Exhibit J

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

In the Matter of:

ELECTRONIC APPLICATION OF STMO BN, LLC (STARFIRE) FOR A CERTIFICATE OF CONSTRUCTION FOR AN APPROXIMATELY 200 MEGAWATT MERCHANT SOLAR ELECTRIC GENERATING FACILITY AND NONREGULATED ELECTRIC TRANSMISSION LINE IN KNOTT AND PERRY COUNTIES, KENTUCKY PURSUANT TO KRS 278.700 AND 807 KAR 5:110	)	Case No. 2026-00180

SITE ASSESSMENT REPORT

STMO Bn, LLC (the "Applicant" or "Starfire"), pursuant to KRS 278.708, files this Site Assessment Report (SAR) contemporaneously with its application requesting from the Kentucky State Board on Electric Generation and Transmission Siting (the "Siting Board" or "Board") a Certificate of Construction for an approximately 200 megawatt alternating current (MW) merchant solar electric generating facility and a nonregulated electric transmission line pursuant to KRS 278.704 and 278.714 (the "Project" or "Starfire 2").

As part of the SAR, the Applicant submits herewith SAR Attachments 1-6. The facts on which the SAR is based are contained in the concurrently filed SAR Attachments and other information and the statements further made by Applicant as follows:

I. Description of Proposed Project Site

1. Pursuant to KRS 278.708(3)(a), the proposed Project is situated on an approximately 1,500-acre site located within the unincorporated areas of Knott and Perry Counties, Kentucky (SAR Attachment 1). The Project footprint, generally the area within the fence line where the Project infrastructure will be located, is approximately 1,273 acres. The Project is located on a

former coal mine approximately six miles east of Wendell H. Ford Airport. The Project is north of Kentucky Route 80 with site access from Routes 476 and 1087.

2. Pursuant to KRS 278.708(3)(a)(1), a detailed description of the surrounding land uses is identified in the Property Value Impact Study conducted by Kirkland Appraisals, LLC, and attached as SAR Attachment 2. The adjoining land uses are shown as summarized below.

	Acreage
Residential	4.86%
Agricultural	95.13%
Commercial	0.00%
Recreational	0.00%

3. Pursuant to KRS 278.708(3)(a)(2), SAR Attachment 3 contains the legal description of the proposed site.

4. Pursuant to KRS 278.708(3)(a)(3), the proposed facility layout and a nonregulated electric transmission line route is included in SAR Attachment 1, as well as Application Exhibit C. The layout shows the proposed access to the site. Access to array areas will be provided via access gates. A wildlife friendly fence with wooden posts and wire mesh will enclose the solar panels and associated infrastructure. The Project will comply with federal, state, and local regulations, as applicable, in determining safety signage locations around the facility.

5. Pursuant to KRS 278.708(3)(a)(4), the proposed locations of all Project infrastructure (buildings, roads, and other structures) are included in the Preliminary Site Layout in SAR Attachment 1.

6. Pursuant to KRS 278.708(3)(a)(5), proposed access points and internal roads are shown in SAR Attachment 1. No railways are located within the Project.

7. Pursuant to KRS 278.708(3)(a)(6), limited electric service may be required to provide for the operations and maintenance building and is anticipated to be provided by Kentucky Power. Water resources will be obtained from onsite wells or trucked in from an offsite water purveyor.

8. Pursuant to KRS 278.708(3)(a)(7), Knott and Perry Counties, Kentucky have not enacted any zoning ordinances or setback requirements for the location of the Project and, therefore, no setbacks by such a planning commission exist in any of the counties. Accordingly, the Project will not be required to follow setbacks established by KRS 278.704(3) because no local zoning is present.

9. There are two residential neighborhoods within two thousand (2,000) feet of the proposed structures or facilities of the Project. Pursuant to KRS 278.704(4), the Applicant will seek a deviation from the KRS 278.704(2)(a)(2) setback requirements in a subsequent Motion. There are no schools, hospitals, or nursing homes within two thousand (2,000) feet of the proposed structures or facilities of the Project.

10. Pursuant to KRS 278.708(3)(a)(8), an acoustic assessment report was completed for the Project and is included in SAR Attachment 4. This report evaluated existing noise conditions in the area as well as proposed noise from construction and operation of the Project. Existing noise in the Project area consists of those typical for rural areas, such as various wildlife noises. Proposed noise impacts for construction and operation of the Project are expected to be minimal due to the distance between project infrastructure and any sensitive noises receptors, along with topography of the area. Construction noise may be periodically audible at offsite locations, but will be temporary and mitigated through best management practices and other measures. Proposed noise impacts for operation of the Project are expected to remain below 55 dBA L_{dn}.

11. Because the Project site covers a large area, the noise levels experienced during construction at any Noise Sensitive Area ("NSA") will vary depending on what areas of the site are under construction. However, construction site noise is a temporary activity, and there are no known noise limits or standards applicable to construction. Any temporary impacts will be minimized by construction phasing. These impacts are shown in SAR Attachment 4, Table 2. Average and peak impacts of construction noise at the Project boundary are also shown in SAR Attachment 4, Table A-1.

12. Noise during the operational phase of the Project will be as follows. During daylight hours, panel tracking will cause intermittent noise, with inverters also creating noise impacts. At night, all inverters are inactive, and noise is restricted to the substation. The noise produced by operation of the Project is expected to be negligible due to the distance between Project infrastructure and noise-sensitive receptors. The impacts of noise during operation are shown in SAR Attachment 4, Table A-2 and Figure 1.

II. Compatibility with Scenic Surroundings

13. Pursuant to KRS 278.708(3)(b), the Project has been designed to be compatible with the scenic surroundings. The current area around the site consists of coal mines in various stages of reclamation and second-growth forests.

14. A glare study was completed for the Project and is attached hereto as SAR Attachment 5. Based on the results of the analysis, no glare is expected to surrounding residences, roads, or other receptors because of the Project. The site is not visible from any existing nearby residences due to intervening topography and vegetation. Because of this, no vegetative screening is proposed as part of the Project.

15. The Project will promote overall wildlife movement and habitat connectivity by utilizing wildlife-friendly fencing to maintain integrity of wildlife movement in the area. The Project will also utilize existing trees and habitat as much as possible to facilitate wildlife movement.

16. Vegetative ground cover on the site will be established to the greatest extent possible, up to a total of ninety percent of the Project footprint. To the extent that it will be consistent with any proposed agrivoltaic areas, the Project will utilize native plants and seed mixes .

17. The nonregulated electric transmission line will not significantly alter the viewshed due to presence of other existing transmission lines, the rolling topography, and existing vegetation.

III. Property Value Impacts

18. Pursuant to KRS 278.708(3)(c), Kirkland Appraisals, LLC prepared a report detailing potential property value impacts to owners in relative proximity to the proposed facility, which is attached hereto as SAR Attachment 2. The conclusion of the report, Section H on page 104, reads as follows:

> "Based on the data and analysis in this report, it is my professional opinion that the solar farm proposed at the subject property will have no negative impact on the value of adjoining or abutting property. I note that some of the positive implications of a solar farm that have been expressed by people living next to solar farms include protection from future development of residential developments or other more intrusive uses, reduced dust, odor and chemicals from former farming operations, protection from light pollution at night, it's quiet, and there is no traffic."

IV. Anticipated Noise Levels at Property Boundary

19. Pursuant to KRS 278.708(3)(d), noise will occur intermittently and temporarily during the construction phase of the Project due to increases in vehicular traffic, construction equipment, and assembly of solar facility components. See SAR Attachment 4. Average and peak impacts of construction noise at the Project boundary are shown in SAR Attachment 4, Table 2 and Table A-1. These will be temporary and minimized to the extent practicable through implementation of best

management practices and noise mitigation measures. Noise from construction equipment will vary depending on multiple factors, including the number and class of equipment operating at a location at a given time. Received sound levels will also fluctuate depending on the construction activity, equipment type, and distance between noise source and noise-sensitive receptors. For example, grading and earthmoving equipment, pile drivers, and other construction equipment typically produce sounds between 76 to 90 dBA at 50 feet. Sounds associated with this equipment will primarily occur during initial site preparation activities, such as grading, access road construction, and pile driving for rack support foundations. The Project spans approximately 4.3 miles from east to west, which means that construction noise will not be isolated to any particular area for long periods of time.

20. During operation, the principal sources of noise are the cooling fans on the inverters and transformers, the electrical components of the inverter skids, and the main power transformer at the substation. The Project includes approximately 55 inverter skids and two substation transformers. Substations generate a sound generally described as a low humming. Breaker noise is a sound event of very short duration and is expected to occur only a few times throughout the year. Modeling results show that noise levels resulting from Project operations will be under 55 dBA for all sensitive receptors in the vicinity of the Project.

V. Effect on Road, Railways and Fugitive Dust

21. Pursuant to KRS 278.708(3)(e), a traffic impact study was completed for the Project and is included as SAR Attachment 6. It evaluates the Project's impact on road and rail traffic, including anticipated fugitive dust and degradation of roads within vicinity of the facility.

22. The traffic study demonstrates that the Project will not produce long-term significant adverse traffic impacts during construction or operation. Any impacts to transportation will be

temporary in nature as these will mostly occur during the construction phase of the Project. During the peak of construction, the Project is anticipated to generate approximately 484 vehicle trips on a typical weekday day with 242 vehicle trips occurring during the weekday morning and weekday evening commuter peak hours. There are multiple routes connecting the site to the regional roadway system, which would reduce impacts to any single roadway segment or intersection. Once construction is complete, post-construction operations and maintenance (O&M) activities at the site are not anticipated to result in a measurable increase in vehicle traffic. The Project will not utilize railways for construction or operational activities.

23. The Project will comply with the provisions of 401 KAR 63:010 applicable to controlling fugitive dust emissions. The Project will utilize Best Management Practices (BMPs), which may include activities such as vehicle cleaning stations, water trucks, and dust screens. During construction, water may be applied to the internal road system to reduce dust generation. Water used for dust control is authorized under the Kentucky Pollutant Discharge Elimination System (KPDES) as a non-stormwater discharge activity.

VI. Mitigation Measures

24. Pursuant to KRS 278.708(4), the Applicant has implemented or intends to implement the following mitigation measures for the Project:

25. Starfire's generation facility will be compatible with the existing land uses in the area. Construction methods will be implemented to minimize potential impacts on noise, dust, and traffic. The Project's design will also incorporate avoidance and mitigation measures for sensitive resources such as wetlands and listed plant and animal species.

26. *Noise:* Construction noise mitigation measures may include keeping construction equipment well-maintained and routinely checking vehicles using internal combustion engines

equipped with mufflers to ensure they are in good working order; locating noisy equipment as far from possible from sensitive areas; and implementing a noise complaint hotline with a local representative to address any noise-related issues. Potential noise from pile driving and other construction activities will be mitigated by construction phasing and limiting noise-causing activities to certain hours. Construction activities will be limited to the hours between 6:00 a.m. through 7:00 p.m. Monday through Saturday. Construction will not be conducted on Sundays unless necessary to make up for delays or to meet deadlines. Operational noise will be mitigated by the placement of noise making equipment in such a way as to avoid noise levels above 55 dBA at all existing sensitive receptors.

