Review and Evaluation of Clover Creek Solar Project LLC d/b/a New Frontiers Solar Park Site Assessment Report Case Number: 2024-00253

REPORT

Report

February 24, 2025

Review and Evaluation of Clover Creek Solar Project LLC d/b/a New Frontiers Solar Park Site Assessment Report Case Number: 2024-00253

Prepared for
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SECTION A.

General Statement

SECTION A.
General Statement

This document provides a review of the Site Assessment Report (SAR) for the proposed Clover Creek Solar Project LLC d/b/a New Frontiers Solar Park (hereafter New Frontiers Solar Park) merchant electric generating facility submitted to the Kentucky State Board on Electric Generation and Transmission Siting (the Siting Board).

New Frontiers Solar Park submitted an administratively complete document titled "Electronic Application of Clover Creek Solar Project LLC d/b/a New Frontiers Solar Park for a Certificate of Construction for an Approximately 100 Megawatt Merchant Electric Solar Generating Facility and Nonregulated Electric Transmission Line in Breckinridge County, Kentucky Pursuant to KRS 278.700 and 807 KAR 5:110" (the "Application") to the Siting Board on November 4, 2024.

The Siting Board assigned the case number 2024-00253 to the New Frontiers Solar Park application. The proposed generating facility is subject to review by the Siting Board under KRS 278.700 *et seq.* (the Act), passed by the General Assembly of the Commonwealth of Kentucky in 2002. Siting Board staff retained BBC Research & Consulting (BBC) to perform this review.

Provisions of the Act Establishing the SAR Review Process

The part of KRS 278 entitled "Electric Generation and Transmission Siting" defined a class of merchant power plants and required them to obtain construction certificates as a prerequisite to the commencement of actual construction activity. Those statutes also created the Siting Board and gave it the authority to grant or deny construction certificates requested by individual applicants. The Siting Board is attached to the Kentucky Public Service Commission (PSC) for administrative purposes.

The Act created the application process and, within the process, a series of steps for preparing and submitting this report:

- The applicant files for a construction certificate and pays the fees. KRS 278.706.
- The applicant submits required items, including an SAR. KRS 278.706 & KRS 278.708.
- If it wishes, the Siting Board may hire a consultant to review the SAR and provide recommendations about the adequacy of the information and proposed mitigation measures. KRS 278.708.
- The consultant must deliver the final report so the Siting Board can meet its own statutory decision deadline — 120 days or 180 days from receipt of an administratively complete application, depending upon whether the Siting Board will hold a hearing. KRS 278.710.

SAR Review Methodology

BBC undertook the following tasks to review New Frontier Solar Park's SAR and complete this report:

- Reviewed prior SAR reviews prepared for the Siting Board by BBC and others since 2020 for proposed commercial solar generating facilities;
- Reviewed the contents of New Frontier Solar Park's SAR and Application;
- Identified additional information we considered useful for a thorough review, and submitted questions to the applicant through the Siting Board Staff's requests for information;
- Conducted the required site visit, including obtaining oral information supplied by the applicant, on January 16, 2025;
- Completed interviews and data collection with a number of outside sources as sourced in this document; and
- Compiled and incorporated all of the foregoing in the analysis.

Report Format

This report is structured to be responsive to KRS 278 and BBC's contract. It begins with this general statement that introduces the review. In Section B of the report, we present the executive summary and list all of the mitigation measures recommended by BBC. Section C offers detailed findings and conclusions of the study and provides context for BBC's recommended mitigation measures.

Certain Limitations

There are inherent limitations to any review process of documents such as the SAR. These must be understood in utilizing this report for decision-making purposes.

Based on previous experience with the SAR review process, BBC has exercised judgment in deciding what information is most relevant and what level of detail is appropriate. This relates to project components, geographic extent of impacts, and assessment methodology. Siting Board staff has previously provided review and guidance in this context.

While BBC has thoroughly reviewed the information provided in New Frontier Solar Park's Application and Site Assessment Report and raised questions with the applicant regarding some apparent inconsistencies in that information, we have not conducted an audit of the information and data provided in those documents. Information regarding the layout and features of the proposed project and the surrounding area provided by the applicant are assumed to be accurate for purposes of this review. This review is based on the best available information at this time.

SECTION B.

Executive Summary

SECTION B.
Executive Summary

This report documents the evaluation of a Site Assessment Report (SAR) in compliance with KRS 278.704 and KRS 278.708. The Kentucky State Board on Electric Generation and Transmission Siting (the Siting Board) received an application from Clover Creek Solar Project LLC d/b/a New Frontiers Solar Park (hereafter, New Frontiers Solar Park) on November 1, 2024, for approval to construct a commercial, photovoltaic solar merchant electric generating facility in Breckinridge County, Kentucky. Siting Board staff retained BBC Research & Consulting (BBC), a Denver-based firm, to review the SAR. BBC was directed to review the SAR for adequacy, visit the site, conduct supplemental research where necessary, and provide recommendations about proposed mitigation measures.

This is the summary of BBC's final report, which encompasses the SAR review, establishes standards for evaluation, summarizes information from the applicant, notes deficiencies, offers supplemental information, and draws conclusions and recommendations related to mitigation. Issues outside the scope of KRS 278.708, including electricity market or transmission system effects and broader environmental issues, were not addressed in this engagement. This report does evaluate and consider the regional economic impacts of the proposed project and plans for future decommissioning.

Description of the Proposed Facility/Site Development Plan

The SAR and supporting materials provide a description of the proposed New Frontiers Solar Park facility in terms of surrounding land uses, legal boundaries, access control, utility service, setback requirements, visual impacts, impacts on surrounding property owners, noise levels, and traffic impacts. Additional detail on each topic was provided in the applicant's responses to the First and Second Requests for Information (RFI) from the Siting Board Staff during the SAR review process.

The New Frontiers Solar Project is a proposed 100-megawatt (MW) photovoltaic (PV) electricity generation facility situated in Breckinridge County, Kentucky, just west of the county seat of Hardinsburg and approximately 70 miles southwest of the City of Louisville. A 460-foot nonregulated transmission line would deliver electricity from the project substation to the point of interconnection (POI) with the existing 161kV New Hardinsburg Substation operated by Big Rivers Electric Corporation (BREC).

The proposed facility would comprise 278,922 photovoltaic modules; associated tracking systems, racking, and piles; 35 inverters, an operations and maintenance building; and a project substation situated on approximately 890 acres out of a total 1,100 acres of private land leased by New Frontiers Solar Park in unincorporated Breckinridge County. The site is situated among low-density agricultural and residential land.

The primary roadway in proximity to the proposed New Frontiers Solar Park site is US-60, which runs north-south on the eastern side of the project and near to the City of Hardinsburg. The estimated total population within a one-mile radius of the project is 22 residents, which is lower than the average population (110) within one mile for 17 of the solar facility applications reviewed by the Siting Board since June 2022 providing comparable information. The estimated population of 2,165 residents living within three miles of the proposed facility, however, is larger than the average of 1,714 residents among the other solar facility applications.

Conclusions with respect to other descriptive elements of the facility follow:

- **Surrounding land use** — Overall, agricultural land comprises 68 percent of adjoining acres, while 19 percent is zoned agricultural/residential, 7 percent is industrial, and about 4 percent is solely residential. Measured by the number of properties rather than their acreage, agricultural uses constitute 32 percent of adjoining parcels, while 13 percent of adjoining parcels are agricultural/residential, and 44 percent are residential. The composition of surrounding land uses — where residential parcels comprise the largest share of adjacent parcels but a much smaller proportion of the total adjacent land area — is typical among the proposed solar facilities that BBC has reviewed for the Siting Board.

- **Proposed access control and security —** The SAR briefly describes proposed access control measures, noting that solar modules and facility infrastructure will be enclosed by perimeter fencing and that the substation and O&M building will be fenced, gated, and locked. In addition, the applicant states that the project will comply with the requirements of the National Electric Safety Code. New Frontiers Solar Park anticipates 11 site access points across the project footprint, all of which will be gated and padlocked.

- **Utilities —** In their Reponses to the First RFI, the applicant states that auxiliary electrical service will be secured from Meade County RECC and water service from City of Hardinsburg Water.

- **Setback requirements —** According to the applicant, Breckinridge County does not have an applicable ordinance or suitable review procedure for establishing setback requirements for projects such as the New Frontiers Solar Park. The applicant has filed a Motion for Deviation from Setback Requirements required by KRS 278.704(2). Two neighborhoods—Lade Ridge and Quail Run Lane—are within 2,000 feet of the proposed project structures.

- **Other facility site development plan descriptions provided in the SAR —** Legal boundaries; location of facility buildings, transmission lines, structures; and location of access roads, internal roads, and railways are addressed in the SAR. When considered alongside additional information supplied by New Frontiers Solar Park in their RFI responses during the review process, these materials appear to meet the informational requirements identified in KRS 278.708.

Compatibility with Scenic Surroundings

The applicant did not include a formal visual assessment in the SAR. However, Section II of the SAR summarizes the assessment of compatibility with scenic surroundings. The SAR describes the surrounding parcels as "generally agricultural and residential, with row crop agricultural and pastureland."[1] The area is rural and semi-rural. BBC visited the proposed New Frontiers Solar Park project site in January 2025 to review the site and its surroundings.

The proposed New Frontiers Solar Park project would be a large, commercial solar facility similar in size to several previous solar projects reviewed by BBC and other consultants for the Siting Board. As with those similar projects, much of the project's compatibility with the scenic surroundings is dependent on site topography and vegetative screening.

Some of the viewpoints from homes or roadways near the project footprint would have relatively unobstructed views of the proposed locations for project components if the site is developed. New Frontiers Solar Park has developed a vegetative screening plan (Attachment G of the SAR) to mitigate viewshed impacts to the surrounding area. The applicant supplied visual representations of the project's proposed vegetative screening in this area in Attachment E of the SAR (Visual Resource Assessment and Mitigation Plan).

New Frontiers Solar Park also commissioned a glare analysis study for the proposed project, which was included as Attachment F of the SAR. Some green and yellow glare would be seen by pilots approaching one of the runways at the Breckinridge County Airport, and green glare would be seen by drivers on KY-259 for short periods during a few months of the year. Additionally, one nearby residence would experience a brief amount of green glare in one month of the year. However, for the viewpoints identified, this level of glare is not expected to be disruptive.

BBC concurs with New Frontiers Solar Park's conclusion that the proposed facility would not be incompatible with its surroundings from a scenic standpoint, though our assessment is contingent on successful completion of the proposed vegetative screening plan to reduce visual impact, particularly from areas where views into the site are currently relatively unobstructed by topography or existing vegetation. This assessment reflects the topography of the site, the proposed screening plan, and recognizes that solar facilities have a relatively low profile, similar to or lower than most single-family homes.

Potential Changes in Property Values for Adjacent Property Owners

The central issue related to property values is whether or not, and to what extent, property values of other landowners will change as a result of development and operation of the proposed New Frontiers Solar Park facility. New Frontiers Solar Park engaged Kirkland Appraisals, LLC—which has conducted property value impact studies for numerous previous solar applications to the Siting Board—to examine the proposed project's potential impact on property values.

[1] SAR, page 2.

In a summary statement, Kirkland Appraisals concludes that there will be no property value impacts from the proposed New Frontiers Solar Park facility on adjoining properties and that the proposed facility will be in harmony with the area.

The matched pair analysis shows no impact on home values due to abutting or adjoining a solar farm as well as no impact to abutting or adjacent vacant residential or agricultural land where the solar farm is properly screened and buffered. The criteria that typically correlates with downward adjustments on property values such as noise, odor, and traffic all indicate that a solar farm is a compatible use for rural/residential transition areas and that it would function in a harmonious manner with this area.[2]

To date, only a small handful of relevant property value impact studies of solar facilities have been conducted by academic researchers or other third-party analysts. Using different methods, and different data sources, recent studies by teams at the Lawrence Berkeley National Lab; the LBJ School of Public Affairs (University of Texas); and the University of Rhode Island have found that there could be small, negative impacts on property values from proximity to commercial solar facilities. Another recent econometric study (at the University of Georgia) focused on solar facilities in North Carolina found no impacts on the value of nearby agricultural land, but did find statistically significant negative effects to the value of smaller residential properties close to solar facilities.[3]

Given the low population density and rural setting for the proposed New Frontiers Solar Park project—and acknowledging that the project's proposed vegetative buffers will help obscure the site's physical elements from nearby residences—we conclude that the proposed solar facility is unlikely to have measurable adverse impacts on most adjacent properties, but might affect the values of some smaller lot, adjacent residential properties located in closest proximity to nearby solar panels. New or existing vegetative screening near these properties may reduce this risk.

Expected Noise from Construction and Operation

Noise levels generated by facility construction and operation are addressed in Section IV of the SAR (Anticipated Noise Levels at Property Boundary) and in the Sound Study—conducted by Stantec—which is included as Attachment D of the SAR. During project construction—including site preparation, excavation, and solar equipment installation—impacts on nearby noise-sensitive receptors (NSRs) will be generated by construction equipment and vehicles, particularly during pile driving for the solar panel racking. Operational sound levels are expected to be modest and non-disruptive for the operating lifetime of the project.

The setting for the New Frontiers Solar Park project is a rural and semi-rural area with a low population density. During the construction phase, vehicles and machinery such as trucks, bulldozers, excavators, and pile drivers will generate noise onsite while preparing the site and installing the facility's panels, racking, inverters, substation, and associated structures. Maximum

[2] SAR Attachment B, page 1.

[3] Abashidze, Nino. *Essays on Economic and Health Effects of Land Use Externalities.* (Under the direction of Dr. Harrison Fell). Page 71. University of Georgia, 2019.

noise levels will occur during pile driving of the solar arrays, which is consistent with previous solar project noise impact studies reviewed by the Siting Board.

Information provided in the applicant's Sound Study indicates that the projected construction sound level at the nearest sensitive receptor (464 feet) would be 82 dBA while a pile driver is in use. At that noise level, the NIOSH recommended exposure limit is approximately eight hours per day. Without pile driving activity, the projected construction noise level would be 61 dBA at the nearest receptor.

During normal operation of the proposed New Frontiers Solar Park facility, noise levels from panel tracking motors, inverters, and the substation transformer are unlikely to be disruptive to local residents.

Impacts on Transportation

Section V of the SAR (Effect on Road, Railways and Fugitive Dust) and Attachment H of the SAR (Traffic Study) provide information regarding anticipated impacts on transportation at and around the proposed project site during construction and operation.

