Appendix H. Route Evaluation Study

ROUTE EVALUATION STUDY (DESKTOP)

South Fork Solar Project
Nicholas County, Kentucky

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1. Introduction

1.1 Project Description and Purpose

This Route Evaluation Study has been prepared for South Fork Solar, LLC, who is planning development of the South Fork Solar Project (the Project) is a proposed 45-megawatt (MW) solar facility located on approximately 498 acres (the Project Area) in unincorporated Nicholas County, Kentucky. The Project will consist of photovoltaic (PV) panel arrays, electrical collection lines, inverters, access roads, an operations and maintenance (O&M) building and storage area, temporary laydown yards, perimeter fencing, and electrical interconnection facilities. The interconnection facilities will include a substation, a switchyard, and a nonregulated electric transmission line connecting the substation to the adjacent switchyard and then to an existing transmission line. The facility will deliver power to a single point of interconnection (POI) on the existing Millersburg Junction-Headquarters 69-kilovolt (kV) transmission line, owned by the East Kentucky Power Cooperative (EKPC).

The objective of this study is to support decisions with state and local authorities regarding permitting and road use and maintenance agreements.

For the purpose of this report, the following definitions have been used when describing the project:

- **Project Area** means all land that contains components of the facility, as well as any real property for which land rights are necessary to be secured in order to construct and operate the facility.
- **Facility** means the proposed major utility facility and all associated facilities.

1.2 Methodology

The solar panels will be located in groups at various locations in the Project Area and access to the proposed solar panels for construction and operation will be from state, county and, where necessary, new private gravel access roads. Construction of the facility will cause temporary increases in truck traffic on area roadways due to the delivery of materials and equipment.

This evaluation identifies the probable public routes that can be used to construct and operate the facility. It is assumed that vehicle traffic will originate from an Interstate or 4-lane divided State highway. From these routes, 2-lane State highways will be used to travel to the Project Area. State and county roads will be used to access private leased parcels that make up the Project Area.

For purposes of this evaluation, Interstate, 4-lane and 2-lane State highways were not evaluated because it is assumed that these roadways are sufficient to accommodate the construction and operational traffic with respect to load capacity, geometry, and condition. This evaluation was completed using desktop resources only such as digital aerial photographs, Google Earth, Google Maps Street View, etc. An on-site visual evaluation was not completed.

Research for state permits that are necessary for hauling the materials and equipment is also included in this report.

1.3 Vehicle Types

The size and types of vehicles needed to deliver construction equipment, construction materials and facility components include flatbed or tractor-trailer equipment delivery vehicles and multi-axle dump trucks. In addition, typical automobiles and pickup trucks will be used to transport construction staff and other incidental truck trips.

1.4 Design Vehicle Characteristics

Transportation of construction equipment and materials and facility components will be completed using conventional transportation vehicles such as fixed-bed trucks or tractor-semi-trailers (AASHTO WB-67 or smaller). Construction equipment such as excavators, bull dozers, and wheel tractor-scrapers will be transported to the site on fixed-bed or tractor-semi-trailer low-boy vehicles. Multi-axle dump trucks may also be used. For the vast majority of the vehicles, they will be of legal weight and dimensions. Some limited components such as switchgear or transformers for switchyards and substations may require the use of Oversize/Overweight (OSOW) Permits which are described in Section 3.3 of this report.

2. Probable Route Evaluation

2.1 Roadway Characteristics

Annual Average Daily Traffic (AADT) data for the probable routes was obtained from the Kentucky Transportation Cabinet (KYTC) Traffic Counts online interactive database[1], if available. A detailed roadway capacity analysis was not completed for this study. Based on the AADT (which are relatively low and consistent with rural areas), we do not expect construction or operation of the Facility to create any significant delays for the traveling public. Table 1 summarizes the existing conditions of the roadways based on the desktop evaluation.