27. *Wetlands and Streams*: The Project has been designed to avoid impacts to wetlands and waters to the greatest extent practicable. If any impacts are identified in the future, these will be minimized to the extent practicable, and the appropriate Clean Water Act (CWA) Section 404/401 permit will be obtained from the U.S. Army Corps of Engineers (USACE) and the Kentucky Energy & Environment Cabinet — Department for Environmental Protection, Division of Water (KDOW).

28. *Viewscape*: The Project is not visible from existing residences in and around the Project area due to intervening topography and vegetation, so additional screening is not proposed.

29. *Setbacks*: No Project infrastructure will be located within two thousand (2,000) feet of any schools, hospitals, or nursing homes. A request for deviation from KRS 278.704(2) setbacks is forthcoming for the two residential neighborhoods that have residences located within 2,000 feet of Project components.

30. *Stormwater*: The Project will comply with all applicable requirements for management of erosion, sedimentation, and stormwater runoff. The Project will develop and submit a Stormwater

Pollution Prevention Plan (SWPPP) and Notice of Intent for coverage by the Kentucky stormwater construction permit KYR10 to the Kentucky Energy & Environment Cabinet — Department for Environmental Protection, Division of Water The SWPPP will be prepared by a qualified engineer and will include an Erosion and Sediment Control Plan (ESC). The combination of these plans will help reduce potential impacts related to erosion and surface water quality during construction. BMPs may include dewatering procedures, stormwater runoff control measures, stormwater detention, construction of silt fencing, vegetated covers and buffers strips, weep berms, and other innovative natural infrastructure approaches. The Project recognizes the importance of erosion, sedimentation and stormwater control in addition to the unique site conditions in the area and will endeavor to implement new or other BMPs if found better suited for the region and proven to be environmentally and economically feasible and will share learnings to advance science and best practices in the region.

Dated this 25th day of August, 2026.

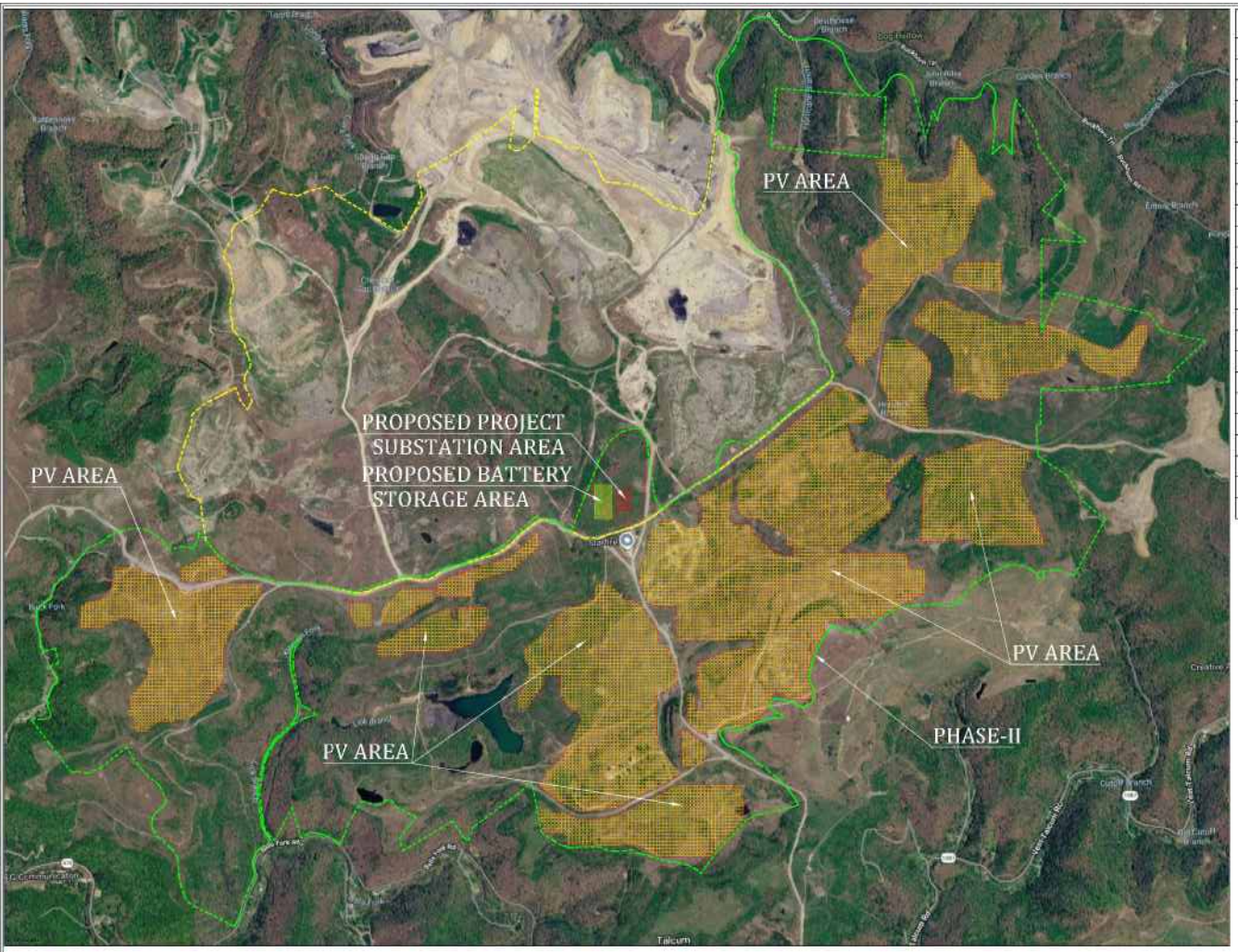
Respectfully submitted,

/s/Gregory T. Dutton
Gregory T. Dutton
Pierce T. Stevenson
FBT GIBBONS LLP
400 West Market Street, Suite 3200
Louisville KY 40202
502-589-5400
502-581-1087 (Fax)
gdutton@fbtgibbons.com
pstevenson@fbtgibbons.com

and

Kathryn A. Eckert
FBT GIBBONS LLP
325 West Main Street, Suite 301
Lexington, KY 40507
(859) 231-0000
(859) 231-0011 (Fax)
keckert@fbtgibbons.com
Counsel for STMO Bn, LLC

SAR Attachment 1



KEY PLAN

Project Details Phase-II	
Site latitude	37°24'11.02"N
Site longitude	83°6'33.31"W
PV DC capacity (Max)	356.093 MWp
PV AC capacity at POI	200MWac
DC AC ratio at POI	1.780
Evacuation voltage	138 kV
Module wattage	620Wp
Module type	Bifacial
Module quantity	574345
Module per string	29
Total strings	19805
PV Inverter rating	4.4MWac
PV Inverter Type	Central
PV Inverter quantity	55
Racking type	Tracker
Pitch	19'-1"
Tracker quantity_4 string	3325
Tracker quantity_3 string	1206
Tracker quantity_2 string	1059
Tracker quantity_1 string	769
Ground coverage ratio	41%
Fenced area(buildable+constraints)	1273 Acres
Site fence length	138648'

NOT FOR CONSTRUCTION



GENERAL NOTES:

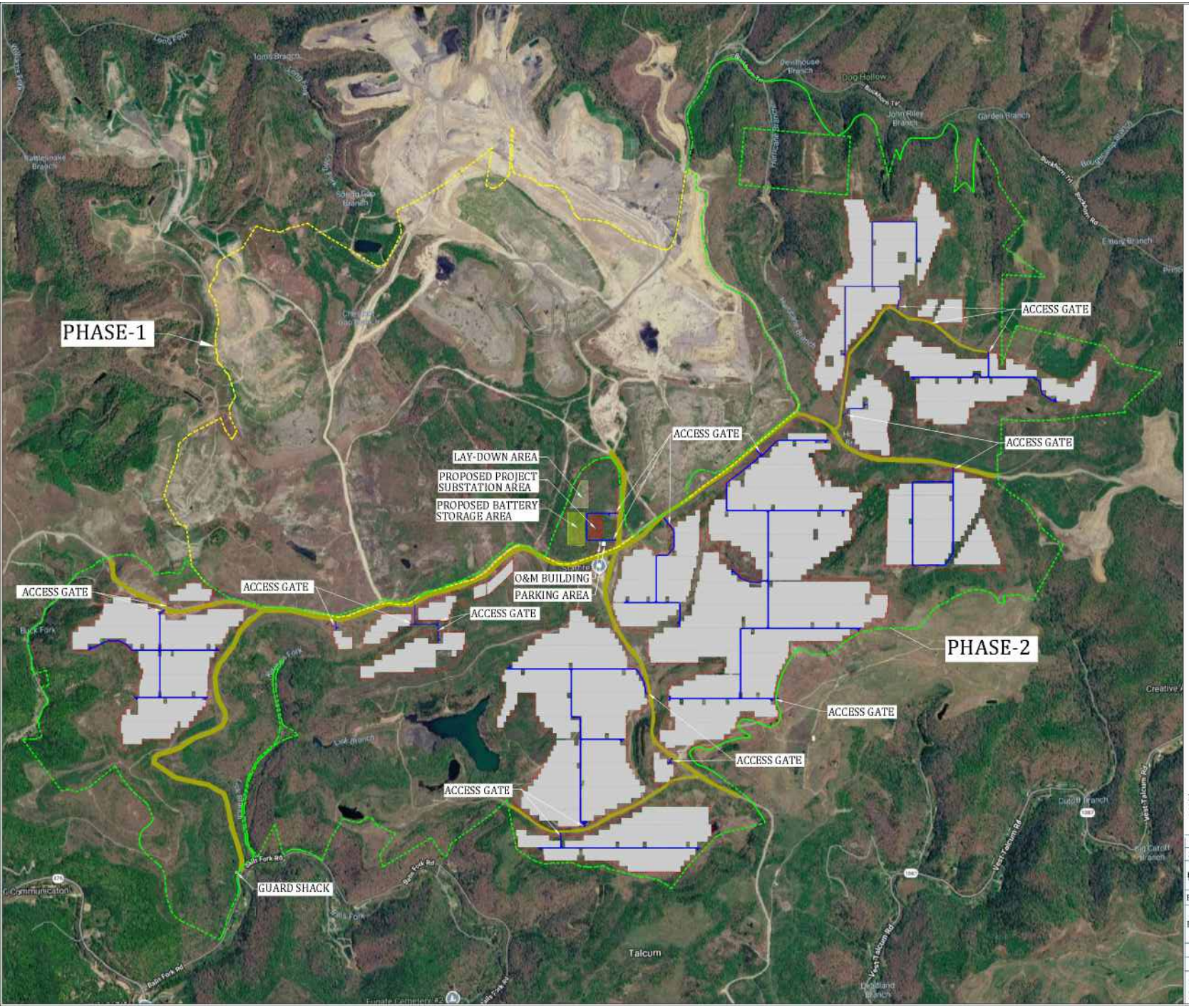
- ALL DIMENSIONS ARE IN FEET
- NAD83 KENTUCKY STATE PLANES, SOUTH ZONE (US FEET)
- PLANT INTERNAL ROAD WIDTH 16' & SUBSTATION ACCESS ROAD WIDTH 24'
- PROJECT SUBSTATION, PARKING, O&M AND LAYDOWN ALL THESE WERE PERMITTED WITH PHASE 1 AND THE SAME FACILITIES WILL UTILIZE IN PHASE 2

