Exhibit J
Construction Route Study and Road Condition Report

Stantec

January 29, 2021

DICKINSON WRIGHT PLLC

Construction Route Study and Road Condition Report

Allen & Auglaize Counties, Ohio

January 29, 2021

Prepared for:

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1.0 INTRODUCTION

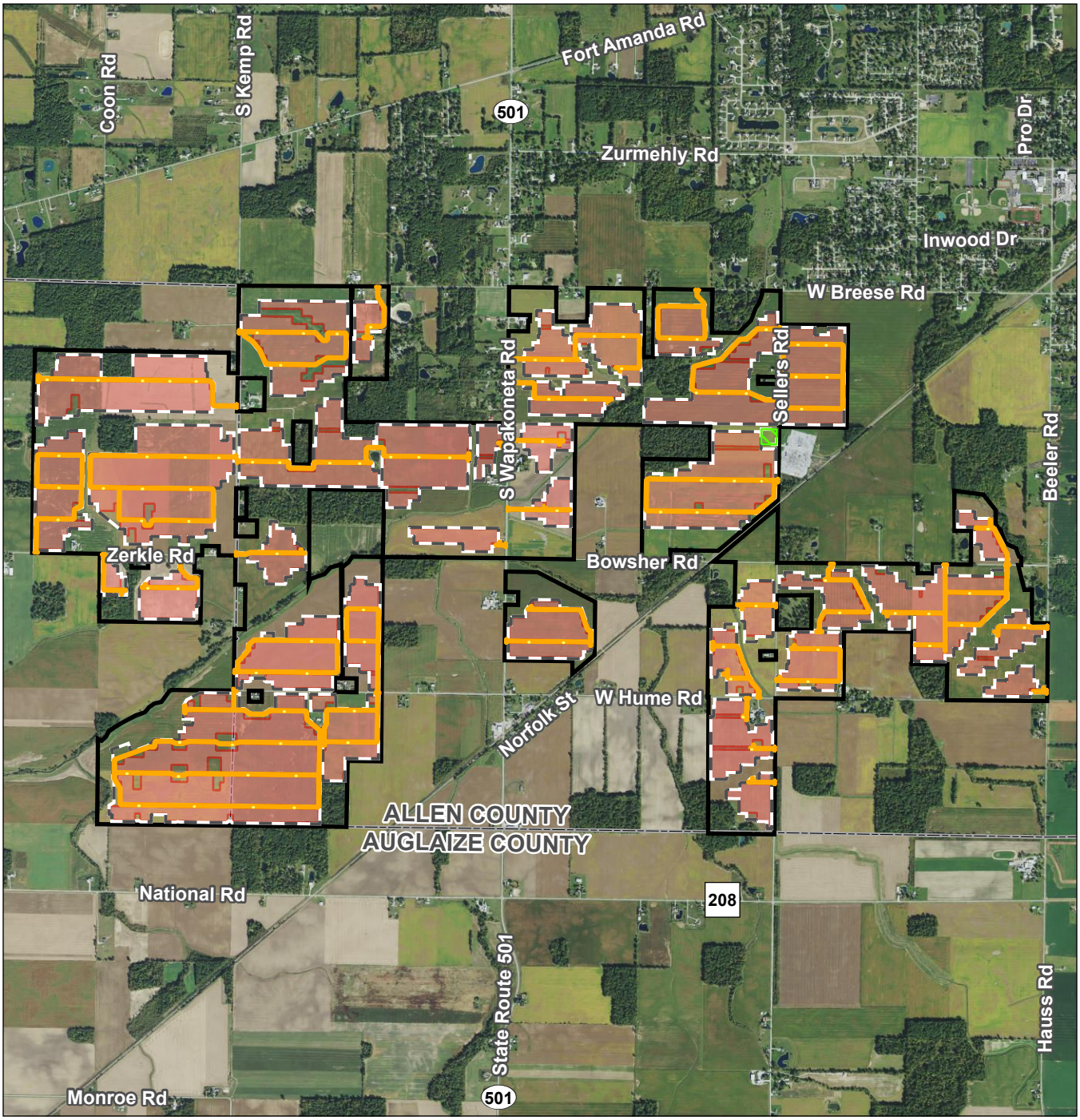
Lightsource bp (LSbp) is proposing to construct a 300-megawatt (MW) alternating current (AC) solar project including photovoltaic solar modules mounted on a racking system, inverters, an electrical collection system transferring power from the inverters to a new project substation, and internal access roads with perimeter fence securing the area (the Project). The Project area includes approximately 2,345 acres of land southwest of the City of Lima, Ohio in Shawnee Township in Allen County, and Logan Township in Auglaize County, Ohio (Figure 1-1).

