

**COMMONWEALTH OF KENTUCKY
BEFORE THE KENTUCKY STATE BOARD ON
ELECTRIC GENERATION AND TRANSMISSION SITING**

In the Matter of:

ELECTRONIC APPLICATION OF NORTHERN)
BOBWHITE SOLAR LLC FOR A CERTIFICATE)
OF CONSTRUCTION FOR AN APPROXIMATELY)
96 MEGAWATT MERCHANT SOLAR ELECTRIC) Case No. 2020-00208
GENERATING FACILITY IN MARION COUNTY,)
KENTUCKY PURSUANT TO KRS 278.700 AND)
807 KAR 5:110)

**NORTHERN BOBWHITE SOLAR LLC’S
MOTION FOR DEVIATION FROM SETBACK REQUIREMENTS**

Northern Bobwhite Solar LLC (“Bobwhite” or “Applicant”) moves the Kentucky State Board on Electric Generation and Transmission Siting (“Board”) pursuant to KRS 278.704(4) for a deviation from the setback requirements in KRS 278.704(2). Bobwhite is contemporaneously filing with the Board an application under KRS 278.706 for a construction certificate to construct an approximately 96-megawatt alternating current (“MWac”) photovoltaic (“PV”) electric generating facility in unincorporated Marion County, Kentucky (the “Project”). The nature of Bobwhite’s Project and the mitigation measures proposed mean that a deviation should be granted.

I. THE NORTHERN BOBWHITE SOLAR PROJECT

The proposed Bobwhite Project is to be located north of the City of Lebanon and east of Highway 55. The Project will be situated on up to 1300 acres of land, which have historically been used for agriculture and farming. Project equipment onsite will consist of photovoltaic solar panels, associated ground-mounted racking structure, access roads, inverters, medium voltage transformers, buried electrical collection cabling, a step-up substation, and a short 161-kilovolt (“kV”) transmission line between East Kentucky Power Cooperative’s (“EKPC”) existing Marion

County Substation. The 161-kV transmission line connecting the Project’s step-up substation and the existing EKPC substation will be less than one mile in length. Project equipment will be spread throughout the Project site based on topography, legal agreements with landowners, and engineering requirements. A permanent operations and maintenance building may be constructed within the project boundary, or an offsite space may be leased.

The land comprising and adjacent to the Project site is sparsely populated. However, there are multiple residences located on parcels adjacent to those parcels where Project equipment will be located. Based on current site plans, the closest distance between an adjacent residence and a Project inverter is 300 feet.

II. STATUTORY SETBACK REQUIREMENTS

In relevant part, KRS 278.704(2) establishes setback requirements for merchant electric generating facilities as follows:

Except as provided in subsections (3), (4), and (5) of this section, no construction certificate shall be issued to construct a merchant electric generating facility unless the exhaust stack of the proposed facility and any wind turbine is at least one thousand (1,000) feet from the property boundary of any adjoining property owner and all proposed structures or facilities used for generation of electricity are two thousand (2,000) feet from any residential neighborhood, school, hospital, or nursing home facility.¹

A. 1,000 Foot Setback Requirement

As a solar generating facility, the Project does not include any exhaust stacks or wind turbines. Accordingly, the one-thousand-foot setback from property boundaries does not apply.

B. 2,000 Foot Setback Requirement

There are no schools, hospitals, or nursing home facilities within 2,000 feet of the Project. There is, however, one residential neighborhood, as defined in KRS 278.700(6), within 2,000 feet of the Project. KRS 278.700(6) defines a residential neighborhood as “a populated area of five (5)

¹ KRS 278.704(2)

or more acres containing at least one (1) residential structure per acre.”² The residential neighborhood within 2,000 feet of Project equipment consists of approximately ten homes along Horan Lane and twelve homes along Green Valley Drive³ (“the Horan-Green Valley Neighborhood”). The Horan-Green Valley Neighborhood is identified on the Project vicinity map included as Exhibit 1.

A parcel with planned Project generation facilities is adjacent to the Horan-Green Valley Neighborhood; however, those generation facilities are currently planned to be located approximately 625 feet from the neighborhood. While not within the Horan-Green Valley Neighborhood, there is a residence at the far eastern end of Horan Lane that is also adjacent to a Project parcel. This residence is located approximately 300 feet from generation facilities, including an inverter. This residence is the closest residence to an inverter throughout the Project.

Bobwhite respectfully seeks a deviation from the 2,000-foot setback requirement in KRS 278.704(2) to allow it to place generating equipment 625 feet from the Horan-Green Valley Neighborhood. Additionally, Bobwhite seeks approval to place Project inverters within 300 feet of residences within the Project area.⁴

II. SETBACK DEVIATION STANDARDS

KRS 278.704(4) authorizes the Board to grant Bobwhite a deviation from the 2,000-foot setback requirement in KRS 278.704(2) if it finds that the Project is “designed to and, as located,

² KRS 278.700(6).

³ The residences along Green Valley Drive narrowly exceed the size and density requirements of KRS 278.700(6). Despite this, Bobwhite is including those residences in the neighborhood for the purposes of this motion.

⁴ See e.g. Order, *In the Matter of Electric Application of Turkey Creek Solar, LLC for a Construction Certificate to Construct an Approximately 50 Megawatt Merchant Solar Electric Generating Facility in Garrard County, Kentucky Pursuant to KRS 278.700 and 807 KAR 5: 110* at 38, Case No. 2020-00040 (Ky. P.S.C. Sept. 23, 2020) and Order, *In the Matter of Electric Application of Glover Creek Solar, LLC for a Construction Certificate to Construct an Approximately 55 Megawatt Merchant Solar Electric Generating Facility in Metcalfe County, Kentucky Pursuant to KRS 278.700 and 807 KAR 5: 110* at 36, Case No. 2020-00040 (Ky. P.S.C. Sept. 23, 2020) (both limiting the proximity of inverters to residential structures).

would meet the goals of KRS 224.10-280, 278.010, 278.212, 278.214, 278.216, 278.218, and 278.700 to 278.716 at a distance closer than those provided in subsection (2) of this section.”⁵ The Board has previously stated that the purpose of the setback requirements in KRS 278.704(2) is to protect property owners from the adverse impacts that might result from the construction of merchant electric generation facilities.⁶ In particular, the Board highlighted the need to address the noise, visual, and traffic impacts of the merchant electric generation facilities.⁷

The Bobwhite Project is designed to minimize the impacts on the Horan-Green Valley Neighborhood. Additionally, the Project has been designed to and will meet the goals of the statutes referenced in KRS 278.704(4). Deviation from the setback requirements in KRS 287.704(2) is appropriate.