DATE	REV.	REVISION HISTORY	DRN. BY	CKD. BY	APPD. BY
2026-08-19	00	FIRST ISSUE	TI	YS	KP

BRIGHTNIGHT	BrightNight Power
PROJECT NAME	STARFIRE
DRAWING TITLE	PLANT LAYOUT PHASE II (PV)

SCALE	PURPOSE CODE	SHEET SIZE	REV.	SHEET
NTS	ISSUE FOR PERMIT	36" x 24"	00	1 OF 2

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NOT FOR CONSTRUCTION

N

W E

S

0' 850' 1700' 3400'

SCALE: 1"=850'

LEGEND:-	
SYMBOL	DESCRIPTION
	SITE FENCE (WILDLIFE FRIENDLY)
	SETBACK LINE FROM FENCE
	PV SITE BOUNDARY (PHASE-I)
	PV SITE BOUNDARY (PHASE-II)
	PV ARRAY
	INVERTER SKID
	ACCESS GATE
	PLANT INTERNAL ROAD
	EXISTING ROAD
	LAY-DOWN AREA
	PROJECT SUBSTATION AREA
	PROPOSED BATTERY STORAGE AREA

NOTE:-
PROJECT SUBSTATION, PARKING, O&M AND LAYDOWN ALL THESE WERE PERMITTED WITH PHASE 1 AND THE SAME FACILITIES WILL UTILIZE IN PHASE 2

DATE	REV.	REVISION HISTORY	DRN. BY	CKD. BY	APPD. BY
2026-08-19	00	FIRST ISSUE	TI	YS	KP

BRIGHTNIGHT	BrightNight Power
PROJECT NAME	STARFIRE
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SCALE	PURPOSE CODE	SHEET SIZE	REV.	SHEET
1"=850'	ISSUE FOR PERMIT	36" x 24"	00	2 OF 2

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SAR Attachment 2

Kirkland Appraisals, LLC

Richard C. Kirkland, Jr., MAI, ARA
9408 Northfield Court
Raleigh, North Carolina 27603
Phone (919) 414-8142
rkirkland2@gmail.com
www.kirklandappraisals.com

August 12, 2026

Mr. Jackson Doughty
BrightNight Power
STMO Bn, LLC
515 N Flagler Drive, Suite 250
West Palm Beach, FL 33401

RE: Starfire Solar Phase II, Knott, Perry Counties, KY

Mr. Doughty

At your request, I have considered the impact of a solar farm proposed to be constructed on a portion of 1,980.08-acre assemblage of land located near Bulan and Dwarf with acreage in Knott, and Perry Counties, Kentucky. This is the second phase of the Startfire Solar project. Phase 1 was approved for a 210 MW project. Phase II is now proposed to be constructed at the same time as Phase I for an additional 200 MW for a total of 410 MW. Specifically, I have been asked to give my professional opinion on whether the proposed solar farm will have any impact on adjoining property value and whether "the location and character of the use, if developed according to the plan as submitted and approved, will be in harmony with the area in which it is to be located."

To form an opinion on these issues, I have researched and visited existing and proposed solar farms in Kentucky as well as other states, researched articles through the Appraisal Institute and other studies, and discussed the likely impact with other real estate professionals. I have not been asked to assign any value to any specific property.

This letter is a limited report of a real property appraisal consulting assignment. My client is BrightNight Power, represented to me by Jackson Doughty. My findings support the Kentucky Siting Board Application. The effective date of this consultation is August 12, 2026.

Conclusion

The adjoining properties are well set back from the proposed solar panels with supplemental landscaping as needed to provide a landscaped buffer. The BESS component is likewise to be set with sufficient distance and screening from homes to protect nearby property values.

The sale/resale analysis and 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.

Data from the university studies, broker commentary, and other appraisal studies support a finding of no impact on property value adjoining a solar farm with proper setbacks and landscaped buffers.

Very similar solar farms in very similar areas have been found by hundreds of towns and counties not to have a negative effect to abutting or adjoining properties. Many of those findings of no impact have been upheld by NC appellate and superior courts such as:

Dellinger V Lincoln County 789 S.E.2d 21 on July 18, 2016

Ecoplexus V Currituck County COA17-656 on December 19, 2017

Innovative 55 V Robeson County COA16-1101 on June 6, 2017

Based on the data and analysis in this report, it is my professional opinion that the solar farm proposed at the subject property will have no impact on the value of adjoining or abutting properties and that the proposed use is in harmony with the area in which it is located.

The data that I have researched includes new home construction as well as new subdivision developments adjoining solar project which speaks to a finding of no impact on adjoining uses and development potential.

I note that some of the positive implications of a solar farm that have been expressed by people living next to solar farms include protection from future development of residential developments or other more intrusive uses, reduced dust, odor and chemicals from former farming operations, protection from light pollution at night, it is quiet, and there is minimal traffic.

If you have any questions please contact me.

Sincerely,





Richard C. Kirkland, Jr., MAI, ARA
NC Certified General Appraiser A4359
KY Certified General Appraiser #5522

Executive Summary

University Studies:

Studies Cited:	9
Range of Impacts:	-7.90 to +19.40%
Average Range of Impacts:	-2.50% to +2.56%

Assessor Surveys:

Assessors:	189
No Impact Responses:	172
Yes Impact Responses:	0
No Response:	17

Sale/Re-Sale Analysis

KY Sales Analyzed:	11
Range of Impacts:	-7% to +15%
Median:	+2%
National Sales Analyzed:	47
Range of Impacts:	-11% to +15%
Median:	+3%

Matched Pair/Paired Sale Analysis

KY Sales Analyzed:	11
Range of Impacts:	-7% to +7%
Median:	-1%
National Sales Analyzed:	174
Range of Impacts:	-10% to +12%
Median:	+1%

Broker Comments

KY Brokers Interviewed:	7
No Impact Responses:	7
Yes Impact Responses:	0
National Brokers Interviewed:	79
No Impact Responses:	77
Yes Impact Responses:	2

Conclusion:

Data Points Considered:	481
Range of Impacts:	-11% to +19%
Conclusion:	0%

Comments:

The data researched consistently shows impacts that hover in the +/-5% impact range, which is consistent with typical market imperfection.

The responses from all of the assessors and all of the brokers interviewed in this analysis shows no impact on property value. The assessors interviewed confirmed in all cases that they do in fact have utility scale solar in their jurisdiction and that they have valued the sites of the solar projects as well. The brokers interviewed all sold specific homes adjoining solar projects and their comments are specific to that one sale.

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I. Proposed Project and Adjoining Uses

Proposed Use Description

This 200 MW solar farm is an addition to Phase 1 which had 210 MW, is proposed to be constructed on a 1,980.08-acre assemblage of land located near Buland and Dwarf with acreage in Knott, and Perry Counties, Kentucky.

Adjoining Properties

I have considered adjoining uses and included a map to identify each parcel's location. Based on the current site plan the closest adjoining home will be 884 feet from the nearest panel according to my client. The nearest home in a residential subdivision will be 3,606 feet from the nearest panel. Measurements given the local mapping software issues along with the significant terrain issues is challenging so I have not attempted measurements on my own.

Adjoining land is primarily a mix of residential and agricultural uses, which is very typical of solar farm sites.

The maps and adjoining uses is for the larger combined Phase I and Phase II.

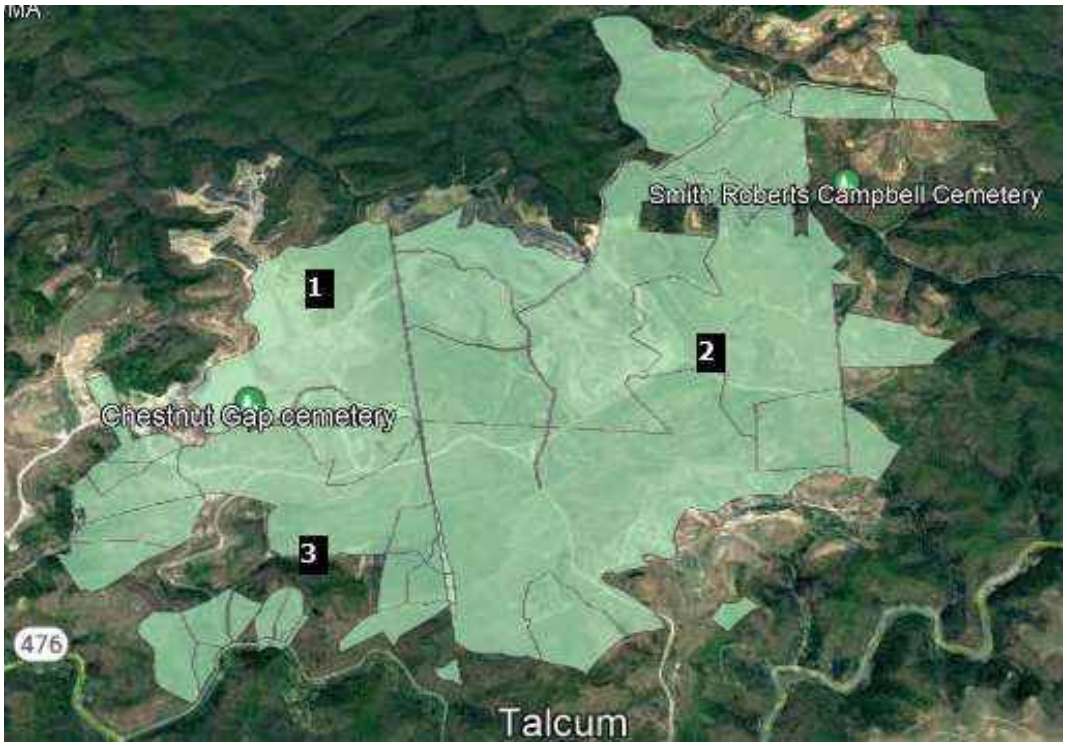
The breakdown of those uses by acreage and number of parcels is summarized below.

