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February 21, 2023

Via Electronic Filing

Tanowa Troupe
Administration/Docketing
Ohio Power Siting Board
180 East Broad Street, 11th Floor
Columbus, Ohio 43215-3793

Re: Dixon Run Solar, LLC, Case No. 21-768-EL-BGN

Dear Ms. Troupe:

Attached is the Supplemental Glare Analysis. Please note that a link to a video simulation is embedded within the memo at page 3.

Please contact me if you have any questions.

Sincerely,

Kara Herrnstein

Attachment



Memorandum

To: OPSB

From: Environmental Design and Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR)

Date: February 20, 2023

Reference: Dixon Run Solar Project –Visual Resource Assessment Supplemental Information

This memorandum is intended to supplement the Visual Resource Assessment submitted to the Ohio Power Siting Board (OPSB) on September 29, 2021, as Exhibit P to the Application for a Certificate of Environmental Compatibility and Public Need in case number 21-0768-EL-BGN, for the Dixon Run Solar Project (Project). This memorandum is being provided in response to condition #15 proposed by OPSB staff in the November 14, 2022 Staff Report, stating:

The Applicant shall incorporate additional screening along US Route 35 in order to provide suitable concealment of the project site and mitigate any predicted glare at those locations.

Based on the supplemental analysis provided herein, the Applicant has concluded that additional screening would not achieve the goal of reducing visibility of panel arrays or mitigating glare for travelers on US Route 35 (US 35). In fact, the supplemental analysis demonstrates that visibility is expected to be negligible for users of the highway and that additional screening would not provide any benefit. EDR respectfully presents this memorandum for OPSB consideration.