Several roadways are in proximity to the proposed site, which has a large footprint comprising several fenced sections of solar arrays. Three of the primary roadways surrounding the proposed project site are US-60, SR 992, and SR 261. Eleven entrances to the project site are planned. The applicant reviewed available traffic volume data from the Kentucky Transportation Cabinet (KYTC) for three count stations located along these three primary roadways.

The Traffic Study states that, during the construction phase of the project, traffic flow will be impacted by the commute of construction workers to and from the site (assumed to occur during peak AM and PM hours) as well as the frequent arrival and departure of large trucks necessary for equipment delivery. Data on existing conditions show that the primary roadways adjoining the project site have a usual level of service of C or D (on a scale from A to F).

Modeling a 25 percent traffic increase, which is likely in excess of the actual increase, the level of service across these three roadways is brought down to the C to E range during the construction phase of the project. US-60, which runs north-south on the eastern side of the project and near to Hardinsburg, would be the most substantially impacted.

The Traffic Study projects that one or two vehicles would travel to the project each day during the operational lifetime of the project, and that this level of traffic to the site would have no measurable impact on the level of service or transportation infrastructure.

Other Considerations

Applicant economic impact study. Exhibit G of the New Frontiers Solar Park Application (Economic Impact Assessment) contains a study of the projected economic impacts from the proposed facility. The analysis was conducted by Dr. Paul Coomes, Emeritus Professor of the University of Louisville, using IMPLAN modeling.

Key findings from the analysis include:

- There will be a one-time spike in construction-related employment over about a 12-month period. The spike will include about 305 new jobs in Breckinridge County in the first year, with new labor compensation of $17.7 million.

- New property-related tax payments are expected to total approximately $3.2 million over the next 30 years, increasing the average annual property tax revenue from $13,000 (current tax generation from the participating parcels) to $107,000.

The level of investment in Breckinridge County projected in the economic impact analysis appears to be roughly consistent with industry standards for a solar project of the size of the proposed New Frontiers Solar Park facility. The overall conclusions that the operating phase will have very modest economic impacts, but that the proposed solar facility will enhance local government revenue while requiring very few services, are consistent with the findings of other commercial solar economic impact studies. The largest impact on employment will be felt during the initial construction period.

The Economic Impact Assessment uses an additional custom IMPLAN model to help provide a more complete overview of the direct and indirect impacts of the change in land use from agriculture to solar energy facility. The assessment assumes that New Frontiers Solar Park will provide approximately 9.6 jobs and $613,000 in labor income annually and pay approximately $700,000 per year in lease payments to landowners. After accounting for the resulting losses and gains from farmland conversion, the overall economic effect is slightly positive.

Over a 30-year timeline, including the construction phase, the land conversion to solar generation is estimated to result in a cumulative net gain of 419 job-years and $30 million in labor income for Breckinridge County.

Facility Decommissioning. In prior solar projects reviewed by the Siting Board, plans and assurances for decommissioning the sites at the end of their functional lives have been an important issue of concern to both the Siting Board and local governments.

Exhibit J of the Application (Decommissioning Plan) contains a plan, conducted by Stantec, for the decommissioning of the proposed facility. Within the plan, New Frontiers Solar Park describes the sequence and project components to be decommissioned, including net decommissioning costs accounting for expenses as well as potential salvage revenue.

Summary Findings

New Frontiers Solar Park has generally provided the required information for the site assessment, including responses to BBC's questions (included in the requests for information from Siting Board Staff) following our review of their SAR. The New Frontiers Solar Park site appears to be appropriately selected in terms of compatibility with the area and access to transmission infrastructure. The rolling topography and rural setting of the site help the facility to be compatible with the surrounding area.

Mitigation Recommendations

Including mitigation identified by New Frontiers Solar Park in their Application and SAR, BBC recommends the following mitigation measures:

Regarding KRS 278.708 (3) (a)– description of the proposed facility –

1. New Frontiers Solar Park should provide a final site layout plan to the Siting Board when site design is finalized and before site preparation begins. Any change in project boundaries or site layout from the information reviewed during this evaluation—including changes to the locations of solar panels, inverters, transformers, the substation, project fencing or other project facilities—should be clearly documented and submitted to the Siting Board for review.

2. New Frontiers Solar Park or its contractor should control access to the site during construction and operation. All construction entrances should be gated and locked when not in use. The applicant's access control strategy should include adequate signage at all site entrances and boundaries—particularly in locations visible to the public, local residents, and business owners—to warn potential trespassers.

3. According to National Electric Code regulations, the security fence must be installed prior to any electrical installation work. Further, the substation must have its own separate security fence, with locked access.

4. Should New Frontiers Solar Park's Motion for Deviation from Setback Requirements be approved, the applicant should promptly and fully meet the terms of the setback provisions as outlined.

Regarding KRS 278.708 (3) (b)– compatibility with scenic surroundings –

5. Existing vegetation between the solar arrays and nearby roadways and homes should be left in place to the extent feasible to help minimize visual and noise impacts and screen the project from nearby homeowners and travelers.

6. New Frontiers Solar Park should closely follow the updated vegetation plan provided in the Response to the Second RFI. Any changes to the plan should be submitted to the Siting Board prior to construction.

7. New Frontiers Solar Park should cultivate at least two acres of native pollinator-friendly species onsite.

8. New Frontiers Solar Park should use panels with anti-reflective coating to reduce glare and corresponding visual impacts.

9. New Frontiers Solar Park should be open to communication with adjacent landowners regarding viewshed impacts and the implementation of additional strategic vegetative screening, if needed.

10. Communication regarding viewshed impacts and concerns should be incorporated into the Complaint Resolution Program described further in mitigation recommendation #17 later in this section.

Regarding KRS 278.708 (3) (c)– potential changes in property values and land use –

11. Existing vegetation on the site should be left in place to the extent feasible to help minimize visual and noise impacts and to screen the project from nearby residents.

12. New Frontiers Solar Park should install vegetative screening according to the updated vegetation plan provided in the Response to the Second RFI. Any further changes to the screening plan should be submitted to the Siting Board prior to construction.

13. New Frontiers Solar Park should be open to communication with adjacent landowners regarding viewshed impacts and the implementation of additional strategic vegetative screening, if needed.

Regarding KRS 278.708 (3) (d)– noise impacts –

14. New Frontiers Solar Park should limit noise-generating construction activity, and particularly pile driving, to the hours of 8 AM to 6 PM, Monday through Saturday.

15. New Frontiers Solar Park should notify residents and businesses within 2,000 feet of the project boundary about the construction plan, the noise potential, and mitigation plans one month prior to the start of construction.

16. During construction, New Frontiers Solar Park should locate stationary noise-generating equipment, such as air compressors or portable power generators, as far as practicable from neighboring residences.

17. New Frontiers Solar Park should implement a Customer Resolution Program to address any complaints from surrounding landowners. New Frontiers Solar Park should submit an annual status report on the Customer Resolution Program to the Siting Board, identifying any complaints, the steps taken to resolve those complaints, and whether the complaint was resolved to the satisfaction of the affected landowner.

Regarding KRS 278.708 (3) (e)– transportation impacts and fugitive dust –

18. New Frontiers Solar Park should submit a final construction schedule, including updated estimates of on-site workers and commuter vehicle traffic, as necessary, to the Siting Board prior to commencement of construction.

19. New Frontiers Solar Park should develop and implement a traffic management plan for the construction phase of the project to minimize impacts on traffic flow and keep traffic safe. As part of this plan, New Frontiers Solar Park should implement ridesharing between construction workers; use appropriate traffic controls; or allow flexible working hours outside of peak hours to minimize any potential delays during AM and PM peak hours.

20. New Frontiers Solar Park and its construction contractors should comply with all laws and regulations regarding the use of roadways.

21. New Frontiers Solar Park should obtain permits from the KYTC and local road authorities as needed for overweight and overdimensional vehicle transport to the site and comply with all permit requirements, coordinating with the KYTC Permits Engineer and the Breckinridge County Road Department as needed.

22. New Frontiers Solar Park should determine whether shoulder stabilization and/or road widening is necessary on any local route to accommodate deliveries to the site. New Frontiers Solar Park should coordinate with the Breckinridge County Road Department regarding any necessary improvements.

23. New Frontiers Solar Park should commit to rectifying any damage to public roads by fixing or fully compensating the appropriate transportation authorities for any damage or degradation to the existing road network that it causes or to which it materially contributes.

24. New Frontiers Solar Park should properly maintain construction equipment and follow best management practices related to fugitive dust throughout the construction process. Dust impacts should be kept to a minimal level.

Regarding economic impacts, project decommissioning, and other issues –

25. New Frontiers Solar Park should commit to prioritizing local hiring and seeking to hire Breckinridge County residents to fill the projected direct construction jobs.

26. New Frontiers Solar Park should follow the decommissioning plan as laid out in Exhibit J of the Application submitted to the Siting Board; and

27. New Frontiers Solar Park should work with Breckinridge County to address any concerns that arise at any point regarding its proposed decommissioning plan.

Subject to the foregoing mitigation measures, BBC recommends that the Siting Board approve the application for a certificate to construct based upon the siting considerations addressed in this review. This recommendation presumes that the project is developed as described in the applicant's SAR and supplemental information, and that the mitigation measures above are

implemented appropriately. If these presumptions are correct—and based upon the information available to BBC at the time of this report—there are unlikely to be significant unmitigated impacts from construction and operation of the New Frontiers Solar Park project regarding scenic compatibility, property values, noise, or traffic.

SECTION C.

Detailed Findings and Conclusions

SECTION C.
Detailed Findings and Conclusions

This section provides detailed review and evaluation of each element of the Site Assessment Report (SAR) submitted by Clover Creek Solar Project LLC d/b/a New Frontiers Solar Park (hereafter, New Frontiers Solar Park) as prescribed in Section 5 of KRS 278.708. It is organized into six subsections:

1. Description of Proposed Facility/Site Development Plan;

2. Compatibility with Scenic Surroundings;

3. Potential Changes in Property Values for Adjacent Property Owners;

4. Expected Noise from Construction and Operation;

5. Impacts on Transportation; and

6. Other Issues – Economic Impacts, Project Decommissioning, and Site-Specific Considerations

Although the Siting Board will likely consider other issues in making its decision, these are beyond the present scope of our inquiry and so are not addressed here.

In evaluating these components of the SAR, BBC has followed a consistent pattern:

- First, BBC describes the generally accepted assessment criteria or methodology necessary to evaluate impacts of a project of this nature (**Potential Issues and Standard Assessment Approaches**).

- Secondly, we summarize relevant information included in the initial SAR (**Information Provided in the Applicant's SAR**).

- Thirdly, we describe supplemental information about the proposed New Frontiers Solar Park project facility, along with other information BBC was able to gather about the project and its impacts (**Supplemental Investigations, Research, and Analysis**).

- Finally, BBC draws its own conclusions about the project's potential impacts and recommended mitigation (**Conclusions and Recommendations**).

We believe that this format transparently presents the basis for our conclusions and recommendations.

Description of Proposed Facility/Site Development Plan

Potential Issues and Standard Assessment Approaches

As required by KRS 278.708(3)(a), the SAR must contain the following information:

- Subsection 1—surrounding land uses for residential, commercial, agricultural, and recreational purposes;
- Subsection 2—the legal boundaries of the proposed site;
- Subsection 3—proposed access control to the site;
- Subsection 4—the location of facility buildings, transmission lines, and other structures;
- Subsection 5—location and use of access ways, internal roads, and railways;
- Subsection 6—existing or proposed utilities to service the facility;
- Subsection 7—compliance with applicable setback requirements as provided under KRS 278.704(2), (3), or (4); and
- Subsection 8—evaluation of the noise levels expected to be produced by the facility.

BBC found each of these required information items in the SAR and examined them. To some extent, the required elements of the description of the facility and site development plan specified in the legislation overlap with topic-specific evaluations also required in the statute. In particular, the statute calls for specific evaluations of impacts on nearby property values, traffic, and noise levels. Both the applicant's SAR and the BBC team's evaluation provide further detail on these topics in subsequent sections.

Information Provided in the Applicant's SAR

The required description of the proposed New Frontiers Solar Park facility and site development plan is mainly set forth in Section II of the Application (Description of Proposed Site), Exhibit B of the Application (Project Site Maps), Section I of the SAR (Description of the Proposed Project Site), and Attachment B of the SAR (Property Value Impact Analysis). Other related or supplementary information comes from various other sections of the SAR and other attachments included with the Application.

Overview of proposed facility. The New Frontiers Solar Project is a proposed 100-megawatt (MW) photovoltaic (PV) electricity generation facility situated in Breckinridge County, Kentucky, just west of the county seat of Hardinsburg. The project will have a footprint (area within the fence line) of approximately 890 acres across 1,100 acres of land. The 22 parcels, leased for the project from private landowners, are currently used predominantly for agricultural activities and low-density rural single family residential homes.

Project components will include a PV solar array field, which consists of modules mounted on metal structures anchored to the ground with pilings. Panels will move to track the sun over the course of the day. Other Project components include: an onsite substation, a DC collection system of

underground cabling and combiner boxes, and power conversion stations (PCS) with inverters, transformers, and emergency backup power to convert DC to AC. An underground and/or overhead collection system will be used to convey electricity from the solar array field to the substation. An operation and maintenance (O&M) area for the Project will also be installed and will include an O&M building, parking area, and other associated facilities such as security gates and signage. In addition, the Project will also include an onsite transmission line, fiber optic cable for communications via underground or on overhead lines, a meteorological station, and access roads.[1]

The project will interconnect via a 460-foot nonregulated transmission line with the existing 161kV New Hardinsburg Substation operated by Big Rivers Electric Corporation (BREC). The applicant's Application and SAR describe the general layout of the facility, including the placement of the solar arrays, electrical collection system, internal access roads, and perimeter fencing. The proposed Project will not include a battery storage system.

Figure C-1.
Location of Proposed New Frontiers Solar Park Solar Facility within Breckinridge County, KY

Note: The site of the proposed New Frontiers Solar Park solar facility is marked with a grey geolocation pin.

Source: BBC Research & Consulting; Google Maps, 2024.

[1] SAR, page 2.

Figure C-2, excerpted from Exhibit B of the Application (Project Site Maps), shows the proposed project footprint (project fence lines outlined in yellow). Nearby neighborhoods are identified with blue shading, and a 2,000-foot project radius is outlined in green. Encompassing the map is a two-mile project radius (blue-white dashed line).