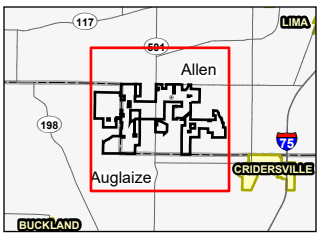
Traffic associated with the construction of the Project brings additional loading and usage not typical to the roadways and therefore the potential can exist for damage beyond extended wear and tear. Stantec Consulting Services Inc. (Stantec) was retained by LSbp to compile data and perform visual inspections on public roadways and infrastructure. Stantec evaluated roadways within the Project area and along access routes to the Project area. We then assessed the suitability of that infrastructure to support the expected construction traffic as well as activity for operations and maintenance (O&M) vehicles throughout the life of the Project.

This construction route and road condition study was completed to support LSbp's application to the Ohio Power Siting Board for a Certificate of Environmental Compatibility and Public Need, specifically addressing the requirements outlined in Ohio Administrative Code Section 4906-4-06(F)(3) and Section 4906-4-06(F)(4) regarding evaluation of the Project's impacts to roads and bridges and a list of all transportation permits needed for construction and operation of the Project.

Stantec completed the site visit and visual inspection on October 7, 2020. The information contained in this report reflects the current site conditions that were observed during the road review. Datasheets and photographs of roadways within the Project area are included in Appendices B and C, respectively.

Over the next year the Applicant is committed to working with Allen and Auglaize Counties along with the townships to execute a Road Use Agreement, for which this baseline report will be a starting point. The Road Use Agreement will specify any updates, repairs and transportation routes are in coordination with the local entities and up to their standards of repair.





Legend

- Project Area
- Solar Array
- Inverter
- Substation
- Fence
- Access Road

0 1,500 3,000 Feet

(At original document size of 8.5x11)
1:36,000

N

Stantec

Notes

1. Coordinate System:
NAD 1983 StatePlane Ohio North FIPS 3401 Feet
2. Data Sources: Stantec, Lightsource, USGS, NADS
3. Orthophotography: 2019 NAIP

Project Location
Allen and Auglaize Counties, Ohio

Prepared by JLH on 2021-01-21
TR by CA on 2021-01-23
IR by CMD on 2021-01-23

Client/Project
Lightsource bp
Birch Solar Project

2028113238

Figure No.
1

Title
Project Area Location Map

V:\2028\Active\2028113238\03_data\gis_cad\gis\mxds\2028113238_BirchSolar\2028113238_BirchSolar_GenLayout.aprx Revised: 2021-01-28 By: JHeideman

Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

2.0 METHODOLOGY

2.1 DESKTOP REVIEW

Stantec reviewed maps of the proposed Project site design to identify roads internal to the Project area and potential roads to be used during construction. Additionally, we studied aerial maps of the roadways, as well as street-level photography for road conditions, existing driveway locations, pavement materials, shoulder materials and surrounding uses. Potential complications and concerns identified as part of the desktop review were noted and are discussed in Section 3.3.

Traffic count information for state routes was acquired from the Ohio Department of Transportation (ODOT) Traffic Survey Report and Maps 2014 Survey Report. County road traffic information was acquired through discussions with the Road Superintendents for Allen and Auglaize County, respectively.