TABLE 1: ROADWAY CHARACTERISTICS

Road	From	To	Pavement Width (ft)	No. of Lanes	Pavement Condition	Surface Type	AADT	Speed Limit
KY-386 (Carpenter Rd) *(1.0 mile)*	US-68	CR-1215	~20’	2	Good	Asphalt	358	NP
CR-1215 (Speaser Ln) *(1.1 miles)*	KY-386	Project Boundary	Varies (~11’±)	<2	Fair	Asphalt / Gravel	N/A	NP

Table 1 Notes:

- AADT
  - Annual Average Daily Traffic (2025)
- NP
  - Not Posted; (55mph per Kentucky State Law)
- N/A
  - Not Available
- Pavement Width approximated from Google Earth.
- Lanes are assumed to be a minimum of 8.5 feet wide.
- Pavement Condition:
  - Excellent
    - Recently paved.
  - Good
    - Pavement appears stable with minor cracking and other pavement distress indicators.
  - Fair

[1] Kentucky Transportation Cabinet (KYTC) Traffic Counts: https://maps.kytc.ky.gov/trafficcounts

- Pavement appears stable but may have a higher amount of transverse and longitudinal cracking and other distressed pavement indicators such as edge cracking, rutting, and weathering. Potholes may be present.

- Poor
  - Pavement is severely distressed with excessive cracks, potholes, rutting, and deterioration.

KY-386 (Carpenter Rd)

This Kentucky State Route is an asphalt road in good condition. This road contains center line and edge line striping. This road segment contains no width, horizontal, or vertical obstructions. This road is relatively flat with no significant or abrupt grade changes and contains one railroad crossing. For the purposes of this report, it is assumed that this roadway is sufficient to accommodate the construction and operational traffic with respect to its load capacity and condition.

CR-1215 (Speaser Ln)

This road segment is an asphalt pavement road beginning at the intersection of KY-386 and continuing as asphalt surface for an unknown distance from the intersection before it becomes what appears to be a gravel surface for the remainder of the probable route. The exact location of this surface transition point is unclear based on the currently available information; however, the roadway appears to change to a gravel surface somewhere near the private driveway at the address of 3722 CR-1215.

Based on Google Maps Street View from KY-386 (imagery captured June 2026), the asphalt pavement apron of CR-1215 at the intersection of KY-386 is in poor condition, exhibiting severe alligator cracking, surface deterioration, and large potholes. However, as the road continues further away from the intersection (approximately 40-50 feet), these distresses appear to dramatically lessen. Therefore, the asphalt portion of the roadway is determined to be in overall fair condition.

Based on the available aerial imagery, the gravel surface portions of this roadway are presumed to be in overall fair condition. Variations in the gravel coloring shown in the aerial imagery appear to run along the wheel track areas, which may be conducive of rutting and/or loss of gravel surface.

There appears to be at least two culverts along this road segment per the available aerial imagery, located on each side of, and adjacent to, the property at 3722 CR-1215. Both culverts appear to possibly direct ditch flows from the north to the existing Big Brushy Creek to the south. The conditions of these culverts are unknown. There are no bridges identified along this road segment.

There are several turning movements along this road segment, two of which may be potentially restrictive as it relates to maneuverability of large trucks. Based on topographic contours provided in the KYTC Traffic Counts online interactive database referenced in this section, this roadway appears to contain several gradual grade changes throughout. In addition, there are several trees with canopies that appear to encroach the roadway. This road segment contains no striping.

Summary

Based on the desktop evaluation, these roads can potentially be used for equipment delivery and construction traffic in their current conditions. Potentially restrictive turning movements and vertical obstructions such as overhanging tree branches along CR-1215 (Speaser Ln) should be further evaluated and verified during future on-site evaluations. If these roadways are determined to be designated routes for the project, temporary or permanent road improvements may be necessary to improve their conditions for use.

3. Potential Impacts to Roadways

The development of a solar electric generating facility has the potential to create transportation impacts because of short-term construction activities. The following sections estimate the traffic for construction vehicles during the project and summarizes permitting and road use agreements.