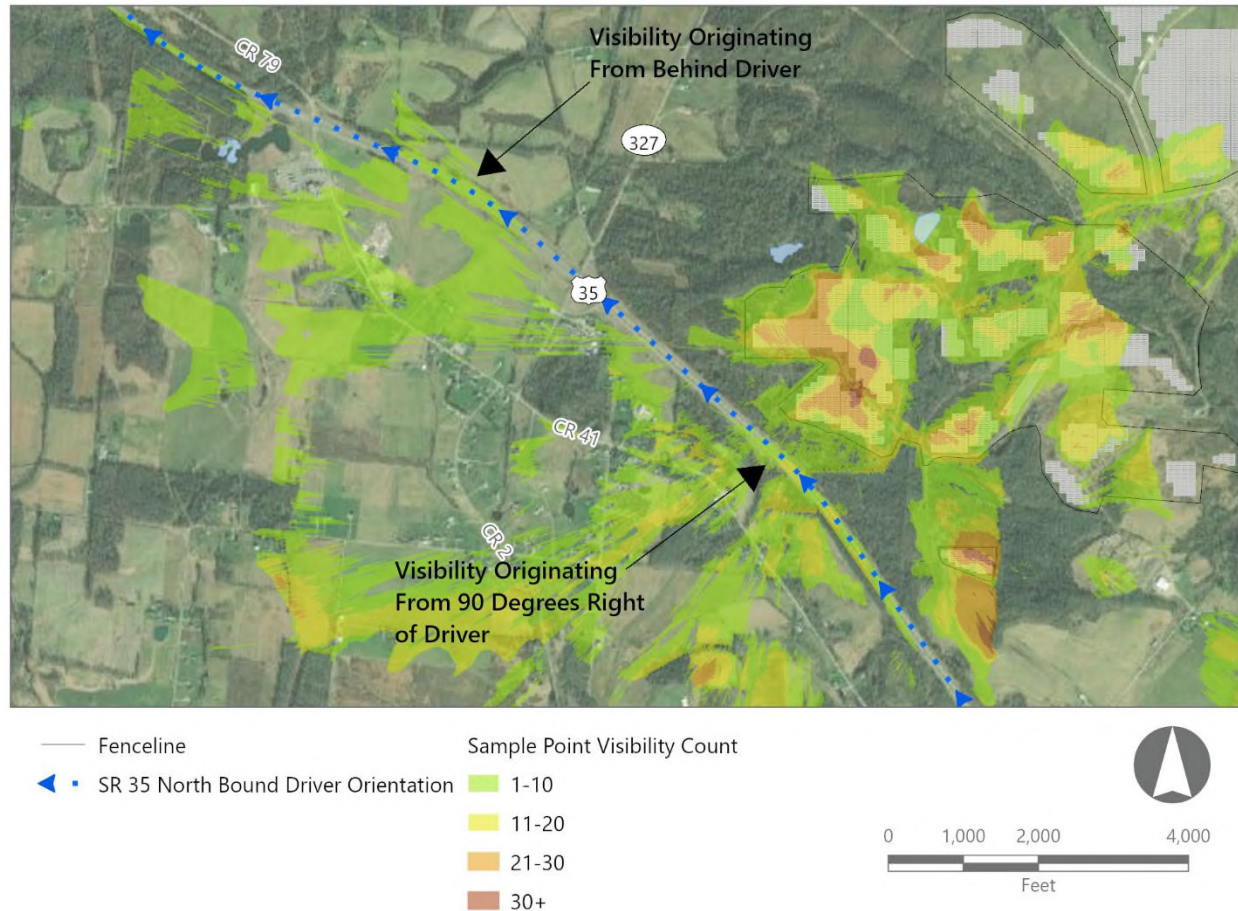
US 35 Viewshed Analysis Results

EDR created a study area to assess the potential visibility of the Project from US 35. This study area encompasses the paved area of the highway within the range of potential Project visibility, as defined by the viewshed analysis conducted for the Visual Resource Assessment. Separate polygons were created for the northbound and southbound lanes of the highway in order to account for the fact that northbound drivers will not have visibility of the Project in their direction of travel.

For the northbound travel lanes, the viewshed analysis results indicate that visibility of some portion of the Project could occur within 6.1 acres of the total 15.9 acres representing the northbound study area. The areas in which visibility is indicated for the northbound lanes are also areas in which the driver of a vehicle would have to look 90 degrees or more away from their direction of travel in order to see the Project, due to the Project's orientation in relation to

northbound US 35 (Inset 1). At such viewing angles, glare is unlikely to pose a potential impact to these drivers. Therefore, no further analysis was completed for the northbound lanes.

Inset 1 Northbound Traveler Orientation Relative to Project



The southbound travel lanes have potential visibility within 5.4 acres (35%) of the 15.2-acre southbound study area. Within this area, EDR completed an analysis to determine the length of potential exposure for southbound drivers. Based on the viewshed analysis results, EDR divided the southbound study area into six discrete areas with potential visibility. These areas total 5,908 linear feet. For a vehicle travelling at the posted speed limit (60 miles per hour), this translates to a total of 67.1 seconds of potential visibility over the total length (Table 1).

The viewshed analysis is based on a grid of sample points spaced approximately 200 feet apart within the panel array areas. The viewshed analysis results include a count of how many sample points contribute to potentially visible areas along US 35. The number of contributing sample points provide an indication of how much of the Project can potentially be seen. As shown in Table 1, very few sample points are visible from US 35 on average, with a total average of 7.9 sample points visible. This suggests that a very small portion of the Project would be visible.

Table 1. Sample Point Visibility Along US 35

Section	Length (Linear Feet)	Visibility (Seconds)	Average Number of Sample Points
1	73.3	0.8	1.8
2	602.4	6.8	1.8
3	217.7	2.5	1.2
4	1,166.9	13.3	1.9
5	203.3	2.3	1.0
6	3,644.4	41.4	8.9
TOTAL	5,908.0	67.1	7.9

Driving Simulation and Photo Documentation

In order to further illustrate the degree of Project visibility, EDR produced a driving simulation from the southbound lane of US 35. This simulation was generated using digital mapping software, a topographic representation of the ground surface based on 2007 lidar data, and the location and height of the proposed Project components. The speed of the driving simulation matches that of the posted speed limit on this section of highway (60 miles per hour). The viewer position represents the height of a driver sitting in the driver's seat of a standard pickup truck (approximately 4.5 feet above ground level). The video also includes a map in the upper right hand corner illustrating the vehicle's position within the viewshed analysis results. This simulation is available to view at [Dixon Run Simulation](#).

As this video illustrates, even when in an area indicated as having potential visibility of the Project, it is frequently impossible to see the Project through the roadside vegetation, as represented by the 2007 lidar data. To further illustrate existing conditions along US 35, EDR staff captured photos representative of a motorist's view along the highway. These photos illustrate the effective screening provided by existing roadside vegetation during leaf off conditions. When compared with the vegetation along US 35 as modeled from the 2007 lidar data, these photos show significant vegetative growth and increased screening from US 35 that has occurred since the lidar data was captured. Since the available lidar data does not capture the last 16 years of growth, potential visibility for motorists on US 35 as shown in the viewshed analysis and driving simulation is overly conservative, and field review confirmed that it overstates the visibility of the Project. A selection of representative photographs are shown in the driving simulation video, and a map showing the locations of those photos is provided as Attachment A. Additional photos taken from US 35 southbound are provided as Attachment B.