III. ARGUMENT

A. The Project’s Impacts on the Horan-Green Valley Neighborhood are Minimal

Bobwhite has designed the Project to minimize impacts on the environment and the neighboring community. The Site Assessment Report, required by KRS 278.708 and included as Exhibit O to Bobwhite’s Application, describes the Project’s anticipated noise, visual, and traffic impacts.

1. Noise Impacts

Appendix D to the Site Assessment Report includes a thorough evaluation of the anticipated noise impacts of Project construction and operation (“Noise Assessment”). The Noise Assessment considered existing sources of noise at the Project site, noise impacts from Project

⁵ KRS278.704(4)

⁶ Order, *In the Matter of Application of ecoPower Generation-Hazard, LLC for a Certificate to Construct and Operate a Merchant Electric Generating Facility and a 69KV Transmission Line in Perry County, Kentucky* (“ecoPower Order”) at 32-33, Case No. 2009-00530 (Ky. P.S.C. May 18, 2010).

⁷ *Id.* at 33.

construction, and noise impacts from Project operations. Existing noise sources at the Project Site include state routes (SR 55, SR 150, and SR 1195), two-lane rural roadways, and activities associated with agriculture.⁸ There is also a municipal airport to the north of the Project site and an industrial park to the east, both of which contribute to the existing noise levels at the Project site.⁹ The Noise Assessment evaluated noise impacts from the Project during construction and operation.

(a). Noise Impacts During Construction

The Project site is primarily agricultural in nature with rolling hills. Heavy earth moving equipment is required to grade some of the land to a more gradual slope. The primary noise impact from Project construction will arise from the use of construction equipment to grade land, install the solar panels and associated equipment and a temporary increase in traffic during construction activities.

The Noise Assessment identifies multiple pieces of construction equipment that may be utilized during Project construction; the loudest of which is an impact pile driver that could be used to construct foundations for solar panels.¹⁰ The US Department of Transportation describes the typical noise level of an impact pile driver as 101 decibels (“dB”) at 50 feet.¹¹ The Noise Assessment calculates how the noise from the pile driver attenuates with distance as follows:¹²

⁸ Noise Assessment at 2-3.

⁹ *Id.* at 3.

¹⁰ *Id.*

¹¹ *Id.*

¹² *Id.* at 4.

Distance from Noise Source to Receptor (feet)	Projected Noise Level at Noise Receptor (dB)
50	101.00
100	94.98
200	88.96
300	85.44
500	81.00
1,000	74.98
1,500	71.46

Based on current site plans, the majority of residential receptors are greater than 300 feet away from locations where pile drivers will operate. At 300 feet, the projected noise level is approximately the same as traffic.¹³ Moreover, the noise from construction activities will be limited in duration and will occur only during hours of 7:00 AM to 10:00 PM, generally occurring only during daylight hours.¹⁴ Noise from construction equipment is not likely to result in long-term negative impacts to neighboring landowners.

In addition to noise from construction equipment such as pile drivers, construction of the Project will result in a temporary increase in truck traffic. The Noise Assessment evaluated the potential noise impact from heavy trucks operating in the Project vicinity.¹⁵ The assessment showed that the closest residents would experience only a minimal, temporary impact from construction-related truck traffic.¹⁶

(b). Noise Impacts During Operation.

Noise from the Project during operation will be produced by panel tracking system motors (if utilized), inverters, and transformers. Tracking system motors are small motors used to track

¹³ *Id.* at 5.

¹⁴ *Id.* at 6.

¹⁵ *Id.* at 5.

¹⁶ *Id.* at 6.

the arc of the sun to maximize each panel’s solar absorption. Tracking system motors would operate no more than one minute out of every 15-minute period.¹⁷ The sound typically produced by a tracking motor is approximately 78 dB at the source, attenuating to approximately 42 dB at 210 feet.¹⁸ A possible alternate design for the Project would use stationary, fixed-tilt panels.

Additional operational noise sources include the Project’s inverters and transformers. Bobwhite currently plans to utilize SMA Sunny Central UP inverters (or similar) for the Project. The inverters will be distributed evenly across the Project site. According to the manufacturer’s specifications, the noise emission produced by this inverter is rated at 67.0 dBA at an approximate distance of 33 feet.¹⁹ As it did for noise from pile driver activities, the Noise Assessment calculates the noise attenuation for the proposed inverters:²⁰

Distance from Noise Source to Receptor (feet)	Noise Experienced at Noise Receptor (dB)
3.28 (1 meter)	97.32
25	69.36
32.8 (10 meters)	67.00
50	63.00
100	57.32
150	53.80
200	51.30
300	47.78

As discussed above, the closest inverter to a residential receptor is currently planned to be located approximately 300 feet away. At 300 feet, the noise from the inverters is approximately

¹⁷ *Id.*

¹⁸ *Id.* at 6-7.

¹⁹ *Id.* at 7.

²⁰ *Id.*

48 dB which is less than normal conversation speech at 5-10 feet (60 dB) and less than an open office background level (50 dB).²¹

Bobwhite currently plans to utilize Eaton Cooper Power Series transformers that produce noise emissions of 56-68 dB at the source, depending on model unit and rating.²² This is approximately equivalent to the noise produced from a household air conditioning unit.²³ The medium voltage transformers are located adjacent to the inverters and have lower noise emissions. At a similar distance from receptors as the inverters, 300 feet or more, the medium voltage transformers would not be a significant contributor of noise.²⁴

If the proposed inverters and transformers are located at least 300 feet from a residential receptor, the noise levels generated from this type of equipment operation at the planned distances would be similar to background or common noise levels in a residential environment. At that distance, the equipment would not would not be a significant contributor of noise.