3.1 Estimated Future Traffic

To deliver the construction equipment, materials and construction workers during the construction of the facility, the probable routes will experience increased construction traffic (trucks, equipment, passenger vehicles carrying workers, etc.). Based on Verdantas' significant background of experience working on solar projects and with solar developers, there will be approximately 17 to 18 vehicles per MW of power. Therefore, there are estimated to be 765 to 810 vehicles for the project. The estimated number of vehicles is the estimated total for the duration of the project's construction. The construction daily totals will vary depending on the stage of construction and will be dependent on the selected contractor's schedule.

For the vast majority of the vehicles, they will be of legal weight and dimensions. Some limited components such as switchgear or transformers for switchyards and substations may require the use of overweight/oversize vehicles.

A final delivery route has not yet been finalized, but it is likely the Primary Access Route for delivery of facility components to the Project Area will be from the northwest, originating from U.S. Route 68, and by way of KY-386 to CR-1215 (Speaser Ln) (see Appendix A). Within the Project Area, CR-1215 (Speaser Ln) and new private gravel access roads will likely be used to deliver equipment and materials.

For the majority of the delivery vehicles that are of legal dimensions, no delays to local traffic should be experienced except where the delivery vehicles may need to travel on narrow roadways (less than 2 lanes in width). However, the delays to local traffic should be minimal due to the low traffic volume in the Project Area. When delivery vehicles are travelling on narrow roadways or when there is an occasionally oversized vehicle, traffic control will be utilized to manage local traffic. Because this is an agricultural area, heavier use of roadways by local farmers during planting and harvest seasons will occur.

The Project Area is located within the Nicholas County School District. The Nicholas County School District has 2 schools: Nicholas County Elementary School, and Nicholas County Middle & High School. Of the Nicholas County School District, both schools are approximately the same distance (~7 miles) from the Project Area. Due to the rural area, many of the students are transported by bus. The number of buses and stops within the Project Area would be limited due to the total number of students and low density of homes.

During operation and maintenance of the facility, there will be very little increase in traffic as solar electric generating facilities typically only require a few permanent operations staff. There will be occasional maintenance vehicles and additional traffic will be negligible.

3.2 Impact on Road Infrastructure

It is probable that degradation of roads in the vicinity of the Project Area may occur as a result of the proposed Project. The increase in localized traffic and the continued entry and exit of heavy trucks or equipment have the potential to result in additional wear on the existing roadway and shoulder of the prospective entrances to the Project site. Potential impacts may also occur along the local roadways where sufficient width for passing motorists cannot be obtained affecting the roadway edges and the shoulder area. Potential impacts to the local roadways may also occur where locations of insufficient subbase are encountered. These areas are typically random and smaller in nature.

3.3 Permits and Agreements

Prior to construction, the contractor will obtain all necessary permits from Kentucky Transportation Cabinet (KYTC) and the County Road Department. County officials will be consulted as necessary to obtain any required driveway permits, crossing permits, or other required approvals. Furthermore, the Project will require coordination with Nicholas County officials as necessary for potential impacts associated with construction activities.

Oversize/Overweight (OSOW) Permits are required when loads exceed legal dimensions or weights. OSOW Permits will be obtained from the Kentucky Transportation Cabinet (KYTC) and in accordance with Kentucky law. Table 2 summarizes the vehicle characteristics without OSOW Permits for State of Kentucky highways.

For construction of the facility, the vast majority of the vehicles will meet current legal dimensions and weights. Therefore, OSOW Permits are only anticipated for a few vehicles that may exceed these criteria such as switchgear or transformers.

TABLE 2: DIMENSIONAL CRITERIA FOR VEHICLES WITHOUT OVERSIZE/OVERWEIGHT PERMITS

Vehicle Characteristic	State Highway Limit
Width of vehicle, inclusive of load	8.5 Feet
Height of vehicle, inclusive of load	13.5 Feet
Length of vehicle, inclusive of load and bumpers	53 Feet
Total Weight of vehicle, inclusive of load	80,000 pounds

Table 2 Notes:

- Length represents semi-tractor-semi-trailer combination.
- Maximum weights are determined by the gross weight of the load and the vehicle, and subject to the axle weights.
- See KYTC Legal Dimensions page:

  https://drive.ky.gov/Motor-Carriers/Overweight-Over-Dimensional/Pages/OWOD-Legal-Dimensions.aspx

4. Anticipated Levels of Fugitive Dust

Land disturbing activities associated with the proposed Project may temporarily contribute to an increase in airborne dust particles, known as fugitive dust per the Kentucky Energy and Environment Cabinet. Fugitive dust is defined as dust that is not emitted from a defined point source, which includes paved, unpaved internal roads, and construction sites. Fugitive dust is regulated under Kentucky's state fugitive emissions regulations (401 KAR 63:010).