Figure C-2.
Context Map of Proposed Project Site, New Frontiers Solar Park, Breckinridge County, KY

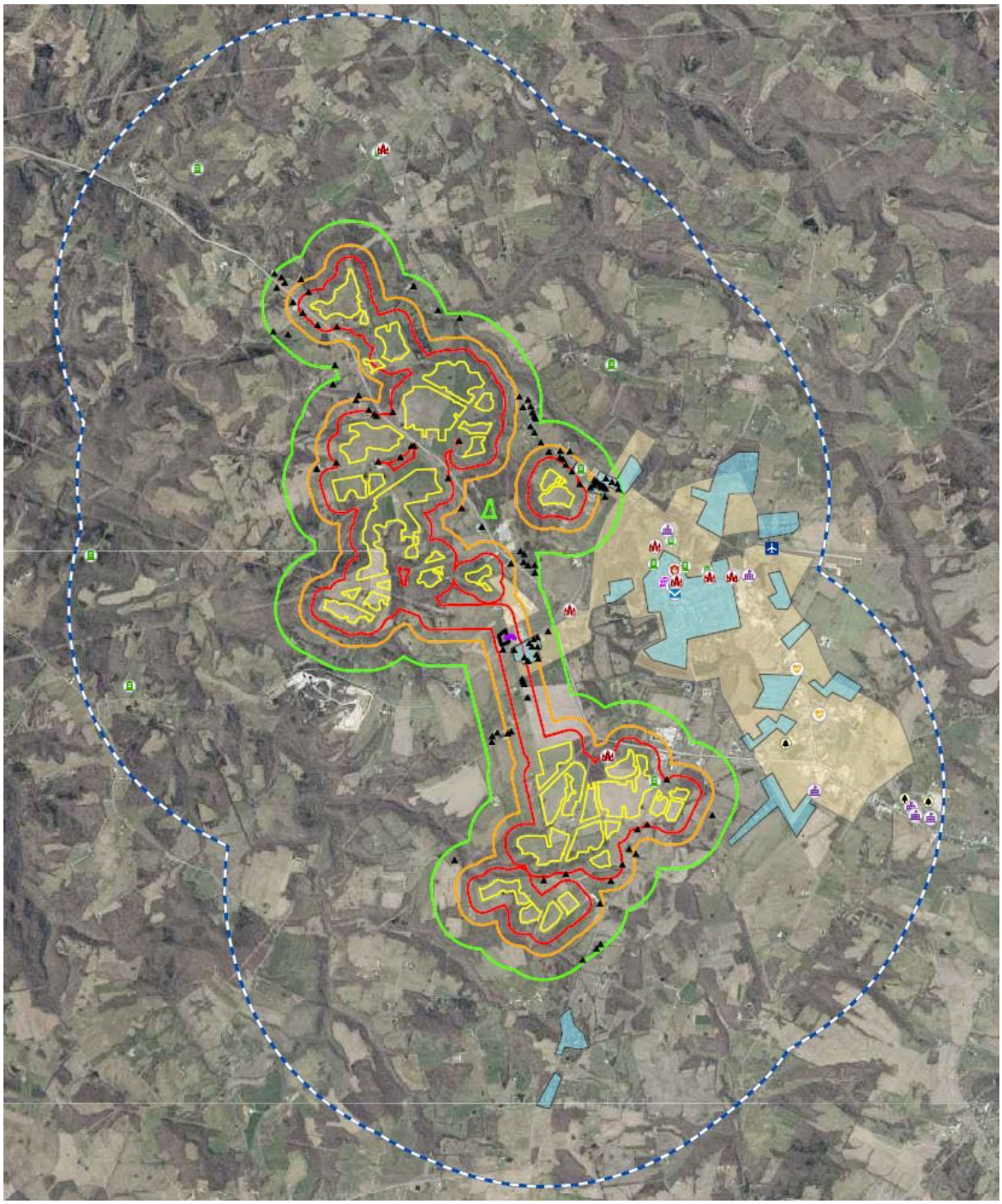
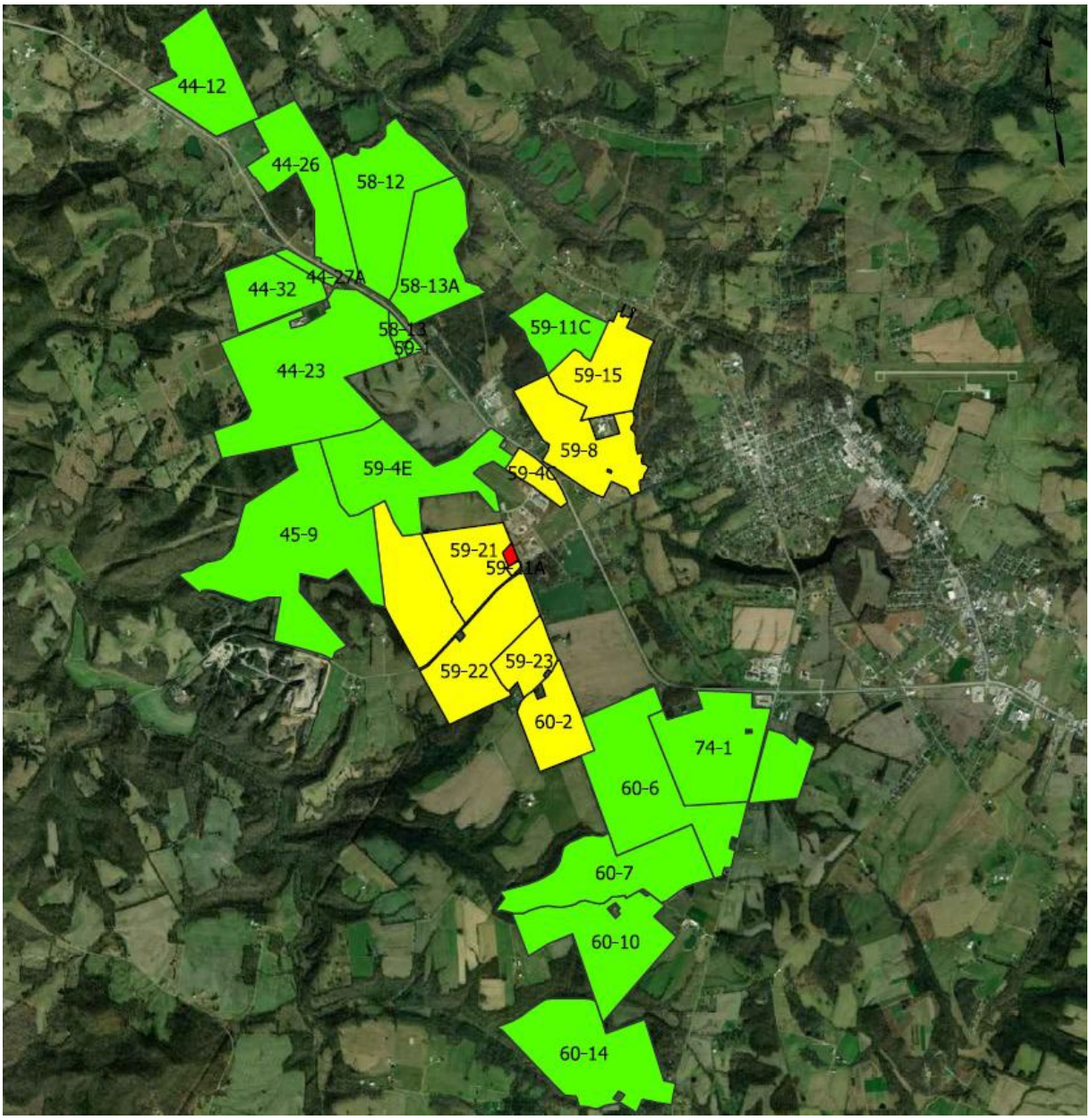


Figure C-3, also excerpted from Exhibit B of the Application (Project Site Maps), shows the parcels participating in the proposed New Frontiers Solar Park project. Those parcels shaded in green are anticipated to host the project infrastructure (e.g., PV panel arrays, inverters) while parcels in yellow will be used to host collection cabling, connecting the project parcels and transmitting power to the proposed substation.

Figure C-3.
Parcel Map of Proposed Project Site, New Frontiers Solar Park, Breckinridge County, KY



Surrounding land uses. Attachment B of the SAR and Exhibit H of the Application (Property Value Impact Analysis) provides detail on the composition of the surrounding land. Figure C-4, excerpted from Attachment B, summarizes the use of land adjoining the proposed project.

Figure C-4.
Adjoining Parcel Land Use for Proposed New Frontiers Solar Park Project

	Acreage	Parcels
Residential	4.28%	43.96%
Agricultural	68.10%	31.87%
Industrial	7.28%	4.40%
Religious	0.13%	1.10%
Cemetary	0.00%	1.10%
Agri/Res	19.15%	13.19%
Commercial	1.05%	4.40%
Total	**100.00%**	**100.00%**

Overall, agricultural land comprises 68 percent of adjoining acres, while 19 percent is agricultural/residential, 7 percent is industrial, 4 percent is solely residential, and 1 percent is commercial. Land zoned for religious purposes is 0.13 percent of adjoining acres.

Measured by the number of properties rather than their acreage, agricultural uses constitute 32 percent of adjoining parcels, while 44 percent of adjoining parcels are residential, 13 percent are agricultural/residential, 9 percent are industrial or commercial, and 2 percent are zoned for religious or cemetery uses.

Attachment B also provides 2022 population estimates for the surrounding area.[2] In 2022, an estimated 22 people lived within a one-mile radius of the project area; 2,165 within a three-mile radius; and 4,416 within a five-mile radius.

Legal boundaries. Attachment C of the SAR (Lease Agreement Legal Descriptions) contains legal descriptions of the participating parcels for the proposed project site. In the Siting Board's First Request for Information (RFI), New Frontiers Solar Park was asked to provide copies of the lease and/or purchase agreements for all participating properties.

Access control. The New Frontiers Solar Park Application briefly describes proposed security measures:

All entrances and driveways will comply with applicable design requirements for safe access and egress. The Project solar arrays will be secured with approximately 186,404 linear feet of perimeter fence, which will consist of seven-foot chain link fence.[3]

In the Siting Board's First and Second Requests for Information (RFI), New Frontiers Solar Park was asked to provide an updated site layout map depicting necessary information on access points and other features.

Location of buildings, transmission lines, and other structures. Page 5 of the SAR states that the locations of project structures are depicted in Attachment A of the SAR. BBC viewed Attachment A and found a site layout map with inadequate resolution for examining project components and

[2] SAR Attachment B, ESRI Housing Profiles, pages 13-15.

[3] Application, page 4.

locations. The applicant was asked in the First and Second Requests for Information (RFI) to supply additional detailed map files for review.

Location and use of access ways, internal roads, and railways. Page 5 of the SAR states that the locations of access ways and internal roads are depicted in Attachment A, however BBC could not locate the information on the referenced map and the applicant was asked to supply an updated map in the First RFI.

There are no railways present at the proposed site.

Existing or proposed utilities. The SAR states that the project's substation will interconnect with the existing Hardinsburg Substation and that electric service necessary for the O&M building may be supplied by Big River Electric Cooperative (BREC). If water is required during project construction or operation, the applicant anticipates securing water from the City of Hardinsburg Water utility if not obtained from onsite wells or trucked in by an offsite water supplier.

Compliance with applicable setback requirements. Kentucky statute 278.704(2) states that "… If the facility is not proposed to be located on a site of a former coal processing plant and the facility will use on-site waste coal as a fuel source or in an area where a planning and zoning commission has established a setback requirement pursuant to KRS 278.704(3), a statement that 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, unless facilities capable of generating ten megawatts (10MW) or more currently exist on the site. […] If the facility is proposed to be located in a jurisdiction that has established setback requirements pursuant to KRS 278.704(3), a statement that the proposed site is in compliance with those established setback requirements."

On page 6 of the SAR, the applicant states:

Pursuant to KRS 278.708(3)(a)(7), Breckinridge County has enacted Ordinance 2022-032 (the "Ordinance"), which applies to solar energy systems and solar panel installation. Section 4.3.7.3.b of the Ordinance imposes the following minimum setbacks for Project components: 50 feet from the Project's perimeter boundary; and 300 feet from any residential structure, nursing home, church, or school. Interconnection facilities may be located within the setback lines and interior property line setbacks are not required for contiguous participating Project properties. The Applicant states that the Project has been designed to be and currently is in compliance with the setbacks. Breckinridge County is still finalizing procedures for obtaining full approvals pursuant to its Ordinance and the Applicant has been in close contact with the county authorities to ensure current and ongoing compliance with the Ordinance.[4]

New Frontiers Solar Park was asked to provide further and more detailed information about the applicable ordinance and any setback requirements in the First and Second RFIs.

[4] SAR, page 6.

Evaluation of noise levels. Attachment D of the SAR (Sound Study) provides an assessment of the noise levels that will be generated during the construction and operation of the New Frontiers Solar Park facility. During the construction phase of the project, activities on site will generate intermittent noise at the nearest receptors (nearby residences). The construction phase is expected to last approximately 12-18 months and the operation phase between 30 and 50 years.

During construction, the applicant estimated a maximum noise level from pile driving of 82 dBA at the nearest sensitive receptor. During the operational life of the project, New Frontiers Solar Park modeled a maximum daytime noise level of 51 dBA from the substation and inverters.

Noise levels and the details of Attachment D are discussed in greater depth and detail on pages 39-46of this report section (Expected Noise from Construction and Operation).

Supplemental Investigations, Research, and Analysis

After reviewing the applicant's SAR, the BBC team sought to supplement the information provided in the SAR where necessary to describe the proposed facility and site development plan more fully.

Overview of proposed facility. Responding to the Second RFI, the applicant supplied more adequate site layout maps for multiple portions of the project footprint, including engineering maps, neighbor maps, and landowner maps. Detailed maps were provided for defined subsections of the project boundary. One of these, showing detail on project features, is excerpted as Figure C-5.[5]

[5] Clover Creek Solar Project LLC d/b/a New Frontiers Solar Park, Responses to Siting Board Staff's Second Request for Information.