2. Visual Impacts

The visual impacts of the Bobwhite Project are described in the Site Assessment Report.²⁵ The Project Site is generally rolling terrain and large portions of which will not be visible from any roadways or neighbors. Given the rolling topography, existing tree lines, and the arrangement of the site, the visibility of the solar equipment from roadways or other vantage points will generally be limited.

Wherever possible, the site will maintain natural vegetative screening; however, where the Project could be visible from a roadway or neighboring residence, the Project will add a vegetative

²¹ *Id.*

²² *Id.*

²³ *Id.* at 7-8.

²⁴ *Id.* at 8.

²⁵ Site Assessment Report, Section 2.0.

buffer to mitigate viewshed impacts.²⁶ The final location of any vegetative buffer will be based off the final Project design and layout. Bobwhite will install vegetative buffering where natural screening is not present if solar panels or inverters are sited within 500 feet of a residence within direct line of site, or if solar panels or inverters are located within 300 feet of a public roadway within direct line of site. Where mitigation is warranted, a vegetative buffer will be planted consisting of deciduous and evergreen trees and shrubs.²⁷ A Conceptual Visual Mitigation Planting Plan offering a detailed description of the proposed vegetative buffering is provided as Appendix I of the Site Assessment Report. Through the Project's design and use of vegetative screening, the siting and operation of the Bobwhite facility is in harmony with its rural, agricultural surroundings.

3. Traffic Impacts

Appendix E to the Site Assessment Report includes a traffic impact study ("Traffic Assessment"). The Traffic Assessment evaluated the potential impact on traffic during both construction and operation of the Bobwhite Project. Primary access to the Project site during construction will be via SR-55.²⁸ In the event that the Project construction contractors cannot move materials from the laydown area located adjacent to the project substation to other Project areas via internal access roads, those materials will be moved via SR-1195 and SR-1406.²⁹ The laydown area is shown on the Project Site Plan (Appendix C) of the Site Assessment Report.

To ensure safety, the Project's construction contractors will install signage notifying drivers in the area of trucks entering and leaving the roadway and will utilize flaggers when

²⁶ *Id.*

²⁷ *Id.*

²⁸ Traffic Assessment at 3.

²⁹ *Id.*

necessary.³⁰ Bobwhite will repair public roads or shoulders damaged by Project construction, if any.³¹ Construction traffic will not travel on Horan Lane or Green Valley Road in the vicinity of the Horan-Green Valley Neighborhood.

During Project operation, traffic to the Project site will be minimal. Operation traffic will consist of approximately two employees traveling to the site several times per week for inspection. Maintenance activities will occur periodically, but will be limited to normal working hours, except in the case of emergencies.³²

Construction and operation of the Project will not significantly impact traffic in the vicinity of the Horan-Green Valley Neighborhood or the Project Site as a whole.

B. The Project Meets the Goals of the Statutes Identified in KRS 278.704(4).

In addition to being designed and operated to minimize the impacts on neighboring residents, the Bobwhite Project meets the goals of KRS 224.10-280, 278.010, 278.212, 278.214, 278.216, 278.218, and 278.700 to 278.716 as required by KRS 278.704(4).

1. KRS 224.10-280

KRS 224.10-280 provides that, prior to constructing a facility to be used for the generation of electricity, a developer must submit a cumulative environmental assessment (“CEA”) to the Energy and Environment Cabinet and pay a fee set pursuant to KRS 224.10-100(2). There have been no regulations promulgated regarding the contents of a CEA and no fee established to defray the costs of processing the CEA. Despite this, Bobwhite prepared a CEA that will be submitted to the Cabinet prior to construction.³³ As described below, the CEA shows that the Bobwhite will have limited negative environmental impacts.

³⁰ *Id.* at 4.

³¹ *Id.*

³² *Id.* at 5.

³³ A copy of the CEA is included as Exhibit 2 to this motion.

(a) *Air Evaluation (KRS 224.10-280(3)(a))*

KRS 224.10-280(3)(a) requires that the CEA for the Project evaluate the types and quantities of air pollutants that will be emitted by the Project and a description of the methods that will be used to control those emissions. The solar panels at the Project produce zero emissions. The CEA notes that limited air emissions will occur during construction through the operation of vehicles and equipment and will consist of emissions of particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide, and volatile organic compounds generated through the combustion of gasoline and diesel fuels.³⁴ Once construction is complete, the only emissions from the Project will be associated with the internal combustion engines of maintenance equipment used to repair the solar panels, worker transportation vehicles, and grounds keeping equipment such as mowers and trimmers.³⁵ No air emissions permit is required for the Project.³⁶

(b) *Water Evaluation (KRS 224.10-280(3)(b))*

KRS 224.10-280(3)(b) requires that the CEA for the Project describe the type and quantity of water pollutants that will be discharged to the waters of the Commonwealth and the methods that will be used to control those discharges. Site grading and construction activities will be the most likely source of surface water pollutants from the Project. The Project will minimize grading and excavating by incorporating existing topography into the layout to the extent possible.³⁷ Bobwhite will conduct Project construction activities under the coverage of the Kentucky Pollutant Discharge Elimination System (“KPDES”) permit for Stormwater Discharges Associated with Construction Activities (“KYR10 Permit”).³⁸ The KYR10 Permit requires Bobwhite develop and

³⁴ CEA at 3.

³⁵ *Id.*

³⁶ *Id.*

³⁷ *Id.* at 4.

