loose or exfoliating bark, cracks, crevices, and/or hollows. A live tree may also qualify if it contains hollows or dead portions with loose or exfoliating bark, cracks, and/or crevices.

    Note: If "no" upload a document with photos representative of the forested habitat to be removed.

    Yes

18. If appropriate, would you like to conduct a voluntary emergence survey to determine if bats are using all of the suitable roost trees proposed for removal? *Emergence surveys require a surveyor to observe each suitable roost tree for the presence of bats. Surveys should follow the protocol in Appendix E in the USFWS' current Indiana Bat Summer Survey Guidelines at https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.*

    No

19. Would you like to conduct a voluntary summer survey presence/absence survey (netting or acoustic) of the project area?

    Note: If "yes" upload a survey proposal for the Field Office to review. Surveys should be conducted in accordance with the USFWS' current Indiana Bat Summer Survey Guidelines, found at https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines

    Yes

    SUBMITTED DOCUMENTS

    - *Bluegrass_Plains_USFWS_Bat_Survey_Study_Plan_Form_KFO approved.pdf https://ipac.ecosphere.fws.gov/project/ALSVSMZZYNDGBOTPWA6QMQCGRA/projectDocuments/146080270*

20. Do you agree to wait for the Field Office to review and approve your survey proposal before proceeding?

    Yes

IPAC USER CONTACT INFORMATION

Agency: Stantec
Name: Kristen Clemens
Address: 3052 Beaumont Centre Circle
City: Lexington
State: KY
Zip: 40513
Email kristen.clemens@stantec.com
Phone: 8598065332

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Department of Agriculture

Stantec Consulting Services Inc.
9200 Shelbyville Road Suite 800
Louisville KY 40222-5136

Stantec

Attachment C

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Kentucky Ecological Services Field Office
J C Watts Federal Building, Room 265
330 West Broadway
Frankfort, KY 40601-8670
Phone: (502) 695-0467 Fax: (502) 695-1024
Email Address: kentuckyes@fws.gov

In Reply Refer To: 07/10/2024 18:14:45 UTC
Project code: 2024-0029791
Project Name: Bluegrass Plains

Federal Nexus: yes
Federal Action Agency (if applicable): Department of Agriculture

Subject: Technical assistance for 'Bluegrass Plains'

Dear Kristen Clemens:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on July 10, 2024, for 'Bluegrass Plains' (here forward, Project). This project has been assigned Project Code 2024-0029791 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements are not complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis, your project is not reasonably certain to cause incidental take of the northern long-eared bat. Unless the Service advises you within 15

days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Clubshell *Pleurobema clava* Endangered
- Fanshell *Cyprogenia stegaria* Endangered
- Gray Bat *Myotis grisescens* Endangered
- Indiana Bat *Myotis sodalis* Endangered
- Longsolid *Fusconaia subrotunda* Threatened
- Monarch Butterfly *Danaus plexippus* Candidate
- Salamander Mussel *Simpsonaias ambigua* Proposed Endangered
- Short's Bladderpod *Physaria globosa* Endangered

You may coordinate with our Office to determine whether the Action may cause prohibited take of the animal species listed above. Note that if a new species is listed that may be affected by the identified action before it is complete, additional review is recommended to ensure compliance with the Endangered Species Act.

Next Step

Consultation with the Service is necessary. The project has a federal nexus (e.g., Federal funds, permit, etc.), but you are not the federal action agency or its designated (in writing) non-federal representative. Therefore, the ESA consultation status is incomplete and no project activities should occur until consultation between the Service and the Federal action agency (or designated non-federal representative), is completed.

As the federal agency or designated non-federal representative deems appropriate, they should submit their determination of effects to the Service by doing the following.

1. Log into IPaC using an agency email account and click on My Projects, click "Search by record locator" to find this Project using **292-146083128**. (Alternatively, the originator of the project in IPaC can add the agency representative to the project by using the Add Member button on the project home page.)
2. Review the answers to the Northern Long-eared Bat Range-wide Determination Key to ensure that they are accurate.
3. Click on Review/Finalize to convert the ‘not likely to adversely affect’ consistency letter to a concurrence letter. Download the concurrence letter for your files if needed.

If no changes occur with the Project or there are no updates on listed species, no further consultation/coordination for this project is required for the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope,

timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place before project implements any changes which are final or commits additional resources.

If you have any questions regarding this letter or need further assistance, please contact the Kentucky Ecological Services Field Office and reference Project Code 2024-0029791 associated with this Project.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

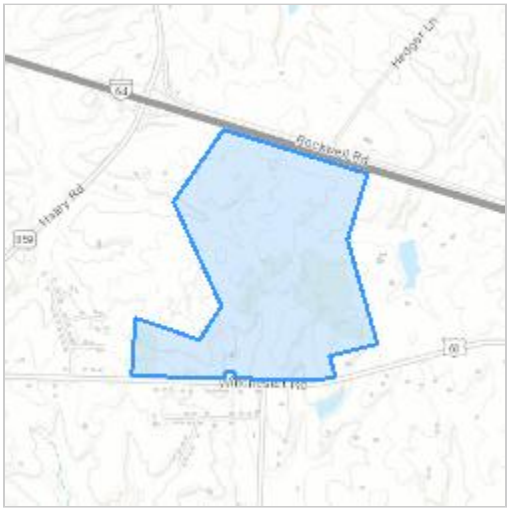
Bluegrass Plains

2. Description

The following description was provided for the project 'Bluegrass Plains':

> Utility scale solar

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.0349302,-84.31322572730085,14z



DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of "may affect, but not likely to adversely affect" for the Endangered northern long-eared bat (*Myotis septentrionalis*).

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. The action area does not overlap with an area for which U.S. Fish and Wildlife Service currently has data to support the presumption that the northern long-eared bat is present. Are you aware of other data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

   Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed NLEB acoustic detections. Data on captures, roost tree use, and acoustic detections should post-date the year when white-nose syndrome was detected in the relevant state. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

   No

3. Does any component of the action involve construction or operation of wind turbines?

   Note: For federal actions, answer 'yes' if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

   No

4. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   Yes

5. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

   No

6. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

   Note: This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

   No

7. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

   No

8. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)?

   No

9. Have you determined that your proposed action will have no effect on the northern long-eared bat? Remember to consider the effects of any activities that would not occur but for the proposed action.

   If you think that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, answer “No” below and continue through the key. If you have determined that the northern long-eared bat does not occur in your project’s action area and/or that your project will have no effects whatsoever on the species despite the potential for it to occur in the action area, you may make a “no effect” determination for the northern long-eared bat.

   Note: Federal agencies (or their designated non-federal representatives) must consult with USFWS on federal agency actions that may affect listed species [50 CFR 402.14(a)]. Consultation is not required for actions that will not affect listed species or critical habitat. Therefore, this determination key will not provide a consistency or verification letter for actions that will not affect listed species. If you believe that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, please answer “No” and continue through the key. Remember that this key addresses only effects to the northern long-eared bat. Consultation with USFWS would be required if your action may affect another listed species or critical habitat. The definition of Effects of the Action can be found here: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

   No

10. [Semantic] Is the action area located within 0.5 miles of a known northern long-eared bat hibernaculum?

    Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

    Automatically answered
    No

11. Does the action area contain any caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating northern long-eared bats?

    No

12. Is suitable summer habitat for the northern long-eared bat present within 1000 feet of project activities?
    (If unsure, answer "Yes.")

    Note: If there are trees within the action area that are of a sufficient size to be potential roosts for bats (i.e., live trees and/or snags ≥3 inches (12.7 centimeter) dbh), answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat can be found at: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

    Yes

13. Will the action cause effects to a bridge?

    No

14. Will the action result in effects to a culvert or tunnel?

    No

15. Does the action include the intentional exclusion of northern long-eared bats from a building or structure?

    Note: Exclusion is conducted to deny bats' entry or reentry into a building. To be effective and to avoid harming bats, it should be done according to established standards. If your action includes bat exclusion and you are unsure whether northern long-eared bats are present, answer "Yes." Answer "No" if there are no signs of bat use in the building/structure. If unsure, contact your local U.S. Fish and Wildlife Services Ecological Services Field Office to help assess whether northern long-eared bats may be present. Contact a Nuisance Wildlife Control Operator (NWCO) for help in how to exclude bats from a structure safely without causing harm to the bats (to find a NWCO certified in bat standards, search the Internet using the search term "National Wildlife Control Operators Association bats"). Also see the White-Nose Syndrome Response Team's guide for bat control in structures

    No

16. Does the action involve removal, modification, or maintenance of a human-made structure (barn, house, or other building) **known or suspected to contain roosting bats?**

    No

17. Will the action directly or indirectly cause construction of one or more new roads that are open to the public?

    Note: The answer may be yes when a publicly accessible road either (1) is constructed as part of the proposed action or (2) would not occur but for the proposed action (i.e., the road construction is facilitated by the proposed action but is not an explicit component of the project).

    No

18. Will the action include or cause any construction or other activity that is reasonably certain to increase average daily traffic on one or more existing roads?

    Note: For federal actions, answer ‘yes’ when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.). .

    No

19. Will the action include or cause any construction or other activity that is reasonably certain to increase the number of travel lanes on an existing thoroughfare?

    For federal actions, answer ‘yes’ when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    No

20. Will the proposed action involve the creation of a new water-borne contaminant source (e.g., leachate pond pits containing chemicals that are not NSF/ANSI 60 compliant)?

    No

21. Will the proposed action involve the creation of a new point source discharge from a facility other than a water treatment plant or storm water system?

    No

22. Will the proposed action involve blasting?

    No

23. Will the action involve military training (e.g., smoke operations, obscurant operations, exploding munitions, artillery fire, range use, helicopter or fixed wing aircraft use)?

    No

24. Will the proposed action involve the use of herbicide or other pesticides (e.g., fungicides, insecticides, or rodenticides)?

    No

25. Will the action include or cause activities that are reasonably certain to cause chronic nighttime noise in suitable summer habitat for the northern long-eared bat? Chronic noise is noise that is continuous or occurs repeatedly again and again for a long time.

    Note: Additional information defining suitable summer habitat for the northern long-eared bat can be found at: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

    No

26. Does the action include, or is it reasonably certain to cause, the use of artificial lighting within 1000 feet of suitable northern long-eared bat roosting habitat?

    Note: Additional information defining suitable roosting habitat for the northern long-eared bat can be found at: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

    No

27. Will the action include tree cutting or other means of knocking down or bringing down trees, tree topping, or tree trimming?

    Yes

28. Has a presence/probable absence summer bat survey targeting the northern long-eared bat following the Service's Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines been conducted within the project area? If unsure, answer "No."

    Yes

29. Was the survey conducted within the last 5 years?

    Yes

30. Did you coordinate with your Ecological Services Field Office (ESFO) in advance of your survey effort and receive authorization for the study proposal and approval of the results? If NO, please contact the appropriate local ESFO before completing this determination key - you may change your answer to 'yes' only after coordinating with the ESFO and uploading both survey results and field office authorization of the survey design.

    Yes

    SUBMITTED DOCUMENTS

    - *USFWS_report_approval_20240709.pdf https://ipac.ecosphere.fws.gov/project/ALSVSMZZYNDGBOTPWA6QMQCGRA/projectDocuments/146083118*
    - *rpt_BluegrassPlains_Mist_Net_Survey_20240628.pdf https://ipac.ecosphere.fws.gov/project/ALSVSMZZYNDGBOTPWA6QMQCGRA/projectDocuments/146082994*

31. Did survey results demonstrate the probable absence of northern long-eared bats?

    Yes

PROJECT QUESTIONNAIRE

Will all project activities by completed by November 30, 2024?

No

Enter the extent of the action area (in acres) from which trees will be removed - round up to the nearest tenth of an acre. For this question, include the entire area where tree removal will take place, even if some live or dead trees will be left standing.

66

Will all potential northern long-eared bat (NLEB) roost trees (trees ≥3 inches diameter at breast height, dbh) be cut, knocked, or brought down from any portion of the action area greater than or equal to 0.1 acre? If all NLEB roost trees will be removed from multiple areas, select ‘Yes’ if the cumulative extent of those areas meets or exceeds 0.1 acre.

Yes

Enter the extent of the action area (in acres) from which all potential NLEB roost trees will be removed. If all NLEB roost trees will be removed from multiple areas, entire the total extent of those areas. Round up to the nearest tenth of an acre.

66

For the area from which all potential northern long-eared bat (NLEB) roost trees will be removed, on how many acres (round to the nearest tenth of an acre) will trees be allowed to regrow? Enter ‘0’ if the entire area from which all potential NLEB roost trees are removed will be developed or otherwise converted to non-forest for the foreseeable future.

0

Will any snags (standing dead trees) ≥3 inches dbh be left standing in the area(s) in which all northern long-eared bat roost trees will be cut, knocked down, or otherwise brought down?

No

IPAC USER CONTACT INFORMATION

Agency: Stantec
Name: Kristen Clemens
Address: 3052 Beaumont Centre Circle
City: Lexington
State: KY
Zip: 40513
Email kristen.clemens@stantec.com
Phone: 8598065332

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Department of Agriculture

Stantec Consulting Services Inc.
9200 Shelbyville Road Suite 800
Louisville KY 40222-5136

Stantec

Attachment D

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Kentucky Ecological Services Field Office
J C Watts Federal Building, Room 265
330 West Broadway
Frankfort, KY 40601-8670
Phone: (502) 695-0467 Fax: (502) 695-1024
Email Address: kentuckyes@fws.gov

In Reply Refer To: 07/10/2024 18:03:26 UTC
Project code: 2024-0029791
Project Name: Bluegrass Plains

Subject: Consistency letter for the project named 'Bluegrass Plains' for specified threatened and endangered species that may occur in your proposed project location consistent with the Kentucky Determination Key (DKey)

Dear Kristen Clemens:

The U.S. Fish and Wildlife Service (Service) received on **July 10, 2024** your effect determination(s) for the 'Bluegrass Plains' (Action) using the Kentucky (DKey) within the Information for Planning and Consultation (IPaC) system. The Service developed this system in accordance with the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based on your answers and the assistance of the Service's Kentucky DKey, you made the following effect determination(s) for the proposed Action:

Species	Listing Status	Determination
Clubshell (*Pleurobema clava*)	Endangered	May affect
Fanshell (*Cyprogenia stegaria*)	Endangered	May affect
Gray Bat (*Myotis grisescens*)	Endangered	NLAA
Longsolid (*Fusconaia subrotunda*)	Threatened	May affect
Short's Bladderpod (*Physaria globosa*)	Endangered	NLAA

Consultation Status

May Affect Determinations: Species with May Affect determinations are those for which the DKey was unable to provide a conclusion or those for which you were either unsure about the determination or you chose to make a "may affect" determination. If the DKey was unable to provide a conclusion, this does not necessarily mean that the project is likely to adversely affect the species. If you think the project may affect the species or want additional technical assistance, please follow the instructions in the "Additional Coordination" section below. If a federal action agency chooses to make a "no effect" determination for the species, there is no

statutory requirement to request concurrence with that determination; however, the federal action agency should document the supporting information for this determination in their files. This documentation would typically demonstrate a lack of suitable habitat within the action area, show that no impacts to suitable habitat would occur, or provide information that the species is not reasonably certain to occur in the action area even though suitable habitat is present.

The Service recommends that your agency contact the Kentucky Ecological Services Field Office or re-evaluate the Action in IPaC if: 1) the scope, timing, duration, or location of the Action changes, 2) new information reveals the Action may affect listed species or designated critical habitat, or 3) a new species is listed or critical habitat designated. If any of the above conditions occurs, additional consultation with the Kentucky Ecological Services Field Office should take place before project changes are final or resources committed.

The following species and/or critical habitats may also occur in your project area and **are not** covered by this conclusion:

- Indiana Bat *Myotis sodalis* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate
- Northern Long-eared Bat *Myotis septentrionalis* Endangered
- Salamander Mussel *Simpsonaias ambigua* Proposed Endangered

To address effects to other federally listed or proposed species and/or their designated critical habitat, you can request project-specific review by following the instructions in the “Next Steps” section of your species list letter, or you may use another determination key, if available.

Additional Coordination

To request additional technical assistance or consultation, please contact the Kentucky Ecological Services Field Office . When you contact the office, please provide all relevant site-specific information regarding the proposed Action. The Kentucky Ecological Services Field Office will respond within 30 to 60 days of your submittal.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

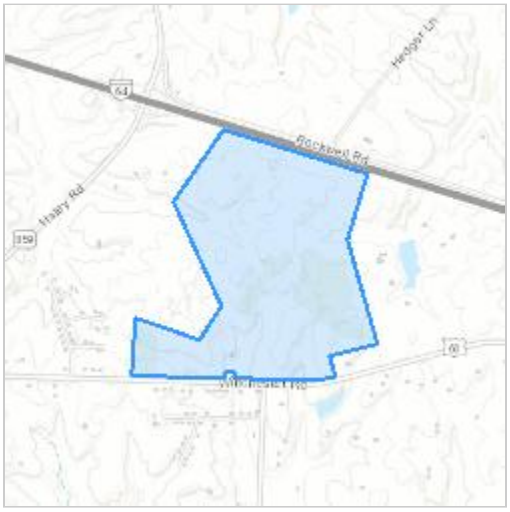
Bluegrass Plains

2. Description

The following description was provided for the project 'Bluegrass Plains':

> Utility scale solar

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.0349302,-84.31322572730085,14z



QUALIFICATION INTERVIEW

1. Will the proposed Action involve Federal funding, permitting, or authorization, or will it be carried out by a Federal Agency?

   Yes

2. Are you the lead Federal Action Agency or designated non-federal representative requesting concurrence on behalf of the lead Federal Action Agency?

   Yes

3. [Hidden Semantic] Does the action area intersect critical habitat?

   Automatically answered
   No

4. Will the proposed Action involve construction or operation of wind turbines?

   No

5. Will the proposed Action involve blasting (other than a fireworks display)?

   No

6. Will the proposed Action involve a new point source discharge from a facility other than a water treatment plant or storm water system?

   No

7. Will the proposed Action involve the creation of a new water-borne contaminant source (e.g. leachate pond, pits containing chemicals that are not NSF/ANSI 60 compliant)?

   No

8. Will the proposed Action include the removal, replacement, repair and/or maintenance of an existing bridge or culvert?

   No

9. Will the proposed Action involve perennial stream loss that would require an individual permit under 404 of the Clean Water Act?

   No

10. Will the proposed Action involve discharge of sediment into a stream?

    No

11. Does the Action Area contain any caves (including their associated sinkholes, fissures, or other karst features), rockshelters, underground quarries, or abandoned mine portals (including associated underground workings)?

    No

12. [Hidden Semantic] Does the Action Area intersect the Kentucky AOI of the gray bat?

    Automatically answered
    Yes

13. Will the proposed Action involve drilling or boring?

    No

14. Based on the responses you have provided, we believe that the proposed Action is consistent with the type of Actions programmatically evaluated by the Service's Kentucky Field Office under the standing analyses that support this determination key. These Actions typically conclude with "no effect" or "may affect - not likely to adversely affect" determinations for the gray bat.

    What is your effect determination for the **gray bat**?

    Note:*IPaC will not provide a concurrence for "no effect" determinations, because there is no statutory requirement to request concurrence from the Service. IPaC will provide concurrence for "May affect – not likely to adversely affect" determinations. If you choose "May affect – likely to adversely affect" or "Unsure," additional coordination with the Service is recommended.*

    2. "May affect - not likely to adversely affect"

15. Will the proposed Action involve a new point source discharge into a stream or change an existing point source discharge (e.g., outfalls; leachate ponds)?

    No

16. Will the proposed Action include any activities that would alter stream flow, such as hydropower energy production, impoundments, intake structures, diversion structures, and/or turbines?

    No

17. Will the proposed Action involve dredging or in-stream gravel mining?

    No

18. Will the proposed Action involve resource extraction (e.g., mining, oil/gas, logging), including exploration activities?

    No

19. Will the proposed Action involve stream impacts (perennial or intermittent) that would require an individual permit under 404 of the Clean Water Act?

    No

20. Will the proposed Action involve activities that would contribute measureable nonpoint source pollution to streams (e.g., sediment, nutrients, etc.)? *See the following EPA webpage for more examples of nonpoint source pollution and activities that can produce it: https://www.epa.gov/nps/basic-information-about-nonpoint-source-nps-pollution*

    No

21. [Hidden Semantic] Does the action area include the 1/2-mile buffer of a stream or river in which any species covered under this key occurs or may occur?

    Automatically answered

    No

22. Will the proposed Action disturb the channel or bank of a perennial or intermittent stream?

    No

23. Will the proposed Action disturb the channel or bank of an ephemeral stream?

    No

24. Will the proposed Action involve vegetation removal within 200 feet of a perennial stream bank?

    No

25. Will the proposed Action involve excavation or grading, including for the construction or improvement of an access road?

    Yes

26. Are all areas proposed for excavation or grading situated more than 200 feet from the banks of perennial and intermittent streams?

    No

27. [Hidden Semantic] Does the project area intersect the AOI of the clubshell (*Pleurobema clava*)?

    Automatically answered
    Yes

28. [Hidden Semantic] Does the project area intersect the AOI of the fanshell (*Cyprogenia stegaria*)?

    Automatically answered
    Yes

29. [Hidden Semantic] Does the project area intersect the AOI of the longsolid?

    Automatically answered
    Yes

30. Will all activities occur within an area that is paved, graveled, and/or inside a structure?

    No

31. Does the Action Area include forested slopes?

    No

32. Does the Action Area include streams and/or areas within a 300-foot buffer from a stream?

    Yes

33. Will the proposed Action involve herbicide application?

    No

34. Will the proposed Action involve ground disturbance?

    Yes

35. Will the proposed Action involve vegetation removal or mowing?

    Yes

36. [Hidden Semantic]Does the project area intersect the AOI for Short's bladderpod?

    Automatically answered
    Yes

37. Based on the responses you have provided, we believe that the proposed Action is consistent with the type of Actions programmatically evaluated by the Service under the standing analyses that supports this determination key. These Actions typically conclude with "no effect" or "may affect - not likely to adversely affect" determinations for Short's Bladderpod.

    What is your effect determination for the **Short's Bladderpod**:

    Note: IPaC will not provide a concurrence for "no effect" determinations, because there is no statutory requirement to request concurrence from the Service. IPaC will provide concurrence for “May affect – not likely to adversely affect” determinations. If you choose “May affect – likely to adversely affect” or “Unsure,” additional coordination with the Service is recommended.

    2. “May affect – not likely to adversely affect”

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LEAD AGENCY CONTACT INFORMATION

Lead Agency: Department of Agriculture

BAT MIST NET SURVEY FOR BLUEGRASS PLAINS SOLAR PROJECT FAYETTE COUNTY, KENTUCKY

June 28, 2024

Prepared for:
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Project Number: 172608286

Sign-off Sheet

The conclusions in the Report titled Bat Mist Net Survey for Bluegrass Plains Solar in Fayette County, Kentucky are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from East Kentucky Power Cooperative (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

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Executive Summary

East Kentucky Power Cooperative (EKPC) (the “Client”) is planning to develop a new solar energy facility in Fayette County, Kentucky (the “Project”). The Project area is 403 acres in size and contains 66 acres of forest. Potential summer habitat occurs within the Project area for the federally endangered Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*), as well as the proposed federally endangered tricolored bat (*Perimyotis subflavus*). Stantec Consulting Services, Inc. (Stantec) was retained by EKPC to complete a presence or probable absence mist net survey targeting these species; and, if captured, conduct a radio-tracking study to identify roost locations.

The objective of this survey was to assess the presence or probable absence of Indiana bats, northern long-eared bats, and tricolored bats using potential summer habitat within the proposed Project area. The survey methods followed the Range-wide Indiana Bat & Northern Long-eared Bat Survey Guidelines dated March 2024, and Stantec completed the Study Plan Form for Bat Surveys and Monitoring (v.2.0), which was approved on April 30, 2024 by U.S. Fish and Wildlife Service (USFWS) Kentucky field office.

Ten net-nights of survey effort completed at three mist net sites captured a total of four eastern red bats (*Lasiurus borealis*). The eastern red bat is not federally or state-listed as endangered or threatened.

Weather restrictions were followed, and mist net locations were distributed in areas where bats were likely to be found traveling and/or foraging; however, survey efforts did not capture any listed bat species. The data collected during the USFWS-approved 2024 mist net survey effort indicates the probable absence of listed or proposed listed bat species; therefore, a May Affect, Not Likely to Adversely Affect determination is anticipated from the USFWS Kentucky Field Office for Indiana, northern long-eared, or tricolored bats.

1 Introduction

East Kentucky Power Cooperative (EKPC) is planning to develop a new solar energy facility in Fayette County, Kentucky (the "Project"). The Project involves the construction of a 40-megwatt (MW) photovoltaic (PV) electrical generating facility. The facility is proposed to be sited to the northeast of the existing EKPC Avon 138-kilovolt transmission substation located at 5481 Winchester Road, Lexington, KY. Proposed Project activities include the panel array installation, ancillary equipment, transmission interconnection, and equipment staging.

The Project area is 403 acres in size and is primarily composed of agricultural fields, forested riparian areas, and tree lines along field edges. Approximately 66 acres of tree clearing will be required to complete the Project. The Project area can be seen in **Figures 1 and 2** in **Appendix A**.

The Project area is within the ranges of the federally endangered Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*), as well as the proposed federally endangered tricolored bat (*Perimyotis subflavus*) according to the USFWS Information for Planning and Consultation (IPaC) environmental review tool (Project Code: 2024-0100621). Tree clearing within potentially suitable forested bat habitat will be required to complete the Project; therefore, Stantec Consulting Services, Inc. (Stantec) was retained by EKPC to complete a mist net survey targeting these three bat species; and, if captured, conduct a radio-tracking study to identify roost locations.

The objectives of this survey were as follows:

- Determine presence or probable absence of Indiana bats, northern long-eared bats, and tricolored bats within the Project area;
- Establish baseline data on bat species composition within the Project area; and
- If captured, radio-track Indiana, northern long-eared, or tricolored bats to identify their roosting habitat and locations.

1.1 Purpose

The purpose of this document is to provide a report detailing the mist net survey efforts for EKPC for use in consultation with USFWS. The report includes a description of methods, results and summarized data, and discussion regarding the survey. Maps, agency notifications, field data sheets, and representative photographs are provided as appendices in the report (**Appendices A, B**, **C**, and **D** respectively). This report will also be used by Stantec for annual coordination of Section 10 federal recovery permit activities with USFWS and with the Kentucky Department of Fish and Wildlife Resources (KDFWR) to meet state scientific collection permit conditions.