Figure C-5.
New Frontiers Solar Park Engineering Map #4

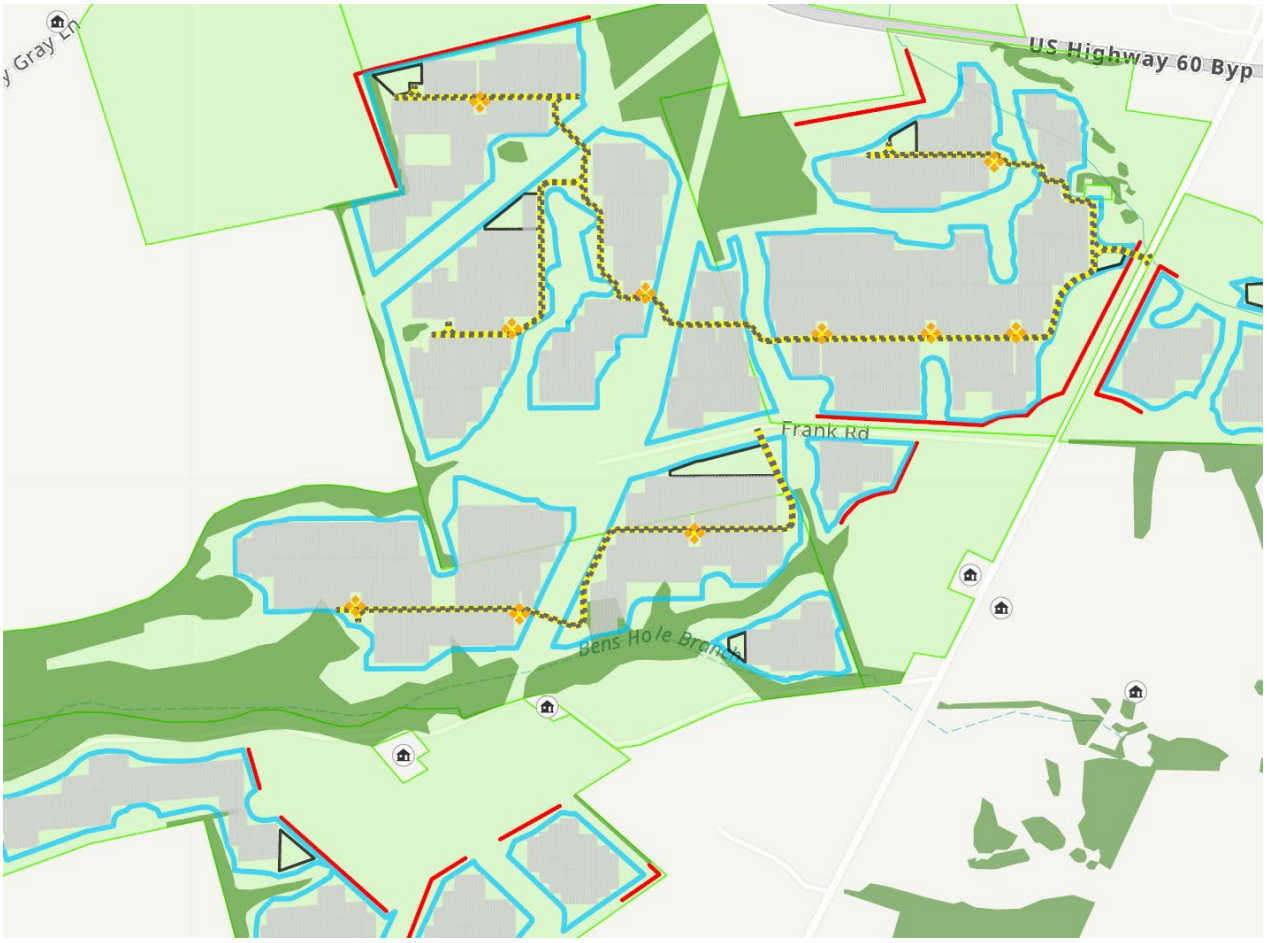


Figure C-5 depicts nearby homes with black-and-white icons. Fenced areas of the project are outlined in blue; existing vegetative screening is shown shaded in dark green; and proposed locations of vegetative screening are lined in red. Solar panel arrays are shaded in grey and access roads (internal roads and external access point locations) are represented by a black and yellow dashed line.

Surrounding land uses. The composition of surrounding land uses — where residential parcels comprise the majority of adjacent parcels but a small proportion of the total adjacent land area — is typical among the proposed solar facilities that BBC has reviewed for the Siting Board. Among the facilities BBC has reviewed for the Siting Board since early 2020[6], residential land uses have averaged 58 percent of the surrounding parcels, and 8 percent of the surrounding acreage (compared to 44 percent and 4 percent, respectively, for the proposed New Frontiers Solar Park site).

Apart from just the immediately adjacent properties, the information provided in SAR Attachment B (Property Value Impact Analysis) also indicates the low population density surrounding the site up to

[6] Prior BBC reviews include Turkey Creek Solar, Unbridled Solar, Ashwood Solar, Flat Run Solar, Martin County Solar, Green River Solar, Rhudes Creek Solar, Russellville Solar, Telesto Energy, Pine Grove Solar, Song Sparrow, Dogwood Corners, and Lynn Bark Energy projects.

a radius of five miles. Since June of 2022, the two consulting firms used by most applicants to the Siting Board to evaluate potential impacts on property values—Kirkland Appraisals, LLC and CohnReznick LLP—have also typically provided information obtained from ESRI regarding the estimated number of residents living within a three-mile radius of the proposed facilities. Kirkland Appraisals has also been providing information regarding the number of residents within a one-mile and a five-mile radius of the proposed facilities they have evaluated.

As shown in Figure C-6, 15 of the 17 facilities reviewed by the Siting Board since June 2022 have provided estimated population densities for a three-mile surrounding radius. The average population estimate for the surrounding three miles among these facilities is 1,714 residents, while the median population estimate for the same radius is 1,155 residents. The proposed New Frontiers Solar Park facility has a population density within three miles that sits slightly above the average, with an estimated 2,165 residents. Twelve of the 17 facilities have also provided estimates of the population living within one mile and within five miles. Among those 12 facilities, New Frontiers Solar Park has the second-lowest estimated population within one mile and is approximately in the middle in terms of the estimated population living within five miles.

Figure C-6.
Estimated Population Totals Within 5 Miles of Proposed Solar Facilities Reviewed by the Siting Board Since June 2022

Case Number	Filing Date	Facility Name	Radius from Project			County
			1 Mile	3 Miles	5 Miles	
2022-00096	June 2022	Telesto Energy Project	203	6,457	31,123	Hardin
2020-00243	August 2022	Golden Solar	NA	376	NA	Caldwell
2022-00115	October 2022	Thoroughbred Solar	NA	1,924	NA	Hart
2022-00262	November 2022	Pine Grove Solar	232	2,528	7,509	Madison
2022-00131	April 2023	Seebree Solar II	NA	NA	NA	Henderson
2022-00272	June 2023	Hummingbird Energy	109	1,088	4,181	Fleming
2022-00274	September 2023	Bright Mountain Solar	NA	2,647	NA	Perry
2023-00256	September 2023	Song Sparrow Solar	53	562	3,761	Ballard
2023-00246	September 2023	Dogwood Corners LLC	98	1,131	3,589	Christian
2023-00263	September 2023	Banjo Creek Solar	33	786	2,927	Graves
2023-00360	December 2023	Frontier Solar	123	1,155	8,811	Marion; Washington
2024-00105	May 2024	Pike County Solar	203	1,048	3,425	Pike
2024-00099	June 2024	Weirs Creek Solar	NA	NA	NA	Webster; Hopkins
2024-00104	June 2024	Lynn Bark Energy Center	19	1,186	3,814	Martin
2024-00253	**November 2024**	**New Frontiers Solar Park**	**22**	**2,165**	**4,416**	**Breckinridge**
2024-00406	January 2025	Lost City Renewables	170	996	2,360	Muhlenberg
2024-00255	February 2025	STMO BN, LLC (Starfire)	57	1,655	4,450	Breathitt, Knott, Perry
		Average population	110	1,714	6,697	
		Median population	104	1,155	3,998	

Legal boundaries. In response to the First Request for Information (RFI) from the Siting Board, New Frontiers Solar Park submitted redacted copies of the confidential lease agreements[7] for parcels in the proposed project to supplement the legal descriptions provided in the SAR.

Access control. In response to a request in the First RFI, the applicant supplied narrative descriptions of 11 site access points planned to be used during the construction and operations phases of the proposed project.[8] Additionally, the applicant states:

The perimeter security fence will be installed in accordance with the applicable NESC standards prior to commencing any electrical work. […] The Project substation will have its own separate fencing compliant with the applicable NESC standards. […] The Project's O&M and substation areas will be fenced, gated, and locked. Security fencing is comprised of a 7-foot tall chain-link fence with 12-inch barbed wire. The Project will install gated entrances locked with a combination padlock or keyed padlock.

New Frontiers Solar Park detailed in the Response to the First RFI their plan for coordination with local law enforcement and fire services regarding security, access to site, and emergency protocols during project construction and operation. The applicant states an intent to meet with Breckinridge

[7] Clover Creek Solar Project LLC d/b/a New Frontiers Solar Park, Responses to Siting Board Staff's First Request for Information.

[8] Clover Creek Solar Project LLC d/b/a New Frontiers Solar Park, Responses to Siting Board Staff's First Request for Information.

County Fire, EMS, Hardinsburg Police, and the Breckinridge County Sheriff to establish a direct line of communication and emergency contact line at the project substation and construction office.

Location and use of access ways, internal roads, and railways. Responding to the Second RFI, the applicant supplied more adequate site layout maps for multiple portions of the project footprint, depicting access roads (black and yellow dashed line) as well as proposed fences, project boundary lines, and other features.[9] One of these maps showing the northern portion of the project is excerpted as Figure C-7.

Figure C-7.
New Frontiers Solar Park Engineering Map #1

[9] Clover Creek Solar Project LLC d/b/a New Frontiers Solar Park, Responses to Siting Board Staff's Second Request for Information.

Existing or proposed utilities. In response to the Siting Board's First Request for Information regarding utility services required during construction or operations, New Frontiers Solar Park updated the information previously provided in the Application to state:

The Project anticipates electrical services to be provided by Meade County RECC, and water service to be provided by the City of Hardinsburg Water. [10]

Compliance with applicable setback requirements. Since submitting their Application in November 2024, the applicant has subsequently (February 2025) filed a Motion for Deviation from Setback Requirements in KRS 278.704(2) and clarified their position with respect to applicable setbacks in Breckinridge County:

There is no zoning applicable to the unincorporated portions of Breckinridge County. The County does not have a comprehensive plan or a planning commission. As such, the Project will not be subject to local zoning regulations. While Breckinridge County Fiscal Court does currently have an ordinance known as "Breckenridge County Fiscal Court Ordinance 2022" dated as of March 21, 2022, that references three types of solar energy systems (SES), this ordinance does not define an SES in a manner that would include the Project or contain any process or procedure for review and approval of an SES site plan. There is therefore no local permitting process that applies to the Project. Notably, the Project meets or exceeds the setbacks described in the ordinance.

New Frontiers Solar Park states that there are no schools, hospitals, or nursing home facilities within 2,000 feet of the proposed structures or project facilities, but the applicant also identifies two neighborhoods within 2,000 feet of the proposed project facilities. The Motion for Deviation from Setback Requirements states:

[…] New Frontiers Solar Park respectfully requests a ruling from the Board that:

1. grants the Project a deviation from the 2,000-foot setback requirement in KRS 278.704(2);

2. authorizes New Frontiers to place generating equipment 800 feet from the relevant residential neighborhood;

3. authorizes New Frontiers to place inverters 1,500 feet from the relevant residential neighborhood; and

4. authorizes New Frontiers to place the substation 350 feet from the relevant residential neighborhood.[11]

Evaluation of noise levels. BBC's investigation of the proposed project's expected noise levels is addressed in full in a subsequent section of our report (Expected Noise from Construction and Operation) which begins on page C-39.

[10] Clover Creek Solar Project LLC d/b/a New Frontiers Solar Park, Responses to Siting Board Staff's First Request for Information.

[11] Clover Creek Solar Project LLC d/b/a New Frontiers Solar Park, Motion for Deviation from Setback Requirements.

Conclusions and Recommendations Regarding the Description of the Proposed Facility and Site Development Plan

Based upon review of the applicant's SAR, subsequent information gathered from the applicant, and additional data collected by the BBC team, we reach the following conclusion concerning the description of the facility and the proposed site development plan:

- The applicant has generally complied with the legislative requirements for describing the facility and site development plan.

Recommended mitigation. Based on our review of the SAR and Application, the applicant's responses to the RFIs from the Siting Board and BBC, and our visit to site—as well as recent Siting Board orders in other solar cases—BBC recommends the following mitigation measures regarding this portion of the Kentucky statutory requirements (KRS 278.708(3)(a):

- New Frontiers Solar Park should provide a final site layout plan to the Siting Board when site design is finalized and before site preparation begins. Any change in project boundaries or site layout from the information reviewed during this evaluation—including changes to the locations of solar panels, inverters, transformers, the substation, project fencing or other project facilities—should be clearly documented and submitted to the Siting Board for review.

- New Frontiers Solar Park or its contractor should control access to the site during construction and operation. All construction entrances should be gated and locked when not in use. The applicant's access control strategy should include adequate signage at all site entrances and boundaries—particularly in locations visible to the public, local residents, and business owners—to warn potential trespassers.

- According to National Electric Code regulations, the security fence must be installed prior to any electrical installation work. Further, the substation must have its own separate security fence, with locked access.

- Should New Frontiers Solar Park's Motion for Deviation from Setback Requirements be approved, the applicant should promptly and fully meet the terms of the setback provisions as outlined.

Compatibility with Scenic Surroundings

This section of the SAR review addresses the compatibility of the proposed New Frontiers Solar Park facility with the scenic surroundings. This component of the SAR is identified in KRS 278.708(3)(b).

Potential Issues and Standard Assessment Approaches

Various government agencies throughout the country employ visual assessment methodologies based on professionally accepted techniques. These techniques are fundamentally consistent in their approach to evaluating the elements of a project and its compatibility with existing landscapes and other surroundings.

An example of a visual assessment methodology in use by a state power plant siting agency is the methodology employed by the staff of the California Energy Commission. In California siting assessments, the assessment of potential incompatibility between a project and its scenic surroundings focuses on project structures, such as smokestacks. Typically, the assessment also addresses project lighting and the potential for visible cooling tower plumes.

A standard visual analysis generally proceeds in this sequence:

- Analysis of the project's visual setting;
- Identification of key observation points (KOP);
- Descriptions of visual characteristics of the project; and
- Evaluation of impacts on KOPs.

A KOP is a location where people may periodically or regularly visit, reside, or work within the viewshed of the project's structures or emissions. [12]

In general practice, visual impact evaluations are conducted within one of three general frameworks, depending upon the relevant jurisdiction and its level of involvement at the project site. These are listed in descending order of structural formality:

- A formal visual resource or scenery management system, typically in effect only on federal lands, such as the U.S. Forest Service Scenery Management System or the U.S. Bureau of Land Management Visual Resource Management System;
- Locally applicable laws, ordinances, regulations, or standards, where imposed by state or local governments; and
- The cultural context, including the influence of previous uses on the landscape and public attitudes toward the compatibility of various types of land use.