Adjoining Use Breakdown

	Acreage	**Parcels**
Residential	4.86%	54.17%
Agricultural	95.13%	45.83%
Commercial	0.00%	0.00%
Recreational	0.00%	0.00%
Total	**100.00%**	**100.00%**

GoogleEarth Map of Overall Project

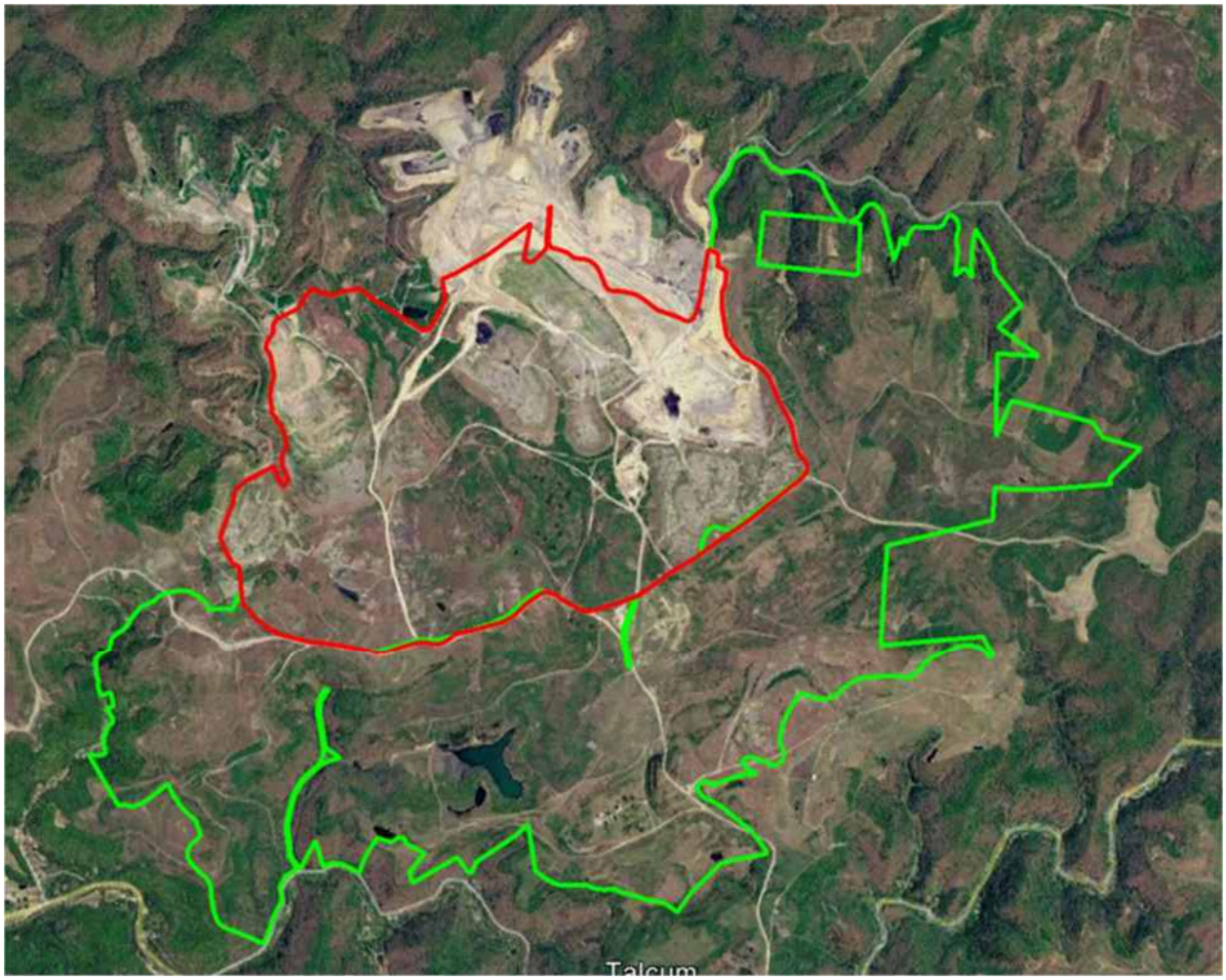
Numbers on this map correlate to the following maps from County GIS showing adjoining parcels – The 2nd Map shows Phase I of the in the bright green line within the larger assemblage of land with Phase II being located in the area outside of the bright green line





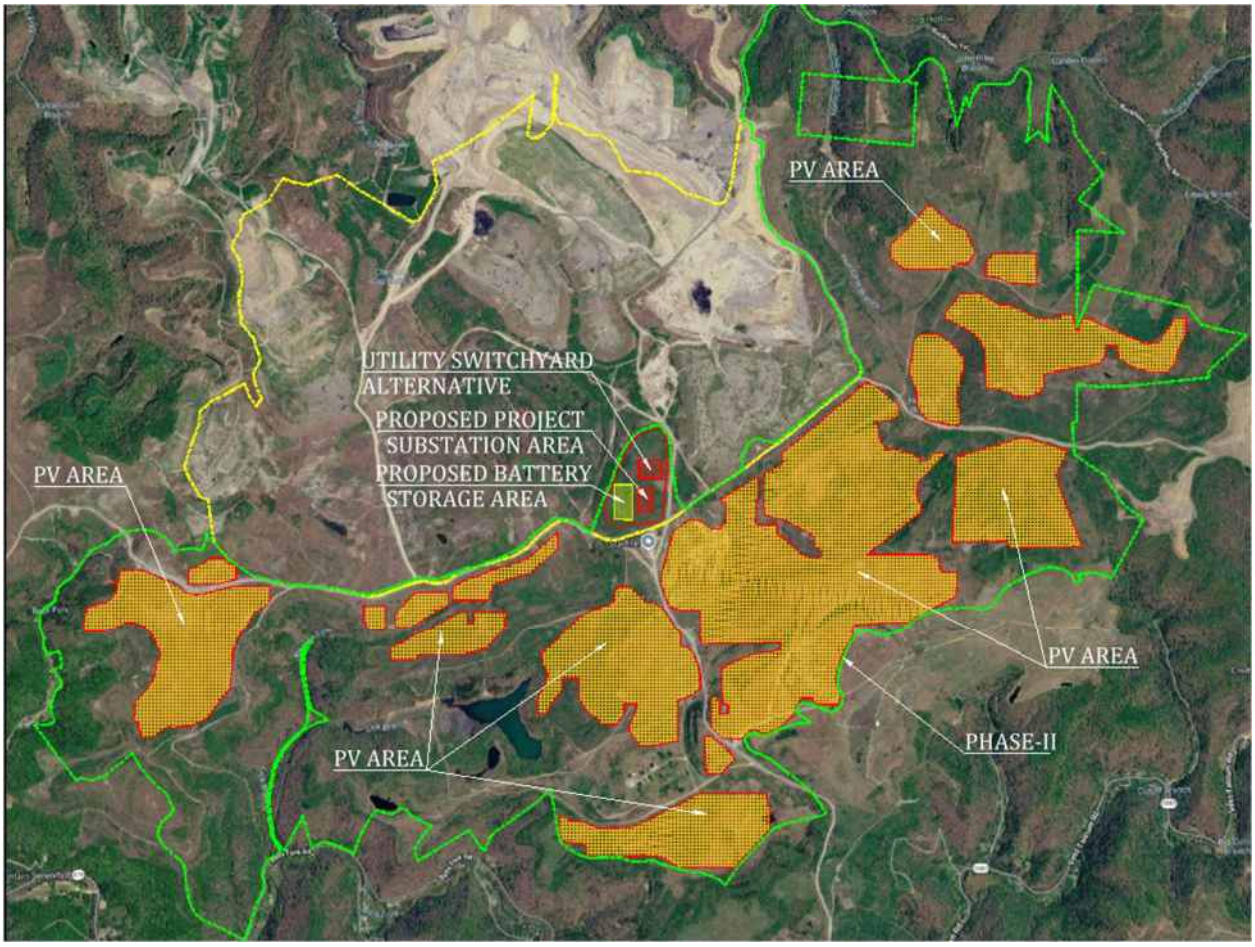
GoogleEarth Map of Specific Area of Proposed Solar Project

Phase I in Red, Phase II in Green



Siteplan of Area of Proposed Solar Project

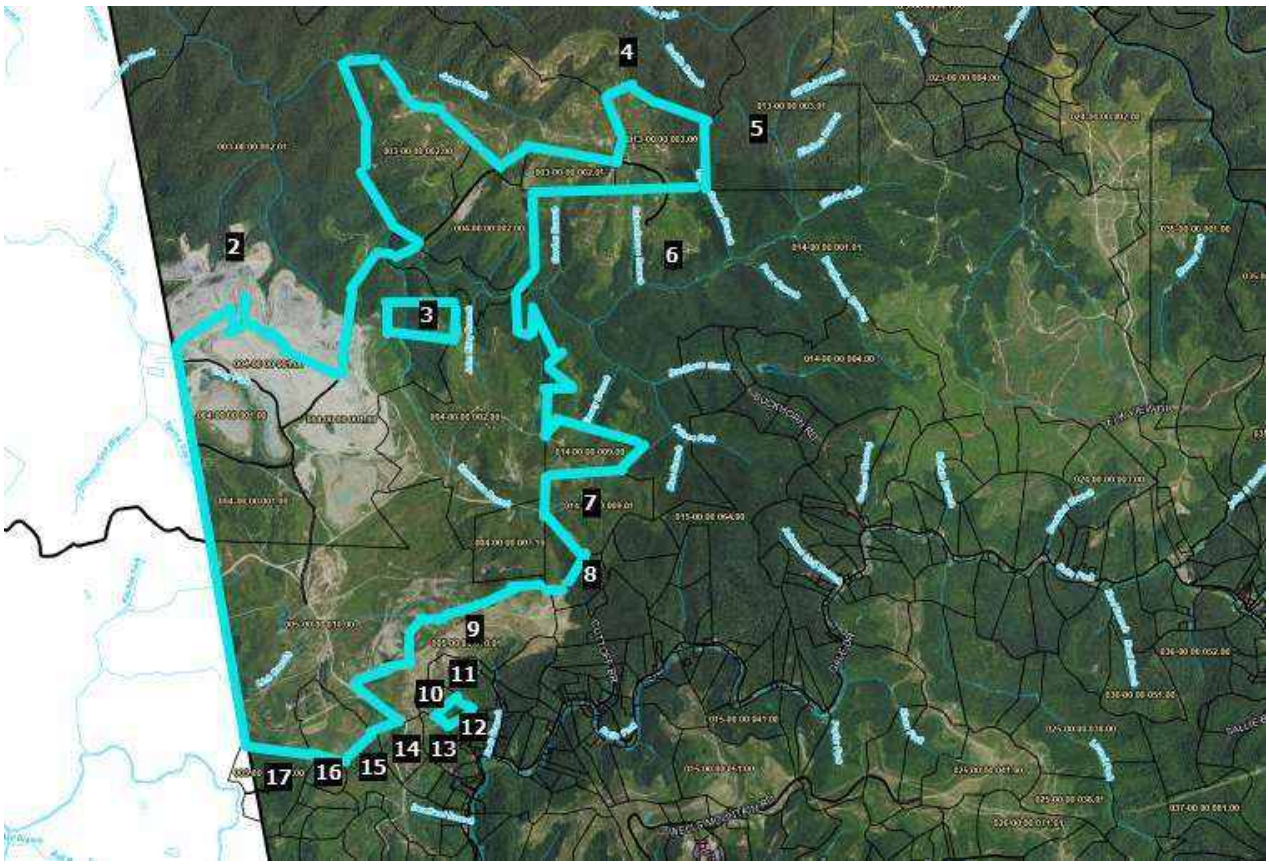
Phase I in Yellow, Phase II in Green with panel locations shown in Orange