1.2 Regulatory Background

1.2.1 ENDANGERED SPECIES ACT

The Endangered Species Act (ESA) [16 U.S.C. 1531 et seq.] became federal law in 1973 and provides for the listing, conservation, and recovery of endangered and threatened species of plants and wildlife. Under the ESA, the USFWS strives to protect and monitor the numbers and populations of listed species. Many states enacted similar laws.

Section 7(a)(2) of the ESA states that each federal agency shall ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in destruction or adverse modification of designated critical habitat. Federal actions include expenditure of federal funds for roads, buildings, or other construction projects, and approval of a permit or license, and the activities resulting from such permit or license. This is true regardless of if involvement is apparent, such as issuance of a federal permit, or less apparent, such as federal oversight of a state-operated program, or federal funding of state highways.

Section 9 of the ESA prohibits the take of listed species. Take is defined by the ESA as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect.” The definition of harm includes adverse habitat modification. Actions of federal agencies that do not result in jeopardy or adverse modification, but that could result in a take, must be addressed under Section 7 of the ESA.

1.2.2 KENTUCKY REGULATIONS

Kentucky wildlife and their habitats are protected under Title XII, Chapter 150 of the Kentucky Revised Statutes (K.R.S.) and Title 301 of the Kentucky Administrative Regulations (K.A.R.) Chapter 3, Section 061 (Endangered Species) and Chapter 4 (Wildlife). The KDFWR and the Office of Kentucky Nature Preserves (OKNP) follow federal regulations and guidance for the protection of threatened and endangered species. The KDFWR provides scientific collection permits and project-specific authorization to surveyors proposing to capture listed species.

1.3 Project Setting

The Project is located within the City of Lexington in Fayette County, Kentucky, and is approximately one-fourth of a mile east of Haley Road (**Appendix A, Figure 1**). The Project lies directly between I-64 (Rockwell Road), which borders the Project’s northern boundary, and U.S. 60 (Winchester Road), which borders the Project’s southern boundary. The northern half of the Project is within the Headwaters North Elkhorn Creek watershed (HUC-12 051002050801), and the southern half of the Project is within the Boone Creek watershed (HUC-12 051002050301), both of which are contained within the Kentucky basin (HUC-6 051002). The Project can be found on the Clintonville, Central Kentucky United States Geological Survey (USGS) 7.5-Minute Quadrangle.

1.3.1 GEOLOGY AND TOPOGRAPHY

According to geospatial data on the physiographic provinces of the United States, the Project area falls within the Lexington Plain section of the Interior Low Plateaus physiographic province (Fenneman and Johnson 1946), and within the Inner Bluegrass physiographic region of Kentucky (KGS 2012). The Inner Bluegrass region is a weakly dissected agricultural plain containing extensive karst, intermittent streams, and expanding urban-suburban areas (KGS 2012; Woods et al 2002). The region is mostly underlain by Middle Ordovician Lexington limestone, resulting in very fertile Alfisols and Mollisols that have developed from the residuum of this underlying phosphatic limestone (Woods et al 2002). The Inner Bluegrass region is characterized by gently rolling hills that were caused by the weathering of the relatively thick-bedded limestone characteristic of the Ordovician strata of central Kentucky, which has been pushed up along the crest of the Cincinnati Arch (KGS 2012). Weathering of these limestones also produces sink holes, sinking streams, springs, and caves, all of which can be found within this physiographic region (KGS 2012). The original open woodlands, savannas, and swamp forests within this region have been largely replaced by agriculture and urban-suburban-industrial areas (Woods et al 2002), as can be seen within the Project area, which is dominated by cultivated cropland and hay/pasture.

1.4 Suitable Summer Habitat for Endangered Bats

Key characteristics of forested bat habitat include the size and relative abundance of large trees and snags that may potentially serve as roost trees, canopy closure, understory clutter/openness, distance to water, stream or pond characteristics, and flight areas. Anthropogenic structures such as bridges, culverts, bat houses, and abandoned buildings and barns may also serve as suitable roosting habitat for bats.

Habitat characterization for bats in forested areas identifies components of the dominant canopy species (diameter at breast height [DBH] >16 inches) and subdominant canopy species (DBH < 16 in). Large trees in the canopy (> 16 in DBH) have the greatest likelihood of being used by maternity colonies of Indiana bats. Many smaller trees are often also found in the canopy, and in some situations the canopy can be entirely composed of smaller-diameter trees.

The subcanopy, or understory, vegetation layer is well defined in classical ecological literature as the portion of the forest structure between the ground vegetation (up to approximately 2 feet [0.6 meters]) and the canopy layers, usually beginning at approximately 25 feet (7.6 meters).

Vegetation in the understory may come from:

- Lower branches of overstory trees;
- Young overstory trees; or
- Small trees and shrubs that are confined to the understory.

The amount of vegetation in the understory is termed “clutter”. Many species of bats, including the Indiana bat, tend to avoid areas of high clutter, while northern long-eared bats may utilize the protection these areas provide.

The Indiana bat is known to roost in several different species of trees, including oaks (*Quercus* spp.), hickories (*Carya* spp.), and ashes (*Fraxinus* spp.) (USFWS 2007). Suitable roost trees may be live trees or snags and have a DBH > 5 in (12.7 cm). In addition to forested habitat, Indiana bats use emergent wetlands, agricultural fields, fencerows, and riparian areas for traveling and foraging. Indiana bats have also been documented using bat houses and bridges for roosting (USFWS 2024a).

Habitat for the northern long-eared bat appears far more general than that of the Indiana bat (Schultes and Elliott 2002; Whitaker and Mumford 2009). While some studies have found this species using larger, older forests and roosts (Lacki and Schwierjohann 2001; Henderson and Broders 2008), others have found the species using smaller roosts and forest tracts (Whitaker and Mumford 2009; Schultes and Elliott 2002).

Tricolored bat habitat is not as well understood as Indiana bat habitat. Tricolored bats have been documented roosting among the leaves of live or recently dead deciduous trees, as well as pine trees (*Pinus* spp.), Spanish moss (*Tillandsia usneoides*), and man-made structures such as bridges and culverts for roosting (USFWS 2024b).

Due to the overlap in foraging and traveling habitat usage between these three species, conditions for the capture of Indiana and northern long-eared bats were considered adequate for determining presence or probable absence of tricolored bats, as outlined in the USFWS 2024 guidelines.

1.4.1 HABITAT ASSESSMENT

A desktop habitat assessment was completed by qualified personnel (as per USFWS 2024a) to assess potential suitable summer habitat within the Project area. The Project area consisted primarily of agricultural crop fields with distinct blocks of young forest dispersed throughout, especially surrounding water features. Short flyway corridors with canopy cover separating field sections were visible within these forest blocks.

Additionally, a team of two biologists conducted a pedestrian habitat assessment of the Project area from November 27-30, 2023. Field findings from this assessment supported the findings of the desktop analysis, confirming the overall landcover of the Project. Forested areas typically consisted of young, shrubby vegetation with high amounts of invasive species such as shrub honeysuckle (*Lonicera mackii*) and winter creeper (*Euonymus fortunei*).

Water resources identified during the desktop and field assessments that could potentially serve as drinking sources or flyways for bats were mapped using publicly available data and Global Positioning Systems (GPS) in the field. The National Hydrography Database (NHD) identified five stream channels with perennial or intermittent flow (USGS 2024) and the National Wetlands Inventory (NWI) identified two pond areas (USFWS 2024c) within the Project area, locations of which were confirmed in the field (**Appendix C)**.

Locations of karst features (especially caves) that may provide suitable habitat for listed bat species were reviewed upon receipt of data from the Kentucky Speleological Society (KSS). The KSS (2023) reported that there are no caves in the Project or within a one-mile buffer of the Project. Per review of the KSS database, the closest cave was 2.35 miles due west from the Project area. One old barn that could provide potential roosting habitat was identified in the south-central portion of the Project area. No bridges or culverts were identified within the Project boundary.

The Project area did not overlap any known summer or swarming buffers for Indiana (USFWS 2019a) or northern long-eared bats (USFWS 2019b). No maternity colonies or hibernacula for Indiana, northern long-eared, or tricolored bats have been documented in Fayette County (KDFWR 2024a). Capture records for these three species within Fayette County were all documented prior to 2006 before the onset of white-nose syndrome (WNS) in Kentucky (KDFWR 2024a).

2 Methods

2.1 Study Plan for Bat Surveys and Monitoring

Prior to conducting field surveys, Stantec biologists completed the Study Plan Form for Bat Surveys and Monitoring (v.2.0) for the submittal to the USFWS Kentucky field office for approval and authorization to conduct the mist net survey. Data from the desktop review and November 27-30, 2023 field habitat assessment were used to determine the level of effort required for the survey as well as proposed mist net site locations. (**Appendix B**).

The level of effort required for presence or probable absence surveys for endangered bat species is outlined in the 2024 USFWS Range-Wide Indiana Bat and Northern Long-Eared Bat Summer Survey Guidance dated March 2024 (USFWS 2024). When using mist nets to physically capture bats, the level of effort is defined in this guidance using “net nights”. One net night equals one mist net set deployed for one calendar night. The survey effort required to adequately survey for the presence or probable absence of a species is dependent on the species (i.e., Indiana bat or northern long-eared bat) and differs based on the active range of the species, as outlined on page 10 of the 2024 USFWS Guidance. When the ranges of Indiana, northern long-eared, and tricolored bats overlap, the level of effort required for northern long-eared bats is used when surveying for the other two species because it is the greater amount of effort.

The state of Kentucky is within the hibernating range of the northern long-eared bat (USFWS 2024). The level of effort required for presence or probable absence surveys of non-linear Projects in this range is ten net nights per 123 acres of suitable forested habitat. Approximately 66 acres of suitable forested habitat is present in the Project area; therefore, the study plan proposed deploying two to four mist net sets for three calendar nights in three distinct areas of the Project (sites) for a total of 10 net nights of survey effort.

Aerial imagery was used to propose three potential mist net site locations in the Project area. NHD streams, NWI wetlands, flyways such as roads with canopy cover, forest gaps in woodlots between fields, and the presence of anthropogenic structures such as bridges, culverts, or barns are all considered when choosing potential mist net sites during the desktop stage. Although these desktop resources can provide useful planning tools for the selection of potential mist net sites, due to changes since aerial imagery was captured and inherent limitations in how landscape-scale databases are developed, final mist net locations were determined in the field.

Proposed mist net sites (PMS) outlined in the study plan were located along water resources and within forest gaps dispersed across the Project area. PMS-01a was in the south-central portion of the Project area and targeted the larger NWI-mapped pond. PMS-01b targeted the second NWI pond and surrounding forest near the eastern boundary of the Project area. PMS-02 was proposed along the perennial stream in the northwest corner of the Project area adjacent to the I-64 roadway.

No visual assessment surveys of bridges and culverts were proposed in the study plan form since no structures large enough to support roosting bats were identified on aerial imagery or during past site visits to the Project area.

Stantec submitted a project-specific Study Plan Form for Bat Survey and Monitoring (**Appendix B**) to the USFWS Kentucky Field Office and KDFWR on April 29, 2024, requesting concurrence that the proposed level of effort is sufficient to determine the presence or probable absence of Indiana, northern long-eared, and tricolored bats within the Project area.

Authorization was received from both agencies on April 30, 2024, confirming the proposed survey methods and level of effort with the following conditions:

1) Band any Indiana bats, tricolored bats, and little brown bats (*Myotis lucifugus*) captured with appropriately sized KDFWR bands using banding pliers. Do not band northern long-eared bats.

2) Ensure net set placements reflect variation of habitats present on site and preferred by Indiana, northern-long eared, and tricolored bats.

3) Ensure transmitters are thoroughly tested for proper functioning prior to the study per the 2024 Summer Survey Guidance.

4) Attach transmitters to the first two Indiana bats captured regardless of sex/age and then all Indiana bat females and juveniles captured after. For northern long-eared bats and tricolored bats, transmitter all individuals captured. Not meeting these conditions may result in denial of survey results.

2.2 Mist Net Surveys

2.2.1 MIST NET SITE SELECTION

A federally permitted biologist chose suitable mist net locations within the Project area based on habitat suitability, targeting areas that were suspected to have high amounts of bat activity. Survey sites were limited to parcels where landowners could be contacted, and permission granted for the survey. Net placement was based on a variety of characteristics, including canopy cover, presence of potential flight areas, proximity to water, and forest conditions. General habitat types selected included the following characteristics:

- Large trees (>16 inches DBH that can support primary maternity roosts for Indiana and northern long-eared bats;
- Canopy cover along potential travel areas which way help funnel bats to the net locations; and
- Stream area (or other water source) for drinking and prey presence.

While mist net sites in riparian areas are typically successful, upland areas (e.g., trails or logging roads) also provide suitable sites (Kiser and MacGregor 2005). In upland areas, road ruts or other areas of standing water frequently facilitate capture of a variety of bat species. The actual location and orientation of each mist net set was determined in the field.

2.2.2 BAT CAPTURE

Protocols for bat capture, handling, and equipment decontamination for WNS were followed during mist net surveys. Any bats captured in mist nets were carefully removed and placed individually in disposable brown

paper bags to keep bats isolated and reduce any risk of cross-exposure of WNS. This procedure was followed for all bats regardless of if they show signs of WNS or not. After use, each paper bag was disposed of into a large plastic sealable bag. Biologists wore disposable gloves when handling individual bats, and their hands were periodically disinfected with hand sanitizer. All measuring equipment and surfaces for processing were decontaminated after each bat.

Morphological characteristics used to identify bats include ear and tragus, calcar, pelage, size/weight, forearm length, and overall appearance of the animal. The species, sex, reproductive condition, age, weight, length of right forearm, time and location, and net site of capture were recorded for all bats. Age (adult or juvenile) of each bat was determined by examining epiphyseal-diaphyseal fusion (calcification) of long bones in the wing. Weight was measured to 0.1 gram using a Pesola spring scale. Length of the right forearm of each bat was measured in millimeters using a field ruler or calipers. The reproductive condition of captured bats was classified as non-descended male, descended male, non-reproductive female, pregnant female (based on gentle abdominal palpation), lactating female, or post-lactating female.

Bat processing and data collection was typically completed within 15 minutes of the time the bat was removed from the net. Bats were caught live and released unharmed near the point of capture after processing.

2.2.3 WEATHER

Weather conditions were monitored each night of the survey. Conditions recorded include temperature, wind speed and direction, percent cloud cover, and moon phase. A standard digital thermometer was used to record temperature, wind speed was estimated by using the Beaufort wind scale, and cloud cover was estimated visually. The moon phase, moon rise and set times, and sunset times for each night were obtained from online resources.

3 Results

3.1 Mist Net Surveys

3.1.1 MIST NET SITE DESCRIPTIONS

Mist Net Site 01a (MS-01a) contained two net sets deployed in the southern portion of the Project area near the larger NWI-mapped pond, as proposed in the study plan. This pond is the largest water resource available in the Project area for bats to use for drinking and foraging. Net A was situated in a forest gap with canopy cover north of the pond. The canopy cover present would help to funnel bats into mist nets, if the forested area was being used as a flight corridor, improving the chances of capture success. Net B was covering the most open pathway available to the pond.

The forest at MS-01a had an open canopy dominated by five-to-12-inch DBH black locust (*Robinia pseudooacacia*), silver maple (*Acer saccharinum*), and hackberry (*Celtis occidentalis*). The subcanopy was moderately cluttered and dominated by two-to-four-inch DBH silver maple, black locust, and Osage orange (*Maclura pomifera*). The shrub layer was highly cluttered and dominated by shrub honeysuckle (*Lonicera maackii*), silver maple saplings, and poison ivy (*Toxicodendron radicans*). No large trees, snags, or structures were present nearby that could serve as potential roosting habitat. The potential for roost tree habitat was estimated to be low, and an overall habitat rating of poor was assigned to this site.

Mist Net Site 01b (MS-01b) contained two net sets and was located in the southern portion of the Project area near the NHD-mapped intermittent stream. The location of MS-01b deviated from the proposed study plan due to better habitat and mist net sites being available south of the originally proposed site. The pond that was proposed to be targeted at PMS-01b was densely cluttered, leaving nowhere to deploy mist nets, and the quality of the forest surrounding the pond was very poor and crowded out with invasive herbaceous and shrubby species, making it unsuitable for bat use.

Net C at MS-01b was located in a wooded area across an NHD-mapped intermittent stream channel. The stream was approximately 2.5 feet wide and an average of 1.5 feet of water flowing at the time of the survey. The riparian forest surrounding the stream was young and dense, with a partially defined flight corridor above the channel which was targeted by Net C. Net D was located in a forest gap with canopy cover to the east of Net C, targeting bats that may use the forest gap as a flight corridor between agricultural fields when foraging.

The forest at MS-01b had a moderately closed canopy dominated by 4-to-10-inch DBH black locust, black walnut (*Juglans nigra*), and hackberry. The subcanopy was moderately closed and dominated by two-to-four-inch DBH hackberry, black locust, and box elder (*Acer negundo*). The shrub layer was also moderately cluttered and was dominated by shrub honeysuckle, box elder, and poison ivy. The site had no large trees or snags. The potential for roost tree habitat was estimated to be low and an overall rating of poor was assigned to this site. An abandoned barn was present west of Net B that could serve as potential roosting habitat. The barn was assessed during the field surveys and no bats were seen or heard roosting and no bat sign (guano and staining) was visible. No bats were observed emerging from the barn at sunset.

Mist Net Site 02 (MS-02) was located in the northwest corner of the Project area targeting the NHD-mapped perennial stream, as proposed in the study plan. MS-03 contained two net sets. Net E was located along a forest gap, which may provide bats a short, covered flight corridor between agricultural fields. Net F was located along the perennial stream over a bend where water was pooled and bats may drink. The stream was approximately two feet wide and one inch deep at the time of the survey and flowed southwest into the Project area from two culverts draining under the I-64 roadway. These culverts were two feet in diameter or less and were not suitable potential roosting habitat for bats; therefore, no culvert surveys were performed. The stream channel where Net F was located only had moderate canopy cover and was somewhat open on the sides; however, three large snags that could serve as suitable potential roost trees were present within 100 feet of the net.

The forest at MS-02 had a moderately closed canopy and was comprised of trees with an average DBH of 12 inches. Dominant species included black locust, sugar maple (*Acer saccharum*), and hackberry. The subcanopy was highly cluttered and dominated by Osage orange, black locust, and box elder with an average DBH of four inches. The shrub layer was also highly cluttered and was dominated by shrub honeysuckle, hackberry saplings, and grape vine (*Vitis* spp). Although the forest at this site was primarily young and densely cluttered, three American sycamore (*Platanus occidentalis*) snags greater than 25 inches in DBH with suitable roosting structures cracks, crevices, and exfoliating bark were present near Net F. The potential for roost tree habitat was estimated to be moderate, and an overall rating of poor was assigned to this site.

3.1.2 BAT CAPTURE

The mist net survey was conducted from, May 15 to May 18, 2024. The survey resulted in the capture of four pregnant female eastern red bats. No bats were banded during the course of the survey. **Table 1** outlines the capture site, date of capture, time of capture, species, sex, reproductive condition, age, mass, right forearm (RFA) measurement, band number and type (if applicable), and Reichard's wing damage index score (Reichard and Kunz. 2009). Field data sheets can be found in **Appendix B**.

Surveys were conducted by Kristen Clemens and Marissa Angel under USFWS Recovery Permit #ES16876D-1 and KDFWR Scientific Wildlife Collecting Permit #SC2411183.

Table 1: Capture Summary for the Bluegrass Plains Solar Bat Survey Fayette County, Kentucky, May 15 – 18, 2024.

Survey Start Date	Site Number	Net ID	Time of Capture (24 hr)	Species	Sex[1]	Reproductive Condition[2]	Age[3]	Mass (g)	Right Forearm Length (mm)	Wing Score[4]
15 May 2024	MS-01a	B	21:25	*Lasiurus borealis*	F	P	A	13.50	41.0	0
15 May 2024	MS-01a	A	21:25	*Lasiurus borealis*	F	P	A	13.00	40.7	0
16 May 2024	MS-01b	A	23:50	*Lasiurus borealis*	F	P	A	14.25	39.0	0
18 May 2024	MS-02	E	00:55	*Lasiurus borealis*	F	P	A	14.75	40.0	0

[1] F = Female, M = Male, U = Unknown (escaped)
[2] NR = Non-Reproductive, TD = Testes Descended, P = Pregnant, L = Lactating, PL = Post-Lactating
[3] A = Adult, J = Juvenile, U = Unknown (escaped)
[4] Reichard's wing damage index is a scale from 0-3 measuring scarring and/or blotching that may indicate damage from WNS

3.1.3 WEATHER

Weather during the survey period typically started in the mid-70s (Fahrenheit [°F]) and continued decreasing throughout the night into the low to mid 60s and high 50s °F. Cloud cover ranged from 0 percent to 100 percent during survey period. A single rain event occurred on May 17, 2024 that resulted in the survey being cancelled for the evening approximately 30 minutes after sunset. Survey efforts were resumed the following day. Wind ranged between 0 and 1 on the Beaufort Wind Scale during the survey period. **Table 2** contains onsite weather data collected during the survey period.

Table 2: Weather Recordings for the Bluegrass Plains Solar Bat Survey Fayette County, Kentucky, May 15 – 18, 2024.

Site	Date	Temp °F			Wind Speed[1]			Cloud Cover %		
		2040h	2240h	0140h	2040h	2240h	0140h	2040h	2240h	0140h
MS-01a	15 May 2024	70.2	64.7	57.1	0	1	0	75	100	70
MS-01a and MS-01b	16 May 2024	73.5	68.7	66.4	0	0	0	25	10	10
MS-01b and MS-02	18 May 2024	79.0	66.5	63.5	0	0	0	5	0	0

1 Beaufort wind scale. 0 = smoke rises vertically (<1 mph), 1 = wind direction shown by smoke (1-3 mph), 2 = wind felt on face; leaves rustle (4-7 mph), 3 = leaves, twigs in constant motion (8-12 mph), 4 = dust rises; small branches move (13-18 mph), 5 = small trees in leaf begin to sway (19-24 mph)

4 Discussion

Mist net surveys targeting endangered bat species were conducted from May 15 to May 18, 2024 in the proposed Bluegrass Plains Solar Project area in Fayette County, Kentucky. The primary objective of this survey was to assess the presence, or probable absence, of Indiana, northern long-eared, and tricolored bats using summer habitat within the Project area. The survey followed the Range-wide Indiana Bat & Northern Long-eared Bat Survey Guidelines dated March 2024, and the Study Plan Form for Bat Surveys and Monitoring (v.2.0), which was approved on April 30, 2024 by the USFWS Kentucky field office (**Appendix B**).

No Indiana, northern long-eared, or tricolored bats were captured during the mist net survey. These three species were unlikely to be found using the Project area since suitable water resources and areas of mature forest were limited or absent. No caves or other suitable hibernacula were documented within one mile of the Project area (KSS 2023) and the Project did not overlap any known summer or swarming buffers for Indiana (USFWS 2019a) or northern long-eared bats (USFWS 2019b). No maternity colonies for Indiana, northern long-eared, or tricolored bats have been documented in Fayette County and capture records for these three species were all documented prior to 2006 before the onset of WNS in Kentucky (KDFWR 2024a).

The second objective was to record baseline data for non-listed bats. Ten net nights of survey efforts within the Project resulted in the capture of four eastern red bats. Eastern red bats forage along forest edges, streams, and often in residential areas around streetlights which attract insect prey (KDFWR 2024b). The capture of eastern red bats during the survey was not unexpected since suitable foraging habitat was present along forest edges surrounding the agricultural fields in the Project area. Additionally, the light sources along nearby roadways including I-64 may attract photophilic prey resources, such as moths.

Weather restrictions were followed, and mist net set locations were distributed in areas where bats were likely to be found traveling and/or foraging; however, survey efforts did not capture any listed species. The data collected during the USFWS-approved 2024 mist net survey effort indicates the probable absence of listed bat species; therefore, a May Affect, Not Likely to Adversely Affect determination is anticipated from the USFWS Kentucky Field Office for Indiana, northern long-eared, and tricolored bats.

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Appendix A Project Area Maps

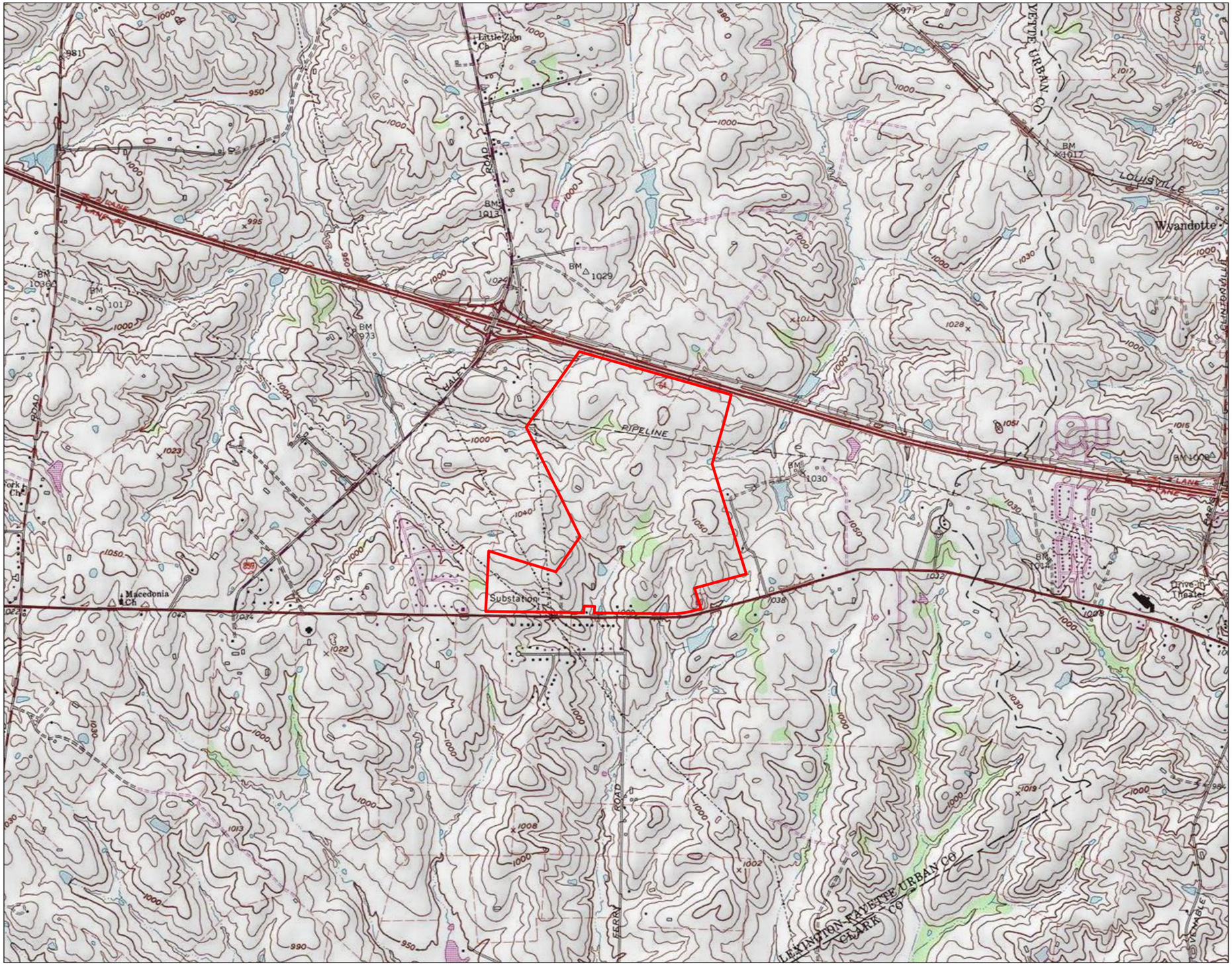

Figure No.