[12] The viewshed is defined as an area of land, water, or other part of the environment visible to the eye from a vantage point. Conversely, the vantage point is presumed to be visible from locations within the viewshed.

Each framework, in its own way, embodies explicit or implicit consideration of some or all of the standard measures of visual impact: viewer exposure and sensitivity; relative project size, quality, visibility, exposure, contrast and dominance; and prevailing environmental characteristics, such as season and light conditions. Local regulations especially focus on screening facilities from public view and the effects of glare from outdoor lighting upon adjacent property.

In this instance, the visual impact evaluation followed the final of the three approaches listed above. The selected approach is appropriate as there is no ordinance specifying conditions relating to scenic compatibility.

Information Provided in the Applicant's SAR

In compliance with KRS 278.708, Section II of the SAR summarizes the assessment of compatibility with scenic surroundings. The SAR summarizes the impacts to the visual setting of the proposed New Frontiers Solar Park project:

Pursuant to KRS 278.708(3)(b), a Visual Resource Assessment and Mitigation Plan (VRA) was completed for the Project and is enclosed as SAR Attachment E. Limited portions of the Project facility may be visible from certain adjacent lands and roadways, but would be mitigated through supplementing existing tree lines and vegetation. The VRA includes a series of visual simulations that demonstrate that the Project facility will be compatible with its scenic surroundings due to the rolling terrain and supplemental vegetative screening.[13]

Figure C-8.
New Frontiers Solar Park Visual Simulation of PV Panel Arrays and Vegetative Screening

[13] SAR, page 7.

Figure C-8 is excerpted from SAR Attachment E and depicts a visual simulation of project infrastructure on the existing landscape. A solar panel array is shown with a young vegetative screen (in the form of tree modules comprising a mix of species) in the foreground between the project arrays and the viewpoint along the road.

Figure C-9, below, provides a visual simulation of the project's proposed substation. On the right of the photo is the existing Hardinsburg substation, while the proposed new project substation is pictured in the left side of the image, behind a row of tree modules forming a vegetative screen.

Figure C-9.
New Frontiers Solar Park Visual Simulation of Proposed Project Substation and Vegetative Screening

Two additional attachments to the SAR support the finding that the proposed project would be compatible with the surrounding area. First, the Property Value Impact Analysis (Attachment B) concludes that a solar farm is a compatible use for rural/residential transition areas such as the proposed New Frontiers Solar Park project site and that it would function in harmony with the area.

Second, the applicant's Glare Hazard Analysis, conducted by Stantec and included as Attachment F of the SAR, concludes that the proposed project would be minimally disruptive with respect to glare. Some green and yellow glare would be seen by pilots approaching one of the runways at the Breckinridge County Airport, and green glare would be seen by drivers on KY-259 for a few months of the year. Additionally, one nearby residence would experience a brief amount of green glare in one month of the year:

The predicted glare and durations to be experienced at the airport, flight paths, surrounding roads and buildings is considered acceptable by existing standards and industry practice. Drivers and

pilots will pass through areas of glare within seconds and glare to the single home is only predicted to last 4-5 minutes per day in December. These results assume a 10 degree resting angle is used.[14]

The proposed New Frontiers Solar Park solar project would be a large, commercial solar facility similar in size to several previous solar projects reviewed by BBC and other consultants for the Siting Board. As with those similar projects, much of the project's compatibility with the scenic surroundings is dependent on site topography and strategic vegetative screening.

Supplemental Investigations, Research, and Analysis

In the course of responding to the Siting Board's First and Second RFIs, New Frontiers Solar Park supplied more information about scenic context of the proposed facility and visual impact mitigation.

The Project is situated on parcels primarily consisting of agriculture and other non-forested landcover. The Project team is working to minimize tree clearing. Priority is given to avoiding the placement of contiguous infrastructure, such as panel blocks, in woodlots, intact wooded areas, and riparian zones, except where necessary.[15]

In addition, the applicant has sought and responded to some feedback from residents neighboring the proposed project site regarding viewshed impacts and scenic compatibility:

Project representatives have communicated with multiple adjoining property owners regarding the Project, mainly conducted in-person or via phone. Responsive neighbors expressed concern over panel placement. Project representatives addressed neighbors' concerns by providing information regarding the Project's setbacks and vegetative screening plans. In certain portions of the project, based on neighbor feedback, setbacks were enlarged and additional vegetative screening was added.[16]

Visual assessment. BBC visited the proposed New Frontiers Solar Park project site in January 2025 to review the site and its surroundings. The following pages present photos from the site visit.

[14] SAR Attachment F, page 19.

[15] Clover Creek Solar Project LLC d/b/a New Frontiers Solar Park, Responses to Siting Board Staff's First Request for Information.

[16] Clover Creek Solar Project LLC d/b/a New Frontiers Solar Park, Responses to Siting Board Staff's First Request for Information.

Figure C-10.
Closest Neighborhood – in Northern Portion of Site

Figure C-11.
View to North from Miller Lane/Bens Hole Branch Road Showing Existing Screening

Figure C-12.
Future Array Area Off of Miller Lane from Participating Parcel

Figure C-13.
Miller Lane and Existing Screening

Figure C-14.
New Hardinsburg Baptist Church Behind Future Array Area

Figure C-15.
View of Future Array Area from Church Parking Lot

Figure C-16.
Future Panel Area South of Anticipated Substation Location

Figure C-17.
Big Rivers Substation

Figure C-18.
Quail Run Neighborhood Near Substation

Figure C-19.
Future Panel Area in N Part of Project from Skillman Monarch Lane

Figure C-20.
Skillman Monarch Lane – Future Access Roads Planned for Both Sides

Figure C-21.
Nearby Non Participant from Skillman Monarch Lane

Figure C-22.
Future Access from US-60, Panels Would be Installed to Left

Figure C-23.
Proximate Homes Along US-60

Conclusions and Recommendations Regarding Compatibility with Scenic Surroundings

The proposed New Frontiers Solar Park facility would be located in a rural area of unincorporated Breckinridge County, home to an existing mix of mostly low-density agricultural and residential land. With the applicant's landscape plan for limiting vegetation removal and planting vegetative screens, the proposed New Frontiers Solar Park project is unlikely to have a substantial visual impact on nearby residences or roadway viewpoints. BBC finds that the proposed project would be generally compatible with the scenic surroundings.

Recommended mitigation. BBC recommends the following mitigation measures regarding this portion of the Kentucky statutory requirements (KRS 278.708(3)(b):

- Existing vegetation on the site should be left in place to the extent feasible to help minimize visual and noise impacts and to further screen the project from nearby residents.
- New Frontiers Solar Park should closely follow the updated vegetation plan provided in the Response to the Second RFI. Any further changes to the Landscape Plan should be submitted to the Siting Board prior to construction.
- New Frontiers Solar Park should cultivate at least two acres of native pollinator-friendly species onsite.
- New Frontiers Solar Park should use panels with anti-reflective coating to reduce glare and corresponding visual impacts, particularly with regard to flight traffic using the local airport.
- New Frontiers Solar Park should be open to communication with adjacent landowners regarding viewshed impacts and the implementation of additional strategic vegetative screening, if needed.

Potential Changes in Property Values for Adjacent Property Owners

Potential Issues and Standard Assessment Approaches

Development of new power plants can raise issues related to potential changes in property values for nearby property owners. These issues may arise from the widespread perception that a power plant and its ancillary facilities—such as ash disposal landfills, overhead electric transmission lines and electric transformer sites—may be "undesirable land uses" whose impacts are expected to be translated economically into negative effects on property values. Studies also show that impacts may extend for some distance from the site, and possibly beyond the immediately adjacent properties. These findings, however, primarily apply to conventional, fossil fuel-fired plants.

Criteria for evaluating property values effects that reflect the concerns of a broad range of interested parties typically include these aspects of the issue:

- Land use compatibility;
- Findings from other empirical studies; and
- Potential for effects to other than adjacent property owners.

Land use compatibility. State and local governments around the country use standards of land use compatibility to minimize the effect of industrial land uses, like power plants, upon nearby properties. KRS Chapter 278 incorporates setback requirements as its primary standard for buffering the siting of power plants. Land use compatibility, in the strict sense of legal use, and in the general sense of reasonably probable use for a given location and "neighborhood," are also factors in a general appraiser's judgment and analysis concerning the "highest and best use" of a property.

Other general issues are also considered to encourage facility siting in compatible settings where negative effects would be minimal to the uses and values of nearby properties. In Wisconsin, for example, the Public Service Commission publishes this general definition of the range of potentially compatible sites for power plants:

"Typically, active or vacant industrial lands may be more compatible and urban residential lands may be less compatible with power plants. Generally, sites that are more compatible with present and planned land uses are more desirable, as are those where the plant would comply with existing land use regulations."

General land use planning practice offers the option to adopt or negotiate for performance standards for outdoor lighting, noise, vibration, odor, smoke, or particulate matter, and so forth to minimize off-site impacts to adjacent uses.

Findings from empirical studies. Standard real estate appraisals are the most common type of empirical study used to evaluate potential changes to property values. The appraiser generally relies upon an examination of as many actual sales as possible of comparable properties in similar locations and with similar expectations for highest and best use.

Academic studies published in the land and environmental economics literature have used a variety of property value-based analyses to estimate the actual effect of power plants and other "undesirable

land uses" whose impacts may have translated economically into negative effects on adjacent property values. So called "undesirable" uses that have been studied in this fashion over time include nuclear and non-nuclear power generation; hazardous, toxic, and nuclear waste disposal; conventional solid waste disposal; waste incineration; and hazardous industrial facilities.

For example, one study investigated the effect newly opened power plants had on property values in neighborhoods located within five miles of the plant. The study included 60 power plants, several of which were located in Kentucky and the surrounding states. The study found that housing values decreased by 3 to 5 percent between 1990 and 2000 in these neighborhoods compared to neighborhoods located further away from the plant. Another study of 262 undesirable or "noxious" facilities located across the country, including 92 coal, natural gas, or oil-fired power plants (of which two were in the East South Central region that includes Kentucky), illustrates this effect. Power plants were found to significantly decrease property values in the communities where they are located. The literature also includes numerous studies of the effect of electric transmission lines upon property values.

The standard statistical technique for evaluating the potential effects of an environmental amenity (such as beach frontage) or a disamenity (such as proximity to a hazardous waste site) is called hedonic pricing analysis. This technique recognizes that before one can evaluate the impact of an external characteristic on property values, the influences of other important value factors must be isolated and held constant using statistical techniques (e.g., multiple regression analysis). A hedonic pricing model treats the good in question (in this case local property values) as a bundle of amenities (size, aesthetic quality of property, access to local town, etc.) and disamenities (pollution, noise, etc.). Such a model is designed to isolate and quantify the implied effect on overall property value from each amenity or disamenity. Hedonic pricing models have been used to evaluate the impacts of many different factors contributing to the value of a piece of property. Examples include examining the effect of the proximity to hog farms (Palmquist, Roka and Vukina, 1997), beaches (Pompe and Rinehart, 1995), airports, and electric power plants (Blomquist, 1973).

Hedonic models are statistically estimated using multiple regression analysis. However, hedonic studies are complex and require extensive statistical training and large amounts of data. Moreover, not all factors that influence a home's selling price can be measured, and housing markets vary greatly from one region to another.

Potential for more distant off-site effects. Most analyses of property value impacts are local in scope. However, the effect of power plants and other facilities on property values has been shown to extend well beyond the site. This has been shown in at least one study, where negative effects of a small power plant located within the city of Winnetka, Illinois, were significant out to a distance of 11,500 feet, or more than two miles. As noted earlier, these findings also primarily apply to conventional, fossil-fuel fired plants.

Information Provided in the Applicant's SAR

New Frontiers Solar Park engaged Kirkland Appraisals, LLC—which has conducted property value impact studies for many of the previous solar applications to the Siting Board—to examine the proposed project's potential impact on property values.

Attachment B of the SAR (Property Value Impact Analysis) provides a comparative study of property values in proximity to solar facilities in Kentucky and in other states across the US, using a matched pairs design. The study draws its conclusions regarding the impacts of the proposed facility on adjacent property values based on market analysis of value impacts from numerous other solar facilities.

Attachment B states that the closest non-participating home to the proposed project will be 500 feet from the nearest solar panel and that the average distance will be 970 feet.[17] Additionally, surrounding residential density is fairly low and 87 percent of the surrounding acreage is agricultural or agricultural/residential. In a summary statement, Kirkland Appraisals concludes that there will be no property value impacts from the proposed New Frontiers Solar Park facility on adjoining properties and that the proposed facility will be in harmony with the area.

The matched pair analysis shows no impact on home values due to abutting or adjoining a solar farm as well as no impact to abutting or adjacent vacant residential or agricultural land where the solar farm is properly screened and buffered. The criteria that typically correlates with downward adjustments on property values such as noise, odor, and traffic all indicate that a solar farm is a compatible use for rural/residential transition areas and that it would function in a harmonious manner with this area.[18]

Supplemental Investigations, Research, and Analysis

BBC's investigation of additional research. To obtain further perspective on this issue, BBC reviewed recent studies regarding solar facility effects on nearby property values. As commercial scale solar facilities become more prevalent in the central and eastern portions of the United States, the research and information concerning potential impacts on property values is also continuing to evolve.

In 2018, a study of the potential effects of commercial solar farms on nearby property values was conducted by the LBJ School of Public Affairs at the University of Texas. That study contacted public sector property assessors in 430 counties across the United States that had at least one utility-scale PV solar facility in place. Thirty-seven residential property assessors agreed to fill out the on-line survey asking their opinion on the likelihood that a solar farm would impact nearby residential property values. Among the findings of that study were that:

- "The majority of responses suggested either no impact (66 percent of all estimates) on home prices, or a positive impact (11 percent of all estimates), as a result of proximity to solar installations."
- "However, some respondents did estimate a negative impact on home prices associated with solar installations." In the 23 percent of cases where negative impacts on value were estimated, the negative effect was estimated to increase with closer proximity and larger scale solar installations. Respondents who had actual experience in assessing homes near solar installations estimated a 3 percent decline in value for homes within 100 feet of a 20 MW solar installations and a 5 percent decline in value within 100 feet of a 102 MW solar facility.

[17] SAR Attachment B, page 5.

[18] SAR Attachment B, page 1.