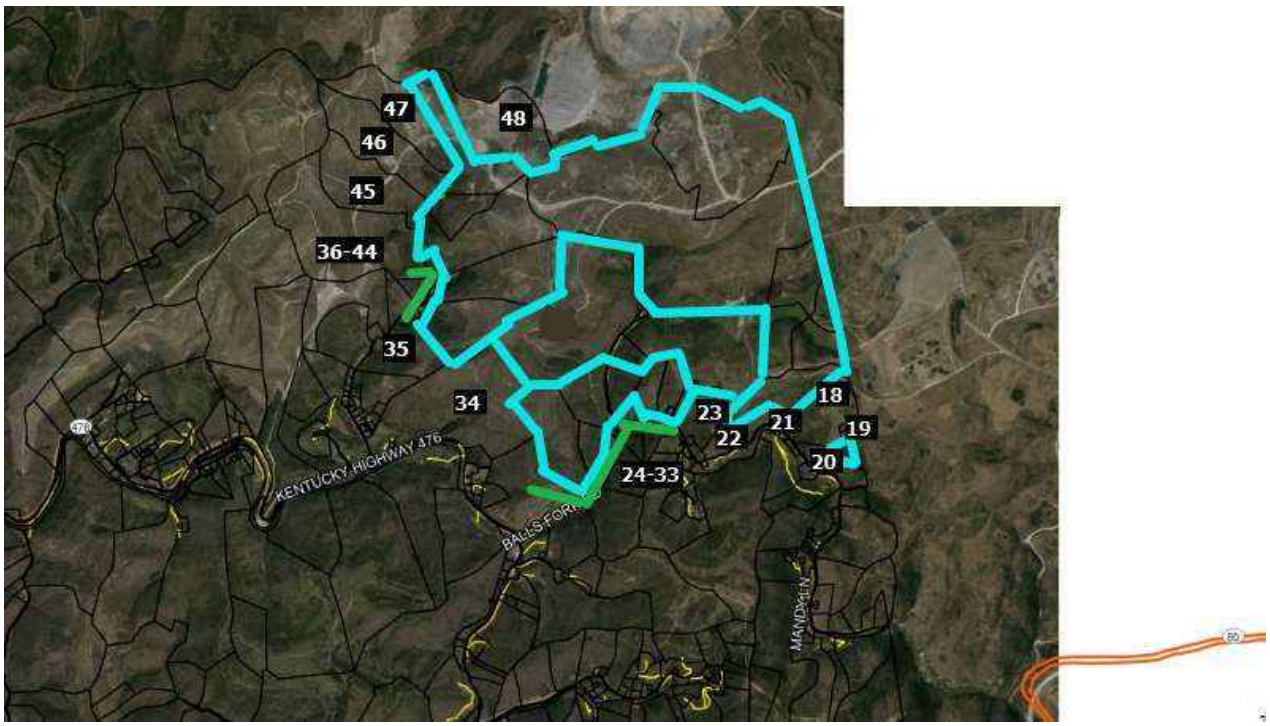
Map 1 – Breathitt County GIS



Map 2 – Knott County GIS



Map 3 – Perry County GIS



Surrounding Uses

#	MAP ID	Owner	GIS Data Acres	Present Use	Adjoin Acres	Adjoin Parcels
1	205-00-00-011.00	ICG	3341.00	Agricultural	30.71%	2.08%
2	003-00 00 002.01	ICG	2265.81	Agricultural	20.83%	2.08%
3	004-00 00 003.00	University	60.00	Agricultural	0.55%	2.08%
4	013-00 00 001.00	University	1558.10	Agricultural	14.32%	2.08%
5	013-00 00 003.01	ICG	351.52	Agricultural	3.23%	2.08%
6	014-00 00 001.01	ICG	1672.00	Agricultural	15.37%	2.08%
7	014-00 00 009.01	Mountain	50.00	Agricultural	0.46%	2.08%
8	015-00 00 061.00	Mountain	35.00	Agricultural	0.32%	2.08%
9	005-00 00 010.01	ICG	314.49	Agricultural	2.89%	2.08%
10	005-00 00 009.00	Mountain	20.00	Residential	0.18%	2.08%
11	005-00 00 005.00	Mountain	50.00	Agri/Res	0.46%	2.08%
12	005-00 00 008.00	Mountain	30.00	Agricultural	0.28%	2.08%
13	005-20 00 005.00	Ritchie	42.75	Agri/Res	0.39%	2.08%
14	005-20 00 003.00	Core	45.00	Agricultural	0.41%	2.08%
15	005-20 00 002.00	Core	120.00	Agricultural	1.10%	2.08%

Surrounding Uses

#	MAP ID	Owner	GIS Data Acres	Present Use	Adjoin Acres	Adjoin Parcels
16	005-00 00 019.02	Core	20.00	Residential	0.18%	2.08%
17	005-00 00 018.00	Fugate	75.00	Agricultural	0.69%	2.08%
18	131-00 00 027.03	Dalton	43.81	Agri/Res	0.40%	2.08%
19	131-00 00 027.02	Glover	1.45	Residential	0.01%	2.08%
20	131-00 00 029.00	ICG	17.60	Agricultural	0.16%	2.08%
21	131-00 00 025.00	Moore	0.65	Residential	0.01%	2.08%
22	131-00 00 024.00	Smith	20.45	Agricultural	0.19%	2.08%
23	131-00 00 016.00	Appalachia	27.95	Agricultural	0.26%	2.08%
24	131-00 00 014.01	Crawford	1.15	Residential	0.01%	2.08%
25	131-00 00 012.00	Kentucky	6.20	Residential	0.06%	2.08%
26	131-00 00 011.00	Stacy	7.50	Residential	0.07%	2.08%
27	131-00 00 006.00	Napier	2.20	Residential	0.02%	2.08%
28	131-00 00 007.00	Bartoe	3.70	Residential	0.03%	2.08%
29	131-00 00 008.00	Little	1.55	Residential	0.01%	2.08%
30	131-00 00 009.00	Embry	1.40	Residential	0.01%	2.08%
31	132-00 00 001.00	Stacy	1.40	Residential	0.01%	2.08%
32	132-00 00 002.00	Little	37.80	Agricultural	0.35%	2.08%
33	113-00 00 002.00	Chaneys	60.20	Agricultural	0.55%	2.08%
34	112-00 00 047.0	Spurlock	136.00	Agri/Res	1.25%	2.08%
35	112-00 00 021.00	Stacy	38.00	Agri/Res	0.35%	2.08%
36	112-00 00 019.00	Ritchie	1.00	Residential	0.01%	2.08%
37	112-00 00 017.00	Davis	0.50	Residential	0.00%	2.08%
38	112-00 00 016.00	Calhoun	1.35	Residential	0.01%	2.08%
39	112-00 00 009.00	Slover	6.20	Residential	0.06%	2.08%
40	112-00 00 009.02	Holland	0.65	Residential	0.01%	2.08%
41	112-00 00 009.01	Slover	0.30	Residential	0.00%	2.08%
42	112-00 00 010.00	Campbell	0.25	Residential	0.00%	2.08%
43	112-00 00 005.00	ICG	140.00	Agri/Res	1.29%	2.08%
44	112-00 00 007.00	ICG	1.40	Residential	0.01%	2.08%
45	112-00 00 001.00	ICG	63.00	Agricultural	0.58%	2.08%
46	111-00 00 001.00	ICG	70.00	Agricultural	0.64%	2.08%
47	111-00 00 002.00	ICG	55.00	Agricultural	0.51%	2.08%
48	111-00 00 004.00	ICG	80.00	Agricultural	0.74%	2.08%
		Total	**10879.330**		**100.00%**	**100.00%**

II. Demographics

I have pulled the following demographics for a 1-mile, 3-mile and 5-mile radius around the proposed solar farm project.

I note that there is a projected a decline in population projected in all three of these rings.



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Housing Profile

42053 2
42053, Kevil, Kentucky
Ring: 1 mile radius

Prepared by Esri
Latitude: 37.12216
Longitude: -88.85959

Population		Households	
2020 Total Population	53	2024 Median Household Income	$57,497
2024 Total Population	57	2029 Median Household Income	$64,160
2029 Total Population	56	2024-2029 Annual Rate	2.22%
2024-2029 Annual Rate	-0.35%		

	Census 2020		2024		2029	
Housing Units by Occupancy Status and Tenure	Number	Percent	Number	Percent	Number	Percent
Total Housing Units	25	100.0%	25	100.0%	25	100.0%
Occupied	25	100.0%	25	100.0%	25	100.0%
Owner	22	88.0%	22	88.0%	22	88.0%
Renter	3	12.0%	3	12.0%	3	12.0%
Vacant	3	12.0%	0	0.0%	0	0.0%

	2024		2029	
Owner Occupied Housing Units by Value	Number	Percent	Number	Percent
Total	21	100.0%	22	100.0%
<$50,000	0	0.0%	0	0.0%
$50,000-$99,999	0	0.0%	0	0.0%
$100,000-$149,999	9	42.9%	8	36.4%
$150,000-$199,999	1	4.8%	1	4.5%
$200,000-$249,999	1	4.8%	2	9.1%
$250,000-$299,999	0	0.0%	1	4.5%
$300,000-$399,999	0	0.0%	1	4.5%
$400,000-$499,999	0	0.0%	1	4.5%
$500,000-$749,999	10	47.6%	8	36.4%
$750,000-$999,999	0	0.0%	0	0.0%
$1,000,000-$1,499,999	0	0.0%	0	0.0%
$1,500,000-$1,999,999	0	0.0%	0	0.0%
$2,000,000+	0	0.0%	0	0.0%
Median Value	$225,000		$250,000	
Average Value	$370,238		$350,000	

Census 2020 Housing Units	Number	Percent
Total	25	100.0%
Housing Units In Urbanized Areas	0	0.0%
Rural Housing Units	25	100.0%

Census 2020 Owner Occupied Housing Units by Mortgage Status	Number	Percent
Total	21	100.0%
Owned with a Mortgage/Loan	13	61.9%
Owned Free and Clear	8	38.1%

Data Note: Persons of Hispanic Origin may be of any race.
Source: Esri forecasts for 2024 and 2029. U.S. Census Bureau 2020 decennial Census data.