1

Title

Project Topographic Overview Map

Client/Project 172608286

East Kentucky Power Cooperative
Bluegrass Plains Solar Project
Bat Mist Net Survey Report

Project Location
Fayette County, Kentucky

Prepared by TCN on 2024-06-28
TR by KC on 2024-06-28
IR by SK on 2024-06-28

N

0 1,000 2,000 Feet

(At original document size of 11x17)
1 inch = 2,000 feet

Legend

Project Boundary

Notes

1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
2. Data Sources: Stantec, EKPC
3. Background: USGS Topographic Map

Stantec

Figure No.

2

Title

Project Overview Map

Client/Project 172608286

East Kentucky Power Cooperative
Bluegrass Plains Solar Project
Bat Mist Net Survey Report

Project Location
Fayette County, Kentucky

Prepared by TCN on 2024-06-28
TR by KC on 2024-06-28
IR by SK on 2024-06-28

N

0 500 1,000 Feet
(At original document size of 11x17)
1 inch = 1,000 feet

Legend

- Project Boundary

Delineated Stream

- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- NHD Waterbody

Notes

1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
2. Data Sources: Stantec, EKPC
3. Background: ESRI World Imagery

Stantec

C:\Users\tnewman\OneDrive - Stantec\GIS\Projects\EKPC\Bluegrass Plains Solar\Bluegrass Plains Solar.aprx Revised: 2024-06-28 By: tnewman

Figure No.

3

Title

Bat Mist Net Location Map

Client/Project 172608286

East Kentucky Power Cooperative
Bluegrass Plains Solar Project
Bat Mist Net Survey Report

Project Location
Fayette County, Kentucky

Prepared by TCN on 2024-06-28
TR by KC on 2024-06-28
IR by SK on 2024-06-28

N

0 500 1,000 Feet

(At original document size of 11x17)
1 inch = 650 feet

Legend

- Project Boundary
- Mist Net Location

Delineated Stream

- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- NHD Waterbody

Notes

1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
2. Data Sources: Stantec, EKPC
3. Background: ESRI World Imagery

Stantec

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Appendix B USFWS Study Plan Form for Bat Surveys and Monitoring

U.S. Fish and Wildlife Service

Study Plan Form for Bat Surveys and Monitoring (v. 2.0)[1]

PROJECT & SURVEY INFORMATION

Project Name: Bluegrass Plains Solar

Proposed Survey Start Date: 5/15/2024

Project Proponent's Name (e.g., client/company/institution): East Kentucky Power Cooperative (EKPC)

Project Location: State(s): Kentucky

County(s): Fayette

Latitude: 38.036709

Longitude: -84.315580

REQUIRED: Attach or provide links to Google Earth® KMZ files (preferred) and/or shapefiles
(mapping must show project boundaries, impacted forest habitat (if known) and all proposed survey sites)
Files are attached: Yes ☑ No ☐
File Links: _____

Project Summary. In the space provided below, please provide a description of the proposed action, including any activities that will permanently or temporarily alter the current environment and existing habitat features.

The Project consists of a proposed 40-megwatt (MW) photovoltaic (PV) electrical generating facility comprised of approximately 400 acres. The facility is proposed to be sited to the northeast of the existing EKPC Avon 345-kilovolt transmission substation located at 5481 Winchester Road, Lexington, KY. Proposed Project activities include the panel array installation, ancillary equipment, transmission interconnection, and equipment staging.

Due to the presence of approximately 100 acres of forested potential summer habitat for the Indiana bat (Myotis sodalis), northern long-eared bat (M. septentrionalis), and tricolored bat (Perimyotis subflavus) within the Project, Stantec was retained by EKPC in order to complete a mist net survey for these three bat species.

CONTACT INFORMATION

Project Manager/Primary Point of Contact (POC): Kristen Clemens

Phone: 859-806-5332

Field Survey Crew Leader (if different from POC): _____

Cell Phone: _____

Institution/Company Name: Stantec Consulting

Mailing Address: 3052 Beaumont Centre Circle Lexington, KY 40513

POC Email Address: kristen.clemens@stantec.com

USFWS Sec. 10(a)(1)(A) Permit No.(s) (if applicable): ES16876D-1

State Permit No.(s) (if applicable): SC2411183

[1] Unless otherwise directed by the Service, surveyors may complete this fillable form, in lieu of a traditional narrative format, and submit it (and supporting files) to the Ecological Services Field Office in the state(s) where the work is to be completed (https://www.fws.gov/our-facilities). Use of this form is not a requirement at this time. Our goal is to improve pre-survey coordination and to expedite the Field Office review and approval process. Please submit your study plan at least 15 working days in advance of your proposed survey start date. Suggestions for improving this document may be sent to R4_Bat_Survey_Guidance@fws.gov.

Have project proponents been informed that abiding by protective time-of-year restrictions (where available) may be sufficient to avoid take of federally listed bats and (in some cases) may negate the need for a bat survey? Yes☑ No☐

Have project proponents been informed that the Service does not require presence/probable absence surveys for federally listed species and that presence can be assumed in a project area containing suitable habitat? Yes☑ No☐

Will this survey be conducted on private or public lands? *(Check both if applicable)*: Private☑ Public☐

Has permission of all necessary landowners/managing agencies been obtained? Yes☑ No☐

If no, explain: _____

Does this project have a federal nexus[2]? Yes☑ No☐ Unsure☐

If yes, explain: United States Department of Agriculture (USDA)

IPaC[3] Consultation Code (if applicable): _____

Purpose of Survey: Official P/A Survey☑ Research☐ Monitoring☐
Educational Outreach/Training Other: _____

Survey Target Species: Indiana bat (IBAT)☑ Northern long-eared bat (NLEB)☑
Tricolored bat (TCB)☑ Other: _____

Has a Phase-1 Habitat Assessment* of the project area been conducted? Yes☑ No☐
If yes, how was the habitat assessment conducted? Field☐ Desktop☐ Combo☑
*(*if available, attach a written report)*

Is suitable habitat[4] present (or assumed present) for all "target" species? Yes☑ No☐

If no, explain: _____

Does this project fall within the outer-tier[5] of any "target" species known home range? Yes☐ No☐ Unsure☑

If yes, which species: _____

Project Configuration

Is this project **linear** (>1 km in total length)? Yes☐ No☑ Combo☐ Unsure☐

If yes, how many 1-km sections containing suitable IBAT/NLEB habitat will be impacted? _____

Is this project **non-linear**? Yes☑ No☐ Combo☐ Unsure☐

If yes, how many acres of suitable IBAT/NLEB habitat is in the overall project area? 100

If yes, how many acres of suitable IBAT/NLEB habitat will be directly impacted/cleared? TBD

PROPOSED METHODS & SURVEY LEVEL OF EFFORT[6]

ACOUSTICS

Total number of detector sites proposed to be surveyed: _____ Number of detector nights/site: _____

[2] A project or action that is carried out, authorized, funded, and/or permitted by a federal agency.
[3] https://ipac.ecosphere.fws.gov/
[4] See Appendix A of the Guidelines regarding suitable habitat definitions.
[5] See Appendix G of the Guidelines if you are unclear what the out-tier of a known range includes.
[6] Survey level of effort (acoustic or netting) must be spread over at least two calendar nights/survey site.

Total number of detector nights for entire survey: _____

Total proposed number of calendar nights to complete the entire survey: _____

Detector(s) (Brand, Model): _____ Microphone(s): directional ☐ omnidirectional ☐

Recording Format: Full Spectrum ☐ Zero-Crossing ☐

FWS-Approved[7] Acoustic Bat ID Software: KPro vers.____ KPro Classifier, NA vers. ____ BCID vers.____
Other Candidate Programs (e.g., Sonobat) vers.: _____

Species to be included for automatic software ID classification analysis:

EPFU☐ CORA☐ COTO☐ LABO☐ LACI☐ LANO☐ LASE☐ TABR☐ MYCI☐ MYEV☐ MYGR☐ MYLU☐
MYLE☐ MYSE☐ MYSO☐ MYTH☐ MYVO☐ NYHU☐ PESU☐ Others:_____

Will qualitative analysis (i.e., manual vetting) be used? Yes☐ No☐ Unsure☐

Name(s) of qualified biologist(s) conducting qualitative/manual identifications (attach resume or link with qualifications):

_____

MIST-NETTING

Total number of net sites to be surveyed: 1-3 Total number of net nights/site: 2-4

Total number of net nights for entire survey (No. of sites X No. of net nights/site): 10

Total proposed number of calendar nights to complete the entire survey: 3

A) Maximum number of net set-ups that will be operated/checked (10-min interval) on a given calendar night at a given survey site: 4
B) Minimum Number of personnel present to operate/check X (see A) net set-ups on a given site: 2
C) Proposed Staffing Rate (A divided by B): 2:1

Staffing Rate

Number of Section 10-permitted biologists per net site (or state-permitted in USFWS R5): 1

Do you propose to band bats? Yes☑ No☐

If yes, please answer the following:

What species will be banded? COTO☑ MYGR☑ MYLU☑ MYSE☑ MYSO☑ PESU☑
Others:_____ All captured bats:
If banding *Myotis* sp. or PESU, specify band size: 2.9 for Myotis, 2.4 for PESU
Describe your proposed bands (color and letter-numbers) and banding scheme: KDFWR-provided metal lipped bands
Will banding pliers be used? Yes☑ No☐

Will any biological samples be collected from captured bats (e.g., guano, hair, swab, wing punch)? Yes☐ No☑

If yes, explain: _____

Name of institution or facility to conduct DNA analysis: _____

RADIO-TRACKING

Will any bats be radio-tagged and tracked? Yes☑ No☐

[7] https://www.fws.gov/media/automated-acoustic-bat-id-software-programs

If yes, please answer following:

Which species will be radio-tagged? MYSO, MYSE, PESU

Name of USFWS Section 10 permitted biologist(s) who will apply transmitter(s): Kristen Clemens

Make/model and approximate weight of transmitter(s) to be used: LB-2x, 0.27g

Manufacturer date and estimated life-span of transmitters to be used: 7-10 days

Frequency range (MHz) of transmitters (e.g., 150.xxx or 172.xxx): 150.xxx

If radio-tracking multiple targeted bats/species, what criteria will be used in selecting which bats will be tracked?

Adult Lactating or post-lactating females will be chosen over adult males. In addition, bats with greater mass will be selected over small bats. Juvenile bats will be the least favored

Will all radio-tagged bats be tracked (min. of 4-hrs. search effort/day) to their diurnal roosts for the minimum recommended period of 7 days? Yes☑ No☐

If no, explain: _____

Will night-time foraging data/telemetry be collected? Yes☐ No☑

Glue used for attaching transmitters: Type: Silicone-based Surgical Adhesive Name: Uro-Bond III 5000

Manufacturer: 3M Other: _____

EMERGENCE SURVEYS

After diurnal roost sites of radio-tagged bats are identified, will emergence surveys be conducted at each identified roost (assuming landowner permission is obtained)? Yes☑ No☐

If yes, how many emergence surveys/roost? 2

Have you identified a small number (e.g., ≤10) of potentially suitable roost trees* that you propose to conduct emergence surveys for? Yes☐ No☑

*(*If yes, provide photographs of each tree documenting that all of the tree can be observed by the surveyor along with coordinates (lat/long and/or KML/shapefile) of all trees to be surveyed.)*

POTENTIAL HIBERNACULA SURVEYS

Are you aware of any known hibernacula used by the target species within the project area itself or nearby?

Yes☐ No☑ Unknown☐

If yes or unknown, list sites or explain: _____

Has your desktop analysis identified any natural or man-made features that could be used as a hibernaculum by any of the target bat species? Yes☐ No☑ Unknown☐

If yes, underground features (e.g., caves, mines, tunnels, bunkers, cisterns) present: Yes☐ No☐

If yes, above-ground features* (e.g., crawl spaces) present: Yes☐ No☐

If unknown, explain: _____

Are you requesting approval of a field survey for potential hibernacula at this time? Yes*☐ No☑

*(*If yes, attach a separate narrative explaining how the project area(s) will be surveyed for potential hibernacula.)*

Are you submitting the results of a Phase 1 Habitat Assessment of potentially suitable hibernacula identified from field surveys? Yes*☐ No☑

*(*If yes, provide a Phase 1 Habitat Assessment Data Sheet for each potential hibernaculum/portal(s)[8] identified to be surveyed.)*

BRIDGE & CULVERT ASSESSMENTS

Will any bridges or culverts be surveyed for bat presence? Yes☐ No☐

If yes, please answer the following:

[8] If multiple cave entrances/portals, please list all locations.

Structure type(s) (check all that apply): Bridge ☐ Culvert ☐ Other ☐
If "other", explain: _____

Survey methodology for structure(s) (check all that apply):
Visual inspection ☐ Guano collection ☐ Emergence survey ☐ Acoustics* ☐
Mist-net* ☐ Harp-trap* ☐ Other _____
*(*Due to site-specific conditions of structures, coordination with the local USFWS Field Office and appropriate state agency(ies) is necessary before proceeding with these survey methodologies)*

Will guano be collected and analyzed to confirm species ID? Yes ☐ No ☐
If "yes", name of institution/entity performing analysis: _____

ADDITIONAL SURVEY INFORMATION[9]

Will the proposed bat survey deviate from the current version of the USFWS Survey Guidelines?[10] Yes ☐ No ☐

If yes, provide justification for any departures or modifications to the guidelines (if applicable) below:

I hereby acknowledge that the information being provided to the Service is accurate and complete as of today's date.

Signature: _____ Date: 4/29/2024

[9] Attach additional pages to this form, if needed.

[10] Proposed surveys deviating from the current Range-wide IBAT & NLEB Survey Guidelines will only be accepted with a thoroughly described justification. Coordinate with your local USFWS Field Office (https://www.fws.gov/our-facilities) for acceptable modifications.

********FOR U.S. FISH AND WILDLIFE SERVICE USE ONLY**********

United States Department of the Interior

Fish and Wildlife Service

Kentucky ES Field Office

330 W. Broadway, Room 265, Frankfort, KY 40601

Office Phone: (502) 695-0468

SITE-SPECIFIC AUTHORIZATION - BAT WORK

Our Field Office has reviewed your study plan and found it to contain sufficient information for our approval. When signed, this statement serves as your site-specific authorization to conduct the proposed activities at the specified locations included in the attached Study Plan Form and supporting files and must be carried with your federal permit when conducting work for this project. All activities must be carried out with strict adherence to permit conditions and authorizations specified in your federal permit as well as your state permit(s) (if needed). The section 10(a)(1)(A) permit authorizing the activities must remain with the surveyor at all times. This authorization is not valid if you have not obtained permission from the owner of the lands where activities will occur.

For federal permit reporting purposes, please use the appropriate USFWS bat survey data spreadsheet, available on the IBAT and NLEB Summer Survey Guidance website[1]. To mitigate the risk of humans transmitting viruses (e.g., SARS-CoV-2) to bats or viral transmission from bats to humans, the U.S. Fish and Wildlife Service requests anyone directly handling or working in close proximity to bats follow current guidelines prepared by the CDC[2] and IUCN Bat Specialist Group[3] in addition to the following the standard WNS decontamination protocols[4].

If the work expands beyond the scope of your original study plan or if there are adverse effects to bats that were not anticipated, cease all survey and/or research activities, and contact this office prior to continuing. Additionally, if a federally listed bat is captured, this USFWS Field Office must be notified within 48 hours with information regarding species, sex, age, and whether or not the bat has a transmitter attached.

Field Office POC: Mike Armstrong

email: Mike_Armstrong@fws.gov phone: (502) 229-4632

☐ **Authorized as Proposed**

☑ **Authorized with Conditions** (see below)

You are authorized to proceed provided that the following adjustment(s) and/or conditions are met.

(1) Band any MYSO, MYLU, and PESU captured with appropriate sized KDFWR bands using banding pliers. Do not band MYSE. (2) ensure net set placements reflect variation of habitats present on site and preferred by MYSO, MYSE, and PESU. (3) ensure transmitters are thoroughly tested for proper functioning prior to the study (see Appendix D of Survey Guidance). (4) attach transmitters to the first

☐ **Not Authorized.**

Comments:

Signature & Date:

NOTE: Please check the appropriate box above before signing/locking the document.

[1] https://www.fws.gov/library/collections/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines
[2] https://www.cdc.gov/healthypets/covid-19/wildlife.html
[3] https://www.iucnbsg.org/uploads/6/5/0/9/6509077/amp_recommendations_for_researchers_final.pdf
[4] https://www.whitenosesyndrome.org/mmedia-education/national-wns-decontamination-protocol-u-s

Appendix C Mist Net Data Sheets

Stantec

Bat Capture Datasheet

Project Name/No.: Bluegrass Plains / 172608590 **Date:** 15 May 2024 **Biologist(s):** Kristen Clemens, Marissa Angel

Site ID: Site 1a **County/State:** Fayette/ KY **Moon Phase:** First quarter **Sunset:** 20:40

Map Kilometer No./Quad: Clintonville Quad **Latitude:** 38.032038 **Longitude:** -84.31675 **Moonrise:** 12:15 **Moonset:** 02:17

General Site Description: Pond and small forest blocks surrounded by agricultural fields **Nets Open:** 20:35 **Nets Closed:** 01:40

Time	Temp (F)	Wind[1]	% Cloud Cover
20:00	70.2	0	75
21:00	68.0	0	95
22:00	64.7	1	100
23:00	63.2	1	10
00:00	59.7	0	40
01:00	57.1	1	70

Net ID (A, B,.)	Length (m)	Height*	Net Area	Lat. (decimal degrees)	Long.	Road	Stream	Pond	Other (specify)	Photo ID, Notes
A	9	7.5	67.5	38.031930	-84.315542				X	Forested corridor
B	9	7.5	67.5	38.031176	-84.316614			X		

** One net at full extension ~ 2.5m high*

Weather Comments: Heavy rain before survey began

No.	Species	Time (24h)	Age (A, J, U)	Sex (M, F, U)	Repro.[2]	RFA (mm)	Mass (g)	WNS Score (0-3)	Net ID	Hgt in Net (m)	Band* #	Comments (e.g., samples taken, transmitter #, disposition)
1	Lasiurus borealis	2125	A	F	P	41.	13.5	0	B	7		
2	Lasiurus borealis	2125	A	F	P	40.7	13	0	A	5		

[1] **Beaufort wind scale**. 0 = smoke rises vertically (<1 mph), 1 = wind direction shown by smoke (1-3 mph), 2 = wind felt on face; leaves rustle (4-7 mph), 3 = leaves, twigs in constant motion (8-12 mph), 4 = dust rises; small branches move (13-18 mph), 5 = small trees in leaf begin to sway (19-24 mph)

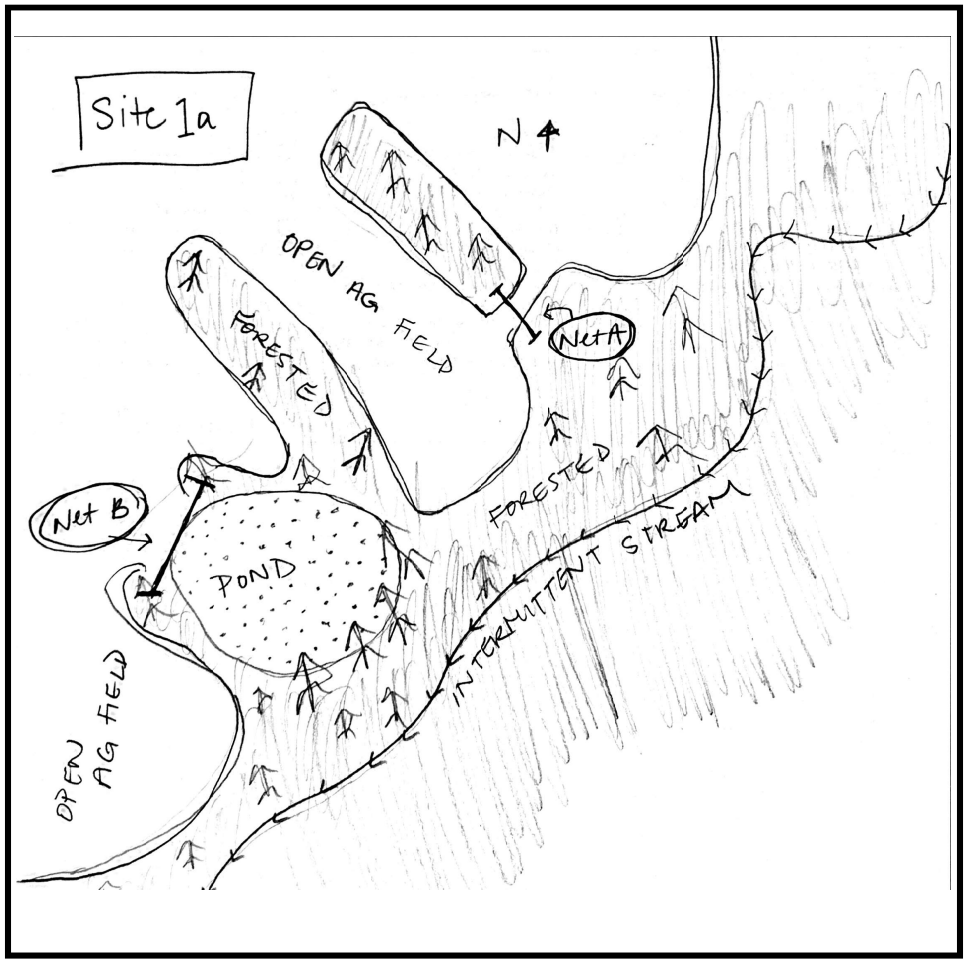
[2] For **females**: L = lactating, PL = post-lactating, NR = non-reproductive; for **males**: TD = testes descended, NR = non-reproductive

* Apply band to LEFT arm for females and RIGHT arm for males

*Note: U (unknown) only to be used for **escaped** bats*

Stantec

Net Site Description



[1] Bridge, Bottomland Forest, Cave Entrance, Creek/Riparian, Field Edge, Mine Portal, Pond, Structure, Upland Forest, Other (describe)

Project Name/No.: Bluegrass Plains / 172608590 **Date:** 15 May 2024

Site ID: Site 1a **Est. Distance to Water** (ft): 3

VEGETATION

Primary Habitat Type[1]: Pond, upland deciduous forest blocks

Potential Roost: Large Trees | Snags | Both | Other (e.g., structure) — No potential roosts present

Roost Tree Potential: High | Moderate | (Low)

Dominant Canopy Species **Avg. Canopy DBH range** (in): 5-12

1. Robinia pseudoacacia 2. Acer saccharinum 3. Celtis occidentalis

Canopy Closure: Closed (80% +) | (Moderate (40 – 80%)) | Open (0 – 40%)

Dominant Subcanopy Species **Avg. Subcanopy DBH range** (in): 2-4

1. Acer saccharinum 2. Robinia pseudoacacia 3. Malclura pomifera

Sub-Canopy Clutter: High (60% +) | (Moderate (30 – 60%)) | Low (0 – 30%)

Dominant Shrub/Understory Species

1. Lonicera mackii 2. Acer saccharinum 3. Toxicodendron radicans

Shrub/ Understory Clutter: (High (60% +)) | Moderate (30 – 60%) | Low (0 – 30%)

STREAM CHARACTERISTICS (if relevant)

Bank Height (ft): N/A **Channel Width:** N/A **Stream Width:** N/A

Riparian Width right bank: N/A left bank: N/A **Avg. Water Depth:** N/A

Other Wildlife Observed: Cardinal bycatch in net A

Additional Comments:

Stantec

Bat Capture Datasheet

Project Name/No.: Bluegrass Plains / 172608590 **Date:** 16 May 2024 **Biologist(s):** Kristen Clemens, Marissa Angel

Site ID: Site 1a and 1b **County/State:** Fayette/ KY **Moon Phase:** Waxing gibbous 60% **Sunset:** 20:41

Map Kilometer No./Quad: Clintonville Quad **Latitude:** 38.032038 **Longitude:** -84.31675 **Moonrise:** 14:16 **Moonset:** 03:12

General Site Description: Pond, intermittent stream, and small forest blocks surrounded by agricultural fields **Nets Open:** 20:40 **Nets Closed:** 01:41

Time	Temp (F)	Wind[1]	% Cloud Cover
20:40	73.5	0	25
21:40	70.1	0	15
22:40	68.7	0	10
23:40	67.0	0	50
00:40	66.5	0	15
01:40	66.4	0	10

Net ID (A, B,.)	Length (m)	Height*	Net Area	Lat. (decimal degrees)	Long.	Road	Stream	Pond	Other (specify)	Photo ID, Notes
A	9	7.5	67.5	38.031930	-84.315542				X	Forested corridor/ field gap
B	9	7.5	67.5	38.031176	-84.316614			X		
C	6	5	30	38.030071	-84.316066		X			
D	15	7.5	112.5	38.030098	-84.314755				X	Forested corridor/ field gap

** One net at full extension ~ 2.5m high*

Weather Comments: Clear, humid evening

No.	Species	Time (24h)	Age (A, J, U)	Sex (M, F, U)	Repro.[2]	RFA (mm)	Mass (g)	WNS Score (0-3)	Net ID	Hgt in Net (m)	Band* #	Comments (e.g., samples taken, transmitter #, disposition)
1	Lasiurus borealis	2350	A	F	P	39	14.25	0	A	1		