³⁸ *Id.*

implement a stormwater pollution prevention plan which will identify best management practices (“BMPs”), such as silt fences, sediment basins, and buffer zones, that will be followed to minimize impacts associated with construction.³⁹ Following construction, Bobwhite will seed all disturbed areas with non-invasive species of ground cover for stabilization and erosion minimization.⁴⁰

During operation, the Project will store small quantities of petroleum fuels, lubricants, and fluids as well as groundskeeping chemicals for use in maintenance and upkeep.⁴¹ These chemicals will be stored inside a building or, if bulk storage is used, in appropriate tanks with secondary containment.⁴² Bobwhite will implement BMPs to minimize the impacts of any spills on groundwater or surface water.⁴³ The CEA concludes that “given the minimal chemical use and implemented BMP’s, it is unlikely that this Project will negatively impact any water resources in the area during the construction or ongoing operations phases.”⁴⁴

(c) *Waste Evaluation (KRS 224.10-280(3)(c))*

KRS 224.10-280(3)(c) requires that the CEA for the Project describe the type and quantity of wastes that will be produced by the Project and how those wastes will be managed and disposed of. During construction, the Project is expected to produce general construction debris primarily comprised of wood, cardboard, and plastic packaging.⁴⁵ These wastes will be recycled where practicable or otherwise disposed in accordance with applicable regulations.⁴⁶ Following construction and during the operation of the Project, wastes will be generated through the replacement, repair and upgrades to Project equipment.⁴⁷ As with construction wastes, wastes

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ *Id.*

⁴² *Id.* at 4-5.

⁴³ *Id.*

⁴⁴ *Id.* at 5.

⁴⁵ *Id.* at 7.

⁴⁶ *Id.*

⁴⁷ *Id.*

developed during operation will be recycled where practicable or otherwise disposed of in accordance with applicable regulations.⁴⁸

(d) *Water Withdrawal Evaluation (KRS 224.10-280(3)(d))*

KRS 224.10-280(3)(d) requires that the CEA for the Project identify the source and volume of water withdrawal necessary for the construction and operation of the Project and methods to be used for managing such withdrawals. Bobwhite may use wells that are currently in the Project area that are fed by underground aquifers well be used for water supply or water will be hauled in as needed.⁴⁹ The CEA notes that Bobwhite does not anticipate construction and operation of the Project to be water-use intensive and concludes that “[w]ater withdrawal for the Project is not expected to create negative effects on regional water resources.”⁵⁰

2. KRS 278.010

KRS 278.010 is the definitions section that applies to KRS 278.010 to 278.450, 278.541 to 278.544, 278.546 to 278.5462, and 278.990. The Board’s authority begins with KRS 278.700 and extends through KRS 278.716 and any applicable provision of 278.990. Bobwhite has met the goal of KRS 278.010 by filing a complete Application pursuant to the applicable statutes utilizing the definition of any applicable term defined in KRS 278.010.

3. KRS 278.212

KRS 278.212 requires the filing of plans and specifications for a merchant generator’s electric interconnection with an electric utility prior to construction and requires that the merchant generator bear the costs associated with the upgrades and the utility’s rate payers. Bobwhite will comply with this requirement through the Interconnection Service Agreement included in Exhibit

⁴⁸ *Id.*

⁴⁹ *Id.* at 8.

⁵⁰ *Id.*

J of the Application. Additionally, Bobwhite will be responsible for the appropriate costs resulting from interconnecting with the electric utility. The Bobwhite Project meets the goals of KRS 278.212.

4. KRS 278.214

KRS 278.214 establishes a curtailment priority for utilities or cooperatives that provide transmission service to follow in the event an emergency on its transmission facilities require curtailment. To the extent they apply to the Project, Bobwhite will comply with the requirements of KRS 278.214 and the requirements of the Interconnection Service Agreement included in Exhibit J of the Application. Accordingly, the Bobwhite Project meets the goals of KRS 278.214.

5. KRS 278.216

KRS 278.216 requires a utility to obtain a site compatibility certificate and complete a site assessment report prior to constructing an electric generating facility. The provisions in KRS 278.216 are similar to the requirements for obtaining a construction certificate under KRS 278.700 to KRS 278.716. Bobwhite is not a utility as defined in KRS 278.010(3), and, as such, KRS 278.216 does not apply. However, by submitting its application to the Board and complying with the similar requirements in KRS 278.700 to KRS 278.716, the Bobwhite Project meets the goals of KRS 278.216.

6. KRS 278.218

KRS 278.218 requires Public Service Commission approval prior to the transfer of ownership or control of assets owned by a utility as defined in KRS 278.010(3). Bobwhite is not a utility as defined in KRS 278.010(3) and, accordingly, KRS 278.218 does not apply. To the extent Board approval may at some time be required for Bobwhite to transfer ownership or control

of its assets, Bobwhite will comply with the applicable statutory and regulatory requirements. The Bobwhite Project meets the goals of KRS 278.218.

7. KRS 278-700 to KRS 278.716

KRS 278-700 to KRS 278.716 are the statutory provisions governing the application for and grant of construction certificates to merchant electric generating facilities. The Board has described the goals of these provisions as ensuring the proposed facility will be constructed and operated in a way that will not intrude upon or unnecessarily disrupt other surrounding land uses, including hospitals, nursing homes, residential areas, schools, parks or otherwise have adverse environmental impacts which are not otherwise regulated.⁵¹ In addition, the Board has described these provisions as requiring an evaluation of:

- the economic impact of the proposed facility;
- whether the facility is to be located at a site where existing generating facilities are located;
- whether the facility will meet all applicable local planning and zoning requirements;
- whether the facility will adversely impact the reliability of electrical service for retail customers of utilities regulated by the Public Service Commission;
- the efficacy of any proposed mitigation measures; and
- the applicant's history of environmental compliance.⁵²

Bobwhite's application includes an evaluation of the issues required by KRS 278.700 to KRS 278.716. Moreover, Bobwhite has designed the Project to ensure that, through Project layout and other mitigation measures, it will not intrude on or otherwise disrupt its neighboring landowners. The Bobwhite Project meets the goals of KRS 278.700 to KRS 278.716.

⁵¹ *Ecopower* at 39.

⁵² *Id.* at 39 (internal citations omitted).

IV. CONCLUSION

Bobwhite has designed the Project to protect the residents of the adjoining residential neighborhood from the minimal impacts of the Project. Additionally, the Project meets the goals of the statutory provisions listed in KRS 278.704(4).