July 02, 2024

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Housing Profile

42053 2
42053, Kevil, Kentucky
Ring: 3 mile radius

Prepared by Esri
Latitude: 37.12216
Longitude: -88.85959

Population		Households	
2020 Total Population	1,673	2024 Median Household Income	$61,065
2024 Total Population	1,655	2029 Median Household Income	$68,339
2029 Total Population	1,637	2024-2029 Annual Rate	2.28%
2024-2029 Annual Rate	-0.22%		

	Census 2020		2024		2029	
Housing Units by Occupancy Status and Tenure	Number	Percent	Number	Percent	Number	Percent
Total Housing Units	751	100.0%	749	100.0%	749	100.0%
Occupied	670	89.2%	657	87.7%	651	86.9%
Owner	558	74.3%	558	74.5%	556	74.2%
Renter	112	14.9%	99	13.2%	95	12.7%
Vacant	82	10.9%	92	12.3%	98	13.1%

	2024		2029	
Owner Occupied Housing Units by Value	Number	Percent	Number	Percent
Total	558	100.0%	555	100.0%
<$50,000	41	7.3%	35	6.3%
$50,000-$99,999	39	7.0%	34	6.1%
$100,000-$149,999	138	24.7%	112	20.2%
$150,000-$199,999	61	10.9%	53	9.5%
$200,000-$249,999	41	7.3%	61	11.0%
$250,000-$299,999	46	8.2%	57	10.3%
$300,000-$399,999	41	7.3%	61	11.0%
$400,000-$499,999	15	2.7%	27	4.9%
$500,000-$749,999	134	24.0%	114	20.5%
$750,000-$999,999	1	0.2%	1	0.2%
$1,000,000-$1,499,999	1	0.2%	0	0.0%
$1,500,000-$1,999,999	0	0.0%	0	0.0%
$2,000,000+	0	0.0%	0	0.0%
Median Value	$200,000		$235,656	
Average Value	$288,038		$291,396	

Census 2020 Housing Units	Number	Percent
Total	751	100.0%
Housing Units In Urbanized Areas	0	0.0%
Rural Housing Units	751	100.0%

Census 2020 Owner Occupied Housing Units by Mortgage Status	Number	Percent
Total	558	100.0%
Owned with a Mortgage/Loan	329	59.0%
Owned Free and Clear	229	41.0%

Data Note: Persons of Hispanic Origin may be of any race.
Source: Esri forecasts for 2024 and 2029. U.S. Census Bureau 2020 decennial Census data.

July 02, 2024

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Housing Profile

42053 2
42053, Kevil, Kentucky
Ring: 5 mile radius

Prepared by Esri
Latitude: 37.12216
Longitude: -88.85959

Population		Households	
2020 Total Population	4,494	2024 Median Household Income	$64,240
2024 Total Population	4,450	2029 Median Household Income	$74,350
2029 Total Population	4,402	2024-2029 Annual Rate	2.97%
2024-2029 Annual Rate	-0.22%		

	Census 2020		2024		2029	
Housing Units by Occupancy Status and Tenure	Number	Percent	Number	Percent	Number	Percent
Total Housing Units	2,091	100.0%	2,084	100.0%	2,084	100.0%
Occupied	1,892	90.5%	1,870	89.7%	1,852	88.9%
Owner	1,556	74.4%	1,572	75.4%	1,565	75.1%
Renter	336	16.1%	298	14.3%	287	13.8%
Vacant	210	10.0%	214	10.3%	231	11.1%

	2024		2029	
Owner Occupied Housing Units by Value	Number	Percent	Number	Percent
Total	1,573	100.0%	1,566	100.0%
<$50,000	149	9.5%	127	8.1%
$50,000-$99,999	152	9.7%	130	8.3%
$100,000-$149,999	282	17.9%	235	15.0%
$150,000-$199,999	240	15.3%	217	13.9%
$200,000-$249,999	124	7.9%	154	9.8%
$250,000-$299,999	186	11.8%	206	13.2%
$300,000-$399,999	171	10.9%	225	14.4%
$400,000-$499,999	55	3.5%	78	5.0%
$500,000-$749,999	206	13.1%	187	11.9%
$750,000-$999,999	4	0.3%	4	0.3%
$1,000,000-$1,499,999	4	0.3%	3	0.2%
$1,500,000-$1,999,999	0	0.0%	0	0.0%
$2,000,000+	0	0.0%	0	0.0%
Median Value	$192,396		$224,026	
Average Value	$250,016		$261,526	

Census 2020 Housing Units	Number	Percent
Total	2,091	100.0%
Housing Units In Urbanized Areas	0	0.0%
Rural Housing Units	2,091	100.0%

Census 2020 Owner Occupied Housing Units by Mortgage Status	Number	Percent
Total	1,557	100.0%
Owned with a Mortgage/Loan	887	57.0%
Owned Free and Clear	670	43.0%

Data Note: Persons of Hispanic Origin may be of any race.
Source: Esri forecasts for 2024 and 2029. U.S. Census Bureau 2020 decennial Census data.

July 02, 2024

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III. Methodology and Discussion of Issues

Standards and Methodology

I conducted this analysis using the standards and practices established by the Appraisal Institute and that conform to the Uniform Standards of Professional Appraisal Practice. The analyses and methodologies contained in this report are accepted by all major lending institutions, and they are used in Kentucky and across the country as the industry standard by certified appraisers conducting appraisals, market analyses, or impact studies and are considered adequate to form an opinion of the impact of a land use on neighboring properties. These standards and practices have also been accepted by the courts at the trial and appellate levels and by federal courts throughout the country as adequate to reach conclusions about the likely impact a use will have on adjoining or abutting properties.

The aforementioned standards compare property uses in the same market and generally within the same calendar year so that fluctuating markets do not alter study results. Although these standards do not require a linear study that examines adjoining property values before and after a new use (e.g. a solar farm) is developed, some of these studies do in fact employ this type of analysis. Comparative studies, as used in this report, are considered an industry standard.

The first type of analysis employed is a Sale/Resale Analysis. This methodology is outlined in **Real Estate Damages**, Third Edition, Pages 35-36 by Randall Bell PhD, MAI and published by the Appraisal Institute. This is a type of Paired Sales Analysis (see next paragraph) that compares the sale of the same property Before and After a change in the market to see if there is any impact on the property value due to that change. In this analysis I have used the Federal Housing Finance Agency Home Price Index to identify typical appreciation in the property market and compared that to the change in value on a home Before a solar farm was announced and After the solar farm was built. No other adjustments were required as I have attempted to focus on homes without renovations and with typical upkeep during the intervening period.

The second type of analysis employed is a Matched Pair Analysis or Paired Sales Analysis. This methodology is outlined in **The Appraisal of Real Estate**, Twelfth Edition by the Appraisal Institute pages 438-439. It is further detailed in **Real Estate Damages**, Third Edition, pages 33-35 by Randall Bell PhD, MAI. Paired sales analysis is used to support adjustments in appraisal work for factors ranging from the impact of having a garage, golf course view, or additional bedrooms. It is an appropriate methodology for addressing the question of impact of an adjoining solar farm. The paired sales analysis is based on the theory that when two properties are in all other respects equivalent, a single difference can be measured to indicate the difference in price between them. Dr. Bell describes it as comparing a test area to control areas. In the example provided by Dr. Bell he shows five paired sales in the test area compared to 1 to 3 sales in the control areas to determine a difference. I have used 3 sales in the control areas in my analysis for each sale developed into a matched pair.

Determining what is an External Obsolescence

An external obsolescence is a use of property that, because of its characteristics, might have a negative impact on the value of adjacent or nearby properties because of identifiable impacts. Determining whether a use would be considered an external obsolescence requires a study that isolates that use, eliminates any other causing factors, and then studies the sales of nearby versus distant comparable properties. The presence of one or a combination of key factors does not mean the use will be an external obsolescence, but a combination of these factors tend to be present when market data reflects that a use is an external obsolescence.

External obsolescence is evaluated by appraisers based on several factors. These factors include but are not limited to:

1) Traffic. Solar Farms are not traffic generators.

2) Odor. Solar farms do not produce odor.

3) Noise. Solar farms generate no noise concerns. A wide range of noise studies that have been completed have found them consistent with agricultural and residential areas.

4) Environmental. Solar farms do not produce toxic or hazardous waste. Grass is maintained underneath the panels so there is minimal impervious surface area.

5) Appearance/Viewshed. This is the one area that potentially applies to solar farms. However, solar farms are generally required to provide significant setbacks and landscaping buffers to address that concern. Furthermore, any consideration of appearance of viewshed impacts has to be considered in comparison with currently allowed uses on that site. For example if a residential subdivision is already an allowed use, the question becomes in what way does the appearance impact adjoining property owners above and beyond the appearance of that allowed subdivision or other similar allowed uses.

6) Other factors. I have observed and studied many solar farms and have never observed any characteristic about such facilities that prevents or impedes neighbors from fully using their homes or farms or businesses for the use intended.

Market Imperfection

Throughout this analysis, I have specifically considered the influence of market imperfection on data analysis. Market imperfection is the term that refers to the fact that unlike a can of soup at the supermarket or in your online shopping cart, real estate cannot be comparison shopped for the best price and purchased at the best price for that same identical product. Real estate products are always similar and never identical. Even two adjacent lots that are identical in almost every way, have a slight difference in location. Once those lots are developed with homes, the number of differences begin to multiply, whether it is size of the home, landscaping, layout, age of interior upfit, quality of interior upfit, quality of maintenance and so on.

Neoclassical economics indicates a perfectly competitive market as having the following: A large number of buyers and sellers (no one person dominates the market), no barriers or transaction costs, homogeneous product, and perfect information about the product and pricing. Real estate is clearly not homogeneous. The number of buyers and sellers for a particular product in a particular location is limited by geography, financing, and the limited time period within a property is listed. There are significant barriers that limit the liquidity in terms of time, costs and financing. Finally, information on real estate is often incomplete or partial – especially at the time that offers are made and prices set, which is prior to appraisals and home inspections. So real estate is very imperfect based on this definition and the impact of this are readily apparent in the real estate market.

What appear to be near-identical homes that are in the same subdivision will often sell with slight variations in price. When multiple appraisers approach the same property, there is often a slight variation among all of those conclusions of value, due to differences in comparables used or analysis of those comparables. This is common and happens all of the time. In fact, within each appraisal, after making adjustments to the comparables, the appraiser will typically have a range of values that are supported that often vary more than +/-5% from the median or average adjusted value.

Based on this understanding of market imperfection, it is important to note that very minor differences in value within an impact study do not necessarily indicate either a negative or positive impact. When the impacts measured fall within that +/-5%, I consider this to be within typical

market variation/imperfection. Therefore it may be that there is a negative or positive impact identified if the impact is within that range, but given that it is indistinguishable from what amounts to the background noise or static within the real estate data, I do not consider indications of +/-5% to support a finding of a negative or positive impact.