[1] **Beaufort wind scale**. 0 = smoke rises vertically (<1 mph), 1 = wind direction shown by smoke (1-3 mph), 2 = wind felt on face; leaves rustle (4-7 mph), 3 = leaves, twigs in constant motion (8-12 mph), 4 = dust rises; small branches move (13-18 mph), 5 = small trees in leaf begin to sway (19-24 mph)

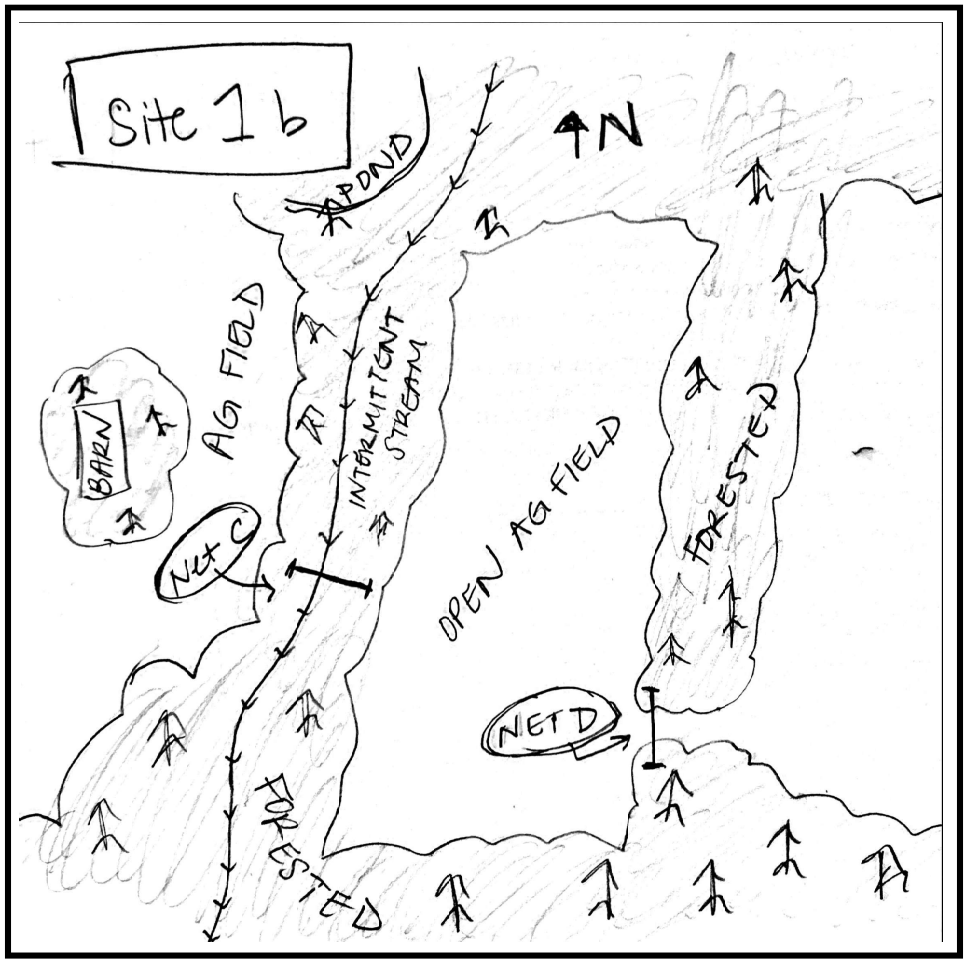
[2] For **females**: L = lactating, PL = post-lactating, NR = non-reproductive; for **males**: TD = testes descended, NR = non-reproductive

* Apply band to LEFT arm for females and RIGHT arm for males

*Note: U (unknown) only to be used for **escaped** bats*

Stantec

Net Site Description



[1] Bridge, Bottomland Forest, Cave Entrance, Creek/Riparian, Field Edge, Mine Portal, Pond, Structure, Upland Forest, Other (describe)

Project Name/No.: Bluegrass Plains / 172608590 **Date:** 16 May 2024

Site ID: Site 1b **Est. Distance to Water** (ft): 0

VEGETATION

Primary Habitat Type[1]: Intermittent stream, upland deciduous forest block

Potential Roost: Large Trees | Snags | Both | (Other (e.g., structure))

Roost Tree Potential: High | Moderate | (Low)

Dominant Canopy Species **Avg. Canopy DBH range** (in): 4-10

1. Robinia pseudoacacia 2. Juglans nigra 3. Celtis occidentalis

Canopy Closure: Closed (80% +) | (Moderate (40 – 80%)) | Open (0 – 40%)

Dominant Subcanopy Species **Avg. Subcanopy DBH range** (in): 2-4

1. Celtis occidentalis 2. Robinia pseudoacacia 3. Acer negundo

Sub-Canopy Clutter: High (60% +) | (Moderate (30 – 60%)) | Low (0 – 30%)

Dominant Shrub/Understory Species

1. Lonicera mackii 2. Acer negundo 3. Toxicodendron radicans

Shrub/ Understory Clutter: High (60% +) | (Moderate (30 – 60%)) | Low (0 – 30%)

STREAM CHARACTERISTICS (if relevant)

Bank Height (ft): 1 **Channel Width:** 2 **Stream Width:** 2.5

Riparian Width right bank: 100 ft left bank: 50 ft **Avg. Water Depth:** 1.5 ft

Other Wildlife Observed: Indigo bunting and cowbird bycatch in net A

Additional Comments: Barn present on western side of site was inspected and no bat sign (guano, staining, chatter) was found. No bats were observed emerging from the barn at sundown

Stantec

Bat Capture Datasheet

Project Name/No.: Bluegrass Plains / 172608590 **Date:** 18 May 2024 **Biologist(s):** Kristen Clemens, Marissa Angel

Site ID: Site 1b and Site 2 **County/State:** Fayette/ KY **Moon Phase:** Waxing gibbous 77% **Sunset:** 20:44

Map Kilometer No./Quad: Clintonville Quad **Latitude:** 38.042620 **Longitude:** -84.316192 **Moonrise:** 15:15 **Moonset:** 03:34

General Site Description: Small intermittent streams and forest blocks surrounded by ag fields **Nets Open:** 20:40 **Nets Closed:** 01:45

Time	Temp (F)	Wind[1]	% Cloud Cover
20:40	79.0	0	5
21:40	78.2	0	0
22:40	66.5	0	0
23:40	65.2	0	0
00:40	63.7	0	0
01:40	63.5	0	0

Net ID (A, B,.)	Length (m)	Height*	Net Area	Lat. (decimal degrees)	Long.	Road	Stream	Pond	Other (specify)	Photo ID, Notes
E	9	7.5	67.5	38.042413	-84.314969				X	Forested corridor/ field gap
F	4	5	20	38.042691	-84.317493		X			
C	6	5	30	38.030071	-84.316066		X			
D	15	7.5	112.5	38.030098	-84.314755				X	Forested corridor/ field gap

** One net at full extension ~ 2.5m high*

Weather Comments: Clear, humid evening

No.	Species	Time (24h)	Age (A, J, U)	Sex (M, F, U)	Repro.[2]	RFA (mm)	Mass (g)	WNS Score (0-3)	Net ID	Hgt in Net (m)	Band* #	Comments (e.g., samples taken, transmitter #, disposition)
1	Lasiurus borealis	00:55	A	F	P	40	14.75	0	E	3.5		

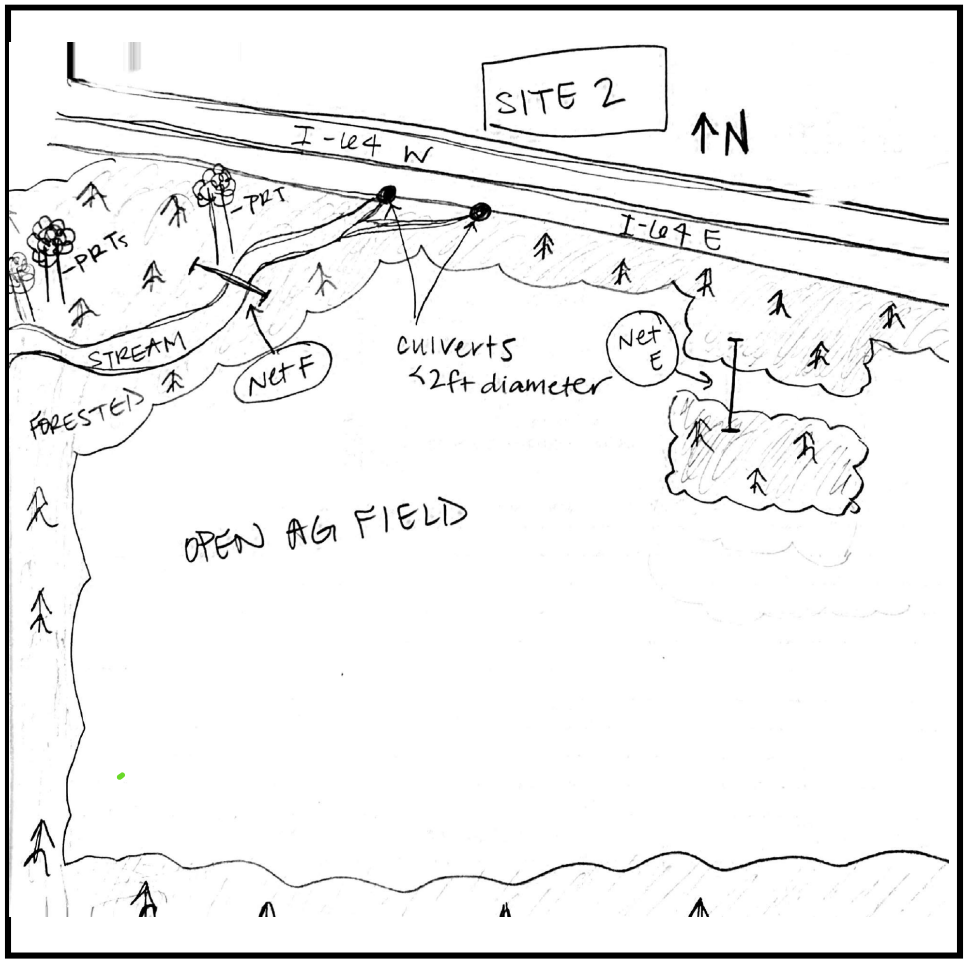
[1] **Beaufort wind scale**. 0 = smoke rises vertically (<1 mph), 1 = wind direction shown by smoke (1-3 mph), 2 = wind felt on face; leaves rustle (4-7 mph), 3 = leaves, twigs in constant motion (8-12 mph), 4 = dust rises; small branches move (13-18 mph), 5 = small trees in leaf begin to sway (19-24 mph)

[2] For **females**: L = lactating, PL = post-lactating, NR = non-reproductive; for **males**: TD = testes descended, NR = non-reproductive

* Apply band to LEFT arm for females and RIGHT arm for males

*Note: U (unknown) only to be used for **escaped** bats*

Net Site Description



[1] Bridge, Bottomland Forest, Cave Entrance, Creek/Riparian, Field Edge, Mine Portal, Pond, Structure, Upland Forest, Other (describe)

Project Name/No.: Bluegrass Plains / 172608590 **Date:** 18 May 2024

Site ID: Site 2 **Est. Distance to Water** (ft): 0

VEGETATION

Primary Habitat Type[1]: Creek/ riparian and upland forest

Potential Roost: Large Trees | (Snags) | Both | Other (e.g., structure)

Roost Tree Potential: High | (Moderate) | Low

3 suitable snags near Net F

Dominant Canopy Species **Avg. Canopy DBH range** (in): 12

1. Robinia pseudoacacia 2. Acer saccharum 3. Celtis occidentalis

Canopy Closure: Closed (80% +) | (Moderate (40 – 80%)) | Open (0 – 40%)

Dominant Subcanopy Species **Avg. Subcanopy DBH range** (in): 4

1. Malclura pomifera 2. Robinia pseudoacacia 3. Acer negundo

Sub-Canopy Clutter: (High (60% +)) | Moderate (30 – 60%) | Low (0 – 30%)

Dominant Shrub/Understory Species

1. Lonicera mackii 2. Celtis occidentalis 3. Vitis spp

Shrub/ Understory Clutter: (High (60% +)) | Moderate (30 – 60%) | Low (0 – 30%)

very cluttered with honeysuckle

STREAM CHARACTERISTICS (if relevant)

Bank Height (ft): 2 ft **Channel Width:** 2.5 ft **Stream Width:** 2 ft

Riparian Width right bank: 70 ft left bank: 55 ft **Avg. Water Depth:** 2 in

Other Wildlife Observed:

Additional Comments: Overall poor quality habitat. Few mature trees or contiguous forest, heavy presence of invasive plant species, potential pesticide/ herbicide use in ag fields, limited water resources, loud noise from heavy traffic on highway. Few to no bats observed flying in the area each night

Appendix D Photographic Log

Stantec

Photographic Log

Client:	**East Kentucky Power Cooperative**	**Project:**	**Bluegrass Plains Solar Project**
Site Name:	**Bluegrass Plains Solar**	**Site Location:**	**Fayette County, Kentucky**

Photograph ID: 1 **Species:** Lasiurus borealis **Capture Location (Lat/Long):** 38.031176, -84.316589 **Site/Net ID:** MS-01, Net B **Sex:** Female **Reproductive Status:** Pregnant **RFA (mm):** 41.0 **Weight (g):** 13.5 **Survey Date:** 5/15/2024	
Photograph ID: 2 **Species:** Lasiurus borealis **Capture Location (Lat/Long):** 38.042413, -84.314969 **Site/Net ID:** MS-02, Net E **Sex:** Female **Reproductive Status:** Pregnant **RFA (mm):** 40 **Weight (g):** 14.75 **Survey Date:** 5/18/2024	

Stantec

Photographic Log

Client:	**East Kentucky Power Cooperative**	**Project:**	**Bluegrass Plains Solar Project**
Site Name:	**Bluegrass Plains Solar**	**Site Location:**	**Fayette County, Kentucky**

Photograph ID: 1 **Mist Net Site:** MS-01 **Net:** A **Type:** Forested corridor **Location:** 38.031930, -84.315542	
Photograph ID: 2 **Mist Net Site:** MS-01 **Net:** A **Type:** Forested corridor **Location:** 38.031930, -84.315542	

Client:	**East Kentucky Power Cooperative**	**Project:**	**Bluegrass Plains Solar Project**
Site Name:	**Bluegrass Plains Solar**	**Site Location:**	**Fayette County, Kentucky**

Photograph ID: 3

Mist Net Site:
MS-01

Net:
B

Type:
Pond/field edge

Location:
38.031176, -84.316589

Photograph ID: 4

Mist Net Site:
MS-01

Net:
C

Type:
Forested stream

Location:
38.030071, -84.316066

Client:	**East Kentucky Power Cooperative**	**Project:**	**Bluegrass Plains Solar Project**
Site Name:	**Bluegrass Plains Solar**	**Site Location:**	**Fayette County, Kentucky**

Photograph ID: 5 **Mist Net Site:** MS-01 **Net:** C **Type:** Forested stream **Location:** 38.030071, -84.316066	
Photograph ID: 6 **Mist Net Site:** MS-01 **Net:** D **Type:** Forested corridor/field edge **Location:** 38.030098, -84.314755	

Client:	**East Kentucky Power Cooperative**	**Project:**	**Bluegrass Plains Solar Project**
Site Name:	**Bluegrass Plains Solar**	**Site Location:**	**Fayette County, Kentucky**

Photograph ID: 7 **Mist Net Site:** MS-01 **Net:** D **Type:** Forested corridor/field edge **Location:** 38.030098, -84.314755	
Photograph ID: 8 **Mist Net Site:** MS-02 **Net:** E **Type:** Forested corridor **Location:** 38.042413, -84.314969	

Client:	**East Kentucky Power Cooperative**	**Project:**	**Bluegrass Plains Solar Project**
Site Name:	**Bluegrass Plains Solar**	**Site Location:**	**Fayette County, Kentucky**

Photograph ID: 9 **Mist Net Site:** MS-02 **Net:** E **Type:** Forested corridor **Location:** 38.042413, -84.314969	
Photograph ID: 10 **Mist Net Site:** MS-02 **Net:** F **Type:** Forested stream **Location:** 38.042691, -84.317493	

Stantec

Photographic Log

Client:	**East Kentucky Power Cooperative**	**Project:**	**Bluegrass Plains Solar Project**
Site Name:	**Bluegrass Plains Solar**	**Site Location:**	**Fayette County, Kentucky**

Photograph ID: 11

Mist Net Site:
MS-02

Net:
F

Type:
Forested stream

Location:
38.042691, -84.317493

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Kentucky Ecological Services Field Office
330 West Broadway, Suite 265
Frankfort, Kentucky 40601
(502) 695-0468

August 30, 2024

Shane Kelley
Stantec Consulting Services Inc.
9200 Shelbyville Road Suite 800
Louisville, KY 40222

Subject: FWS 2024-0029791; Bluegrass Plains Solar Project; Fayette County, Kentucky

Dear Shane Kelley:

The U.S. Fish and Wildlife Service's Kentucky Field Office (KFO) has reviewed the above-referenced project information received by our office on July 12, 2024. On behalf of East Kentucky Power Cooperative (EKPC), Stantec Consulting Services, Inc. (Stantec) is proposing a solar development project in Fayette County, Kentucky. EKPC plans to request financing from the U.S. Department of Agriculture, Rural Utilities Service for this project. The KFO offers the following comments in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Project Description
EKPC is proposing to construct a solar energy facility immediately northeast of the existing EKPC Avon 138-kilovolt transmission substation located at 5481 Winchester Road in Lexington, Kentucky (38.030093°N, -84.320932°W). The proposed 40-megawatt alternating current photovoltaic (PV) electrical generating facility would include 15-foot-tall PV solar tracking panels, associated ground-mounted racking structure, access roads, inverters, medium voltage transformers, buried electrical collection cabling, a step-up transformer, transmission line from the collector system to the existing substation, security fencing, laydown areas, and an operations and maintenance building. The project site consists of open fields, forested habitat, seven wetlands, five open water ponds, one perennial stream, four intermittent streams, and twelve ephemeral streams. No stream impacts are proposed. A total of 66 acres of tree removal will be required for the project.

Federally Listed Species
The applicant has determined that the proposed project has the potential to affect the gray bat (*Myotis grisescens*), Indiana bat (*Myotis sodalis*), northern long-eared bat (*Myotis septentrionalis*), clubshell (*Pleurobema clava*), fanshell (*Cyprogenia stegaria*), longsolid (*Fusconaia subrotunda*), and Short's bladderpod (*Physaria globosa*). Further, the applicant

determined that the proposed action is not likely to jeopardize the continued existence of the tricolored bat (*Perimyotis subflavus*) and salamander mussel (*Simpsonaias ambigua*). A habitat assessment of the project site was performed by Stantec on November 27-30, 2023.

Gray bat

No features that could provide suitable roosting habitat for the gray bat were identified at the project site, or within a one-mile buffer of the project site, during the habitat assessment. In addition, the applicant will implement BMPs to minimize impacts to gray bat foraging habitat from erosion and sedimentation. Therefore, any impacts to gray bat foraging habitat are expected to be insignificant. Based on lack of suitable roosting habitat and implementation of BMPs, we agree with your determination that the proposed action, "may affect, but is not likely to adversely affect" the gray bat.

Indiana bat and northern long-eared bat (NLEB)

No features that could be used as hibernacula by these species were identified at the project site during the habitat assessment. The trees in the woodlot were identified as suitable summer roosting, foraging, and commuting habitat for these species, and the proposed project will require the removal of 66 acres of this habitat. The proposed project is located within "Potential" habitat for both species. Mist-net survey plans were approved with conditions on April 30, 2024 and were conducted from May 15 to May 18, 2024. No Indiana bats or NLEBs were captured. The KFO approved the results of this survey on July 9, 2024. Based on probable absence of the Indiana bat and NLEB during summer occupancy and the lack of suitable hibernacula within the action area, we agree with your determination that the proposed action "may affect, but is not likely to adversely affect" the Indiana bat and NLEB.

Mussel species

The above-listed mussels are typically found in small to large rivers in shallow or deep water. No mussel species were observed during the field assessment and the majority of the streams within the project area lack the flow regime necessary to support these mussel species. No impacts are proposed to perennial streams that could be suitable for mussels. In addition, Best Management Practices (BMPs) would be utilized to minimize impacts to downstream waters. Based on lack of impacts to suitable mussel habitat and implementation of BMPs, we agree with your determination that the proposed project "may affect, but is not likely to adversely affect" the above-listed mussel species.

Short's bladderpod

The proposed action area consists of open fields and forested habitat. Short's bladderpod typically grows on steep, rocky, wooded slopes and talus (sloping mass of rock fragments below a bluff or ledge) areas. It also occurs along tops, bases, and ledges of bluffs and infrequently on sites with little topographic relief. The species usually is found in these habitats on south- to west-facing slopes near rivers or streams. Most populations are closely associated with calcareous outcrops. Based on the habitat assessment report, the project area does not contain suitable habitat for this species; therefore, we agree with your determination that the proposed action, "may affect, but is not likely to adversely affect" Short's bladderpod.

Federally Proposed Species

Tricolored bat

On September 14, 2022, the Service published a proposal in the Federal Register to list the tricolored bat (TCB) as endangered under the ESA. The Service has up to 12-months from the date of the proposal published to make a final determination, either to list the TCB under the ESA or to withdraw the proposal. Species proposed for listing are not afforded protection under the ESA; however, as soon as a listing becomes effective the prohibitions against jeopardizing its continued existence and "take" will apply.

On behalf of EKPC, Stantec has requested concurrence that the project will not jeopardize the continued existence of the TCB. No caves or cave-like features that could provide suitable winter roosting habitat for the TCB were observed within the project area. The proposed project will require the removal of approximately 66 acres of suitable summer roosting habitat for the TCB. Mist-net survey plans were approved with conditions on April 30, 2024 and were conducted from May 15 to May 18, 2024. No TCBs were captured. The KFO approved the results of this survey on July 9, 2024. Additionally, the tricolored bat is a widely dispersed species, occurring across 39 states. Based on the size of the species' range and probable absence of the tricolored bat within the action area, we agree that the proposed project is not likely to jeopardize the continued existence of the TCB.

Salamander mussel

On August 22, 2023, the Service published a proposal in the Federal Register to list the salamander mussel as endangered under the ESA. The Service has up to 12-months from the date of the proposal published to make a final determination, either to list the salamander mussel under the ESA or to withdraw the proposal. Species proposed for listing are not afforded protection under the ESA; however, as soon as a listing becomes effective the prohibitions against jeopardizing its continued existence and "take" will apply.

On behalf of EKPC, Stantec has requested concurrence that the project will not jeopardize the continued existence of the salamander mussel. The species occurs within medium to large perennial streams and lakes with swift currents. Based on the lack of suitable habitat within the action area and proposed implementation of BMPs to prevent erosion and sedimentation to downstream waters, we agree that the proposed project is not likely to jeopardize the continued existence of the salamander mussel.

Summary

The KFO agrees that the proposed action "may affect but is not likely to adversely affect" the gray bat, Indiana bat, northern long-eared bat, clubshell, fanshell, longsolid, and Short's bladderpod. The KFO also agree that the proposed action is not likely to jeopardize the continued existence of the tricolored bat and salamander mussel. If the proposed action is subsequently modified or new information indicates that the proposed action may affect listed species or their habitat in a manner not previously considered, additional coordination with our office may be necessary.

We appreciate the opportunity to review the proposed project. If you have any questions, please contact Karah Jaffe of my staff at karah_jaffe@fws.gov.

Sincerely,

for Virgil Lee Andrews, Jr.
Field Supervisor

Federal Aviation Administration

The FAA is currently experiencing delays in processing off-airport aeronautical studies. These delays are currently resulting in an approximate 15 additional days in processing time. The FAA will continue to work aeronautical studies on a first come, first served basis. Please take this possible delay into consideration when determining when to submit your case. If your submitted aeronautical study requires priority and 60 days has elapsed since submission, please contact the OEG Specialist for your state with the rationale for your request and it will be reviewed for escalation. The issue causing these delays is actively being mitigated and is expected to be resolved around August.

« OE/AAA

Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference CFR Title 14 Part 77.9.

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the FAA Co-location Policy
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the Air Traffic Areas of Responsibility map for Off Airport construction, or contact the FAA Airports Region / District Office for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

* **Structure Type:**	SOLAR | Solar Panel Please select structure type and complete location point information.
Latitude:	38 Deg 2 M 25.2 S N
Longitude:	84 Deg 18 M 28.10 S W
Horizontal Datum:	NAD83
Site Elevation (SE):	1020 (nearest foot)
Structure Height :	15 (nearest foot)
Is structure on airport:	(•) No ( ) Yes

Results

You do not exceed Notice Criteria.

Federal Aviation Administration

The FAA is currently experiencing delays in processing off-airport aeronautical studies. These delays are currently resulting in an approximate 15 additional days in processing time. The FAA will continue to work aeronautical studies on a first come, first served basis. Please take this possible delay into consideration when determining when to submit your case. If your submitted aeronautical study requires priority and 60 days has elapsed since submission, please contact the OEG Specialist for your state with the rationale for your request and it will be reviewed for escalation. The issue causing these delays is actively being mitigated and is expected to be resolved around August.

« OE/AAA

Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

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The tool below will assist in applying Part 77 Notice Criteria.

* **Structure Type:**	SOLAR | Solar Panel Please select structure type and complete location point information.
Latitude:	38 Deg 2 M 32.3 S N
Longitude:	84 Deg 18 M 59.86 S W
Horizontal Datum:	NAD83
Site Elevation (SE):	1020 (nearest foot)
Structure Height :	15 (nearest foot)
Is structure on airport:	(•) No ( ) Yes

Results

You do not exceed Notice Criteria.

Federal Aviation Administration

The FAA is currently experiencing delays in processing off-airport aeronautical studies. These delays are currently resulting in an approximate 15 additional days in processing time. The FAA will continue to work aeronautical studies on a first come, first served basis. Please take this possible delay into consideration when determining when to submit your case. If your submitted aeronautical study requires priority and 60 days has elapsed since submission, please contact the OEG Specialist for your state with the rationale for your request and it will be reviewed for escalation. The issue causing these delays is actively being mitigated and is expected to be resolved around August.

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The tool below will assist in applying Part 77 Notice Criteria.