State Route (SR) Highways 501 and 198 were not reviewed in detail for this report, as they were built and maintained to ODOT standards. The expectation is State Highway standards are suitable to accommodate large and heavy loads and for the purpose of this analysis are deemed to be suitable for traffic associated with this Project.

2.2 AGENCY INTERVIEWS

Roads within the Project area fall under the jurisdiction of four agencies: Allen County Engineer's office, Auglaize County Engineer's office, Shawnee Township, and ODOT District 1. Calls were made to the county engineer's offices to obtain additional information pertaining to transportation permit requirements and any other roadway information within their jurisdiction. Their statements regarding safety concerns or access permitting requirements are incorporated as applicable into the various report sections.

2.3 IN PERSON FIELD REVIEW

Upon completion of the desktop reviews and agency interviews, Stantec visited the Project area to complete an on-site evaluation of the roadways that are:

- Within the Project area;
- Adjacent to the Project area; or
- Provide a direct link to accessing the Project from Interstate Highway I-75, SR 501 or 117.

The specified roads were driven to verify the conditions and materials that had been noted in earlier portions of the investigations.

3.0 ROADS AND INFRASTRUCTURE

3.1 EXISTING ROAD INFRASTRUCTURE

The Project is located on largely agricultural lands between SR 198 and Shawnee Road, north of National Road and south of Fort Amanda Road. An existing American Electric Power (AEP) substation, which will be the Project's interconnection point to the electric grid, is located in the northeastern portion of the Project area. SR 501 will serve as the north-south backbone of access in and around the Project. West Breese Road or West Hume Road will service as the main connection to I-75 from the Project.

All preliminary permanent driveway access points to the Project arrays will be along township and county roads and are shown on Figure 1-1. Access Permits are required and must be obtained from the respective County's Engineer Office prior to construction. The jurisdictions associated with the public roads proposed to be used for the project are as follows:

- Allen County – Breese Road, Fort Amanda (east of Kemp Road), and Shawnee Road
- Shawnee Township – Hume Road, Bowsher Road (east of SR 501), Sellers Road, Beller Road, Zurmehly Road, Fort Amanda (west of Kemp Road), and S. Kemp Road
- Auglaize County – National Road, Zerkle Road, Bowsher Road
- ODOT – SR 501 (S. Wapakoneta Road)

An existing Norfolk railroad line runs from the AEP substation, southwest through the western edge of the Project area. There are four uncontrolled crossings in the Project area: National Road, Hume Road, Bowsher Road, and Sellers Road. There is also one controlled crossing on SR 501 south of Hume Road. No train traffic was observed during the site visit. If time sensitive deliveries are traveling from east to west, the usage schedules should be reviewed for possible delays.

Appendix A provides a photo log of the conditions identified during the field surveys.

3.1.1 Preconstruction Roadway Characteristics

Existing vehicle traffic volume was obtained for SR 501 from ODOT using 2014 data. The 2014 Annual Average Daily Traffic (ADT) is listed as 3,650 vehicles per day (VPD). The ADT for township and county roads is not readily available; however, the surrounding roads all have ADTs less than 3,650. Detailed capacity analysis was not completed for this study. However, during the field observation of the surrounding roadways, traffic capacity or flow delays were not observed at any of the locations. The roadways are all rural roadways mainly carrying low volume local and agricultural traffic. On the county and township roads, traffic was heaviest at the intersection of S. Kemp Road and Fort Amanda Road; however, no delays were observed, and the stop sign appeared adequate for traffic flow. SR 501 had the heaviest volume traveling in the north-south direction. No traffic delays were observed for cross traffic.



The roadways have good sight distance along their alignments. Traffic accident data was not reviewed for the purpose of this study; however, no areas of reoccurring concern were noted during discussions with the County Engineers for Allen or Auglaize County. A standard level of care should be taken to properly construct and sign the proposed construction entrances per the ODOT Traffic Control in Work Zone Standards.