For these reasons, Bobwhite respectfully requests that the Board

(1) grant the Bobwhite Project a deviation from the 2,000-foot setback requirement in KRS 278.704(2) to allow it to place generating equipment 625 feet from the Horan-Green Valley Neighborhood; and

(2) authorize Bobwhite to place Project inverters 300 feet from residences within the Project area.

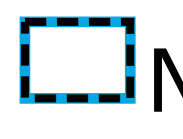
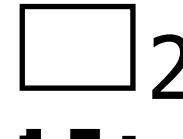









Respectfully submitted,



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COUNSEL FOR NORTHERN BOBWHITE
SOLAR LLC

Exhibit 1
Vicinity Map

-  Northern Bobwhite Solar Project Boundary
-  2000 foot radius
-  2 mile radius
-  Marion County Substation POI
-  In Service Transmission Lines
-  County Line
-  Lebanon City Limits
-  Parks
-  Public Schools
-  Residential Structures
-  Residential Neighborhoods

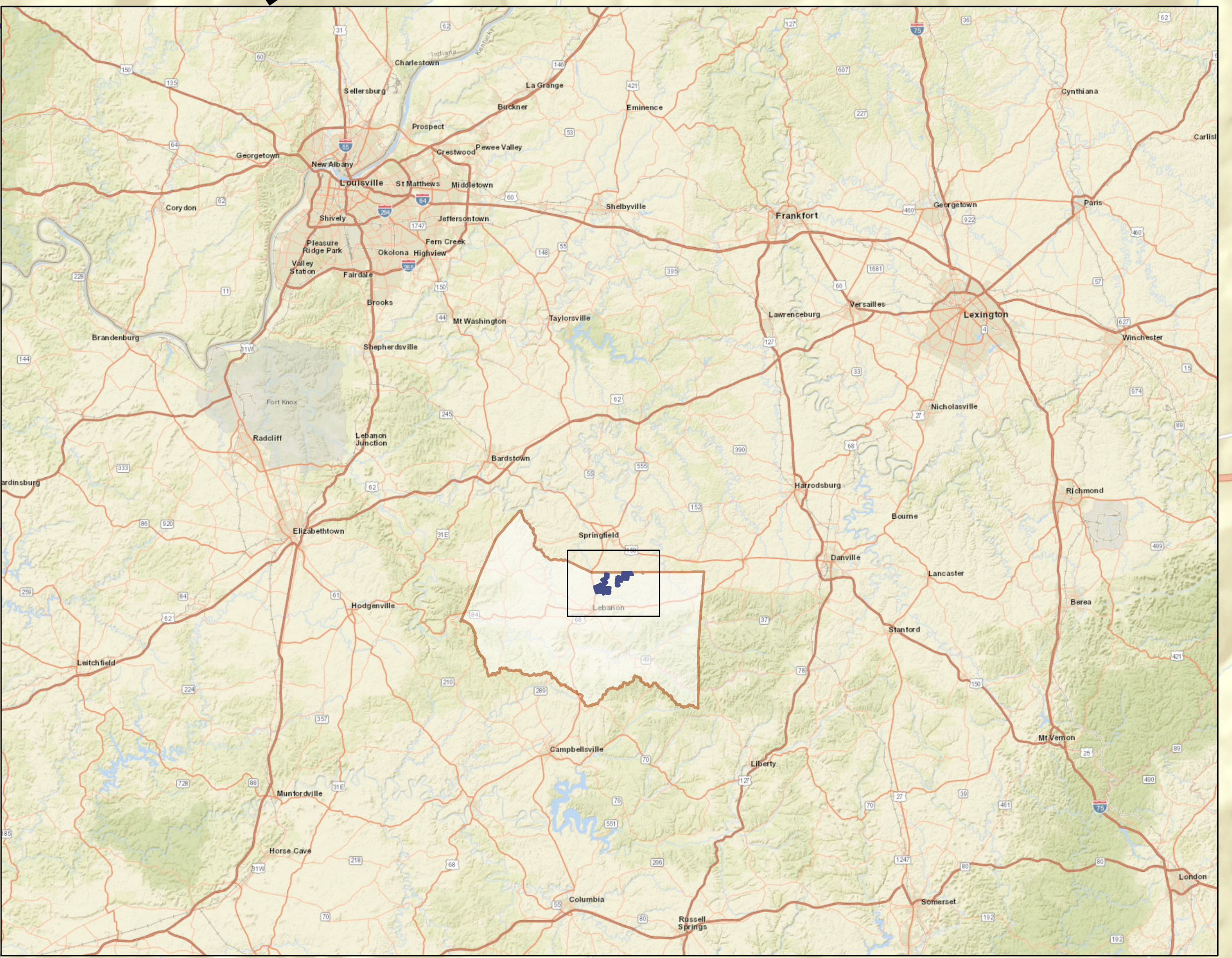
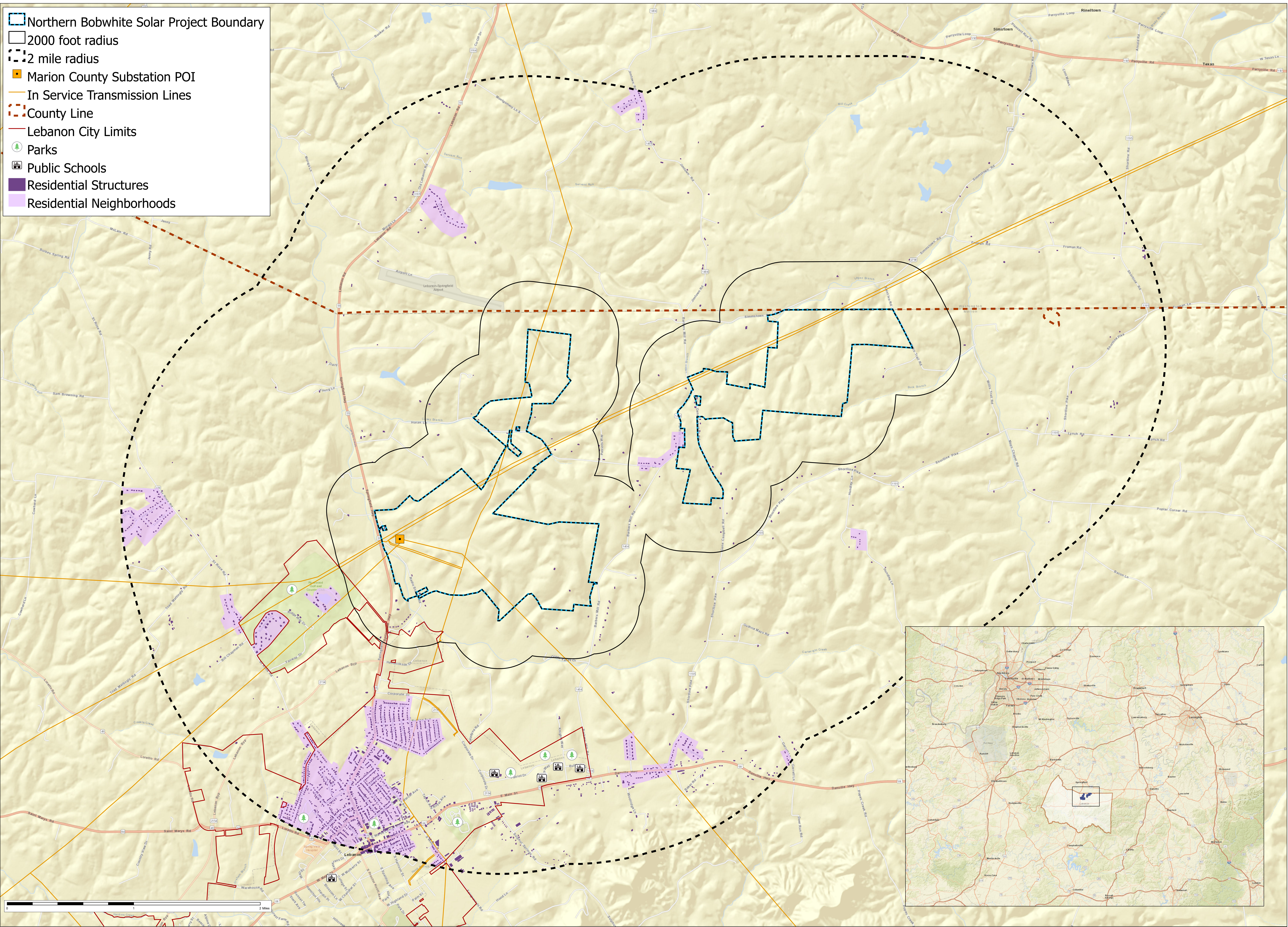