This is further supported by a study printed in the American Society of Farm Managers and Rural Appraisers (ASFMRA) 2024 Journal on Page 90 titled "By How Much Can Appraised Farm Values Differ Across Appraisers?" that considered 54 appraisal reports completed by 9 Certified General Appraisers for three Iowa farms at two points in time (2019 and 2020) to evaluate the variability of the appraised values. They found that the appraised values can differ by as much as 20%, or +/-10%. Rural properties do tend to have much greater variability in the appraised values due to the unique nature of most of those properties.

Impacts greater than that range are however, considered to be strong indications of impacts that fall outside of typical market imperfection. I have used this as a guideline while considering the impacts identified within this report.

Relative Solar Farm Sizes

Solar farms have been increasing in size in recent years. Much of the data collected is from existing, older solar farms of smaller size, but there are numerous examples of sales adjoining 75 to 80 MW facilities that show a similar trend as the smaller solar farms. This is understandable given that the primary concern relative to a solar farm is the appearance or view of the solar farm, which is typically addressed through setbacks and landscaping buffers. The relevance of data from smaller solar farms to larger solar farms is due to the primary question being one of appearance. If the solar farm is properly screened, then little of the solar farm would be seen from adjoining property regardless of how many acres are involved.

Larger solar farms are often set up in sections where any adjoining owner would only be able to see a small section of the project even if there were no landscaping screen. Once a landscaping screen is in place, the primary view is effectively the same whether you are adjoining a 5 MW, 20 MW or 100 MW facility.

I have split out the data for the matched pairs adjoining larger solar farms only to illustrate the similarities later in this report. I note that I have matched pairs adjoining solar farms over 600 MWs in size showing no impact on property value.

Steps Involved in the Analysis

The paired sales analysis employed in this report follows the following process:

1. Identify sales of property adjoining existing solar farms.
2. Compare those sales to similar property that does not adjoin an existing solar farm.
3. Confirmation of sales are noted in the analysis write ups.
4. Distances from the homes to panels are included as a measure of the setbacks.
5. Topographic differences across the solar farms themselves are likewise noted along with demographic data for comparing similar areas.

There are a number of Sale/Resale comparables included in the write ups, but most of the data shown is for sales of homes after a solar farm has been announced (where noted) or after a solar farm has been constructed.

IV. Research on Solar Farms

A. Appraisal Market Studies

I have also considered a number of impact studies completed by other appraisers as detailed below.

CohnReznick – Property Value Impact Study: Adjacent Property Values Solar Impact Study: A Study of Eight Existing Solar Facilities

Patricia McGarr, MAI, CRE, FRICS, CRA and Andrew R. Lines, MAI with CohnReznick completed an impact study for a proposed solar farm in Cheboygan County, Michigan completed on June 10, 2020. I am familiar with this study as well as a number of similar such studies completed by CohnReznick. I have not included all of these studies but I submit this one as representative of those studies.

This study addresses impacts on value from eight different solar farms in Michigan, Minnesota, Indiana, Illinois, Virginia and North Carolina. These solar farms are 19.6 MW, 100 MW, 11.9 MW, 23 MW, 71 MW, 61 MW, 40 MW, and 19 MW for a range from 11.9 MW to 100 MW with an average of 31 MW and a median of 31.5 MW. They analyzed a total of 24 adjoining property sales in the Test Area and 81 comparable sales in the Control Area over a five-year period.

The conclusion of this study is that there is no evidence of any negative impact on adjoining property values based on sales prices, conditions of sales, overall marketability, potential for new development or rate of appreciation.

Christian P. Kaila & Associates – Property Impact Analysis – Proposed Solar Power Plant Guthrie Road, Stuarts Draft, Augusta County, Virginia

Christian P. Kaila, MAI, SRA and George J. Finley, MAI developed an impact study as referenced above dated June 16, 2020. This was for a proposed 83 MW facility on 886 acres.

Mr. Kaila interviewed appraisers who had conducted studies and reviewed university studies and discussed the comparable impacts of other development that was allowed in the area for a comparative analysis of other impacts that could impact viewshed based on existing allowed uses for the site. He also discussed in detail the various other impacts that could cause a negative impact and how solar farms do not have such characteristics.

Mr. Kaila also interviewed County Planners and Real Estate Assessor's in eight different Virginia counties with none of the assessor's identifying any negative impacts observed for existing solar projects.

Mr. Kaila concludes on a finding of no impact on property values adjoining the indicated solar farm.

Fred Beck, MAI, CCIM – Impact Analysis in Lincoln County, North Carolina, 2013

Mr. Fred Beck, MAI, CCIM completed an impact analysis in 2013 for a proposed solar farm that concluded on a negative impact on value. That report relied on a single cancelled contract for an adjoining parcel where the contracted buyers indicated that the solar farm was the reason for the cancellation. It also relied on the activities of an assessment impact that was applied in a nearby county.

Mr. Beck was interviewed as part of the Christian Kalia study noted above. From that I quote "Mr. Beck concluded on no effect on moderate priced homes, and only a 5% change in his limited research of higher priced homes. His one sale that fell through is hardly a reliable sample."

Also noted in the Christian Kalia interview notes is a response from Mr. Beck indicating that in his opinion "the homes were higher priced homes and had full view of the solar farm." Mr. Beck indicated in the interview if landscaping screens were employed he would not see any drop in value.

NorthStar Appraisal Company – Impact Analysis for Nichomus Run Solar, Pilesgrove, New Jersey, 2020

Mr. William J. Sapio, MAI with NorthStar Appraisal Company considered a matched pair analysis for the potential impact on adjoining property values to this proposed 150 MW solar farm. Mr. Sapio considered sales activity in a subdivision known as Point of Woods in South Brunswick Township and identified two recent new homes that were constructed and sold adjoining a 13 MW solar farm and compared them to similar homes in that subdivision that did not adjoin the solar farm. These homes sold in the $1,290,450 to $1,336,613 price range and these homes were roughly 200 feet from the closest solar panel.

Based on this analysis, he concluded that the adjoining solar farm had no impact on adjoining property value.

MR Valuation Consulting, LLC – The Kuhl Farm Solar Development and The Fischer Farm Solar Development – New Jersey, 2012

Mr. Mark Pomykacaz, MAI MRICS with MR Valuation Consulting, LLC considered a matched pair analysis for sales near these solar farms. The sales data presented supported a finding of no impact on property value for nearby and adjoining homes and concludes that there is no impact on marketing time and no additional risk involved with owning, building, or selling properties next to the solar farms.

Mary McClinton Clay, MAI – McCracken County Solar Project Value Impact Report, Kentucky, 2021

Ms. Mary Clay, MAI reviewed a report by Kirkland Appraisals in this case and also provided a differing opinion of impact. Having testified opposite Ms. Clay, she has stated that she does not confirm her data and does not use an appropriate method for time adjustments.

The comments throughout this study are heavy in adjectives, avoids stating facts contrary to the conclusion and shows a strong selection bias.

Kevin T. Meeks, MAI – Corcoran Solar Impact Study, Minnesota, 2017

Mr. Kevin Meeks, MAI reviewed a report by Kirkland Appraisals in this case and also provided additional research on the topic with additional paired sales. The sales he considered are well presented and show that they were confirmed by third parties and all of the broker commentary is aligned with the conclusion that the adjoining solar farms considered had no impact on the adjoining home values.

Mr. Meeks also researched a 100 MW project in Chisago County, known as North Star Solar Garden in MN. He interviewed local appraisers and a broker who was actively marketing homes adjoining that solar farm to likewise support a finding of no impact on property value.

John Keefe, Chisago County Assessor, Chisago County Minnesota Assessor's Office, 2017

This study was completed by the Chisago County Minnesota Assessor's Office on property prices adjacent to and in close vicinity of a 1,000-acre North Star solar farm in Minnesota. The study concluded that the North Star solar farm had "no adverse impact" on property values. Mr. Keefe further stated that, "It seems conclusive that valuation has not suffered."

Tim Connelly, MAI – Solar Impact Study of Proposed Solar Facility, New Mexico, 2023

This study is a detailed review of an Impact Study completed by Kirkland Appraisals, LLC for Rancho Viejo Solar. It goes through all of the analysis and confirms the applicability and reliability of the methods and conclusions. Mr. Connelly, MAI concurs that "the proposed solar project will not have a negative impact on market value, marketability, or enjoyment of property in the immediate vicinity of the proposed project."

Donald Fisher, ARA, 2021

Donald Fisher has completed a number of studies on solar farms and was quoted in February 15, 2021 stating, "Most of the locations were in either suburban or rural areas, and all of those studies found either a neutral impact or, ironically, a positive impact, where values on properties after the installation of solar farms went up higher than time trends."

Jennifer N. Pitts, MAI - Study of Residential Market Trends Surrounding Six Utility-Scale Solar Projects in Texas, 2023

This study was completed by Real Property Analytics with Ms. Pitts along with Erin M. Kiella, PhD, and Chris Yost-Bremm, PhD. This analysis considered these solar farms through different stages of the market from announcement of the project, during construction, and after construction. They found no indication of a negative impact on sales price, the ratio of sales price to listing price, or the number of Days on Market. They also researched individual sales and interviewed local brokers who confirmed that market participants were knowledgeable of the solar projects and did not result in a negative impact on sales price or marketing time.

Michael S. MaRous, MAI, CRE – Market Impact Analysis Langdon Mills Solar, Columbia County, Wisconsin, 2023

This study was completed by MaRous & Company and singed by Machael S. MaRous. This analysis included consideration of solar projects in 13 states and including 7 solar projects in Wisconsin. This includes 22 matched pairs with a conclusion on Page 70 that states "there does not appear to have been any measurable negative impact on surrounding residential property values due to the proximity of a solar farm."

This analysis was further supported by Assessor Surveys including assessors in Wisconsin which found no instance of an assessor in Wisconsin identifying any negative impacts from solar farms on adjoining property values.

Conclusion of Impact Studies

Of the 11 studies noted 9 included actual sales data to derive an opinion of no impact on value. The two studies to conclude on a negative impact includes the Fred Beck study based on no actual sales data, and he has since indicated that with landscaping screens he would not conclude on a negative impact. The other study by Mary Clay shows improper adjustments for time, a lack of confirmation of sales comparables, and exclusion of data that does not support her initial position.

I have relied on these studies as additional support for the findings in this impact analysis.

B. Articles

I have also considered a number of articles on this subject as well as conclusions and analysis as noted below.

Farm Journal Guest Editor, March 22, 2021 – Solar's Impact on Rural Property Values

Andy Ames, ASFMRA (American Society of Farm Managers and Rural Appraisers) published this article that includes a discussion of his survey of appraisers and studies on the question of property

value related to solar farms. He discusses the university studies that I have cited as well as Patricia McGarr, MAI.