- "The results also suggest that experience assessing near a solar installation is associated with a much less negative estimate of impact."[19]

A 2020 study published by economists from the University of Rhode Island using the hedonic pricing analysis approach described earlier identified statistically significant negative impacts on home prices due to proximity to commercial solar sites in Rhode Island and Massachusetts —under certain conditions. Of the studies BBC has reviewed, this study appears to be the most robust in the sense that is covers a wide and diverse geographic area, observes hundreds of thousands of home sales transactions over a long period of time pre- and post-solar farm development, and has results that are robust to many different model specifications.

The study, based on "over 400,000 transactions within three miles of a solar site", found that residential property values in suburban areas within one mile of a solar facility declined by 1.7 percent (on average) compared to surrounding properties, with larger effects on home values within 0.1 miles (500 feet) of a solar site (-7.0 percent). However, solar sites in industrial or rural areas[20] had no statistically significant impact on home prices.[21]

Another recent contribution to the research on this topic is the 2019 PhD Dissertation of Dr. Nino Abashidze, an economist at the University of Georgia. Dr. Abashidze used the hedonic pricing model approach and econometric regression analysis to evaluate the effects from proximity to solar farms on both agricultural land values and residential property values in North Carolina. Dr. Abashidze found that proximity to solar farms had no discernable effect on *agricultural* land values (properties 30 acres or larger in size). However, Dr. Abashidze did find statistically significant negative impacts on *residential* property values. Dr. Abashidze's econometric analysis found that (on average) homes within one mile of solar facilities experienced an estimated nine percent decrease in value, while homes closer to the facilities (within one-half mile) experienced an estimated 12 percent decrease in value. It is also important to note, however, that most of the residential properties in Dr. Abashidze's analysis were located on relatively small lots (average lot size of 0.9 acres, sample standard deviation in lot size of 1.6 acres) and that the study was based on a relatively small number of home sales transactions compared to the University of Rhode Island study.[22]

Most recently, a team from the Lawrence Berkeley National Lab and the University of Connecticut examined the impact of large-scale non-rooftop photovoltaic projects on residential home prices in California, Massachusetts, Minnesota, North Carolina, New Jersey, and Connecticut.[23] This 2023 study

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[19] *An Exploration of Property-Value Impacts Near Utility-Scale Solar Installations.* Project Director: Dr. Varun Rai. Policy Research Project (PRP), LBJ School of Public Affairs, The University of Texas at Austin, May 2018.

[20] In the study by Gaur and Lang cited below, "rural" is defined as areas with municipal population density of less than 850 people per square mile. The proposed New Frontiers Solar Park facility would sit in unincorporated Breckinridge County, and the surrounding area has a low population density.

[21] *Property Value Impacts of Commercial-Scale Solar Energy in Massachusetts and Rhode Island.* Vasunda Gaur and Cory Lang, University of Rhode Island. September 29, 2020. Available at https://works.bepress.com/cory_lang/33/

[22] Abashidze, Nino. *Essays on Economic and Health Effects of Land Use Externalities.* (Under the direction of Dr. Harrison Fell). Page 71. University of Georgia, 2019.

[23] *Shedding light on large-scale solar impacts: An analysis of property values and proximity to photovoltaics across six U.S. states.* Elmallah, S., Hoen, B., Fujita, K.S., Robson, D., and Brunner, E; Energy Policy 175 (2023) 113425, January 2023. Available at https://www.sciencedirect.com/science/article/pii/S0301421523000101

analyzed data on 1,630 large solar facilities combined with data from the USGS National Land Cover Database (to determine land use type); urban-rural classification data from the US Census Bureau; and CoreLogic home sales data for more than 1.8 million transactions. Overall findings were that homes within half a mile of a large-scale solar project see an average price reduction of 1.5 percent compared to homes more than two miles away from the facility; that there was no statistically significant impact beyond one mile; and that property value impact was only measurable for certain states (Minnesota, North Carolina, New Jersey), for rural homes, and for larger projects located on agricultural land.

The results of this study indicate that, in a rural agricultural context, there is potential for a slight negative impact on property values for homes within one mile of a large solar project. However, the authors note in their discussion the wide variety among the 1,630 solar projects included in the study and that policy practices to mitigate potential negative impacts of solar development include vegetative screening and land use co-location (e.g., integrating solar development and agricultural production).

Conclusions and Recommendations Regarding Potential Changes in Property Values

With the proliferation of commercial solar facilities across the U.S., there is an increasing focus on the potential effects on residential property values from proximity to such facilities.

Most studies sponsored by solar developers have analyzed this question using sales price comparisons of homes near solar facilities to comparable homes that are not proximate to a solar facility, using techniques similar to the approach used in appraising homes. These studies identify similar homes (except for their proximity to solar facilities) and use appraisal techniques, which may be more subjective than the statistical techniques used in econometric studies, to adjust for differences in age, square footage, and other home characteristics. BBC has reviewed several of these studies and can confirm that they have consistently found no impact on property values from proximity to solar installations.

To date, relatively few studies have been conducted by academic researchers or other "third-party" analysts, but the body of research is slowly growing. Using different methods, and different data sources, recent studies by professors at the LBJ School of Public Affairs (University of Texas), the University of Rhode Island, and the Lawrence Berkeley National Laboratory have found that there could be small, negative impacts on property values from proximity to commercial solar facilities. In some studies, those negative effects appear to be more likely in suburban settings, rather than rural settings. Another recent study by a University of Georgia economist of impacts to property values from solar farms in North Carolina – using a hedonic pricing model and econometric approach similar to the University of Rhode Island study – found that solar facilities did not impact nearby *agricultural land* values but did reduce nearby *residential* values (within one mile) by nine to 12 percent, on average. And in the case of the recent 2023 study of property value impacts across six U.S. states, impacts were found in only three states and were limited to rural homes in agricultural settings, with no consideration for the presence or absence of a vegetative screen.

Overall, research and literature on this topic continues to grow and has not reached a consensus on any universal relationship between home values and proximity to nearby solar facilities. Two econometric property value studies indicate that the likelihood of adverse impacts on property values from nearby solar facilities increases with proximity to the solar site and with residential

density, and decreases in more rural, agricultural settings. Another study indicates that the land use context and geographic location (e.g., state) of the solar project are essential factors in projecting any possible impacts. The duration of any adverse effects on nearby residential property values has yet to be established.

As shown earlier in Figure C-4, about 87 percent of the land use adjacent to the proposed New Frontiers Solar Park facility is considered to be either agricultural or large lot "agri/residential," while about 4 percent of the adjacent land is considered residential. Theoretically, based on some of the recent studies these properties could be at risk of a reduction in value, though the findings from the studies discussed and cited above are not consistent in determining factors that influence value impacts.

Acknowledging the proposed project site's existing vegetation, planned vegetative screenings, and existing topography, we conclude that the proposed solar facility is unlikely to have adverse impacts on adjacent property values.

Recommended mitigation. It is important to note that while some of the academic studies discussed above have documented negative impacts on home values, the cause of the impacts has not been well researched. The studies hypothesize that solar farms may act as a visual disamenity, which suggests there is potential to mitigate negative impacts through actions designed to buffer the view of solar facilities from nearby homes.

BBC recommends the following measures to ensure minimal impact to the surrounding properties:

- Existing vegetation on the site should be left in place to the extent feasible to help minimize visual and noise impacts and to screen the project from nearby residents.
- New Frontiers Solar Park should install vegetative screening according to the updated vegetation plan provided in the Response to the Second RFI. Any further changes to the screening plan should be submitted to the Siting Board for review prior to commencement of project construction.
- New Frontiers Solar Park should be open to communication with adjacent landowners regarding viewshed impacts and the implementation of additional strategic vegetative screening, if needed.

Expected Noise from Construction and Operation

This section evaluates the studies and conclusions discussed in the SAR concerning peak and average noise levels associated with construction and operation of the proposed New Frontiers Solar Park facility. This component of the SAR is identified in KRS 278.708(3)(d).

Potential Issues and Standard Assessment Approaches

Various governmental agencies throughout the country employ noise assessment methodologies based on professionally accepted techniques. In evaluating the construction and operational stages of a project, these techniques are fundamentally consistent in that they seek to estimate the potential contribution to ambient noise levels at the site in terms of sensitive receptors. Generally, assessment methodologies are meant to measure the increase in noise levels over the ambient conditions at residential and non-residential sensitive receptors.

A standard noise impact assessment focuses on several key factors:

- Identification of sensitive receptor sites;
- Existing local ambient noise levels;
- Estimated construction or operational noise intensities;
- Distances between noise sources and sensitive receptors;
- Time of day during which peak noises are anticipated;
- Noise created by transportation features such as conveyors, trucks, and rail lines; and
- Calculation of the cumulative effect of the new noise sources when combined with the existing ambient noise level, recognizing that new noise sources contribute to the ambient noise level, but not in an additive way.

Information Provided in the Applicant's SAR

Noise levels generated by facility construction and operation are addressed in Section IV of the SAR (Anticipated Noise Levels at Property Boundary) and in the Sound Study—conducted by Stantec using the FHWA Roadway Construction Noise Model (RCNM)—which is included as Attachment D of the SAR. During project construction—including site preparation, excavation, and solar equipment installation—impacts on nearby noise-sensitive receptors (NSRs) will be generated by construction equipment and vehicles, particularly during pile driving for the solar panel racking. Operational sound levels are expected to be modest and non-disruptive for the operating lifetime of the project.

Provided in the Sound Study is a summary table of the NSRs nearest to components of the proposed New Frontiers Solar Park facility. This table is excerpted as Figure C-24 below and identifies those residences and neighborhoods in closest proximity to the planned project substation, inverters, and panels.

Figure C-24.
Nearest Noise Sensitive Receptors (NSRs) to the Proposed New Frontiers Solar Park

Land use	Nearest Receptor to	Section of Study Area	Distance from Fence	Distance from Nearest Solar Panel	Distance from Nearest Inverter or Transformer
Residence (SR-316)	Inverter	South	545 ft	614 ft	816 ft (inverter)
Residence (SR-048)	Substation transformer	Central	2,452 ft	2,942 ft	409 ft (transformer)
Residence (SR-007)	Panel tracking system & Project fence	North	423 ft	464 ft	1,317 ft (inverter)
Residences – Gilbert Heights Neighborhood (SR-081 – 104)	N/A	East	3,641 ft	3,778 ft	4,341 ft (inverter)
Residences – Lake Ridge Neighborhood (SR-105 – 115, 117 – 122)	N/A	East	1,044 ft	1,122 ft	1,779 ft (inverter)
Residences – Lakeside Drive Neighborhood (SR-060 – 066)	N/A	East	3,186 ft	3,638 ft	2,340 ft (transformer)
Residences – Quail Run Lane Neighborhood (SR-052 – 058)	N/A	Central	2,650 ft	3,242 ft	1,052 ft (transformer)

Noise generated during construction. Section IV of the SAR summarizes key findings from the Sound Study (Attachment D). Attachment D states that a maximum noise level of 82 dBA at the nearest NSR is expected during the construction phase of the proposed project when pile drivers would be operating at the site. The maximum noise level at the nearest NSR during construction when pile drivers are not operating is estimated to be 61 dBA. However, in the First and Second RFIs, New Frontiers Solar Park was asked to clarify the sound emission level used for pile drivers in the FHWA RCNM, as varying sections of the Sound Study contain conflicting information about the dBA level for impact pile drivers.

The Sound Study notes that project construction will likely occur over a period of 12 to 18 months, and typical equipment to be used in the construction of the New Frontiers Solar Park facility includes vehicles and machinery such as backhoes, bulldozers, excavators, graders, dump trucks, and pile drivers; this is similar to all other solar facility applications that BBC has reviewed. With the exception of pile drivers (for which the applicant was requested to provide clarification regarding sound emission levels), the Sound Study utilizes standard sound emission levels for construction vehicles and equipment, as published by the FHWA RCNM.

A construction sound analysis was completed considering impact pile driving and other typical construction equipment. Worst-case construction sound levels at the nearest residence are expected to range from 59 to 82 dBA with multiple pieces of equipment operating simultaneously. Construction related activity is expected to occur mainly during daylight hours (7:00 a.m. to 7:00 p.m. or dusk if sunset occurs after 7:00 p.m.) At times, construction activities will be audible to nearby residences or

other sensitive receptors; however, not all equipment will be operating at the same time, and activities will be temporary in duration and spread throughout the Project area.[24]

From the nearest NSRs to the proposed New Frontiers Solar Park footprint, the applicant's projected maximum construction noise levels are slightly higher than, although still in range of, the noise levels that BBC has observed for several other applications submitted to the Siting Board.

Noise generated during operation. During normal facility operation, select solar equipment will emit noise – specifically, the project substation transformer and the project inverters. The Sound Study in Attachment D finds that the highest expected daytime sound level at the nearest NSR due solely to facility operation is 51 dBA, or only slightly louder than the typical noise level of a rural daytime setting. Sound generated at nighttime will be lower as the facility components will be in standby and will not resume electricity generation until the sun rises.