Exhibit 2

Cumulative Environmental Assessment

**CUMULATIVE ENVIRONMENTAL ASSESSMENT for PROPOSED
NORTHERN BOBWHITE SOLAR LLC PROJECT
MARION COUNTY, KENTUCKY**

DECEMBER 2020



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**CUMULATIVE ENVIRONMENTAL ASSESSMENT
NORTHERN BOBWHITE
MARION COUNTY, KENTUCKY**

DECEMBER 2020

Prepared for:

NORTHERN BOBWHITE SOLAR LLC

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FIGURE 1 Site Location Map

1.0 INTRODUCTION

The proposed Northern Bobwhite Solar Facility (“the Project”) will be a 96-megawatt alternating current (“MWac”) photovoltaic (“PV”) electric generating facility. The proposed project is to be located in unincorporated Marion County, KY, north of the City of Lebanon, KY and east of Highway 55 at approximate coordinates 37°36’56.80” N, -85°13’45.57” W. The project will be situated on up to 1300 acres which has historically been used for agriculture and farming. Project components will include PV solar panels and the associated ground-mounted racking structure, access roads, inverters, medium voltage transformers, buried electrical collection cabling, a step-up substation, a short 161 kilovolt (“kV”) transmission line, security fencing, laydown areas, and an operations and maintenance (“O&M”) building.

The project will consist of a construction phase lasting approximately 12-18 months. This will include site grading and constructions of the solar panel arrays. Upon completion of the construction phase, ongoing operations of the project will last for approximately 20 - 40 years. The solar panels are self-sufficient in operation and will only require periodic maintenance and repair activities as well as regular groundskeeping.

This assessment will evaluate compliance of the Project with KRS 224.10-280 with respect to the following areas:

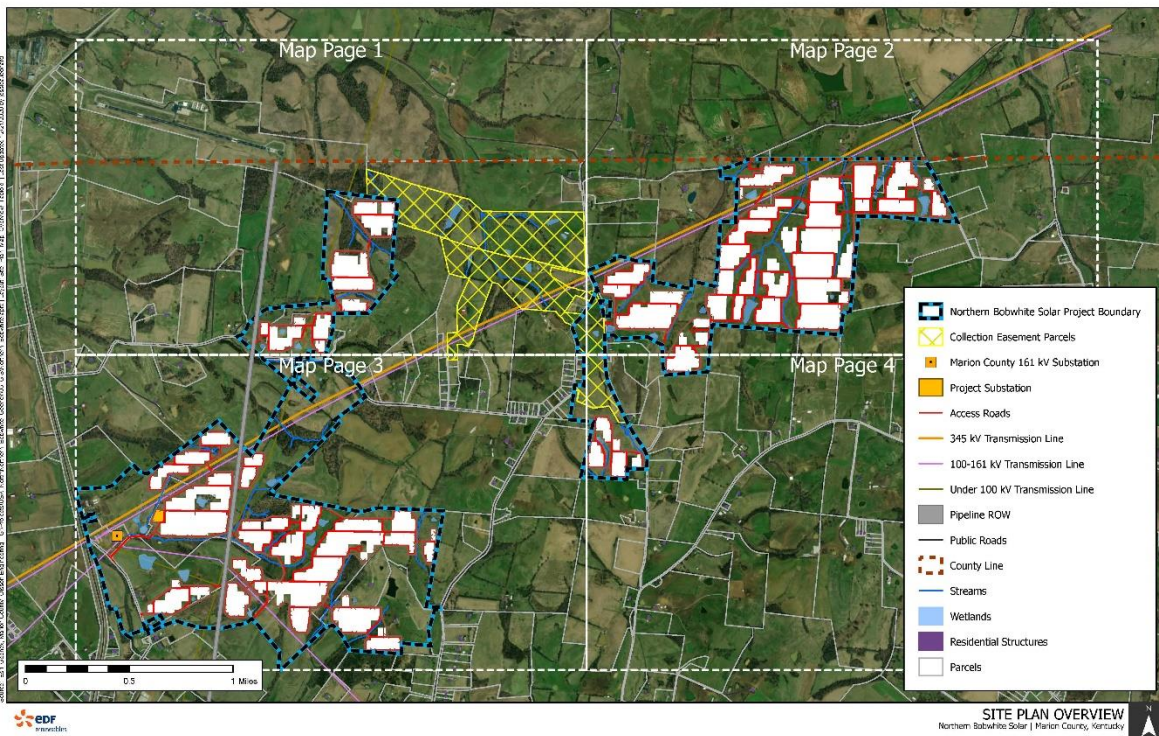
- Air Pollutants
- Water Pollutants
- Wastes
- Water Withdrawal