All roads are undivided two lane roads with minimal lane widths for each direction. Generally, all roads are in good to fair condition with no major issues noted on any roads. The travel surface varies between county roads and township roads with the county roads being paved asphalt and the township roads typically chip seal. A summary of the roadway characteristics is noted in Table 3-1 below.

TABLE 3-1. ROADWAY CHARACTERISTICS SUMMARY OF SURVEYED ROADS FOR THE BIRCH SOLAR PROJECT

Road Name	# of Lanes	Overall Width	Travel Surface
National Road	2	20’	Asphalt; good to fair surface condition
Zerkle Road	2	20’	Chip Seal; recently top coated, new condition
S. Kempt Road	2	20’	Chip Seal, moderate to fair surface condition
Hume Road (west of SR 501)	2	20’	Chip Seal; fair condition surface condition, no potholes, minor edge cracking, moderate cracking at intersection with SR 501
Hume Road (east of SR 501)	2	20’	Asphalt; good to fair surface condition
SR 501 (Wapak Rd)	2	27’	11.5’ lanes asphalt lanes with 2’ paved shoulder, good surface condition. Built to ODOT standards
W. Breese Road (east of SR 501)	2	20’	Asphalt; good to fair surface condition (direct access to Interstate 75 approximately 4 miles from the project location)
W. Breese Road (west of SR 501)		20’	Asphalt; good to fair surface condition
Fort Amanda Road	2	20’	Chip seal; gravel berm overgrown; good surface condition
Bowsher Road	2	20’	Chip Seal
Sellers Road	2	20’	Chip Seal

3.1.2 Culverts

There are several existing culverts within the Project vicinity ranging in size from 12-inch corrugated metal pipe to large box culverts. The culverts were noted, but not inspected, during the field observation. All appeared to be in good condition. A high-water sign is posted on W. Breese Road between Sellers Road and Wapakoneta Road and should be noted for travel route planning during periods of wet weather conditions. The Allen County Engineer representatives noted no concerns of drainage issues in the area.

A load rated bridge is posted between Zerkle Road and Hume Road along S. Kemp Road. The rated bridge could limit the traffic flow between nearby sites. The bridge mainly impacts construction travel and routes should be reviewed with the limitations of the bridge.

3.1.3 Over Head Clearance

There should not be concerns for the Project with overhead clearance. The roadways are adjacent to mainly open agricultural fields with mostly shallow roadside ditches and few right-of-way obstructions. At the intersection of Nation Road and SR 198 there are utility poles near two corners of the intersection so depending on the direction of travel, the turning radius and offset of the poles may need to be reviewed.



4.0 PROJECT IMPACTS TO THE TRANSPORTATION NETWORK

During the 12-16-month construction phase of the Project, large and heavy vehicles will be utilized. Heavy and large loads associated with the construction stage of this Project are described in the following sections.

Upon completion of construction, the day-to-day operation of the Project will not require large volumes or heavy traffic. Typical vehicles used during day-to-day operations will be pick-up trucks or small vans for regular panel maintenance and site work (vegetation management, etc.).

Timing of construction should be considered when Project planning to minimize the load impact on the roadways to reduce damage. During the spring months (usually up until May), there is snow melt in the area resulting in heavily saturated soils. Due to the reduced stability of the roadways and freeze thaw cycles, most the damage to the roads is seen in the spring months. The county engineer does not typically enforce reduced load limits; however, both country engineers do reserve the ability to reduce limits if a problem is noticed.

4.1 SAFETY CONCERNS

Access on and off existing roadways presents the largest safety concern for roads proposed to be utilized during Project construction and operation. Adherence to posted speed limits is an important factor in reducing accidents. All Township Roads have a speed limit of 55 miles per hour (mph), although they are, not posted. All County Roads have a 55-mph speed limit, not posted, with the exception of W. Breese Road outside the Project boundary where the speed limit is 45 mph. SR 501 has a posted speed limit of 55 mph.