The primary sources of fugitive dust are expected to be from vehicular traffic on paved and unpaved internal roads, construction activities, and material handling. The anticipated levels of fugitive dust will vary depending on several factors including traffic volume, vehicle speed, road surface conditions, and weather conditions such as wind speed and precipitation. Internal roads to access the site will be gravel, which may result in an increase in airborne dust particles during dry conditions and when internal roadway traffic is heavy during construction.

To address the anticipated levels of fugitive dust, mitigation measures are recommended during construction activities. These include implementing speed limits, barriers, and other traffic control measures, along with the use of water for dust control as authorized under the Kentucky Pollutant Discharge Elimination System as a non-stormwater discharge activity.

5. Impacts to Rail

There are no public rail or bus transit systems in the Project Area.

The Transkentucky Transportation Railroad (TTIS)[2], which is a Class III freight railroad, runs through Nicholas County, adjacent to (not through) the Project Area, and crosses KY-386. Consequently, there will be no impact to rail traffic or a rail system during the duration of construction.

[2] Kentucky Transportation Cabinet (KYTC) Railroads: https://transportation.ky.gov/MultimodalFreight/Pages/Railroads.aspx

6. Conclusions

The vast majority of the vehicles transporting construction equipment, materials and workers are expected to meet legal load and dimensional limits. Some limited components such as switchgear or transformers for switchyards and substations may require Oversize/Overweight (OSOW) Permits. OSOW Permits will be obtained from the KYTC and in accordance with Kentucky law. All work will be coordinated and approved by the appropriate regulatory agencies prior to construction.

For the majority of the delivery vehicles that are of legal dimensions, no delays to local traffic should be experienced except where the delivery vehicles may need to travel on narrow roadways. However, the delays to local traffic should be minimal due to the low traffic volume in the Project Area. When delivery vehicles are traveling on narrow roadways or when there is an occasionally oversized vehicle, traffic control will be utilized to manage local traffic. Because this is an agricultural area, heavier use of roadways by local farmers during planting and harvest seasons will occur.

U.S. Route 68 to to KY-386 to CR-1215 (Speaser Ln) will likely be the Primary Access Route used to approach the project, being the main artery for delivery of facility components. Within the Project Area, CR-1215 (Speaser Ln) and new private gravel access roads will likely be used to deliver equipment and materials. Potentially restrictive turning movements and vertical obstructions such as overhanging tree branches along CR-1215 (Speaser Ln) should be further evaluated and verified during future on-site evaluations. If these roadways are determined to be designated routes for the project, temporary or permanent road improvements may be necessary to improve their conditions for use.

All roads should be monitored during construction for deterioration to ensure they are safe for local traffic. The volume and/or weight of construction traffic may cause accelerated pavement deterioration or stress on drainage structures that could necessitate temporary repairs. After completion of construction activities, there may be improvements required to return the roadways and drainage structures to pre-construction conditions or better.