All necessary air, water, waste permits have been or will be obtained before construction and operation of the Project, and may include:

Permit	Regulatory Agency	Activity	Authority
Kentucky Pollutant Discharge Elimination System (“KPDES”) Individual Permit	Kentucky Division of Water (“DOW”)	Discharge of process wastewater, non-process wastewater or stormwater from a point source.	KRS 224.10-100, 224.16-050, 224.70-110, 224.70-120, 401 KAR 5:001, AND 401 KAR 5:055-5:080
KPDES Construction Storm Water Discharge General Permit	DOW	Stormwater discharges from construction activities that disturb one or more acres.	KRS 224.16-050, 224.16-060, 401 KAR 5:005 AND 5:060
KPDES Wastewater facility Construction Permit	DOW, Marion County	If installation of sewers or pump stations is involved, a Wastewater Facility Construction Permit is required.	KRS 151.230
General Permit for Floodplain Development	DOW	Development in, along, or across a stream requires floodplain permit.	KRS 151.230

Permit	Regulatory Agency	Activity	Authority
Water Withdrawal Permit	DOW	Withdrawal of public water.	KRS 151.140, 401 KAR 4:010 and 4:200
Section 404 Clean Water Act Nationwide Permit	U.S. Army Corps of Engineers (“USACE”)	Permit for structures and/or work in affecting Waters of the United States.	33 CFR 322.2
Section 401 Water Quality Certification	DOW	Any discharge into water of the Commonwealth, associated with any federally licensed or permitted activity.	§ 401 CWA KRS 224.16-050 401 KAR Ch.5

Figure 1 Site Location Map



2.0 AIR

The Environmental Protection Agency federally regulates ambient air quality through the Clean Air Act (“CAA”) 42 U.S.C. §7401 et seq. The CAA establishes National Ambient Air Quality Standards (“NAAQS”) based on the concentrations of specific criteria pollutants within a geographic area. Based upon the comparison of concentrations of these criteria pollutants to the national standard, these areas will be designated as attainment or nonattainment. Marion county, as well as the surrounding counties of Washington, Nelson, Larue, Mercer, Boyle, Anderson, Taylor, Casey are designated as in attainment. Marion county is regulated by Kentucky Administrative Regulations for air quality established in 401 KAR 50-68.

Air emissions during the construction phase would be generated primarily through the operation of vehicles and equipment. Typical equipment will include bulldozers, backhoes, semi-trucks, and other specialized equipment used for the constructions and installation of the photovoltaic solar panels. Associated emissions of equipment and vehicles would include particulate matter (“PM”), carbon monoxide (“CO”), nitrogen oxides (“NO_x”), sulfides (“SO₂”), and volatile organic compounds (“VOCs”) generated through the combustion of gasoline and diesel fuels. The quantities of emissions would vary based upon the stage of construction, with the majority occurring during initial site grading and excavation. The number of personnel on-site will be dependent on the construction phase and associated activities.

Air emissions from the Project would decrease significantly after the construction phase and into the ongoing operations for the life of the Project. Operation of the solar panels produce zero emissions. The only emissions during the ongoing operation of the Project would be from the internal combustion engines of maintenance equipment used to repair the solar panels, worker transportation vehicles, and groundskeeping equipment such as mowers and trimmers. Therefore, facility operations will generate negligible levels of air pollutants. ***The Project does not require an air quality permit.***

3.0 WATER

3.1 KPDES Permitting

The site is located within the Upper Cartwright Creek, Servant Run and Pleasant Run (HUC 0514010303) watersheds. Surface water drainage would flow to Beech Fork and eventually into the Ohio River. These watersheds are not identified as outstanding waters as identified in 401 KAR 10:030 and 401 KAR 10:031 or impacted streams as identified by the Water Quality Assessment Program and 305(b)/303(d) Integrated Reports by the Kentucky DOW. The portion of the Pleasant Run watershed encompassing part of the Project is at the furthest extent of the Zone III Zone of Potential Impact for the Springfield Water Works drinking water withdrawal for the city of Springfield, Kentucky, which extends to 25-miles upstream of the intake.

Site grading and construction activities will be the most likely potential source of surface water pollutants such as sediment. Grading and excavating activities will be minimized by incorporating topography into the layout of the site to the greatest extent possible. Final grading will result in contouring the land consistent with surrounding areas and will be stabilized with vegetation.

In accordance with Kentucky DOW regulations for construction activities that disturb one or more acres, activities will be conducted under the coverage of a Kentucky Pollutant Discharge Elimination System ("KPDES") permit for Stormwater Discharges Associated with Construction Activities ("KYR10"). As required by the KYR10 permit, a stormwater pollution prevention plan ("SWPPP") will be prepared and implemented to minimize impacts associated with the construction activities. Best Management Practices ("BMP") including silt fences, sediment basins, and buffer zones will be identified in the SWPPP and implemented where appropriate.