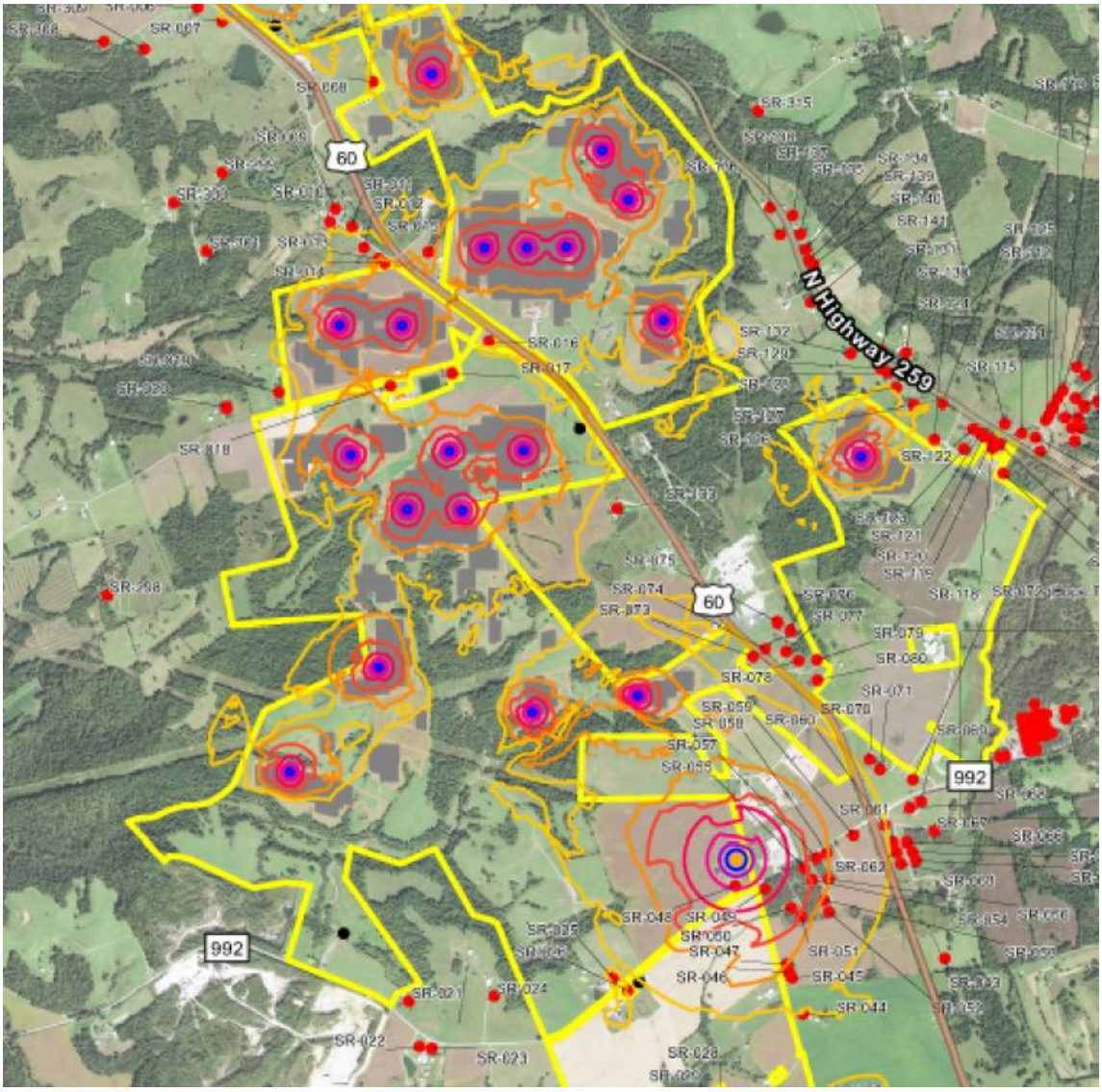
The operational sound assessment considered 35 solar inverters and one substation transformer in full operation. The highest daytime sound level expected at a residence due to operation of the Project is estimated to be 51 dBA. The solar facility will generate power during daylight hours only. Sound from the inverters and substation will be minimal during the nighttime hours, due to equipment operating in an energized stand-by mode.[25]

Figure C-25 presents one section of the noise contour map for daytime operational noise during the proposed project's lifetime, excerpted from Attachment D. The yellow outline indicates the proposed project's parcel boundaries. Red dots indicate NSRs (primarily residences) while the blue dots depict inverters, and the light orange contour line (outermost) is indicative of a noise level of 30 dBA.

[24] SAR Attachment D, page 12.

[25] SAR Attachment D, page 12.

Figure C-25.
New Frontiers Solar Park Daytime Operational Noise Contours Map



Given the existing noise in the area around the proposed project site—such as ambient agricultural and rural residential noise, or the noise emitted by the existing Hardinsburg substation—the Sound Study concludes that the increase in noise emission resulting from operation of the proposed New Frontiers Solar Park facility is unlikely to cause excessive disturbance.

Supplemental Investigations, Research, and Analysis

In the course of responding to the Siting Board's First and Second Requests for Information, New Frontiers Solar Park provided a preliminary construction schedule for the proposed project, attached here as Figure C-26.

Figure C-26.
New Frontiers Solar Park
Preliminary Project
Construction Schedule

Milestone	Timeframe (est.)
State Siting Board Construction Certificate	Q2 2025
State Permitting: Floodplain, Stormwater, and other Environmental Permits	Q2 2025
Federal Permitting: USACE Jurisdictional Determination	Q2 2025
EPC Mobilization	Q2 2025
Grading: Access roads and entrances begin	Q2 2025
Peak Construction (grading/pile install)	Q4 2025
Substantial Completion	Q3 2026

The applicant plans to commence site construction in Q2 2025 and complete the project in Q3 2026, for an approximate construction duration of 15 months. Pile driving activity, which will generate the greatest noise levels on site, is currently anticipated to occur in Q4 2025.

Construction activities will occur Monday through Saturday between 7:00 a.m. and 7:00 p.m. Construction will not be conducted on Sundays unless necessary to make up for delays or to meet deadlines. Non-construction activities will occur Monday through Sunday from dawn until dusk, and may take place prior to 7:00 a.m.[26]

In the Second RFI, the New Frontiers Solar Park was asked to clarify the sound emissions level utilized in the pile driving noise modeling, as the original Sound Study included with the SAR indicated at different points that either 84 dBA or 101 dBA was used. The typical noise level that BBC has observed in previous solar facility applications that have come before the Siting Board—and the noise level supported by FHWA publications—is 101 dBA for impact pile drivers.

The applicant responded that the text of the original Sound Study contained outdated references to an 84 dBA sound emissions level but that the noise modeling used a base metric of 101 dBA when measured at 50 feet.[27] This is consistent with other solar facility applications that BBC has reviewed previously. The applicant also supplied an updated Sound Study.

Pile driving noise estimates for KY solar projects. BBC compared the projected construction and operational noise levels from the New Frontiers Solar Park project to previous estimates for other Kentucky solar projects we have reviewed for the Siting Board over the past four years.[28] We found that the noise level estimates in the amended New Frontiers Solar Park Sound Study for pile driving activity (101 dBA at 50 feet) are consistent with the noise level projections from these other

[26] Clover Creek Solar Project LLC d/b/a New Frontiers Solar Park, Responses to Siting Board Staff's First Request for Information.

[27] Clover Creek Solar Project LLC d/b/a New Frontiers Solar Park, Responses to Siting Board Staff's Second Request for Information.

[28] In addition to the proposed New Frontiers Solar Park project, BBC also reviewed the proposed Turkey Creek, Unbridled, Ashwood, Flat Run, Martin County, Green River, Rhudes Creek, Russellville, Telesto, Pine Grove, Song Sparrow, Dogwood Corners, and Lynn Bark Energy solar facilities.

proposed solar facilities. Figure C-27 summarizes the pile driving noise levels estimated in several proposed solar facility applications.

Figure C-27.
Estimated Noise Levels from Pile Driving, KY Solar Project Proposals (dBA)

	Maximum estimated noise level at 50 ft (dBA)
New Frontiers Solar Park	
Pile driver	101.0
Lynn Bark Energy	
Pile driver	101.0
Dogwood Corners	
Pile driver (impact)	101.0
Pile driver (sonic)	95.0
Song Sparrow Solar	
Pile driver	100.0
Pine Grove Solar	
Pile driver	101.0
Telesto Energy	
Pile driver (impact)	90.0
Russellville Solar	
Pile driver (impact)	102.0
Rhudes Creek Solar	
Pile driver & other equip.	90.0
Green River Solar	
Pile driver	94.9
Martin County Solar	
Pile driver (impact)	101.0
Pile driver (sonic)	95.0
Flat Run Solar	
Pile driver	100.6
Ashwood Solar	
Pile driver (impact)	101.0
Pile driver (sonic)	95.0
Unbridled Solar	
Pile driver (impact)	101.0
Turkey Creek Solar	
Pile driver (impact)	101.0
Pile driver (sonic)	96.0

The New Frontiers Solar Park Sound Study models noise levels at nearby receptors based on a pile driver noise measurement that is consistent with the Federal Highway Administration and the majority of pile driver noise estimates from previous solar facility applications before the Siting Board. The applicant summarized their communications to date with members of the public regarding construction noise:

Project representatives contacted landowners near the Project substation, mainly by telephone, to discuss the construction process and initiate communications to address any questions or concerns. In addition, a packet outlining the Project information and an invitation to confer with Project representatives was dropped off in mailboxes belonging to these landowners. Project representatives did not receive any responses to these communication efforts. Furthermore, construction noise was a topic of discussion at the open house referenced in Response No. 5 above, and will likely continue to be a topic

of conversation during Breckinridge County Fiscal Court meetings moving forward. Project representatives have not received any specific concerns from adjoining neighbors regarding the potential impacts from construction noise. Additionally, Project representatives have met with the leadership of Hardinsburg Baptist Church to discuss potential noise impacts and mitigation strategies. Construction noise is less of a concern with the understanding that construction activities will take place outside of service times occurring in the evening during weekdays and Sunday mornings.[29]

Commonly accepted noise level exposure limits. BBC researched noise level exposure limits advocated by public health agencies such as the CDC and the National Institute for Occupational Safety and Health (NIOSH). NIOSH has a recommended exposure limit of 85 dBA (note that decibels are measured on a logarithmic scale).[30] Figure C-28 identifies the time that it takes for a person to reach their full daily noise dose based on differing levels of noise exposure.

Figure C-28.
Time to Reach 100 Percent of Daily Noise Dose

Source: Centers for Disease Control and Prevention, The National Institute for Occupational Safety and Health, Guidance and Regulations

Time to reach 100% noise dose	Exposure level (dBA)
8 hours	85
4 hours	88
2 hours	91
1 hour	94
30 minutes	97
15 minutes	100

At 82 dBA—the reported maximum noise level expected during pile driving at the nearest receptor—the level of noise is not hazardous. However, it warrants management to ensure that no nearby NSR experiences prolonged continuous exposure to pile driver noise.

[29] Clover Creek Solar Project LLC d/b/a New Frontiers Solar Park, Responses to Siting Board Staff's First Request for Information.

[30] Noise and Hearing Loss Prevention. The National Institute for Occupational Safety and Health. https://www.cdc.gov/niosh/topics/noise/default.html

Conclusions and Recommendations

During construction, noise from the pile drivers will have the most substantial impact on the nearest noise receptors. However, maximum noise levels at the nearest receptors are not projected to reach a hazardous level, and the activity of pile driving is intermittent and unlikely to disturb any single NSR for an extended period.

During normal operation of the proposed New Frontiers Solar Park facility, it is unlikely that noise levels from inverters and the substation transformer will be incongruous with the existing noise profile of the area.

Recommended mitigation. New Frontiers Solar Park should clarify precisely where pile driving will occur and mitigate hazardous or annoying noise as necessary, depending on the proximity to nearby residences. Further:

- New Frontiers Solar Park should limit noise-generating construction activities, and particularly pile driving, to the hours between 8 AM and 6 PM, Monday through Saturday.

- New Frontiers Solar Park should notify residents and businesses within 2,000 feet of the project boundary about the construction plan, the noise potential, and mitigation plans one month prior to the start of construction.

- During construction, New Frontiers Solar Park should locate stationary noise-generating equipment, such as air compressors or power generators, as far as practicable from neighboring residences.

- New Frontiers Solar Park should implement a Customer Resolution Program to address any complaints from surrounding landowners. New Frontiers Solar Park should submit an annual status report on the Customer Resolution Program to the Siting Board, identifying any complaints, the steps taken to resolve those complaints, and whether the complaint was resolved to the satisfaction of the affected landowner.

Impacts on Transportation

This portion of the SAR review examines the impact of the proposed New Frontiers Solar Park facility on road transportation. This also includes traffic effects, such as congestion, safety, fugitive dust, and degradation of the transportation infrastructure. This component of the SAR corresponds to KRS 278.708(3)(e).

Potential Issues and Standard Assessment Approaches

Development of a new power plant can raise a variety of potential traffic related issues. These issues may arise from the movement of construction workers and heavy and oversized loads during the construction process and added congestion during both construction and subsequent operations.

Standard components of the evaluation of traffic-related impacts include:

1. Identification of access methods, and a description and visual portrayal of primary access routes to the site during construction and during operation.

2. Description of baseline traffic conditions: existing traffic counts, road capacity and level of service and any major existing constraints (e.g., bridge weight limitations, etc.).

3. Identification of any special transportation requirements during construction (e.g., the need to reinforce or "ramp over" existing bridges, detours, temporary closures, etc.).

4. Projection of traffic volumes related to construction and operation.

5. Determination of whether the additional traffic, during construction and operation, would lead to congestion, changes in the level of service of the existing road network or additional road maintenance costs.

Information Provided in the Applicant's SAR

Section V of the SAR (Effect on Road, Railways and Fugitive Dust) and Attachment H of the SAR (Traffic Impact Study) provide information regarding anticipated impacts on transportation at and around the proposed project site during construction and operation.

Three of the primary roadways surrounding the proposed project site are US-60, SR 992, and SR 261; these routes are estimated by the Traffic Study to be most impacted by increased vehicle traffic during the project's construction phase rather than the operational life of the project when the facility is managed by few employees and few daily trips will be taken to site.

Historical Average Daily Traffic (ADT) volumes were obtained from the Kentucky Transportation Cabinet (KYTC) for three (3) locations along US Highway 60, State Route 992, and State Route 261. […] 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. To demonstrate this,

traffic on studied roadways was increased by 25 percent. This increase is far greater than would be anticipated for the actual construction of the Project.[31]

Figure C-29, excerpted from Exhibit E, shows the capacity results when modeling a 25 percent increase in traffic along these routes. The Level of Service (LOS) of a roadway is ranked from best to worst on an A to F scale, and the data on existing conditions show that the primary roadways adjoining the New Frontiers Solar Park site have a usual LOS of C or D. The Percent Time Spent Following (PTSF) is the metric used to measure LOS for two-lane highways.

Figure C-29.
Roadway Capacity Analysis and Level of Service (LOS) during Construction of New Frontiers Solar Park

Location	2023 Existing Conditions		2023 Construction Conditions	
	PTSF	LOS	PTSF	LOS
Count Station 014A35 (US Hwy 60)	46.8	D	52.1	E
Count Station 014751 (SR 992)	21.0	C	22.6	C
Count Station 014752 (SR 261)	37.8	D	44.3	D

Modeling a substantial (and likely overestimated) increase in expected traffic (i.e., 25 percent), the LOS across these three roadways is brought down to the C to E range during the busy construction phase of the project. US-60, which runs north-south on the eastern side of the project and near to Hardinsburg, would be the most substantially impacted in this modeled scenario.

The trip generation analysis for the construction of the Project would generally be based on the number of workers and the associated construction vehicles and 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.

[…] All roadways within the Project area will continue to operate at LOS D or better during peak construction traffic except for US Highway 60 which is predicted to operate under a LOS E during the construction process. Since the Percent Time Spent Following (PTSF) does not increase significantly and the increase of construction traffic [used in the model] *was far greater than anticipated during actual construction, an LOS E is not a concern.*[32]

The Traffic Study projects that only a couple of vehicles would travel to the project each day during the operational lifetime of the project, and that this level of traffic to the site would have no measurable impact on the LOS or transportation infrastructure.[33]

The Traffic Study concludes by stating:

Although no significant adverse traffic impacts are expected during Project construction, using mitigation measures such as ridesharing between construction workers, using appropriate traffic

[31] SAR Attachment H, page 6.