4.1.1 Safety During Construction

When a construction entrance is required along SR 501, permits will be required from ODOT and a Traffic Control Plan must be developed in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).

Speed limits of 55 mph are allowed on many of the township roads located within the Project area. However, for safety reasons, and to prevent pavement damage from loaded trucks, speeds should be limited to 35 mph on roadways in nonstandard condition (either due to weather or changed road conditions). In nonstandard conditions, unloaded trucks can travel at higher speeds up to 45 mph (10 mph below speed limit).

4.1.2 Safety During Operations

During the operational phase of the Project, maintenance vehicles will typically consist of pick-up trucks, small box trucks, vans, and small to mid-sized tractors for vegetation maintenance and other needed equipment maintenance.



Permits for permanent access drives will be obtained from each of the jurisdictions with Shawnee Township having a separate process from Allen County. The Allen County Engineer noted that W. Breese Road has limited access restrictions so permit issuance would require a special review if access were to be granted.

4.1.3 Access Highway Recommendations

For traffic accessing Interstate 75, the most direct route is by way of W. Breese Road. This is a two-lane road mostly carrying local traffic through a predominantly residential area. Shawnee Middle and High School and Apollo Career Center are located a short distance north of W. Breese Road so school traffic should be considered during times of travel.



5.0 CONCLUSION

Stantec performed a roadway condition assessment for the Project. The results of the assessment include the following:

- Permanent access drives may be placed on the nearest convenient roadways without creating a significant safety hazard.
- Construction access drives should be limited to local (township and county) roads whenever feasible.
- Construction travel routes should consider the location of the weight-limited bridge on S. Kemp Road south of Zerkle Road.
- The recommended access route from I-75 to the Project site is W. Breese Road to SR 501.
- Significant culvert damage is not expected based on the existing condition of the infrastructure and the small number of heavy vehicles expected for this Project.
- Pavement damage is not expected to be extensive; however, can be anticipated, especially near construction entrances on roads that are currently in compromised condition.

Appendix A PHOTO LOG



Photo 1. Fort Amanda Rd, at S. Kemp Rd, view west



Photo 2. Fort Amanda Rd, at S. Kemp Rd, view east



Photo 3. Fort Amanda Rd, 0.5 mile west of S. Kemp at culvert, view east



Photo 4. S. Kemp Rd at W. Breese Rd, view north



Photo 5. W. Breese Rd, 0.25 mile from SR 501 at culvert, view west



Photo 6. SR 501, at W. Breese, view south



Photo 7. SR 501, 0.3 mile from W. Breese Rd, view south



Photo 8. SR. 501, 0.5 mile from W. Breese Rd, at bridge, view south



Photo 9. SR 501 culvert at Two Mile Creek, west side (view east)



Photo 10. SR 501 culvert at Two Mile Creek, east side (view west)



Photo 11. SR 501 at box culvert at Bowsher Rd., view west



Photo 12. Bowsher Rd at SR 501, view east



Photo 13. Hume Rd, at Two Mile Creek, view west



Photo 14. Hume Rd, at Two Mile Creek, view west



Photo 15. Hume Rd at bend to S. Kemp Rd, view west



Photo 16. S Kemp Rd at Hume Rd at bend, view north



Photo 17. Load rated bridge on S. Kemp Rd, north of Hume Rd.



Photo 18. Zerkle Rd and S. Kemp Rd intersection, view east



Photo 19. Zerkle Rd at S Kemp Rd, view west



Photo 20. National Road at SR 198, view east



Photo 21. National Road halfway between Bowsher Rd and railroad crossing, view west



Photo 22. National Rd at railroad crossing, view west



Photo 23. National Rd east of Bowsher Rd, view east



Photo 24. SR 501 at Hume Rd, view south towards railroad tracks

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Summary: Application - 15 of 31 (Exhibit J - Construction Route Study and Road Condition Report) electronically filed by Christine M.T. Pirik on behalf of Birch Solar 1, LLC