* **Structure Type:**	SOLAR | Solar Panel Please select structure type and complete location point information.
Latitude:	38 Deg 1 M 52.11 S N
Longitude:	84 Deg 18 M 25.62 S W
Horizontal Datum:	NAD83
Site Elevation (SE):	1025 (nearest foot)
Structure Height :	15 (nearest foot)
Is structure on airport:	(•) No ( ) Yes

Results

You do not exceed Notice Criteria.

Federal Aviation Administration

The FAA is currently experiencing delays in processing off-airport aeronautical studies. These delays are currently resulting in an approximate 15 additional days in processing time. The FAA will continue to work aeronautical studies on a first come, first served basis. Please take this possible delay into consideration when determining when to submit your case. If your submitted aeronautical study requires priority and 60 days has elapsed since submission, please contact the OEG Specialist for your state with the rationale for your request and it will be reviewed for escalation. The issue causing these delays is actively being mitigated and is expected to be resolved around August.

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The tool below will assist in applying Part 77 Notice Criteria.

* **Structure Type:**	SOLAR | Solar Panel Please select structure type and complete location point information.
Latitude:	38 Deg 1 M 49.60 S N
Longitude:	84 Deg 19 M 23.78 S W
Horizontal Datum:	NAD83
Site Elevation (SE):	1025 (nearest foot)
Structure Height :	15 (nearest foot)
Is structure on airport:	(•) No ( ) Yes

Results

You do not exceed Notice Criteria.

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EXHIBIT E – ACOUSTIC ASSESSMENT

Acoustic Assessment Report

Bluegrass Plains Solar Project

Fayette County, Kentucky

April 4, 2024

Prepared for

East Kentucky Power Cooperative
4775 Lexington Road
Winchester, KY 40391

Prepared by

Tetra Tech
424 Lewis Hargett Circle
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Lexington, KY 40503

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Acronyms and Abbreviations

µPa	microPascal
AC	alternating current
ANSI	American National Standards Institute
Applicant	East Kentucky Power Cooperative
dB	decibel
dBA	A-weighted decibel
dBL	linear decibel
DC	direct current
EKPC	East Kentucky Power Cooperative
Hz	hertz
I-64	Interstate 64
ISO	International Organization for Standardization
L_{dn}	day-night sound level
L_{eq}	equivalent sound level
L_{max}	maximum sound level
L_P	sound pressure level
L_w	sound power
MW	megawatt
NSR	Noise Sensitive Receptor
Project	Bluegrass Plains Solar Project
PV	photovoltaic
Tetra Tech	Tetra Tech, Inc.
EPA	United States Environmental Protection Agency

1.0 INTRODUCTION

East Kentucky Power Cooperative (EKPC) (the Applicant) plans to construct and operate the Bluegrass Plains Solar Project (the Project), a solar photovoltaic power generation facility that will consist of an up to 40-megawatt (MW) ground-mounted solar photovoltaic system and related interconnection and ancillary facilities.

The proposed Project is located on approximately 386 acres of agricultural land on contiguous parcels in Fayette County, Kentucky between US Highway 60 (Winchester Road) along the property's southern border and Interstate 64 (I-64) along the property's northern border. The Project will include a network of internal roads accessed by multiple gates providing openings through the perimeter fence. Access roads will be approximately 20 feet in width. Project components will include photovoltaic (PV) solar modules mounted on single axis tracker systems supported by steel posts. Panels will move to track the sun over the course of the day. Other components of the PV system include inverters, medium voltage transformers, junction boxes, direct current and alternating current (DC and AC) electrical collection systems, and collection lines. The Project components will connect to the existing EKPC-owned substation located adjacent to the Project's southwest boundary line.

Tetra Tech prepared this Acoustic Assessment Report to support Project permitting. The report provides background information on concepts related to environmental sound, including descriptions of the noise metrics used throughout the report; applicable noise criteria; review of existing conditions; predicted noise levels from construction and operation of the Project equipment; and an assessment of the potential offsite noise impacts from construction and operation of the Project. Potential offsite noise impacts will be evaluated relative to the environmental noise guidelines given by the United States Environmental Protection Agency (EPA). The Project and nearby noise sensitive receptors (NSRs; e.g., residences) are shown in Figure 1.

1.1 Acoustical Metrics and Terminology

All sounds originate with a source, whether it is a human voice, motor vehicles on a roadway, or a combustion turbine. Energy is required to produce sound and this sound energy is transmitted through the air in the form of sound waves – tiny, quick oscillations of air pressure just above and just below atmospheric pressure. These oscillations, or sound pressures, impinge on the ear, creating the sound we hear. A sound source is defined by a sound power level (L_W), which is independent of any external factors. By definition, sound power is the rate at which acoustical energy is radiated outward and is expressed in units of watts.

A source sound power level cannot be measured directly. It is calculated from measurements of sound intensity or sound pressure at a given distance from the source outside the acoustic and geometric near-field. A sound pressure level (L_P) is a measure of the sound wave fluctuation at a given receiver location and can be obtained through the use of a microphone or calculated from information about the source sound power level and the surrounding environment. The sound pressure level in decibels (dB) is the logarithm of the ratio of the sound pressure of the source to the reference sound pressure of

20 microPascals (µPa), multiplied by 20[1]. The range of sound pressures that can be detected by a person with normal hearing is very wide, ranging from about 20 µPa for very faint sounds at the threshold of hearing, to nearly 10 million µPa for extremely loud sounds such as a jet during take-off at a distance of 300 feet.

Broadband sound includes sound energy summed across the entire audible frequency spectrum. In addition to broadband sound pressure levels, analysis of the various frequency components of the sound spectrum can be completed to determine tonal characteristics. The unit of frequency is hertz (Hz) measuring the cycles per second of the sound pressure waves. Typically, the frequency analysis examines 11 octave bands ranging from 16 Hz (low) to 16,000 Hz (high). Since the human ear does not perceive every frequency with equal loudness, spectrally-varying sounds are often adjusted with a weighting filter. The A-weighted filter is applied to compensate for the frequency response of the human auditory system and is represented in A-weighted decibel (dBA).

Sound can be measured, modeled, and presented in various formats, with the most common metric being the equivalent sound level (L_{eq}). The equivalent sound level has been shown to provide both an effective and uniform method for comparing time-varying sound levels and is widely used in acoustic assessments of wind energy projects. Community sound levels are also often described in terms of the day-night averaged sound level (L_{dn}), which accounts for the increased potential for annoyance that comes with elevated sound levels at night. In addition, the maximum sound level (L_{max}) can be used to quantify the maximum instantaneous sound pressure level generated by a source and is often used in establishing regulatory noise limits. Estimates of noise sources and outdoor acoustic environments, and the comparison of relative loudness are presented in Table 1. Table 2presents additional reference information on terminology used in the report.

Table 1. Sound Pressure Levels and Relative Loudness of Noise Sources and Acoustic Environments

Noise Source or Activity	Sound Level (dBA)	Subjective Impression
Vacuum cleaner (10 feet)	70	Moderate
Passenger car at 65 miles per hour (25 feet)	65	
Large store air-conditioning unit (20 feet)	60	
Light auto traffic (100 feet)	50	Quiet
Quiet rural residential area with no activity	45	
Bedroom or quiet living room; Bird calls	40	Faint
Typical wilderness area	35	
Quiet library, soft whisper (15 feet)	30	Very quiet
Wilderness with no wind or animal activity	25	Extremely quiet
High-quality recording studio	20	
Acoustic test chamber	10	Just audible
	0	Threshold of hearing

Adapted from: Kurze and Beranek (1988)

[1] The sound pressure level (L_p) in dB corresponding to a sound pressure (p) is given by the following equation:

Lp = 20 log10 (p / pref);

Where:

p = the sound pressure in µPa; and

pref = the reference sound pressure of 20 µPa.

Table 2. Acoustic Terms and Definitions

Term	Definition
Noise	Typically defined as unwanted sound. This word adds the subjective response of humans to the physical phenomenon of sound. It is commonly used when negative effects on people are known to occur.
Sound Pressure Level (L_P)	Pressure fluctuations in a medium. Sound pressure is measured in dB referenced to 20 µPa, the approximate threshold of human perception to sound at 1,000 Hz.
Sound Power Level (L_W)	The total acoustic power of a noise source measured in dB referenced to picowatts (one trillionth of a watt). Noise specifications are provided by equipment manufacturers as sound power as it is independent of the environment in which it is located. A sound level meter does not directly measure sound power.
Equivalent Sound Level (L_{eq})	The L_{eq} is the continuous equivalent sound level, defined as the single sound pressure level that, if constant over the stated measurement period, would contain the same sound energy as the actual monitored sound that is fluctuating in level over the measurement period.
A-Weighted Decibel (dBA)	Environmental sound is typically composed of acoustic energy across all frequencies. To compensate for the auditory frequency response of the human ear, an A-weighting filter is commonly used for describing environmental sound levels. Sound levels that are A-weighted are presented as dBA in this report.
Unweighted Decibels (dBL)	Unweighted sound levels are referred to as linear. Linear decibels are used to determine a sound's tonality and to engineer solutions to reduce or control noise as techniques are different for low and high frequency noise. Sound levels that are linear are presented as dBL in this report.
Propagation and Attenuation	Propagation is the decrease in amplitude of an acoustic signal due to geometric spreading losses with increased distance from the source. Attenuation refers to the decrease in energy as sound propagates through a medium. Sound attenuation factors include air absorption, terrain effects, sound interaction with the ground, diffraction of sound around objects and topographical features, foliage, and meteorological conditions including wind velocity, temperature, humidity, and atmospheric conditions.

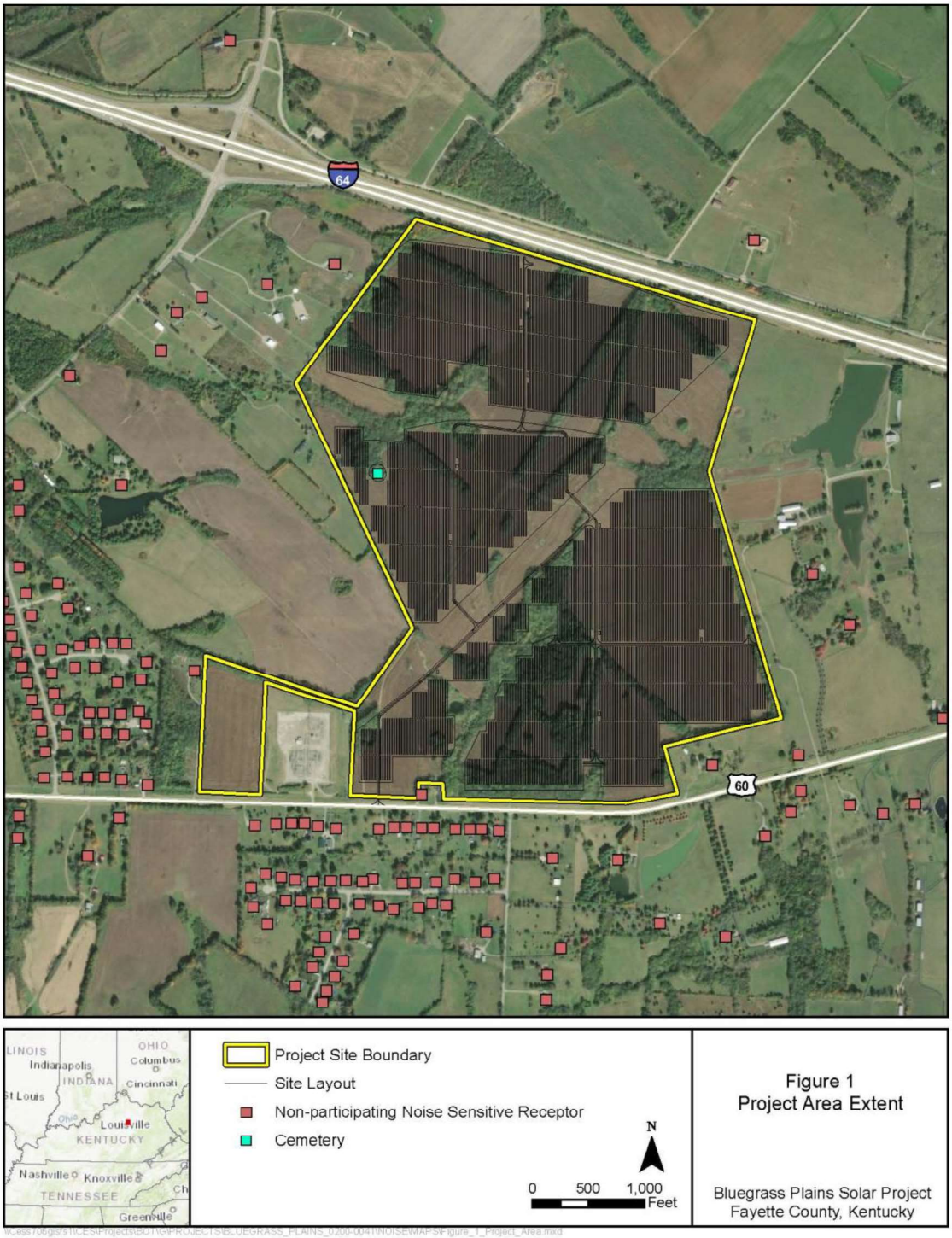

Figure 1. Project Location

2.0 NOISE CRITERIA

A review was conducted of noise regulations applicable to the Project at the federal, state, county, and local levels. There are no federal, state, county, or local environmental noise requirements specific to this Project; however, in the State of Kentucky the EPA environmental noise guidelines have been used to evaluate potential noise impacts associated with solar energy facilities.

2.1 Environmental Protection Agency Environmental Noise Guidelines

While the EPA has no regulation governing environmental noise, the agency has conducted several extensive studies to identify the effects of sound level on public health and welfare. In 1974, the EPA published a landmark document entitled "Information on Levels of Environmental Noise Requisite to Protect the Public Health and Welfare with an Adequate Margin of Safety." This publication remains the authoritative study based on a large sampling of community reaction to noise. The EPA sound level guidelines do not provide an absolute measure of noise impact, but rather a consensus on potential activity interference and annoyance. For outdoor residential areas, the recommended EPA guideline is an L_{dn} of 55 dBA (equivalent to an L_{eq} (1-hour) of 48.6 dBA assuming continuous 24-hour operation). The EPA sound level guidelines also suggest an L_{eq} of 70 dBA (24-hour) limit to avoid adverse effects on health and safety at publicly accessible property lines or work areas. Since these protective levels were derived without concern for technical or economic feasibility and contain a margin of safety to ensure their protective value, they must not be viewed as standards, criteria, regulations, or goals. Rather, they should be viewed as levels below which there is no reason to suspect that the general population will be at risk from any of the identified effects of noise. The EPA criteria limits are summarized in Table 3.

Table 3. Summary of EPA Cause and Effect Noise Levels

Location	Level	Effect
All public accessible areas with prolonged exposure	70 dBA $L_{eq(24)}$	Safety / hearing loss concerns
Outdoor at residential structure and other NSAs where a large amount of time is spent	55 dBA L_{dn}	Protection against annoyance and activity interference
Outdoor areas where limited amounts of time are spent, e.g., park areas, school yards, golf courses, etc.	55 dBA $L_{eq(24)}$	
Indoor residential	45 dBA L_{dn}	
Indoor non-residential	55 dBA $L_{eq(24)}$	

Source: EPA 1974

The application of the EPA noise guidelines is a common compliance approach used to ensure adequate protection of human health and welfare. While the EPA criteria limits cannot be used to infer audibility thresholds, compliance with EPA guidelines would likely result in the reduced probability of dissatisfaction. Inaudibility under all operating conditions is an unrealistic expectation, and one that is not required under any other industrial, commercial, or agricultural activity in the state of Kentucky. Guideline limits identified are absolute and independent of the existing acoustic environment; therefore, no baseline sound survey is required to assess conformity.

3.0 EXISTING ACOUSTIC ENVIRONMENT

Fayette County is generally characterized as a rural agricultural land use area, and existing ambient sound levels are expected to be relatively low, although sound levels may be sporadically elevated in localized areas due to roadway noise or periods of human activity. Background sound levels will thus vary both spatially and temporally depending on proximity to area sound sources, roadways and natural sounds. Principal contributors to the existing acoustic environment likely include motor vehicle traffic, mobile farming equipment, farming activities such as plowing and irrigation, all-terrain vehicles, local roadways, rail movements, periodic aircraft flyovers, and natural sounds such as birds, insects, and leaf or vegetation rustle during elevated wind conditions in areas with established tree stands or established crops. Diurnal effects result in sound levels that are typically quieter during the night than during the daytime, except during periods when evening and nighttime insect noise dominate in warmer seasons.

In areas with elevated background sound levels, sound may be obscured through a mechanism referred to as acoustic masking. Seasonal sounds such as cricket chirping, certain farming activities, as well as wind-generated ambient noise as airflow interacts with foliage and cropland, contribute to this masking effect. The latter is most prevalent in rural and suburban areas with established tree stands. Wintertime defoliate conditions typically have lower background sound levels due to lower wind masking effects and reduced outdoor activities in colder climates. During colder seasons, people typically exhibit lower sensitivities to outdoor sound levels, particularly in this geographical region of the United States, as windows are closed, further enhancing outdoor to indoor transmission losses, and limited time is spent outdoors as compared to more temperate climates.

4.0 PROJECT CONSTRUCTION

Construction of the Project is expected to be typical of other solar power generating facilities in terms of schedule, equipment, and activities.

4.1 Noise Calculation Methodology

Acoustic emission levels for activities associated with Project construction were based on typical ranges of energy equivalent noise levels at construction sites, as documented by the Environmental Protection Agency (EPA 1971) and the EPA's "Construction Noise Control Technology Initiatives" (EPA 1980). The EPA methodology distinguishes between type of construction and construction stage. Using those energy equivalent noise levels as input to a basic propagation model, construction noise levels were calculated at a series of set reference distances.

The basic model assumed spherical wave divergence from a point source located at the closest point of the Project site. Furthermore, the model conservatively assumed that all pieces of construction equipment associated with an activity would operate simultaneously for the duration of that activity. An additional level of conservatism was built into the construction noise model by excluding potential shielding effects due to intervening structures and buildings along the propagation path from the site to receiver locations.

4.1 Projected Noise Levels During Construction

Construction work will not consist of a phased approach. Table 4summarizes the expected equipment to be used during Project construction and also shows the maximum noise level at 50 ft.

Table 4. Project Construction Equipment Noise Levels

Construction Equipment	Maximum (L_{max}) Equipment Noise Level at 50 feet
Air Compressor	81
Backhoe	80
Ballast Tamper	83
Chainsaw	85
Compactor	82
Crane Derrick	88
Crane Mobile	83
Dozer	85
Generator	81
Grader	85
Impact Wrench	85
Jack Hammer	88
Loader	85
Pickup Truck	55
Pile Driver (Impact)	101
Pile Driver (Sonic)	96
Pneumatic Tool	85
Rock Drill	98
Roller	74
Saw	76
Scraper	89
Shovel	82
Tie Cutter	84
Tie Handler	80
Tie Inserter	85
Tractor	84
Truck	88
Welder/Torch	73

Source: FHWA 2017

Pile driving will be the method selected to install the foundations of the solar PV modules. Pile driving can generate high noise levels, as indicated in Table 4. Noise is generated from both the ram striking the pile as well as the operating steam, air, or diesel exhaust as it is exhausted from the cylinder (this is not present with hydraulic impact hammers). The sound pressure level of the impact pile driving unit is estimated to be 101 dBA at 50 feet. Received sound levels associated with pile driving activities were

predicted at NSRs and are given in Table A-1 in Appendix A. Predicted sound levels from pile driving at NSRs are expected to range from approximately 45 to 67 dBA.

Work associated with these phases may overlap. Equipment used for construction includes heavy equipment (e.g., bulldozers, loaders, dump trucks), which involve diesel engines that produce mechanical and exhaust noise with the latter typically the predominant sound source. The construction of the Project may cause short-term, but unavoidable, noise impacts that could be loud enough at times to temporarily interfere with speech communication outdoors and indoors with windows open. Noise levels resulting from the construction activities will vary significantly depending on several factors such as the type and age of equipment, specific equipment manufacturer and model, the operations being performed, and the overall condition of the equipment and exhaust system mufflers.

Project construction will generally occur during the day, Monday through Sunday, with pile driving being restricted to Monday through Friday. Furthermore, all reasonable efforts will be made to minimize the impact of noise resulting from construction activities including implementation of standard noise reduction measures (Section 4.2, below). Due to the infrequent nature of loud construction activities at the site, the limited hours of construction and the implementation of noise mitigation measures, the temporary increase in noise due to construction is considered to be a less than significant impact.

4.2 Construction Noise Mitigation

Construction noise will be temporary in nature and, as such, no long term or significant noise impacts due to construction are anticipated. Regardless, reasonable efforts may be made to minimize the impact of noise resulting from construction activities. Following is a list of recommended best management practices and noise mitigation measures:

- Construction equipment should be well-maintained and vehicles using internal combustion engines equipped with mufflers will be routinely checked to ensure they are in good working order;
- A noise/dust fence will be considered in areas where dust and noise cannot be mitigated by other means;
- Noisy equipment will be located as far from possible from sensitive areas; and
- Property owners adjacent to the Project site will be provided contact information for a representative on the Project team they can communicate with in the event of noise-related issues.

Implementing the listed measures will aid in reducing offsite construction noise impacts. Project construction noise may periodically exceed levels that currently characterize the area. Due to the temporary nature of construction noise, no long-term impacts are anticipated.

5.0 PROJECT OPERATIONAL ACOUSTIC ASSESSMENT

This section describes the model utilized for the assessment, input assumptions used to calculate noise levels due to the Project's normal operation, and the results of the noise impact analysis relative to the applicable noise requirements and guidelines.

5.1 Noise Prediction Model

The Cadna-A® computer noise model was used to calculate sound pressure levels from the operation of the Project. An industry standard, Cadna-A® was developed by DataKustik GmbH to provide an estimate of sound levels at distances from sources of known emission. It is used by acousticians and acoustic engineers due to the capability to accurately describe noise emission and propagation from complex facilities consisting of various equipment types like the Project, and in most cases, yields conservative results of operational noise levels in the surrounding community.

The current ISO standard for outdoor sound propagation, ISO 9613 Part 2, "Attenuation of Sound during Propagation Outdoors," was used within Cadna-A (ISO 1996). The method described in this standard calculates sound attenuation under weather conditions that are favorable for sound propagation, such as for downwind propagation or atmospheric inversion, conditions that are typically considered worst case. The calculation of sound propagation from source to receiver locations consists of full octave band sound frequency algorithms, which incorporate the following physical effects:

- Geometric spreading wave divergence;
- Reflection from surfaces;
- Atmospheric absorption at 10 degrees Celsius and 70 percent relative humidity;
- Screening by topography and obstacles;
- The effects of terrain features including relative elevations of noise sources;
- Sound power levels from stationary and mobile sources;
- The locations of noise-sensitive land use types;
- Intervening objects including buildings and barrier walls to the extent included in the design;
- Ground effects due to areas of pavement and unpaved ground;
- Sound power at multiple frequencies;
- Source directivity factors;
- Multiple noise sources and source type (point, area, and/or line); and
- Averaging predicted sound levels over a given time.

Cadna-A allows for three basic types of sound sources to be introduced into the model: point, line, and area sources. Each noise-radiating element was modeled based on its noise emission pattern. Larger dimensional sources such as the transformers and inverters were modeled as area sources. Off-site topography was obtained using the publicly available U.S. Geological Survey digital elevation data. A default ground attenuation factor of 0.5 was assumed for off-site sound propagation over acoustically "mixed" ground. A ground attenuation factor of 0.0 for a reflective surface was assumed for on-site areas.

5.2 Input to Noise Prediction Model

The Project's general arrangement was reviewed and directly imported into the acoustic model so that on-site equipment could be easily identified; buildings and structures could be added; and sound emission data could be assigned to sources as appropriate. Figure 2 shows the equipment layout based on the Project site layout supplied by the Applicant.

The primary noise sources during operations are the PV inverters. It is expected that all equipment would operate during the daytime period and nighttime period. Reference sound power levels input to Cadna-A were provided by equipment manufacturers based on information contained in reference documents or developed using empirical methods. The source levels used in the predictive modeling are based on estimated sound power levels that are generally deemed to be conservative. The projected operational noise levels are based on Applicant-supplied sound power level data for the major sources of equipment. Table 5 summarizes the equipment sound power level data used as inputs to the acoustic modeling analysis; however, the tracking motors were not incorporated due to their low sound power level. With a sound power level of 53 dBA, at a distance of 10 feet the resultant sound pressure level would be less than 32 dBA. Even though the Project incorporates a multitude of tracking motors, their cumulative sound contribution is not expected to materially affect offsite received sound levels. The reason is due to both the low-level sound emissions of tracking motors and the logarithmic relationship between additive sound sources. Because the decibel scale is a logarithmic scale, two different sound sources combining cannot simply be added together arithmetically. For instance, two sound sources with a sound power level of 50 dBA result in a combined sound power level of 53 dBA, as opposed to 100 dBA.

Table 5. Modeled Octave Band Sound Power Level for Project Equipment

Sound Source	Sound Power Level (L_w) by Octave Band Frequency (Hz) dBA									Broadband Level
	31.5	63	125	250	500	1k	2k	4k	8k	dBA
PV Inverter	102	95	100	94	90	90	90	97	88	100
Tracking Motor	36	36	40	44	48	48	44	40	36	53

5.3 Noise Prediction Model Results

Broadband (dBA) sound pressure levels were calculated for expected normal Project operation assuming that all components identified previously are operating continuously and concurrently at the representative manufacturer-rated sound levels. The sound energy was then summed and weighted to determine the L_{eq} at a point of reception. A sound contour plot displaying broadband (dBA) sound levels (L_{eq}) presented as color-coded isopleths is provided in Figure 2. The sound contours are graphical representations of the cumulative noise associated with full operation of the equipment and show how operational noise will be distributed over the surrounding area. Results from acoustic modeling are projected 5-dBA increments on scaled Project aerial imagery. Results are independent of the existing acoustic environment, representative of Project-generated sound levels only. The sound contour isopleths are plotted at a height of 1.52 m above ground level, about the height of the ears of a standing person. The isopleths are analogous to elevation contours on a topographic map, i.e., the noise contours are continuous lines of equal noise level around some source, or sources, of noise.