[32] SAR Attachment H, page 12.

[33] SAR Attachment H, page 6

controls, or allowing flexible working hours outside of peak hours could be implemented to minimize any potential for delays during the peak hours.[34]

In the First RFI, BBC requested more information about the estimated number and class of delivery trucks anticipated on site and the load weight of the substation transformer delivery, as well as documentation of any correspondence between New Frontiers Solar Park and the KYTC District Engineer or the Breckinridge County Road Department.

Regarding fugitive dust, the SAR states that New Frontiers Solar Park will use best management practices, including appropriate revegetation, water application, concrete waste management, and use of perimeter silt fences to minimize dust.[35]

Supplemental Investigations, Research, and Analysis

Vehicle load weights and compatibility with local roadways. BBC conducted further research on the weight limits and vehicle classes permitted to travel on specific roadways in Kentucky. Some of the roadways serving the project area are rated for weight limits of 80,000 pounds, 44,000 pounds, or 36,000 pounds (KYTC Truck Weight Classification). Any vehicle loads exceeding these limits could subject the roadway and shoulder to damage or degradation. The smaller, local roads transited by delivery trucks may be more susceptible to degradation from heavy loads.

Regarding potential damage to local roadways, the most concerning delivery to the site would be that of the proposed project's substation transformer. A 2012 publication on Large Power Transformers (LPTs) by the U.S. Department of Energy states:

Transporting an LPT is challenging – its large dimensions and heavy weight pose unique requirements to ensure safe and efficient transportation… When an LPT is transported on the road, it requires obtaining special permits and routes from the department of transportation of each state on the route of the LPT being transported. According to an industry source, obtaining these special permits can require an inspection of various infrastructure (e.g., bridges), which can add delay. In addition, transporting LPTs on the road can require temporary road closures due to traffic issues, as well as a number of crew and police officers to coordinate logistics and redirect traffic.

BBC consulted the Kentucky Transportation Cabinet's Department of Overweight/Over-dimensional Vehicles Route Evaluation online tool to ascertain potential route restrictions for oversized deliveries. The BBC team input information for several sample configurations into the KYTC Route Evaluation tool and found potential challenges with load clearances, particularly during delivery of the power transformer, depending on the exact configuration of the delivery load.

[34] SAR Attachment H, page 12.

[35] SAR, page 15.

In their Response to the First RFI, New Frontiers Solar Park provided the weight limits for the anticipated roadways to be used for construction traffic:

> *Weight limits for anticipated roadways are as follows:*
>
> *i. Highway 60: Class AAA, 80,000 pounds;*
>
> *ii. Skillman Monarch Lane: Class A, 44,000 pounds;*
>
> *iii. KY 259: Class AA, 62,000 pounds;*
>
> *iv. KY 992: Class AA, 62,000 pounds;*
>
> *v. KY 261: Class AA, 62,000 pounds; and*
>
> *vi. Bens Hole Branch Road: Class A, 44,000 pounds.*
>
> *[…] Although the specific route for oversized loads will be finalized in coordination with state and local officials prior to commencing construction, the Project anticipates heavy trucks will likely use Highway 60, KY 261, and KY 992 and as main haul routes. Use of local roads are anticipated but finalized routes will depend on the terminal delivery point for the Project substation. At this time, potential delivery routes on local roads may include Frank Farm Road, Bens Hole Branch Road, and Skillman Monarch Lane.* [36]

Local roads that are not state routes are not covered by KYTC permits and must instead be permitted through the appropriate County entity. However, overall BBC finds that the limitations and challenges of the primary roadways adjacent to the proposed New Frontiers Solar Park project site are comparable with those of several other recent solar facility applications reviewed and approved by the Siting Board over the past few years.

In the First RFI, BBC requested further information from the applicant regarding planning or correspondence between New Frontiers Solar Park and the KYTC District Engineer or the Breckinridge County Road Department. The applicant responded that project representatives have contacted the KYTC as well as the Breckinridge County Road Department to discuss construction and operation of the proposed New Frontier Solar Park, and that the project's EPC team will meet with Breckinridge County road officials in Q1 2025 regarding preparation for construction.[37]

Delivery vehicles. Responding to questions posed in the First RFI, New Frontiers Solar Park supplied information regarding the planned peak number of construction vehicles accessing the project site as well as delivery load weights for varying truck types:

[36] Clover Creek Solar Project LLC d/b/a New Frontiers Solar Park, Responses to Siting Board Staff's First Request for Information.

[37] Clover Creek Solar Project LLC d/b/a New Frontiers Solar Park, Responses to Siting Board Staff's First Request for Information.

The Project anticipates up to 240 worker vehicles traveling daily during construction. The number and approximate weight classes of heavy and light duty trucks onsite per day during Project construction are as follows:

> *i. Approximately 200 passenger cars or pickup trucks, ranging between 2,500 and 6,000 pounds in weight;*
>
> *ii. Approximately 20 delivery trucks and associated trailers, ranging between 6,000 and 10,000 pounds in weight; and*
>
> *iii. Approximately five semi-trucks and associated trailers, ranging between 24,000 and 80,000 pounds in weight.*

The substation transformer is anticipated to weigh between 40,000 and 60,000 pounds. The class of truck anticipated for delivery of the substation will be a semi-truck with drop axles and a flatbed trailer capable of hauling up to 105,000 pounds.[38]

BBC expects that the ongoing planning between New Frontiers Solar Park, the KYTC, and the Breckinridge County Road Department can mitigate problems resulting from overweight and over-dimensional load delivery.

Conclusions and Recommendations

During construction, daily deliveries on semi-truck trailers and workforce commuter traffic will substantially increase the amount of traffic on primary roadways near the project site. However, all impacted roadways are projected to maintain a passable level of service (LOS).

Delivery of the project's substation transformer will likely present some challenges given the load ratings of some surrounding roadways, but, in general, challenges can be overcome with careful advance planning with the KYTC and Breckinridge County Road Department and by utilizing an appropriate traffic management plan.

Recommended mitigation. BBC recommends the following measures to mitigate potential impacts on traffic and the local road network:

- New Frontiers Solar Park should submit a final construction schedule, including updated estimates of on-site workers and commuter vehicle traffic, to the Siting Board prior to commencement of construction.

- New Frontiers Solar Park should develop and implement a robust traffic management plan for the construction phase of the project to minimize impacts on traffic flow and keep traffic safe. As part of this plan, New Frontiers Solar Park should implement ridesharing between construction workers; use appropriate traffic controls; or allow flexible working hours outside of peak hours to minimize any potential delays during AM and PM peak hours.

[38] Clover Creek Solar Project LLC d/b/a New Frontiers Solar Park, Responses to Siting Board Staff's First Request for Information.

- New Frontiers Solar Park and its construction contractors should comply with all laws and regulations regarding the use of roadways.

- New Frontiers Solar Park should obtain permits from the KYTC and local road authorities as needed for overweight and overdimensional vehicle transport to the site and comply with all permit requirements, coordinating with the KYTC Permits Engineer and the Breckinridge County Road Department as needed.

- New Frontiers Solar Park should determine whether shoulder stabilization and/or road widening is necessary on any local route to accommodate deliveries to the site. New Frontiers Solar Park should coordinate with the Breckinridge County Road Department regarding any necessary improvements.

- New Frontiers Solar Park should commit to rectifying any damage to public roads by fixing or fully compensating the appropriate transportation authorities for any damage or degradation to the existing road network that it causes or to which it materially contributes.

- New Frontiers Solar Park should properly maintain construction equipment and follow best management practices related to fugitive dust throughout the construction process. Dust impacts should be kept to a minimal level.

Other Issues

While not specifically required under the statutes authorizing SAR reviews by consultants for the Siting Board (KRS 278.708), it has become customary to consider additional issues in these reviews, including economic impacts and project decommissioning. This final portion of this section of BBC's report includes these aspects.

Economic Impacts

Current economic conditions and trends. As discussed previously, the proposed New Frontiers Solar Park facility would be located in unincorporated Breckinridge County, adjacent to the county seat of Hardinsburg and approximately 70 miles southwest of the City of Louisville. Breckinridge County has experienced modest growth in population over the past decade, with approximately 20,432 residents as of the 2020 census compared with 20,059 in 2010.

Per capita personal income in Breckinridge County was $42,080 in 2023 compared with $55,360 for the state of Kentucky.[39] The County had an estimated civilian labor force of 8,750 in 2023, and the largest employment sectors were manufacturing, health care and social assistance, and retail trade.[40]

Applicant economic impact study. Exhibit G of the New Frontiers Solar Park Application (Economic Impact Assessment) contains a study of the projected economic impacts from the proposed facility. The analysis was conducted by Dr. Paul Coomes, Emeritus Professor of the University of Louisville, using IMPLAN modeling.

Key findings from the analysis include:

- There will be a one-time spike in construction-related employment over about a 12-month period. The spike will include about 305 new jobs in Breckinridge County in the first year, with new labor compensation of $17.7 million.

- New property-related tax payments are expected to total approximately $3.2 million over the next 30 years, increasing the average annual property tax revenue from $13,000 (current tax generation from parcels) to $107,000.

Review and assessment of applicant economic information. The level of investment in Breckinridge County projected in the economic impact analysis appears to be roughly consistent with industry standards for a solar project of the size of the proposed New Frontiers Solar Park facility. The overall conclusions that the operating phase will have very modest economic impacts, but that the proposed solar facility will enhance local government revenue while requiring very few services, are consistent with the findings of other commercial solar economic impact studies. The largest impact on employment will be felt during the initial construction period.

Measuring the net economic impact of the change in land use. Farmland conversion can have both economic benefits and drawbacks. The Economic Impact Assessment uses an additional custom IMPLAN model to help provide a more complete overview of the direct and indirect impacts of the

[39] U.S. Bureau of Economic Analysis, Table CAINC5N Personal Income by Major Component and Earnings by NAICS Industry.

[40] U.S. Census Bureau American Community Survey 2023 5-Year Estimates.

change in land use from agriculture to solar energy facility. This assessment comprises Appendix B of the Economic Impact Study.

For the specific case of farms in Breckinridge County, corn, soybeans, and cattle grazing are the most common uses of agricultural land. Appendix B estimates total farm revenue from the relevant parcels at approximately $844,000 per year, supporting 7.6 jobs (combined direct, indirect, and induced) and $269,000 in labor income annually.

Appendix B assumes that ongoing operations at New Frontiers Solar Park will support approximately 9.6 jobs and $613,000 in labor income annually and pay approximately $700,000 per year in lease payments to landowners. A portion of the lease income will be spent in the local economy, providing a small benefit to sectors that are represented within the County. After accounting for the resulting losses and gains from farmland conversion, the overall ongoing economic effect is expected to be slightly positive.

Figure C-30.
Estimated Net Annual Impacts to Breckinridge County from Land Use Conversion

	Employment	Labor Income
Farming	-7.6	-$268,535
Solar operations	9.6	$613,295
Lease payments to landowners	2.2	$79,905
Net	4.1	$424,666

Over a 30-year timeline, including the construction phase, the land conversion to solar generation is estimated to result in a cumulative net gain of 419 job-years and $30 million in labor income for Breckinridge County.

Recommended mitigation. BBC recommends the following measures in regard to potential economic impacts:

- New Frontiers Solar Park should commit to prioritizing local hiring and seeking to hire Breckinridge County residents to fill the projected direct construction jobs.

Project Decommissioning

In prior solar projects reviewed by the Siting Board, plans and assurances for decommissioning the sites at the end of their functional lives have been an important issue of concern to both the Siting Board and local governments.

Applicant project decommissioning plan. Exhibit J of the Application (Decommissioning Plan) contains a plan for the decommissioning of the proposed facility. The plan was authored by Stantec on behalf of the applicant.

The anticipated lifetime of the proposed New Frontiers Solar Park solar project is up to 50 years.[41] As required by KRS 278.706, decommissioning activities will be completed within 18 months of the project ceasing to sell electricity.

Equipment and vehicles required for decommissioning will be similar to those required for project construction, such as cranes, excavators, backhoes, bulldozers, dump trucks, front-end loaders, deep rippers, water trucks, disc plows, tractors, and ancillary equipment.[42] Decommissioning activities include the removal of all project components, including solar modules; mounting system and steel piles; inverters; electrical cabling; substation and transmission tie-in line; site access roads; and perimeter fencing. Figure C-31, excerpted from Exhibit J, is a table identifying the type and quantity of components to be removed upon project decommissioning.

Figure C-31.
Primary Components of New Frontiers Solar Park Solar Project to be Decommissioned

Component	Quantity	Unit of Measure
Solar modules (approximate)	278,922	Each
Tracking system (equivalent full trackers)	3,206	Tracker
Steel piles	41,678	Each
Inverter stations with concrete pad foundations	35	Each
Perimeter fencing	186,404	Linear Foot
Access roads (approximate)	41,810	Linear Foot
Operations and maintenance building	1	Each
Project substation	1	Each
Overhead transmission line	0.09	Linear Mile

Project components in either working or salvageable condition may be sold in the secondary market or as salvage, providing revenue to offset decommissioning costs. Project components that are not suited for resale or salvage will be disposed of at a licensed facility. [43]

The sequence of decommissioning begins with reinforcing access roads, installing erosion controls and best management practices, de-energizing solar arrays, and other site groundwork. Decommissioning then progresses to the removal of physical project components and concludes with

[41] Exhibit J, page 2.

[42] Exhibit J, page 7.

[43] Exhibit J, page 8.

de-compacting subsoils and restoring and revegetating disturbed land to allow a return to pre-construction land use to the extent possible. The decommissioning plan provided appears adequate and details the installation placement and subsequent removal of each type of project equipment at the facility.

Figure C-32 shows the estimated net $4.7 million decommissioning cost ($7.4 million in costs and $2.7 million in estimated salvage revenue) of the facility, as excerpted from Exhibit J.

Figure C-32.
Net Decommissioning Cost Summary for New Frontiers Solar Park Solar Project

Item	Cost/Revenue
Decommissioning Expenses	$7,375,147
Potential Revenue – salvage value of module components and recoverable materials	$2,657,261
Net Decommissioning Cost	$4,717,886

Recommended mitigation. To mitigate concerns regarding decommissioning:

- New Frontiers Solar Park should follow the decommissioning plan laid out in Exhibit J of the Application submitted to the Siting Board; and
- New Frontiers Solar Park should work with the County to address any concerns that arise at any point regarding its proposed decommissioning plan.