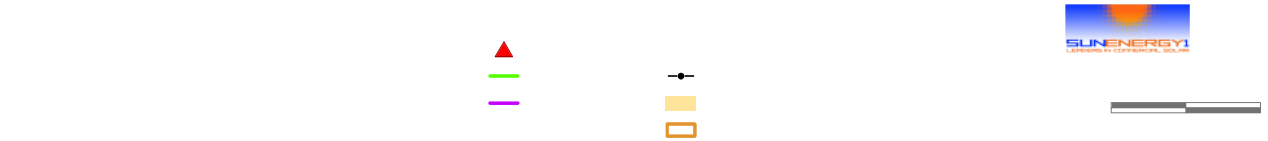
Glare

In areas where small portions of the Project are potentially visible, the Project is unlikely to result in any discernable glare not already experienced by drivers passing other reflective surfaces that are closer to the highway, such as metal barns and silos, water bodies, or even windowpanes of residences and other structures. If any glare is possible from the very small portion of the Project that is potentially visible on US 35, it will also be originating from several hundred to over 1,000 feet from the driver when visibility occurs. Furthermore, while not at as extreme of a viewing angle as from the northbound lanes, drivers in the southbound lanes would also have to direct their attention away from the road in order to see the Project, due to the Project's orientation in relation to US 35.

As discussed in the Glare Analysis (Exhibit K of the Application), potential glare on US 35 would be limited to morning and evening hours, would seldom be visible within motorists' narrow field of view, and would occur primarily in the summer, in leaf-on conditions. When considered together, these factors further reduce the potential occurrences and duration for drivers to experience glare within the 67-second window of travel time on US 35 in which the Project may be visible to these drivers. As such, there is negligible risk that this glare could result in distraction of southbound drivers.

Attachment A

Map of Driving Simulation Photo Locations



Attachment B

Photo Documentation

Photos were captured at evenly-spaced intervals from the southbound direction of travel on US 35. The photos are listed in order as captured, beginning from the intersection with State Route 327 and ending at the intersection with Dixon Run Road.

Photo 1	1	Photo 16.....	8
Photo 2	1	Photo 17.....	9
Photo 3	2	Photo 18.....	9
Photo 4	2	Photo 19.....	10
Photo 5	3	Photo 20.....	10
Photo 6	3	Photo 21.....	11
Photo 7	4	Photo 22.....	11
Photo 8	4	Photo 23.....	12
Photo 9	5	Photo 24.....	12
Photo 10.....	5	Photo 25.....	13
Photo 11.....	6	Photo 26.....	13
Photo 12.....	6	Photo 27.....	14
Photo 13.....	7	Photo 28.....	14
Photo 14.....	7	Photo 29.....	15
Photo 15.....	8	Photo 30.....	15

Dixon Run Solar

Jackson County, Ohio

Glare Analysis Supplemental Memorandum



Photo 1

US 35 -
Southbound



Photo 2

US 35 -
Southbound

Dixon Run Solar

Jackson County, Ohio

Glare Analysis Supplemental Memorandum



Photo 3

US 35 -
Southbound



Photo 4

US 35 -
Southbound

Dixon Run Solar

Jackson County, Ohio

Glare Analysis Supplemental Memorandum



Photo 5

US 35 -
Southbound



Photo 6

US 35 -
Southbound

Dixon Run Solar

Jackson County, Ohio

Glare Analysis Supplemental Memorandum



Photo 7

US 35 -
Southbound



Photo 8

US 35 -
Southbound

Dixon Run Solar

Jackson County, Ohio

Glare Analysis Supplemental Memorandum



Photo 9

US 35 -
Southbound



Photo 10

US 35 -
Southbound

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Glare Analysis Supplemental Memorandum

Photo 11

US 35 -
Southbound



Photo 12

US 35 -
Southbound



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Jackson County, Ohio

Glare Analysis Supplemental Memorandum

Photo 13

US 35 -
Southbound



Photo 14

US 35 -
Southbound



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Jackson County, Ohio

Glare Analysis Supplemental Memorandum



Photo 15

US 35 -
Southbound



Photo 16

US 35 -
Southbound

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Glare Analysis Supplemental Memorandum

Photo 17

US 35 -
Southbound



Photo 18

US 35 -
Southbound



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Photo 19

US 35 -
Southbound



Photo 20

US 35 -
Southbound



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Glare Analysis Supplemental Memorandum



Photo 21

US 35 -
Southbound



Photo 22

US 35 -
Southbound

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Glare Analysis Supplemental Memorandum



Photo 23

US 35 -
Southbound



Photo 24

US 35 -
Southbound

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Photo 25

US 35 -
Southbound



Photo 26

US 35 -
Southbound

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Glare Analysis Supplemental Memorandum



Photo 27

US 35 -
Southbound



Photo 28

US 35 -
Southbound

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Photo 29

US 35 -
Southbound



Photo 30

US 35 -
Southbound

Dixon Run Solar

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Glare Analysis Supplemental Memorandum

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Commission of Ohio Docketing Information System on**

2/21/2023 10:25:48 AM

in

Case No(s). 21-0768-EL-BGN

Summary: Text Supplemental Glare Analysis Memorandum electronically filed by
Teresa Orahood on behalf of Herrnstein, Kara