Modeling results show that noise levels resulting from Project operations will be below the threshold of 48.6 dBA, which corresponds to the EPA environmental noise guideline of 55 dBA L_{dn}. The highest predicted sound level is 43 dBA at a cemetery located within the Project boundary. It was included as a NSR in the acoustic modeling analysis to be mindful of the significance of a quiet environment. Besides the cemetery, the highest predicted sound level was at a NSR is 40 dBA. Tabulated modeling results are provided in Table A-2 in Appendix A showing the maximum received sound levels at each NSR.

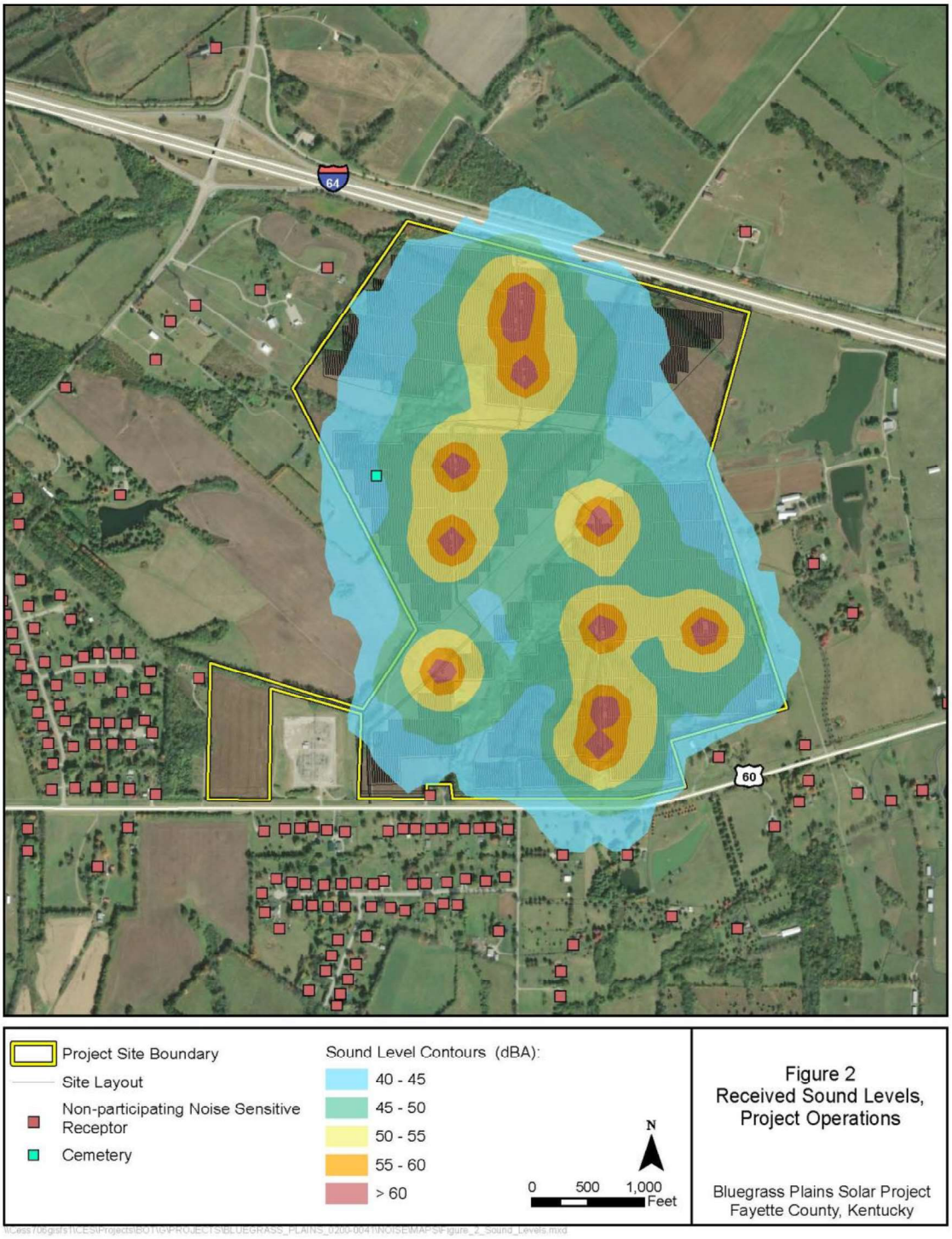

Figure 2. Project Operation, Received Sound Levels

6.0 CONCLUSIONS

Tetra Tech completed a detailed acoustic assessment of the proposed Bluegrass Plains Solar Project, located in Fayette County, Kentucky. The assessment included an evaluation of Project sound contribution to the surrounding area during construction and operation phases.

The construction noise assessment indicated that construction noise will be periodically audible at offsite locations; however, that noise will be temporary and minimized to the extent practicable through implementation of best management practices and noise mitigation measures as identified in section 4.2.

Operational sound levels were modeled and evaluated at NSRs in the Project area. Anticipated Project sound sources consist of the PV inverters. The results, as shown in Table A-2 and the acoustic model contour isopleths, showed there are no potential exceedances of the 55 dBA L_{dn} EPA noise guideline at any of the identified NSRs, which corresponds to 48.6 dBA L_{eq}. The highest predicted sound level is 43 dBA at a cemetery located within the Project boundary. It was included as a NSR in the acoustic modeling analysis to be mindful of the significance of a quiet environment. Besides the cemetery, the highest predicted sound level was at a NSR is 40 dBA. The EPA guideline limits identified are not legally enforceable requirements but serve as useful guidelines to determine the likelihood of adverse community noise impacts. In conclusion, the Project has been designed to operate in compliance with guideline limits. Acoustic modeling results inclusive of a number of conservative assumptions demonstrate compliance with the EPA guideline limits. Overall, sound emissions associated with the Project are expected to remain at a low level, and consistent with other solar energy facilities of similar size and design sited in the State of Kentucky.

7.0 REFERENCES

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APPENDIX A

Acoustic Modeling Results

Table A-1. Pile Driving Acoustic Modeling Results Summary

NSR ID	Status	UTM Coordinates (m)		Received Sound Level, L_{eq} (dBA)
		Easting	Northing	Maximum
1	Non-Participant	734991	4215397	46
2	Non-Participant	735279	4215483	46
3	Non-Participant	735279	4215440	46
4	Non-Participant	735070	4215371	47
5	Non-Participant	734987	4215341	47
6	Non-Participant	734894	4215190	47
7	Non-Participant	734750	4215225	47
8	Non-Participant	734648	4215359	46
9	Non-Participant	734674	4214915	49
10	Non-Participant	734789	4214783	50
11	Non-Participant	734909	4215100	48
12	Non-Participant	734925	4215026	49
13	Non-Participant	735032	4214781	51
14	Non-Participant	734879	4214464	53
15	Non-Participant	733989	4214116	49
16	Non-Participant	733946	4214077	49
17	Non-Participant	733813	4213993	48
18	Non-Participant	734046	4213795	51
19	Non-Participant	733904	4214019	49
20	Non-Participant	734999	4213802	59
21	Non-Participant	735182	4213863	60
22	Non-Participant	734822	4213761	58
23	Non-Participant	734755	4213718	57
24	Non-Participant	734715	4213612	57
25	Non-Participant	736323	4213962	58
26	Non-Participant	737710	4213802	48
27	Non-Participant	737601	4213658	49
28	Non-Participant	734468	4213536	55
29	Non-Participant	733659	4213418	48
30	Non-Participant	733731	4213406	49
31	Non-Participant	733348	4213460	46
32	Non-Participant	733295	4213375	46
33	Non-Participant	733327	4213517	46
34	Non-Participant	733315	4212898	46
35	Non-Participant	733376	4212958	46
36	Non-Participant	733513	4213214	48
37	Non-Participant	734158	4213202	53

Table A-1. Pile Driving Acoustic Modeling Results Summary

NSR ID	Status	UTM Coordinates (m)		Received Sound Level, L_{eq} (dBA)
		Easting	Northing	Maximum
38	Non-Participant	734168	4213149	53
39	Non-Participant	734338	4213233	54
40	Non-Participant	734341	4213164	55
41	Non-Participant	734618	4213242	57
42	Non-Participant	734330	4212822	54
43	Non-Participant	734322	4212867	54
44	Non-Participant	734307	4212915	54
45	Non-Participant	734295	4212954	54
46	Non-Participant	734275	4212990	54
47	Non-Participant	734272	4213047	54
48	Non-Participant	734345	4213011	55
49	Non-Participant	734366	4212940	55
50	Non-Participant	734454	4212969	55
51	Non-Participant	734483	4212902	56
52	Non-Participant	734383	4212879	55
53	Non-Participant	734346	4212779	54
54	Non-Participant	734412	4212786	55
55	Non-Participant	734470	4212789	55
56	Non-Participant	734517	4212802	56
57	Non-Participant	734557	4212810	55
58	Non-Participant	734607	4212811	57
59	Non-Participant	734644	4212810	57
60	Non-Participant	734701	4212762	57
61	Non-Participant	734363	4212739	54
62	Non-Participant	736508	4213055	61
63	Non-Participant	736615	4212921	59
64	Non-Participant	737594	4212954	50
65	Non-Participant	737652	4212988	49
66	Non-Participant	737872	4212674	47
67	Non-Participant	737441	4212512	50
68	Non-Participant	737413	4212394	50
69	Non-Participant	737251	4212564	52
70	Non-Participant	737299	4212606	52
71	Non-Participant	737080	4212502	53
72	Non-Participant	737285	4212442	51
73	Non-Participant	736985	4212515	54
74	Non-Participant	736875	4212674	56

Table A-1. Pile Driving Acoustic Modeling Results Summary

NSR ID	Status	UTM Coordinates (m)		Received Sound Level, L_{eq} (dBA)
		Easting	Northing	Maximum
75	Non-Participant	736485	4212560	59
76	Non-Participant	736628	4212429	57
77	Non-Participant	736720	4212407	56
78	Non-Participant	736806	4212436	55
79	Non-Participant	736908	4212376	54
80	Non-Participant	736469	4212405	58
81	Non-Participant	736495	4212462	58
82	Non-Participant	736250	4212526	60
83	Non-Participant	735462	4212422	67
84	Non-Participant	734831	4212742	59
85	Non-Participant	734686	4212713	57
86	Non-Participant	734623	4212704	57
87	Non-Participant	734562	4212744	56
88	Non-Participant	734507	4212742	56
89	Non-Participant	734444	4212723	55
90	Non-Participant	734377	4212696	54
91	Non-Participant	734392	4212649	54
92	Non-Participant	734407	4212612	54
93	Non-Participant	734421	4212565	54
94	Non-Participant	734433	4212509	54
95	Non-Participant	734431	4212438	54
96	Non-Participant	734494	4212443	54
97	Non-Participant	734489	4212555	55
98	Non-Participant	734467	4212624	55
99	Non-Participant	734451	4212668	55
100	Non-Participant	734549	4212620	56
101	Non-Participant	734588	4212620	56
102	Non-Participant	734635	4212618	56
103	Non-Participant	734684	4212626	57
104	Non-Participant	734704	4212593	57
105	Non-Participant	734646	4212562	56
106	Non-Participant	734597	4212563	56
107	Non-Participant	734549	4212562	55
108	Non-Participant	734550	4212443	55
109	Non-Participant	734597	4212444	55
110	Non-Participant	734643	4212439	60
111	Non-Participant	734715	4212425	61

Table A-1. Pile Driving Acoustic Modeling Results Summary

NSR ID	Status	UTM Coordinates (m)		Received Sound Level, L_{eq} (dBA)
		Easting	Northing	Maximum
112	Non-Participant	734021	4212468	51
113	Non-Participant	733668	4212430	48
114	Non-Participant	733586	4212437	47
115	Non-Participant	733543	4212439	47
116	Non-Participant	733510	4212436	47
117	Non-Participant	733442	4212435	46
118	Non-Participant	733381	4212440	46
119	Non-Participant	733412	4212501	46
120	Non-Participant	733491	4212585	47
121	Non-Participant	733514	4212618	47
122	Non-Participant	733549	4212646	47
123	Non-Participant	733577	4212625	48
124	Non-Participant	733611	4212588	48
125	Non-Participant	733580	4212515	47
126	Non-Participant	733233	4212785	45
127	Non-Participant	733318	4212209	45
128	Non-Participant	733768	4212280	48
129	Non-Participant	734365	4212331	53
130	Non-Participant	734195	4212325	51
131	Non-Participant	734556	4212228	54
132	Non-Participant	734639	4212334	55
133	Non-Participant	734365	4212271	52
134	Non-Participant	735010	4212325	62
135	Non-Participant	735066	4212331	63
136	Non-Participant	735109	4212333	63
137	Non-Participant	735145	4212335	59
138	Non-Participant	735181	4212328	59
139	Non-Participant	735230	4212323	59
140	Non-Participant	735348	4212325	65
141	Non-Participant	735389	4212331	65
142	Non-Participant	735423	4212331	65
143	Non-Participant	735463	4212332	65
144	Non-Participant	735497	4212332	65
145	Non-Participant	735556	4212331	66
146	Non-Participant	735559	4212194	59
147	Non-Participant	735508	4212186	64
148	Non-Participant	735451	4212181	59

Table A-1. Pile Driving Acoustic Modeling Results Summary

NSR ID	Status	UTM Coordinates (m)		Received Sound Level, L_{eq} (dBA)
		Easting	Northing	Maximum
149	Non-Participant	735415	4212180	59
150	Non-Participant	735335	4212188	63
151	Non-Participant	735308	4212181	63
152	Non-Participant	735261	4212183	63
153	Non-Participant	735220	4212180	62
154	Non-Participant	735173	4212177	62
155	Non-Participant	735123	4212181	57
156	Non-Participant	735086	4212185	57
157	Non-Participant	735043	4212194	62
158	Non-Participant	735003	4212155	56
159	Non-Participant	735011	4212102	61
160	Non-Participant	735100	4212123	61
161	Non-Participant	735052	4212058	60
162	Non-Participant	735141	4212121	61
163	Non-Participant	735184	4212118	62
164	Non-Participant	735231	4212118	62
165	Non-Participant	735302	4212119	62
166	Non-Participant	735354	4212116	62
167	Non-Participant	735394	4212108	62
168	Non-Participant	735463	4212114	63
169	Non-Participant	735498	4212126	63
170	Non-Participant	735537	4212123	63
171	Non-Participant	735211	4212027	61
172	Non-Participant	735194	4211985	60
173	Non-Participant	735179	4211944	55
174	Non-Participant	735289	4212038	61
175	Non-Participant	735261	4211961	60
176	Non-Participant	735239	4211919	55
177	Non-Participant	735132	4211889	54
178	Non-Participant	735208	4211848	54
179	Non-Participant	735218	4211880	55
180	Non-Participant	735595	4212332	66
181	Non-Participant	735628	4212334	66
182	Non-Participant	735674	4212330	66
183	Non-Participant	735615	4212189	59
184	Non-Participant	735667	4212199	59
185	Non-Participant	735649	4212052	58

Table A-1. Pile Driving Acoustic Modeling Results Summary

NSR ID	Status	UTM Coordinates (m)		Received Sound Level, L_{eq} (dBA)
		Easting	Northing	Maximum
186	Non-Participant	735819	4211942	56
187	Non-Participant	735853	4212016	57
188	Non-Participant	735824	4212259	60
189	Non-Participant	736001	4212260	60
190	Non-Participant	736121	4212091	57
191	Non-Participant	736301	4212059	56
192	Non-Participant	736402	4212337	58
193	Non-Participant	737279	4212277	51
194	Non-Participant	737542	4212252	49
195	Non-Participant	736369	4211738	53
196	Non-Participant	736114	4211560	52
197	Non-Participant	735989	4211580	53
198	Non-Participant	735940	4211717	54
199	Non-Participant	735817	4211873	56
200	Non-Participant	735783	4211552	52
201	Non-Participant	735756	4211468	52
202	Non-Participant	735556	4211600	58
203	Non-Participant	735251	4210974	52
204	Non-Participant	735755	4211332	51
205	Non-Participant	735751	4211284	50
206	Non-Participant	735820	4210930	47
207	Non-Participant	735254	4210945	52
208	Non-Participant	734974	4210894	46
209	Non-Participant	734974	4210869	46
210	Cemetery/Non-Participant	735315	4213295	67

Table A-2. Operational Acoustic Modeling Results Summary

NSR ID	Status	UTM Coordinates (m)		Received Sound Level, L_{eq} (dBA)
		Easting	Northing	Maximum
1	Non-Participant	734991	4215397	21
2	Non-Participant	735279	4215483	20
3	Non-Participant	735279	4215440	20
4	Non-Participant	735070	4215371	20
5	Non-Participant	734987	4215341	21
6	Non-Participant	734894	4215190	22
7	Non-Participant	734750	4215225	21
8	Non-Participant	734648	4215359	20
9	Non-Participant	734674	4214915	21
10	Non-Participant	734789	4214783	22
11	Non-Participant	734909	4215100	23
12	Non-Participant	734925	4215026	23
13	Non-Participant	735032	4214781	23
14	Non-Participant	734879	4214464	28
15	Non-Participant	733989	4214116	22
16	Non-Participant	733946	4214077	23
17	Non-Participant	733813	4213993	23
18	Non-Participant	734046	4213795	24
19	Non-Participant	733904	4214019	23
20	Non-Participant	734999	4213802	34
21	Non-Participant	735182	4213863	37
22	Non-Participant	734822	4213761	32
23	Non-Participant	734755	4213718	31
24	Non-Participant	734715	4213612	30
25	Non-Participant	736323	4213962	32
26	Non-Participant	737710	4213802	22
27	Non-Participant	737601	4213658	22
28	Non-Participant	734468	4213536	27
29	Non-Participant	733659	4213418	19
30	Non-Participant	733731	4213406	23
31	Non-Participant	733348	4213460	18
32	Non-Participant	733295	4213375	17
33	Non-Participant	733327	4213517	17
34	Non-Participant	733315	4212898	20
35	Non-Participant	733376	4212958	21
36	Non-Participant	733513	4213214	22
37	Non-Participant	734158	4213202	23

Table A-2. Operational Acoustic Modeling Results Summary

NSR ID	Status	UTM Coordinates (m)		Received Sound Level, L_{eq} (dBA)
		Easting	Northing	Maximum
38	Non-Participant	734168	4213149	23
39	Non-Participant	734338	4213233	24
40	Non-Participant	734341	4213164	24
41	Non-Participant	734618	4213242	29
42	Non-Participant	734330	4212822	24
43	Non-Participant	734322	4212867	24
44	Non-Participant	734307	4212915	24
45	Non-Participant	734295	4212954	24
46	Non-Participant	734275	4212990	24
47	Non-Participant	734272	4213047	24
48	Non-Participant	734345	4213011	24
49	Non-Participant	734366	4212940	25
50	Non-Participant	734454	4212969	25
51	Non-Participant	734483	4212902	25
52	Non-Participant	734383	4212879	26
53	Non-Participant	734346	4212779	24
54	Non-Participant	734412	4212786	26
55	Non-Participant	734470	4212789	26
56	Non-Participant	734517	4212802	26
57	Non-Participant	734557	4212810	25
58	Non-Participant	734607	4212811	27
59	Non-Participant	734644	4212810	27
60	Non-Participant	734701	4212762	27
61	Non-Participant	734363	4212739	24
62	Non-Participant	736508	4213055	37
63	Non-Participant	736615	4212921	36
64	Non-Participant	737594	4212954	24
65	Non-Participant	737652	4212988	23
66	Non-Participant	737872	4212674	20
67	Non-Participant	737441	4212512	22
68	Non-Participant	737413	4212394	23
69	Non-Participant	737251	4212564	24
70	Non-Participant	737299	4212606	25
71	Non-Participant	737080	4212502	25
72	Non-Participant	737285	4212442	24
73	Non-Participant	736985	4212515	28
74	Non-Participant	736875	4212674	30

Table A-2. Operational Acoustic Modeling Results Summary

NSR ID	Status	UTM Coordinates (m)		Received Sound Level, L_{eq} (dBA)
		Easting	Northing	Maximum
75	Non-Participant	736485	4212560	36
76	Non-Participant	736628	4212429	32
77	Non-Participant	736720	4212407	29
78	Non-Participant	736806	4212436	28
79	Non-Participant	736908	4212376	28
80	Non-Participant	736469	4212405	35
81	Non-Participant	736495	4212462	35
82	Non-Participant	736250	4212526	37
83	Non-Participant	735462	4212422	39
84	Non-Participant	734831	4212742	31
85	Non-Participant	734686	4212713	27
86	Non-Participant	734623	4212704	26
87	Non-Participant	734562	4212744	26
88	Non-Participant	734507	4212742	26
89	Non-Participant	734444	4212723	26
90	Non-Participant	734377	4212696	25
91	Non-Participant	734392	4212649	26
92	Non-Participant	734407	4212612	26
93	Non-Participant	734421	4212565	26
94	Non-Participant	734433	4212509	25
95	Non-Participant	734431	4212438	25
96	Non-Participant	734494	4212443	25
97	Non-Participant	734489	4212555	26
98	Non-Participant	734467	4212624	26
99	Non-Participant	734451	4212668	26
100	Non-Participant	734549	4212620	26
101	Non-Participant	734588	4212620	26
102	Non-Participant	734635	4212618	27
103	Non-Participant	734684	4212626	27
104	Non-Participant	734704	4212593	27
105	Non-Participant	734646	4212562	27
106	Non-Participant	734597	4212563	26
107	Non-Participant	734549	4212562	26
108	Non-Participant	734550	4212443	25
109	Non-Participant	734597	4212444	26
110	Non-Participant	734643	4212439	28
111	Non-Participant	734715	4212425	29

Table A-2. Operational Acoustic Modeling Results Summary

NSR ID	Status	UTM Coordinates (m)		Received Sound Level, L_{eq} (dBA)
		Easting	Northing	Maximum
112	Non-Participant	734021	4212468	23
113	Non-Participant	733668	4212430	20
114	Non-Participant	733586	4212437	20
115	Non-Participant	733543	4212439	20
116	Non-Participant	733510	4212436	20
117	Non-Participant	733442	4212435	20
118	Non-Participant	733381	4212440	20
119	Non-Participant	733412	4212501	20
120	Non-Participant	733491	4212585	20
121	Non-Participant	733514	4212618	20
122	Non-Participant	733549	4212646	20
123	Non-Participant	733577	4212625	19
124	Non-Participant	733611	4212588	19
125	Non-Participant	733580	4212515	19
126	Non-Participant	733233	4212785	20
127	Non-Participant	733318	4212209	19
128	Non-Participant	733768	4212280	21
129	Non-Participant	734365	4212331	23
130	Non-Participant	734195	4212325	23
131	Non-Participant	734556	4212228	24
132	Non-Participant	734639	4212334	25
133	Non-Participant	734365	4212271	23
134	Non-Participant	735010	4212325	31
135	Non-Participant	735066	4212331	31
136	Non-Participant	735109	4212333	32
137	Non-Participant	735145	4212335	32
138	Non-Participant	735181	4212328	32
139	Non-Participant	735230	4212323	32
140	Non-Participant	735348	4212325	34
141	Non-Participant	735389	4212331	36
142	Non-Participant	735423	4212331	36
143	Non-Participant	735463	4212332	37
144	Non-Participant	735497	4212332	37
145	Non-Participant	735556	4212331	37
146	Non-Participant	735559	4212194	34
147	Non-Participant	735508	4212186	33
148	Non-Participant	735451	4212181	31

Table A-2. Operational Acoustic Modeling Results Summary

NSR ID	Status	UTM Coordinates (m)		Received Sound Level, L_{eq} (dBA)
		Easting	Northing	Maximum
149	Non-Participant	735415	4212180	31
150	Non-Participant	735335	4212188	33
151	Non-Participant	735308	4212181	33
152	Non-Participant	735261	4212183	31
153	Non-Participant	735220	4212180	31
154	Non-Participant	735173	4212177	31
155	Non-Participant	735123	4212181	30
156	Non-Participant	735086	4212185	30
157	Non-Participant	735043	4212194	30
158	Non-Participant	735003	4212155	29
159	Non-Participant	735011	4212102	29
160	Non-Participant	735100	4212123	30
161	Non-Participant	735052	4212058	29
162	Non-Participant	735141	4212121	30
163	Non-Participant	735184	4212118	30
164	Non-Participant	735231	4212118	32
165	Non-Participant	735302	4212119	32
166	Non-Participant	735354	4212116	32
167	Non-Participant	735394	4212108	33
168	Non-Participant	735463	4212114	33
169	Non-Participant	735498	4212126	33
170	Non-Participant	735537	4212123	33
171	Non-Participant	735211	4212027	30
172	Non-Participant	735194	4211985	29
173	Non-Participant	735179	4211944	27
174	Non-Participant	735289	4212038	31
175	Non-Participant	735261	4211961	30
176	Non-Participant	735239	4211919	27
177	Non-Participant	735132	4211889	26
178	Non-Participant	735208	4211848	26
179	Non-Participant	735218	4211880	27
180	Non-Participant	735595	4212332	37
181	Non-Participant	735628	4212334	37
182	Non-Participant	735674	4212330	37
183	Non-Participant	735615	4212189	34
184	Non-Participant	735667	4212199	35
185	Non-Participant	735649	4212052	32

Table A-2. Operational Acoustic Modeling Results Summary

NSR ID	Status	UTM Coordinates (m)		Received Sound Level, L_{eq} (dBA)
		Easting	Northing	Maximum
186	Non-Participant	735819	4211942	30
187	Non-Participant	735853	4212016	34
188	Non-Participant	735824	4212259	40
189	Non-Participant	736001	4212260	40
190	Non-Participant	736121	4212091	35
191	Non-Participant	736301	4212059	31
192	Non-Participant	736402	4212337	34
193	Non-Participant	737279	4212277	25
194	Non-Participant	737542	4212252	21
195	Non-Participant	736369	4211738	29
196	Non-Participant	736114	4211560	28
197	Non-Participant	735989	4211580	29
198	Non-Participant	735940	4211717	30
199	Non-Participant	735817	4211873	29
200	Non-Participant	735783	4211552	26
201	Non-Participant	735756	4211468	26
202	Non-Participant	735556	4211600	27
203	Non-Participant	735251	4210974	22
204	Non-Participant	735755	4211332	25
205	Non-Participant	735751	4211284	25
206	Non-Participant	735820	4210930	20
207	Non-Participant	735254	4210945	22
208	Non-Participant	734974	4210894	18
209	Non-Participant	734974	4210869	18
210	Cemetery/Non-Participant	735315	4213295	43

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EXHIBIT F – TRAFFIC IMPACT STUDY

Bluegrass Plains Solar Traffic Impact Study

February 7, 2024

Prepared for:

Bluegrass Plains Solar

Prepared by:
Stantec Consulting Services Inc.
9200 Shelbyville Road, Suite 800
Louisville, Kentucky 40222

This document entitled Bluegrass Plains Solar Traffic Impact Study was prepared by Stantec Consulting Services Inc. (“Stantec”) for the account of Bluegrass Plains Solar (the “Client”). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec’s professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Prepared by _____
(signature)
Dan O’Dea, Senior Transportation Engineer

Reviewed by _____
(signature)
Brian Aldridge, Senior Principal

Approved by _____
(signature)
Shane Kelley, Environmental Scientist

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Executive Summary

Bluegrass Plains Solar is proposing to construct and operate the Bluegrass Plains Solar Project (Project) located near the intersection of US 60 (Winchester Road) and KY 859 (Haley Road), approximately 1.5 miles west of the Clark County line in eastern Fayette County, Kentucky. The petitioner proposes to utilize the existing land to establish a solar facility on the site. The development will have an access point from US 60 into the facility. Analyses of the 2022 existing conditions (based on most recent counts provided by the Kentucky Transportation Cabinet (KYTC), and the 2025 construction year were performed. The traffic impact study (TIS) evaluated the operating conditions for the AM and PM peak hours at the roadway segments below:

- Station 034270: KY 859 (Haley Road) from milepoint MP 0.000 to MP 1.482
- Station 034277: KY 859 (Haley Road) from MP 1.482 to MP 3.184
- Station 034296: US 60 (Winchester Road) from MP 13.275 to MP 16.367
- Station 034271: US 60 (Winchester Road) from MP 16.367 to MP 19.154
- Station 034295: KY 1973 (N Cleveland Road) from MP 1.866 to MP 7.600
- Station 034283: KY 1973 (N Cleveland Road) from MP 7.600 to MP 10.201
- Station 034300: KY 1923 (Combs ferry Road) from MP 0.000 to MP 1.698
- Station 025766: KY 1678 (Clintonville Road) from MP 0.000 to MP 0.640
- Station 025778: KY 2888 (Rockwell Road) from MP 0.000 to MP 1.615

Based on the results of the analysis, the following conclusions were developed:

- During construction, all highway segments are anticipated to continue to operate at acceptable level of service (LOS) standards during the peak hours. Therefore, the construction for this project will not adversely affect traffic operations on the roadways in and around the project area.