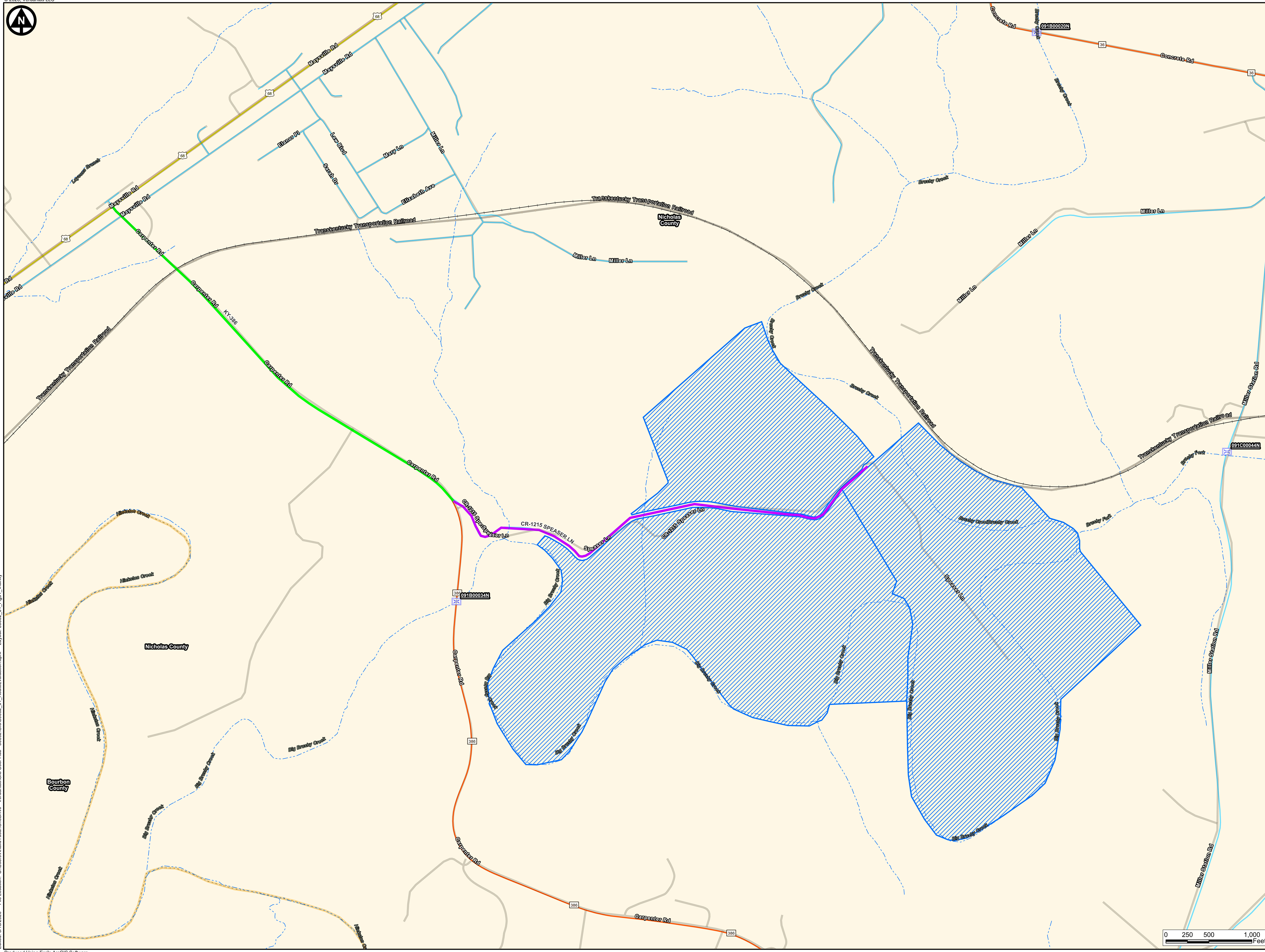
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During operation and maintenance of the facility, there will be very little increase in traffic as solar electric generating facilities typically only require a few permanent operations staff. There will be occasional maintenance vehicles and additional traffic will be negligible.

Appendix A

Project Map

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- South Fork Solar Project Area
- County Boundary
- Stream
- Primary Access Route - US and State Highways
- Probable Route - County and Local Roads
- County Road
- State Route
- US Route
- Railroad
- KYTC Bridge

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Nicholas County, Kentucky

Vicinity Map

Route Evaluation Study (Desktop)
South Fork Solar Project

Project Number	50602
Date	09/2026
Author	kyusuf
Scale	1 in = 500 ft
Figure	1

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