Following grading, all areas will be seeded with non-invasive species of groundcover for stabilization and erosion minimization. All disturbed areas will be inspected periodically for erosion issues and remediated as appropriate to prevent sediment discharge into waterways. Ongoing maintenance practices for the control of vegetation will be regular mowing and application of EPA approved herbicides. All herbicide applications will be performed by licensed and certified professionals.

During the construction phase, approximately 4-6 acres will be used as staging areas for personnel, equipment, and materials. Upon completion of construction, most of this area will be cleared and seeded. A portion of this area may remain as operational use areas for the life of the Project.

Ongoing operations at the site will consist of general maintenance and repairs of equipment. On-site storage of chemicals will consist of small quantities of petroleum fuels, lubricants, and fluids as well as groundskeeping chemicals. BMP's will be in place to minimize any associated impacts on surface water.

3.2 Ground Water Resources

Groundwater resources in the area are reported to be at depths of less than 100 feet in broad valley bottoms (Springfield Quadrangle USGS 1978). This resource would not be significantly affected as any rainwater on the panels would drain off to the ground beneath and infiltrate naturally into the subsurface. There are currently no water withdrawal wells located within the boundaries of the site.

A search of the Kentucky Geological Survey's Kentucky Groundwater Data Repository Water Well and Spring Location Map identified 13 potential drinking water wells and 5 springs within a 3-mile radius of the center of the Project area.

On-site storage of chemicals during the constructions phase and ongoing operations for the life of the Project would consist of small quantities of petroleum-based fuels, lubricants, and fluids, janitorial supplies, and cleaners. These chemicals would be stored inside of a building as to minimize potential for leaks, spills, or contaminated rainwater to impact stormwater. Any bulk quantities of chemicals, such as fuels, will be stored in appropriate tanks with secondary containment. Equipment using these chemicals would be maintained in good working order as to minimize any leaks. BMP's will be implemented to clean up any leaks or spills as quickly as possible.

Given the minimal chemical use and implemented BMP's, it is unlikely that this Project will negatively impact any water resources in the area during the construction or ongoing operations phases.

3.3 Wetland Delineation 404/401 USACE Permitting

Terracon conducted a wetland delineation the Project (Appendix G of the Site Assessment Report). This assessment describes the observations made during site visits and other sources of information used to investigate the Project site for wetlands and other waterbodies. Based on the results of the assessment, seven wetlands, 45 streams, and 35 ponds are present at the Project site.

The purpose of performing this wetland delineation of the project site was to characterize the existing site conditions, observe the project site for suspect waterbodies and wetlands and provide a recommendation regarding whether or not suspect waterbodies (if observed) would be considered jurisdictional with the USACE.

According to our preliminary site investigation, potential jurisdictional waters are present on the project site. However, for all on-site areas, only the USACE can make the final determination on the jurisdictional status of waterbodies, and on the need for permit processing and compensatory mitigation. Additionally, non-jurisdictional wetlands, ponds, and streams may also be considered Waters of the State and could potentially be regulated by the DOW.

The Project is anticipated to be designed in a manner to allow for the utilization of USACE Nationwide Permits. Final wetland and stream impact calculations will be available following detailed engineering plan development and will determine the necessity of USACE and/or DOW permitting.

4.0 WASTE

General construction debris is expected to be generated during the construction phase of the Project. These wastes will generally consist of wood, cardboard, plastic packaging and potentially hazardous waste. All waste materials generated at the site will be recycled when practicable, and otherwise will be disposed of in accordance with all local, state, and federal regulations at an appropriate permitted off-site location. BMP's will be implemented to inspect waste generation and storage practices to ensure that all material is managed in accordance with all applicable regulations. Wastes will be placed in dumpsters or roll-off containers located at the staging areas upon generation. In the event hazardous waste is generated, Bobwhite will develop a hazardous material business plan to ensure materials are handled, used, and stored accordance with BMPs.

BMP's will be implemented to minimize the potential for any leaks or spills from equipment. Spill response kits will be placed throughout the site as appropriate to respond to any spills or leaks. Any contaminated spill response equipment will be stored in appropriate containers until disposal in accordance with all applicable regulations.

During the ongoing operations of the site, wastes will be generated through the replacement and repair of the photovoltaic solar panels and associated equipment. These wastes would primarily consist of electrical equipment, electrical wiring, batteries, and scrap metal. All materials will be recycled when practicable and wastes will be disposed of in accordance with all applicable regulations. General waste dumpsters will be on-site for the life of the Project and emptied regularly by a certified waste contractor.

Sewage waste during the construction phase will be managed through the use of portable toilets provided by a certified contractor.

5.0 WATER WITHDRAWAL

Construction and standard facility operations will require water. Wells that currently exist within the Project area that are fed by underground aquifers will be used for water supply or water will be hauled in as needed. There is enough natural movement of groundwater to maintain current demand on water supplies. If there are no existing wells or if existing wells are not sufficient for construction and operations, a new well may be developed.

Construction activities will use water to prevent dust and sediment pollution into onsite air and wetlands. Ground-disturbing activities, such as grading, require water for soil compaction and dust control. Water used for any dust control measures will be properly handled using BMP protocols. Water may also be used for construction of building foundations and equipment pads, washing equipment, and other minor uses. The stormwater pollution prevention plan will include regulations for using water to clean equipment and appropriately disposing of this wastewater.

Anticipated use of water for construction is expected to be relatively minor and will not negatively impact groundwater resources. Once the facilities are complete, standard operations are expected to have low water requirements. The surrounding area receives enough rainfall throughout the year to contribute to aquifers and reduce the need for regularly washing the solar panels. Rainfall will be adequate in keeping the photovoltaic panels largely free from dust and debris. Additionally, rain will contribute to ongoing vegetation management. Some water will be needed to maintain ground cover planted between the photovoltaic panels, ground-stabilization vegetation, and planted visual buffers. An irrigation system may need to be installed to sustain vegetation through periods of low rain.

Bobwhite does not anticipate construction and operation of solar electricity generating facilities to be water-use intensive. Water withdrawal for the Project is not expected to create negative effects on regional water resources.