- After construction is complete, the site will be managed with negligible added traffic demand. During the operational phase of the project, the surrounding roadway network will continue to operate at an acceptable LOS during the peak hours.

1.0 INTRODUCTION

The purpose of this study is to estimate the traffic impacts of the proposed Bluegrass Plains Solar Project ("Bluegrass Solar" or the "Project") which is located near the intersection of US 60 (Winchester Road) and KY 859 (Haley Road), approximately 1.5 miles west of the Clark County line in eastern Fayette County, Kentucky. The Project site can be generally described as south of I-64, east of KY 859 (Haley Road), north of US 60 (Winchester Road), and west of the Clark County line. The proposed Project site is shown in **Figure 1**.

The Project is a proposed 40-megawatt photovoltaic electrical generating facility which will be comprised of approximately 400 acres. The facility will consist of solar photovoltaic panels and their associated racking systems, inverters, collection system, transmission line, project substation and other project equipment. Arrays of photovoltaic modules will be mounted on single access trackers arranged in rows. Power conversion systems will be distributed throughout the Project area, comprised of inverters, substation, and utility switching station. The equipment will connect via underground electrical wiring to a substation and switchyard proposing to interconnect to the existing East Kentucky Power Cooperative (EKPC) Avon 345-kilovolt transmission substation located on the southwest corner of the property (5481 Winchester Road, Lexington KY). The Project will have an access point from US 60 for construction vehicle deliveries and long-term maintenance access. A construction year of 2025 was evaluated as part of the study.

2.0 DATA COLLECTION

Annual Average Daily Traffic (AADT) traffic counts were obtained from the Kentucky Transportation Cabinet (KYTC) to establish the existing traffic conditions. **Figure 2** shows the locations of the primary / adjacent count stations used in this analysis. The summarized count data for each of these stations (plus additional stations outside the immediate area) is included in **Appendix A** for the following count stations:

- Station 034270: KY 859 (Haley Road) from mile point (MP) 0.000 to MP 1.482
- Station 034277: KY 859 (Haley Road) from MP 1.482 to MP 3.184
- Station 034296: US 60 (Winchester Road) from MP 13.275 to MP 16.367
- Station 034271: US 60 (Winchester Road) from MP 16.367 to MP 19.154
- Station 034295: KY 1973 (N Cleveland Road) from MP 1.866 to MP 7.600
- Station 034283: KY 1973 (N Cleveland Road) from MP 7.600 to MP 10.201
- Station 034300: KY 1923 (Combs ferry Road) from MP 0.000 to MP 1.698
- Station 025766: KY 1678 (Clintonville Road) from MP 0.000 to MP 0.640
- Station 025778: KY 2888 (Rockwell Road) from MP 0.000 to MP 1.615

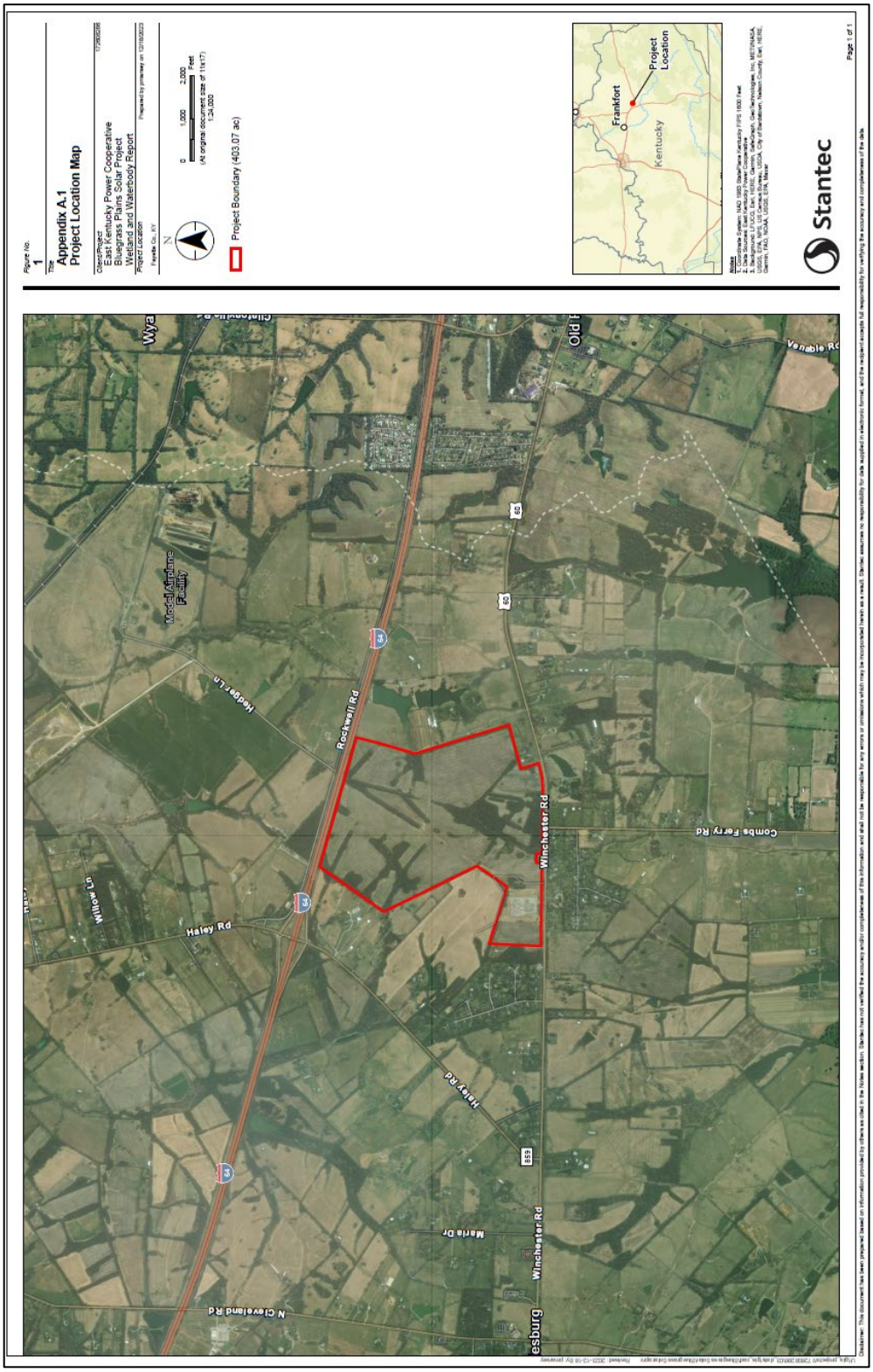


Figure 1: Project Location

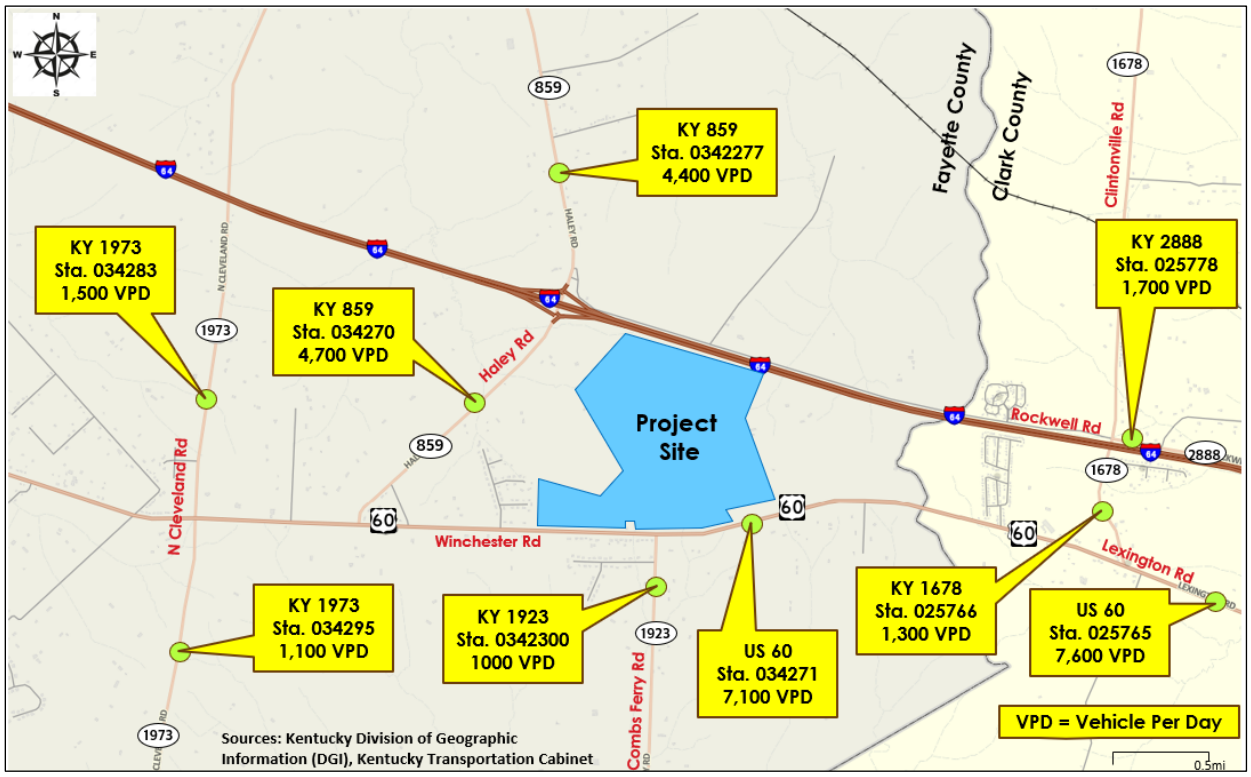


Figure 2: KYTC Count Stations

US 60 (Winchester Road) located directly south of the Project site is classified as a two-lane rural minor arterial with a posted speed limit of 55 miles per hour (mph). The daily traffic volume on US 60 ranges from 7,146 vehicles per day (VPD) in Fayette County to 7,608 VPD in Clark County. KY 859 (Haley Road) is a two-lane rural minor collector with a posted speed limit of 55 mph and daily traffic of 4,711 VPD between US 60 and I-64. North of I-64, KY 859 has a daily traffic of 4,368 VPD. KY 1973 (N Cleveland Road) is a two-lane rural minor collector with a posted speed limit of 55 mph. The daily traffic on KY 1973 is 1,426 VPD north of US 60 and 1,132 VPD south of US 60. KY 1923 (Combs Ferry Road) is a two-lane rural local road with a posted speed limit of 55 and daily traffic of 955 VPD. KY 1678 (Clintonville Road) is a two-lane urban collector with a posted speed limit of 55 mph and daily traffic of 1,256 VPD. KY 2888 (Rockwell Road) is two-lane local rural road with daily traffic of 1,652 VPD with a posted speed limit of 55 mph.

Historical volumes from the KYTC traffic count database show that daily traffic on routes within the study area for which data was available has generally decreased slightly over the past 15 years, as shown in **Figure 3**.

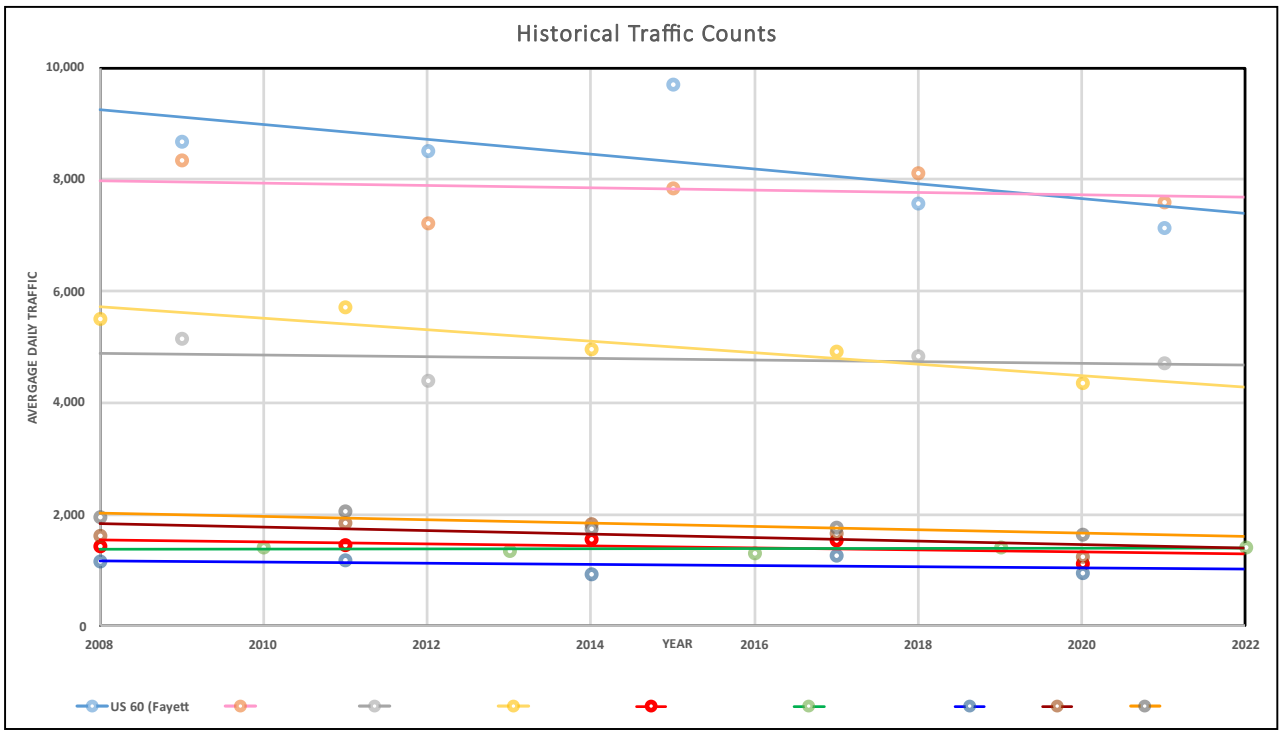


Figure 3: Historical Traffic Counts

The parcel for the proposed solar farm is located in eastern Fayette County and less than two miles from the Clark County line. Population projections for both Fayette and Clark Counties are shown on **Figure 4**. Fayette County population estimates have increased since 2010 and long-term projections suggest growth through 2040. The projection increase represents a 1.15% annual growth between 2020 and 2040. While the population of Fayette County has increased, the eastern part of the county in the vicinity of the Project has not developed to the same extent. **Figure 5** shows population estimates and projections for Clark County. Clark County population estimates have increased only slightly since 2010 and are projected to have long-term modest growth at an annual rate of 0.035%. Therefore, based on

trends from the historical volumes and near-negligible growth for Clark County, a growth rate per year was not applied to the latest traffic count data to the construction year of 2025.

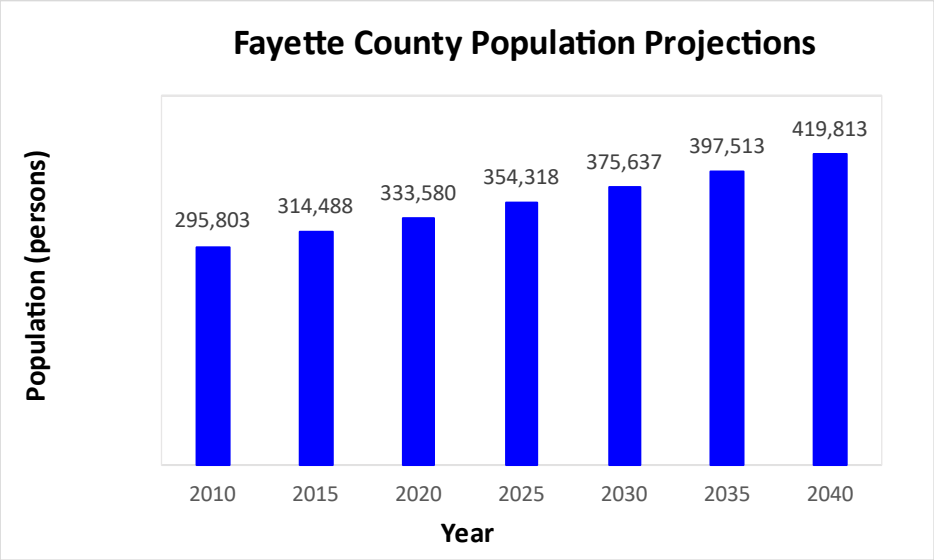


Figure 4: Fayette County Population Projections

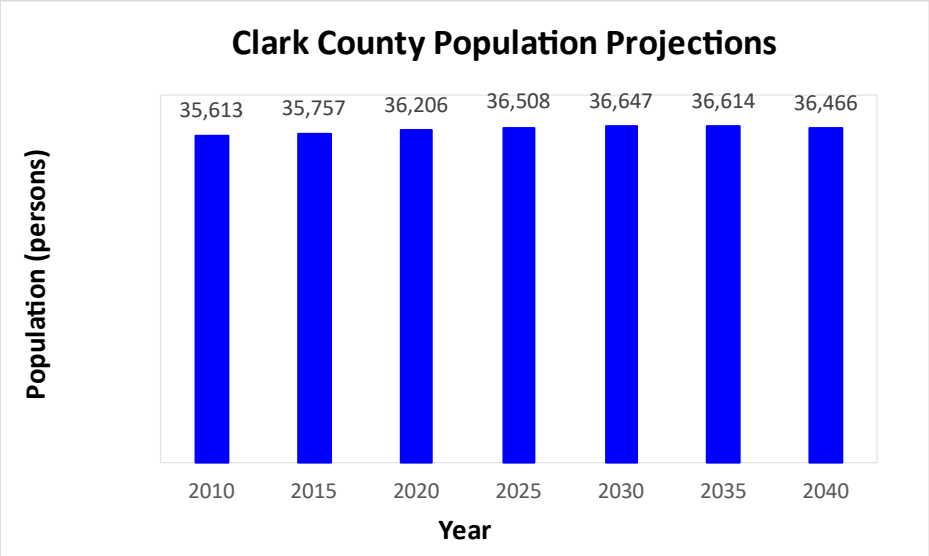


Figure 5: Clark County Population Projections

An evaluation was performed based on KYTC's estimated AADT for each station to quantify the Level of Service (LOS) by roadway type and land use or context. LOS provides a measure of the quality of traffic

flow provided by a roadway facility, expressed in terms of letter grades with LOS A representing the highest quality traffic flow and minimal delay, and LOS F representing poor traffic operations and significant delay. For rural areas, LOS C or better is generally considered to be acceptable. In urban areas, LOS D or better is generally considered acceptable**. Figure 6** provides an example of motorized vehicle LOS for arterials.

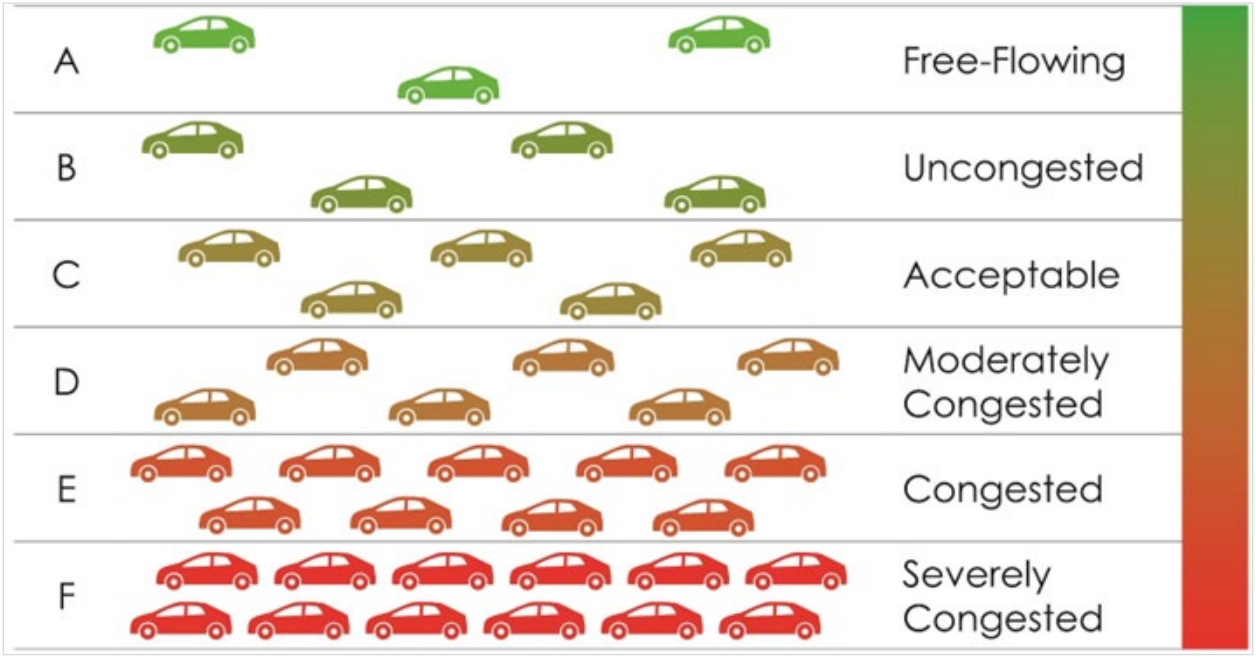


Figure 6: Examples of Motorized Vehicle LOS for Arterials

Motor Vehicle Highway Generalized Service Volume Tables (GSVT) were used to evaluate the roadways based on methods described in the *2023 Multimodal Quality/Level of Service Handbook (Q/LOS Handbook)*. The handbook is intended to be used by engineers, planners, and decision-makers to evaluate roadway users' quality/level of service (Q/LOS) at generalized planning levels. The Generalized Service Volume Tables are the primary tools for conducting generalized planning and are based on the Highway Capacity Manual (HCM) Sixth Edition and roadway, traffic, control characteristics and multimodal data. For all two-lane roadways, the *Motor Vehicle Highway Generalized Service Volume Table* using Annual Average Daily Traffic (AADT) for rural roadways was used for this evaluation and is shown in **Table 1**. Each GSVT provides generalized peak hour directional, peak hour two-way, and annual average daily traffic (AADT) maximum service volumes for a given LOS by roadway type and land use or context classification. Rural freeways and roadways are in areas with a population less than 5,000 and not immediately adjacent to core urbanized, urbanized, or transitioning areas. "Rural" refers to sparsely settled lands that may include agricultural land mixed with grassland, woodland, or wetlands.

Table 1: Motor Vehicle Generalized Service Volume Table using AADT for Rural Roadways

Roadway Type	Level of Service (LOS) Threshold			
	B	C	D	E
Two-Lane	4,600	8,200	14,000	28,500
Four-Lane	32,000	45,800	55,700	63,900
Six-Lane	48,000	68,300	83,700	95,900

Source: 2023 Multimodal Quality/Level of Service Handbook, Appendix B

The results of the existing peak hour traffic analyses for two-lane rural roadways are summarized in **Table 2**. The results indicate that all existing roadways in the vicinity of the Project currently operate at acceptable LOS during the peak hour.

Table 2: Existing Level of Service Summary

Route	Roadway Name	Segment Description	AADT (VPD)	LOS
US 60	Winchester Road	Fayette County, from KY 859 to Clark County Line	7,100	B
	Lexington Road	Clark County, from Fayette County Line to KY 1678	7,600	B
KY 859	Haley Road	from US 60 to I 64	4,700	B
		from I 64 north 1.7 miles to KY 57	4,400	A
KY 1973	N Cleveland Road	from KY 418 north 1.87 miles to US 60	1,100	A
		from US 60 north 2.6 miles to KY 57	1,500	A
KY 1923	Combs Ferry Rd	from KY 418 north 5.7 miles to US 60	1,000	A
KY 1678	Clintonville Road	from US 60 north for 1.94 miles to Van Meter Road	1,300	A
KY 2888	Rockwell Road	from KY 1678 east 1.62 miles to Hancock Creek	1,700	A

Specifically, the results indicate that both stations of US 60 (Winchester Road / Lexington Road) and the section of KY 859 (Haley Road) between US 60 and I 64 interchange ramps have AADTs greater than 4,600 but less than 8,200 and, therefore, operate at a LOS of B for peak hours. All other existing two-lane

roadways in the vicinity of the Project have an AADT below 4,600 vehicles per day and, therefore, operate at LOS A.

3.0 PROJECT TRIP GENERATION

3.1 CONSTRUCTION

The trip generation analysis for the construction of the Project would generally be based on the number of workers and the associated construction and delivery truck trips expected during the construction of the Project. Construction workers will consist of laborers, equipment operators, electricians, supervisory personnel, support personnel, and construction management personnel. It is envisioned that workers will arrive/depart from passenger vehicles and trucks daily during the AM (6:00 – 9:00 AM) and PM (3:00 – 7:00 PM) peak hours. Equipment deliveries will occur on trailers, flatbeds, or other large vehicles at various times during the day. While specific details concerning construction duration and intensity are not currently known, this study has employed a sensitivity analysis to demonstrate likely construction traffic levels will not have a significant, adverse effect on peak hour traffic operations. For this analysis, all existing peak hour traffic volumes on roadways were increased by five percent which is greater than would be anticipated for the actual construction of the Project. Note that a five percent increase on a roadway with 7000 vehicles per day is 350 additional vehicles per day. Even with this unlikely increase in traffic levels due to project construction, an adverse effect on peak hour traffic operations is still not expected.

3.1.1 CONSTRUCTION ANALYSIS

The 2025 construction year analysis assumed no changes to the existing roadway network and increases in traffic as demand discussed above. The results of the construction year peak hour two-lane analysis are summarized in **Table 3**. The results indicate that all analyzed roadway segments are anticipated to continue to operate at an acceptable LOS during construction for both peak hours as the LOS changed from an A to B for only KY 859 (Haley Road) north of I-64 from the analysis for the existing scenario.

Table 3: Construction Year (2025) Peak Two-Lane Highway Analysis

Route	Roadway Name	Segment Description	AADT (VPD)	LOS
US 60	Winchester Road	Fayette County, from KY 859 to Clark County Line	7,455	B
	Lexington Road	Clark County, from Fayette Clark County Line to KY 1678	7,980	B
KY 859	Haley Road	from US 60 to I 64	4,935	B
		from I 64 north 1.7 miles to KY 57	4,620	B
KY 1973	N Cleveland Road	from KY 418 north 1.87 miles to US 60	1,155	A
		from US 60 north 2.6 miles to KY 57	1,575	A
KY 1923	Combs Ferry Rd	from KY 418 north 5.7 miles to US 60	1,050	A
KY 1678	Clintonville Road	from US 60 north for 1.94 miles to Van Meter Road	1,365	A
KY 2888	Rockwell Road	from KY 1678 east 1.62 miles to Hancock Creek	1,785	A

3.1.2 TRUCK WEIGHT LIMITS

Truck Weight Limits are based on highway designations as established in KRS 189.221. I-64, US 60, KY 859 and KY 2888 are classified as AAA highways with a gross weight limit of up to 80,000 lbs. KY 1678 is classified as AA highway with a gross weight rating up to 62,000 lbs. KY 1973 and KY 1923 are classified as A Highways with a weight rating of less than 44,000 lbs.

Although there are no bridges with posted weight limits on routes in the immediate vicinity of the study area, trucks still must conform to posted bridge weight limits and relevant axle weight limits to access the Project.

3.2 OPERATION

Once operational, the facility will be managed and monitored by a small number of employees. The facility will have up to three full-time employees on site for 40 hours per week for site inspections and repair. Operations workers are expected to commute to and from the Project site individually during the peak AM and PM hours. Work can also be conducted at night but this is anticipated to be minimal. This additional volume of daily traffic is considered negligible, and the operational phase of the project will have no measurable impact on the traffic and/or transportation infrastructure.

4.0 CONCLUSION

As demonstrated in the traffic analysis, the construction period will not produce significant operational changes to existing roadways. All roadways within the Project area will continue to operate at an acceptable LOS (likely LOS B or better) during peak construction traffic. Although no significant adverse traffic impacts are expected during Project construction or operation, using mitigation measures such as ridesharing between construction workers, using appropriate traffic controls, or allowing flexible working hours outside of peak hours could be implemented to minimize any potential for delays during the AM and PM peak hours.

Appendix A

HISTORICAL TRAFFIC COUNT DATA

Historical Traffic Volume Summary

Station Details:

Sta ID:	034271
Sta Type:	Full Coverage
Map:	MapIt
District:	7
County:	Fayette
Route:	034-US-0060 -000
Route Desc:	WINCHESTER RD

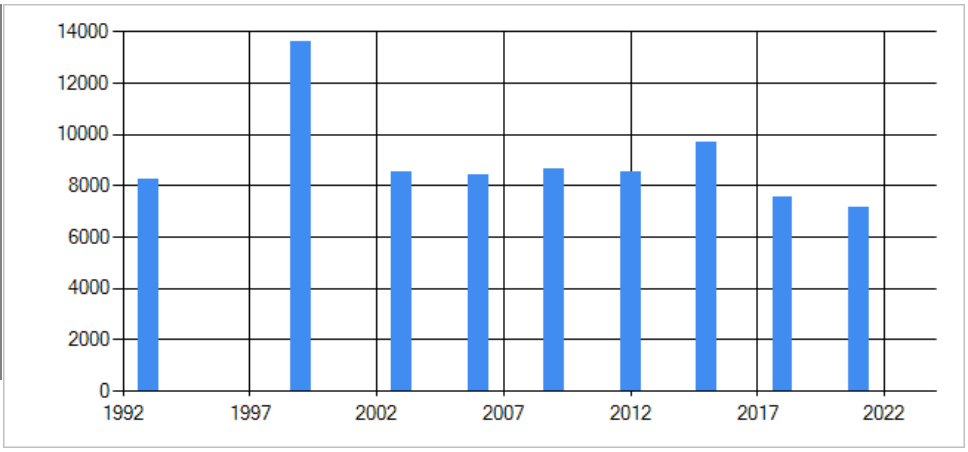
Begin MP:	16.3670
Begin Desc:	KY 859 (HALEY ROAD)
End Mp:	19.1540
End Desc:	CLARK COUNTY LINE
Impact Year:	
Year Added:	

Newest Count:

AADT:	7146
Year:	2021
% Single:	5.5350
% Combo:	1.4150
K Factor:	10.80
D Factor:	57

Definitions:
Sta. ID - Three digit county number + station number
MP - milepoint
Impact Year – year of significant change to traffic pattern within station segment
AADT – Annual Average Daily Traffic – the annualized average 24-hour volume of vehicles on a segment of roadway
% Single – single unit truck volume as a percentage of the AADT
% Combo – combination truck volume as a percentage of the AADT
K Factor – peak hour volume as a percentage of the AADT
D Factor – percentage of peak hour volume flowing in the peak direction

Year	AADT	Year	AADT	Year	AADT
2023		2013		2003	8530
2022		2012	8520	2002	
2021	7146	2011		2001	
2020		2010		2000	
2019		2009	8680	1999	13600
2018	7579	2008		1998	
2017		2007		1997	
2016		2006	8420	1996	
2015	9709	2005		1995	
2014		2004		1994	



Historical Traffic Volume Summary

Station Details:

Sta ID:	025765
Sta Type:	Full Coverage
Map:	MapIt
District:	7
County:	Clark
Route:	025-US-0060 -000
Route Desc:	LEXINGTON RD

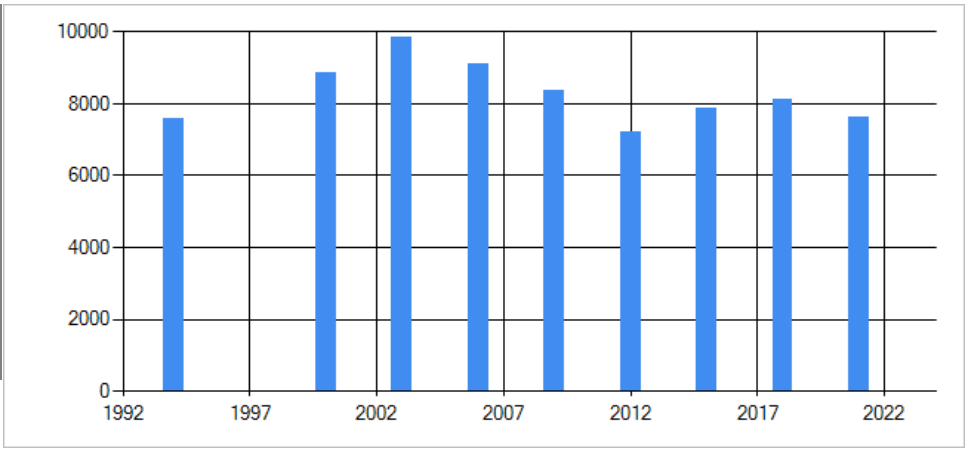
Begin MP:	0
Begin Desc:	FAYETTE COUNTY LINE
End Mp:	1.0540
End Desc:	KY 1678
Impact Year:	
Year Added:	

Newest Count:

AADT:	7608
Year:	2021
% Single:	5.5350
% Combo:	1.4150
K Factor:	10.20
D Factor:	55

Definitions:
Sta. ID - Three digit county number + station number
MP - milepoint
Impact Year – year of significant change to traffic pattern within station segment
AADT – Annual Average Daily Traffic – the annualized average 24-hour volume of vehicles on a segment of roadway
% Single – single unit truck volume as a percentage of the AADT
% Combo – combination truck volume as a percentage of the AADT
K Factor – peak hour volume as a percentage of the AADT
D Factor – percentage of peak hour volume flowing in the peak direction

Year	AADT	Year	AADT	Year	AADT
2023		2013		2003	9860
2022		2012	7224	2002	
2021	7608	2011		2001	
2020		2010		2000	8860
2019		2009	8360	1999	
2018	8127	2008		1998	
2017		2007		1997	
2016		2006	9110	1996	
2015	7859	2005		1995	
2014		2004		1994	7580



Historical Traffic Volume Summary

Station Details:

Sta ID:	034270
Sta Type:	Classification
Map:	MapIt
District:	7
County:	Fayette
Route:	034-KY-0859 -000
Route Desc:	HALEY RD

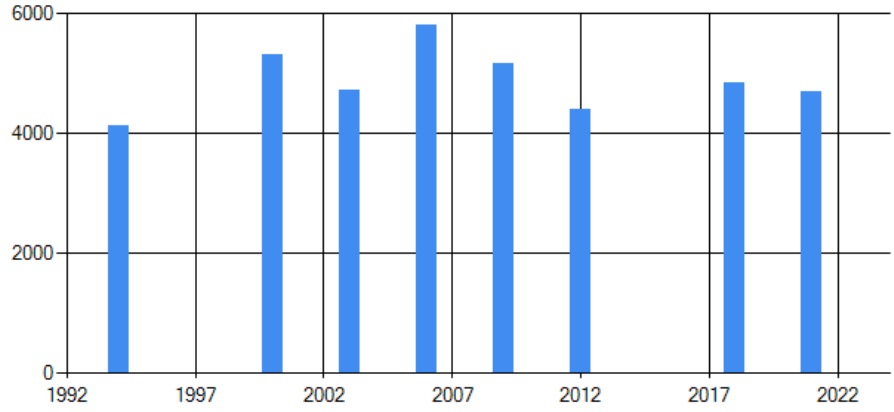
Begin MP:	0
Begin Desc:	US 60
End Mp:	1.4820
End Desc:	I 64
Impact Year:	
Year Added:	

Newest Count:

AADT:	4711
Year:	2021
% Single:	5.5580
% Combo:	1.2470
K Factor:	11.20
D Factor:	51

Definitions:
Sta. ID - Three digit county number + station number
MP - milepoint
Impact Year – year of significant change to traffic pattern within station segment
AADT – Annual Average Daily Traffic – the annualized average 24-hour volume of vehicles on a segment of roadway
% Single – single unit truck volume as a percentage of the AADT
% Combo – combination truck volume as a percentage of the AADT
K Factor – peak hour volume as a percentage of the AADT
D Factor – percentage of peak hour volume flowing in the peak direction

Year	AADT	Year	AADT	Year	AADT
2023		2013		2003	4730
2022		2012	4397	2002	
2021	4711	2011		2001	
2020		2010		2000	5310
2019		2009	5160	1999	
2018	4849	2008		1998	
2017		2007		1997	
2016		2006	5810	1996	
2015		2005		1995	
2014		2004		1994	4140



Historical Traffic Volume Summary

Station Details:

Sta ID:	034277
Sta Type:	Full Coverage
Map:	MapIt
District:	7
County:	Fayette
Route:	034-KY-0859 -000
Route Desc:	HALEY RD

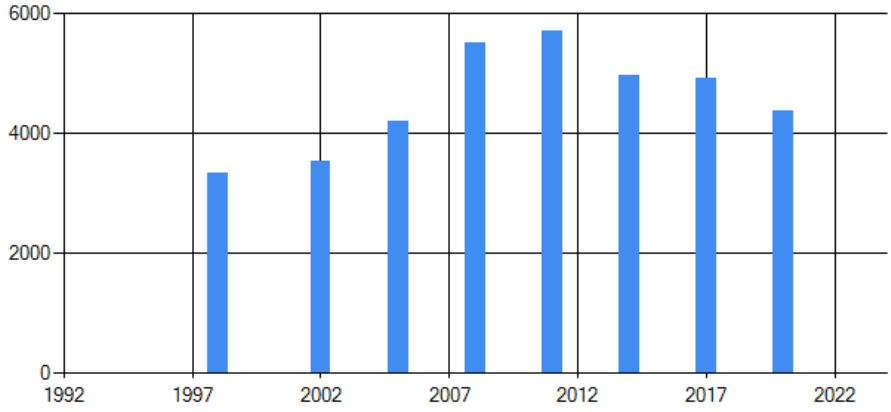
Begin MP:	1.4820
Begin Desc:	I 64
End Mp:	3.1840
End Desc:	KY 57
Impact Year:	
Year Added:	

Newest Count:

AADT:	4368
Year:	2020
% Single:	5.5580
% Combo:	1.2470
K Factor:	12.90
D Factor:	56

Definitions:
Sta. ID - Three digit county number + station number
MP - milepoint
Impact Year – year of significant change to traffic pattern within station segment
AADT – Annual Average Daily Traffic – the annualized average 24-hour volume of vehicles on a segment of roadway
% Single – single unit truck volume as a percentage of the AADT
% Combo – combination truck volume as a percentage of the AADT
K Factor – peak hour volume as a percentage of the AADT
D Factor – percentage of peak hour volume flowing in the peak direction

Year	AADT	Year	AADT	Year	AADT
2023		2013		2003	
2022		2012		2002	3550
2021		2011	5720	2001	
2020	4368	2010		2000	
2019		2009		1999	
2018		2008	5510	1998	3350
2017	4933	2007		1997	
2016		2006		1996	
2015		2005	4200	1995	
2014	4970	2004		1994	



Historical Traffic Volume Summary

Station Details:

Sta ID:	034295
Sta Type:	Full Coverage
Map:	MapIt
District:	7
County:	Fayette
Route:	034-KY-1973 -000
Route Desc:	N CLEVELAND RD

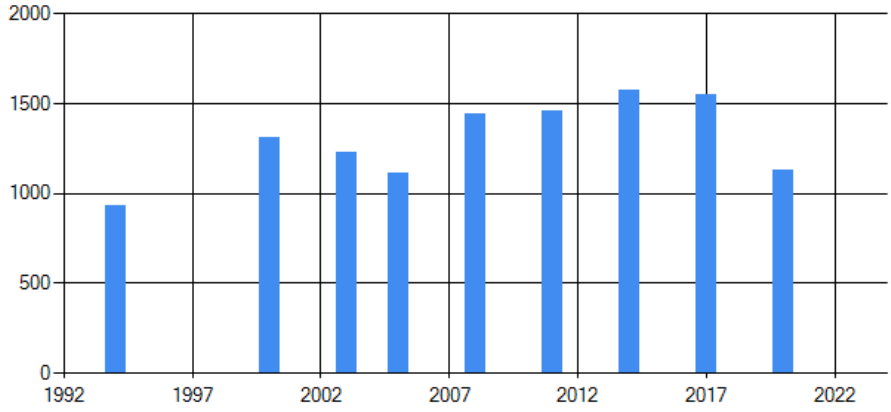
Begin MP:	1.8660
Begin Desc:	KY 418 AT ATHENS
End Mp:	7.60
End Desc:	US 60
Impact Year:	
Year Added:	

Newest Count:

AADT:	1132
Year:	2020
% Single:	5.1070
% Combo:	0.4120
K Factor:	15
D Factor:	56

Definitions:
Sta. ID - Three digit county number + station number
MP - milepoint
Impact Year – year of significant change to traffic pattern within station segment
AADT – Annual Average Daily Traffic – the annualized average 24-hour volume of vehicles on a segment of roadway
% Single – single unit truck volume as a percentage of the AADT
% Combo – combination truck volume as a percentage of the AADT
K Factor – peak hour volume as a percentage of the AADT
D Factor – percentage of peak hour volume flowing in the peak direction

Year	AADT	Year	AADT	Year	AADT
2023		2013		2003	1230
2022		2012		2002	
2021		2011	1460	2001	
2020	1132	2010		2000	1310
2019		2009		1999	
2018		2008	1440	1998	
2017	1553	2007		1997	
2016		2006		1996	
2015		2005	1110	1995	
2014	1571	2004		1994	930



Historical Traffic Volume Summary

Station Details:

Sta ID:	034283
Sta Type:	Classification
Map:	MapIt
District:	7
County:	Fayette
Route:	034-KY-1973 -000
Route Desc:	N CLEVELAND RD

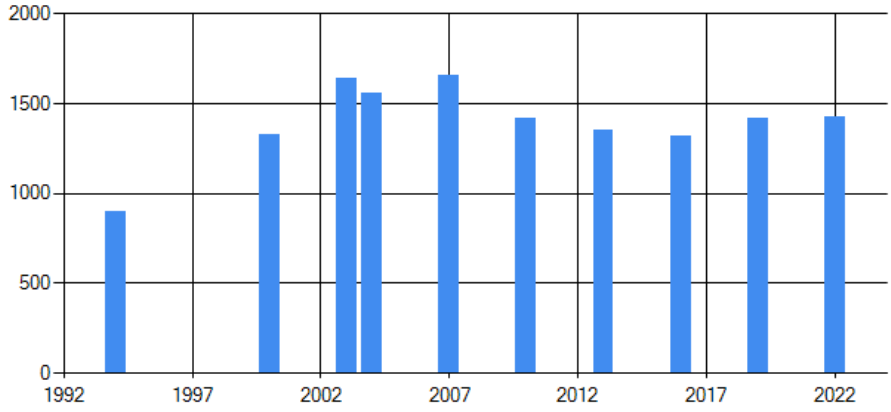
Begin MP:	7.60
Begin Desc:	US 60
End Mp:	10.2010
End Desc:	KY 57
Impact Year:	
Year Added:	

Newest Count:

AADT:	1426
Year:	2022
% Single:	5.1070
% Combo:	0.4120
K Factor:	10.90
D Factor:	62

Definitions:
Sta. ID - Three digit county number + station number
MP - milepoint
Impact Year – year of significant change to traffic pattern within station segment
AADT – Annual Average Daily Traffic – the annualized average 24-hour volume of vehicles on a segment of roadway
% Single – single unit truck volume as a percentage of the AADT
% Combo – combination truck volume as a percentage of the AADT
K Factor – peak hour volume as a percentage of the AADT
D Factor – percentage of peak hour volume flowing in the peak direction

Year	AADT	Year	AADT	Year	AADT
2023		2013	1354	2003	1640
2022	1426	2012		2002	
2021		2011		2001	
2020		2010	1420	2000	1330
2019	1418	2009		1999	
2018		2008		1998	
2017		2007	1660	1997	
2016	1320	2006		1996	
2015		2005		1995	
2014		2004	1560	1994	898



Historical Traffic Volume Summary

Station Details:

Sta ID:	034300
Sta Type:	Full Coverage
Map:	MapIt
District:	7
County:	Fayette
Route:	034-KY-1923 -000
Route Desc:	COMBS FERRY RD

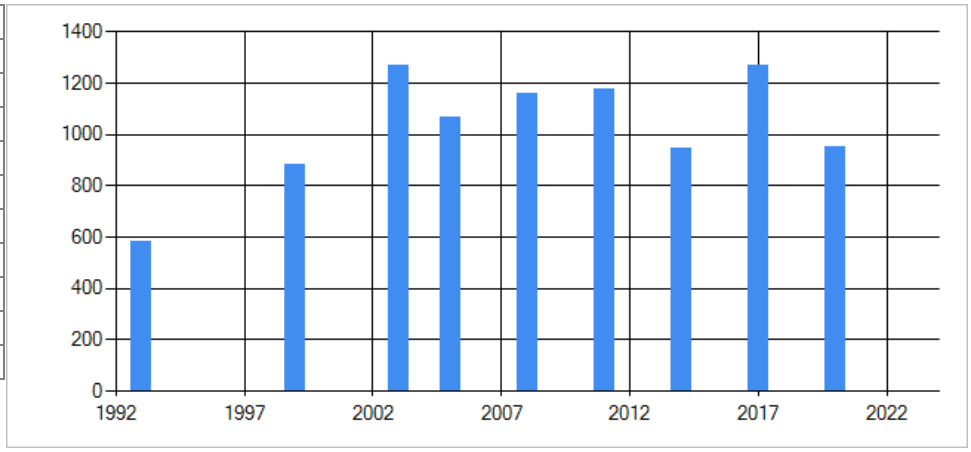
Begin MP:	0
Begin Desc:	US 60
End Mp:	1.6980
End Desc:	CLARK COUNTY LINE
Impact Year:	
Year Added:	

Newest Count:

AADT:	955
Year:	2020
% Single:	
% Combo:	
K Factor:	11.50
D Factor:	56

Definitions:
Sta. ID - Three digit county number + station number
MP - milepoint
Impact Year – year of significant change to traffic pattern within station segment
AADT – Annual Average Daily Traffic – the annualized average 24-hour volume of vehicles on a segment of roadway
% Single – single unit truck volume as a percentage of the AADT
% Combo – combination truck volume as a percentage of the AADT
K Factor – peak hour volume as a percentage of the AADT
D Factor – percentage of peak hour volume flowing in the peak direction

Year	AADT	Year	AADT	Year	AADT
2023		2013		2003	1270
2022		2012		2002	
2021		2011	1180	2001	
2020	955	2010		2000	
2019		2009		1999	883
2018		2008	1160	1998	
2017	1272	2007		1997	
2016		2006		1996	
2015		2005	1070	1995	
2014	945	2004		1994	



Historical Traffic Volume Summary

Station Details:

Sta ID:	025766
Sta Type:	Full Coverage
Map:	MapIt
District:	7
County:	Clark
Route:	025-KY-1678 -000
Route Desc:	CLINTONVILLE RD

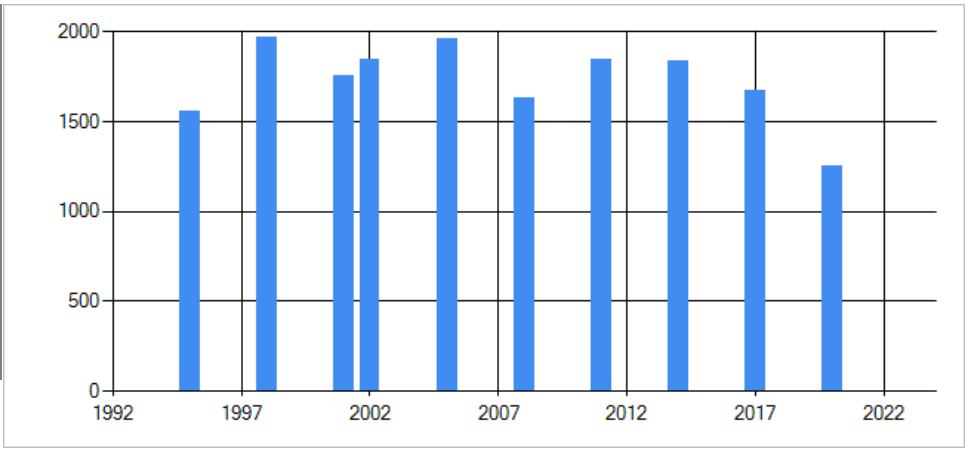
Begin MP:	0
Begin Desc:	US 60
End Mp:	1.9390
End Desc:	VAN METER ROAD
Impact Year:	
Year Added:	

Newest Count:

AADT:	1256
Year:	2020
% Single:	
% Combo:	
K Factor:	10.40
D Factor:	56

Definitions:
Sta. ID - Three digit county number + station number
MP - milepoint
Impact Year – year of significant change to traffic pattern within station segment
AADT – Annual Average Daily Traffic – the annualized average 24-hour volume of vehicles on a segment of roadway
% Single – single unit truck volume as a percentage of the AADT
% Combo – combination truck volume as a percentage of the AADT
K Factor – peak hour volume as a percentage of the AADT
D Factor – percentage of peak hour volume flowing in the peak direction

Year	AADT	Year	AADT	Year	AADT
2023		2013		2003	
2022		2012		2002	1850
2021		2011	1850	2001	1760
2020	1256	2010		2000	
2019		2009		1999	
2018		2008	1630	1998	1970
2017	1677	2007		1997	
2016		2006		1996	
2015		2005	1960	1995	1560
2014	1835	2004		1994	



Historical Traffic Volume Summary

Station Details:

Sta ID:	025778
Sta Type:	Full Coverage
Map:	MapIt
District:	7
County:	Clark
Route:	025-KY-2888 -000
Route Desc:	ROCKWELL RD

Begin MP:	0
Begin Desc:	KY 1678
End Mp:	1.6150
End Desc:	HANCOCK CREEK CULVERT
Impact Year:	
Year Added:	

Newest Count:

AADT:	1652
Year:	2020
% Single:	
% Combo:	
K Factor:	9
D Factor:	56

Definitions:
Sta. ID - Three digit county number + station number
MP - milepoint
Impact Year – year of significant change to traffic pattern within station segment
AADT – Annual Average Daily Traffic – the annualized average 24-hour volume of vehicles on a segment of roadway
% Single – single unit truck volume as a percentage of the AADT
% Combo – combination truck volume as a percentage of the AADT
K Factor – peak hour volume as a percentage of the AADT
D Factor – percentage of peak hour volume flowing in the peak direction

Year	AADT	Year	AADT	Year	AADT
2023		2013		2003	
2022		2012		2002	2000
2021		2011	2060	2001	1790
2020	1652	2010		2000	
2019		2009		1999	
2018		2008	1960	1998	
2017	1770	2007		1997	
2016		2006		1996	
2015		2005	2090	1995	1920
2014	1752	2004		1994