He also discusses the findings of Donald A. Fisher, ARA, who served six years at the Chair of the ASFMRA's National Appraisal Review Committee. He is also the Executive Vice President of the CNY Pomeroy Appraiser and has conducted several market studies on solar farms and property impact. He is quoted in the article as saying, "Most of the locations were in either suburban or rural areas, and all of those studies found either a neutral impact, or ironically, a positive impact, where values on properties after installation of solar farms went up higher than time trends."

Howard Halderman, AFM, President and CEO of Halderman Real Estate and Farm Management attended the ASFMRA solar talk hosted by the Indiana Chapter of the ASFMRA and he concludes that other rural properties would likely see no impact and farmers and landowners shown even consider possible benefits. "In some cases, farmers who rent land to a solar company will insure the viability of their farming operation for a longer time period. This makes them better long-term tenants or land buyers so one can argue that higher rents and land values will follow due to the positive impact the solar leases offer."

More recently in August 2022, Donald Fisher, ARA, MAI and myself led a webinar on this topic for the ASFMRA discussing the issues, the university studies and specific examples of solar farms having no impact on adjoining property values.

National Renewable Energy Laboratory – Top Five Large-Scale Solar Myths, February 3, 2016

Megan Day reports form NREL regarding a number of concerns neighbors often express. Myth #4 regarding property value impacts addresses specifically the numerous studies on wind farms that show no impact on property value and that solar farms have a significantly reduced visual impact from wind farms. She highlights that the appearance can be addressed through mitigation measures to reduce visual impacts of solar farms through vegetative screening. Such mitigations are not available to wind farms given the height of the windmills and again, those studies show no impact on value adjoining wind farms.

C. Broker Commentary

In the process of working up the matched pairs used later in this report, I have collected comments from brokers who have actually sold homes adjoining solar farms indicating that the solar farm had no impact on the marketing, timing, or sales price for the adjoining homes. I have comments from brokers noted within the solar farm write ups of this report including brokers from Kentucky, Virginia, Tennessee, and North Carolina. I have additional commentary from other states including New Jersey and Michigan that provide the same conclusion.

V. University Studies

I have also considered the following studies completed by four different universities related to solar farms and impacts on property values.

A. University of Texas at Austin, May 2018

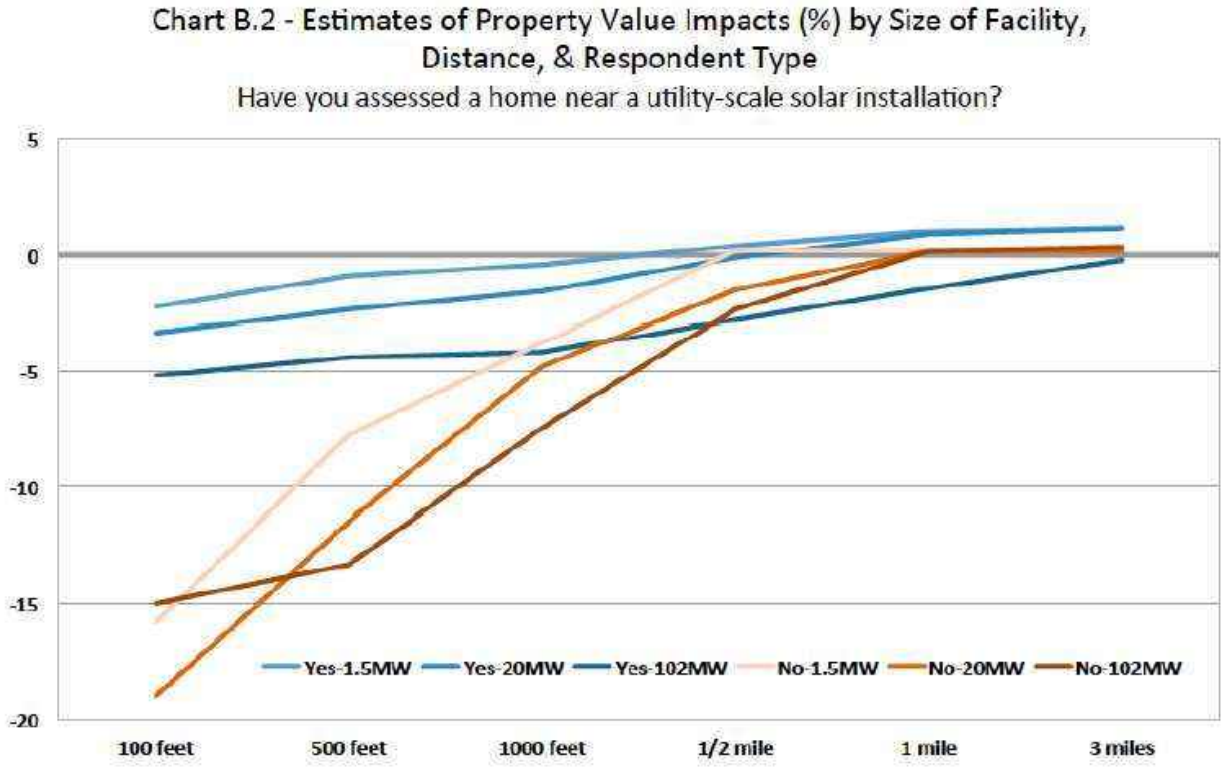
An Exploration of Property-Value Impacts Near Utility-Scale Solar Installations

This study considers solar farms from two angles. First it looks at where solar farms are being located and concludes that they are being located primarily in low density residential areas where there are fewer homes than in urban or suburban areas.

The second part is more applicable in that they conducted a survey of appraisers/assessors on their opinions of the possible impacts of proximity to a solar farm. They consider the question in terms of

size of the adjoining solar farm and how close the adjoining home is to the solar farm. I am very familiar with this part of the study as I was interviewed by the researchers multiple times as they were developing this. One very important question that they ask within the survey is very illustrative. They asked if the appraiser being surveyed had ever appraised a property next to a solar farm. There is a very noticeable divide in the answers provided by appraisers who have experience appraising property next to a solar farm versus appraisers who self-identify as having no experience or knowledge related to that use.

On Page 16 of that study they have a chart showing the responses from appraisers related to proximity to a facility and size of the facility, but they separate the answers as shown below with appraisers with experience in appraising properties next to a solar farm shown in blue and those inexperienced shown in brown. Even within 100 feet of a 102 MW facility the response from experienced appraisers were -5% at most on impact. While inexperienced appraisers came up with significantly higher impacts. This chart clearly shows that an uninformed response widely diverges from the sales data available on this subject.



Furthermore, the question cited above does not consider any mitigating factors such as landscaping buffers or screens which would presumably reduce the minor impacts noted by experienced appraisers on this subject.

The conclusion of the researchers is shown on Page 23 indicated that "Results from our survey of residential home assessors show that the majority of respondents believe that proximity to a solar installation has either no impact or a positive impact on home values."

This analysis supports the conclusion of this report that the data supports no impact on adjoining property values. The only impact suggested by this study is -5% if a home was within 100 feet of a 100 MW solar farm with little to no landscaping screening. The proposed project has a landscaping screening, is much further setback than 100 feet from adjoining homes, and is less than 100 MW.

B. University of Rhode Island, September 2020

Property Value Impacts of Commercial-Scale Solar Energy in Massachusetts and Rhode Island

The University of Rhode Island published a study entitled **Property Value Impacts of Commercial-Scale Solar Energy in Massachusetts and Rhode Island** on September 29, 2020 with lead researchers being Vasundhara Gaur and Corey Lang. I have read that study and interviewed Mr. Corey Lang related to that study. This study is often cited by opponents of solar farms but the findings of that study have some very specific caveats according to the report itself as well as Mr. Lang from the interview.

While that study does state in the Abstract that they found depreciation of homes within 1-mile of a solar farm, that impact is limited to non-rural locations. On Pages 16-18 of that study under Section 5.3 Heterogeneity in treatment effect they indicate that the impact that they found was limited to non-rural locations with the impact in rural locations effectively being zero. For the study they defined "rural" as a municipality/township with less than 850 population per square mile.

They further tested the robustness of that finding and even in areas up to 2,000 population per square mile they found no statistically significant data to suggest a negative impact. They have not specifically defined a point at which they found negative impacts to begin, as the sensitivity study stopped checking at the 2,000-population per square mile.

Where they did find negative impacts was in high population density areas that was largely a factor of running the study in Massachusetts and Rhode Island which the study specifically cites as being the 2nd and 3rd most population dense states in the USA. Mr. Lang in conversation as well as in recorded presentations has indicated that the impact in these heavily populated areas may reflect a loss in value due to the scarce greenery in those areas and not specifically related to the solar farm itself. In other words, any development of that site might have a similar impact on property value.

Based on this study I have checked the population for the Magnolia-Upton Division of LaRue County, which has a population of 4,086 for 2025 based on HomeTownLocator using Census Data and a total area of 81.72 square miles. This indicates a population density of 50 people per square mile which puts this well below the threshold indicated by the Rhode Island Study.

I therefore conclude that the Rhode Island Study supports the indication of no impact on adjoining properties for the proposed solar farm project.

Magnolia-Upton Division Data & Demographics (As of July 1, 2025)

POPULATION	
Total Population	4,086 (100%)
Population in Households	4,055 (99.2%)
Population in Families	3,403 (83.3%)
Population in Group Quarters[1]	31 (0.8%)
Population Density	50
Diversity Index[2]	19

HOUSING	
Total HU (Housing Units)	1,751 (100%)
Owner Occupied HU	1,248 (71.3%)
Renter Occupied HU	343 (19.6%)
Vacant Housing Units	160 (9.1%)
Median Home Value	$191,908
Average Home Value	$285,226
Housing Affordability Index[3]	115

INCOME	
Median Household Income	$59,329
Average Household Income	$70,190
% of Income for Mortgage[4]	20%
Per Capita Income	$27,349
Wealth Index[5]	52

HOUSEHOLDS	
Total Households	1,591
Average Household Size	2.55000000000
Family Households	1,121
Average Family Size	3

C. University of Rhode Island, 2023

House of the rising sun: The effect of utility-scale solar arrays on housing prices

The University of Rhode Island published this study completed by the same researchers as the prior Rhode Island study, Vasundhara Gaur and Corey Lang. This study focused on Massachusetts and Rhode Island and found the opposite of the prior study. This study indicates that they found 1.5% to 3.6% declines in property value within 0.5 miles of a solar array and that this is mostly driven by solar projects found on agricultural land.

D. Georgia Institute of Technology, October 2020

Utility-Scale Solar Farms and Agricultural Land Values

This study was completed by Nino Abashidze as Post-Doctoral Research Associate of Health Economics and Analytics Labe (HEAL), School of Economics, Georgia Institute of Technology. This research was started at North Carolina State University and analyzes properties near 451 utility-scale ground-mount solar installations in NC that generate at least 1 MW of electric power. A total of 1,676 land sales within 5-miles of solar farms were considered in the analysis.

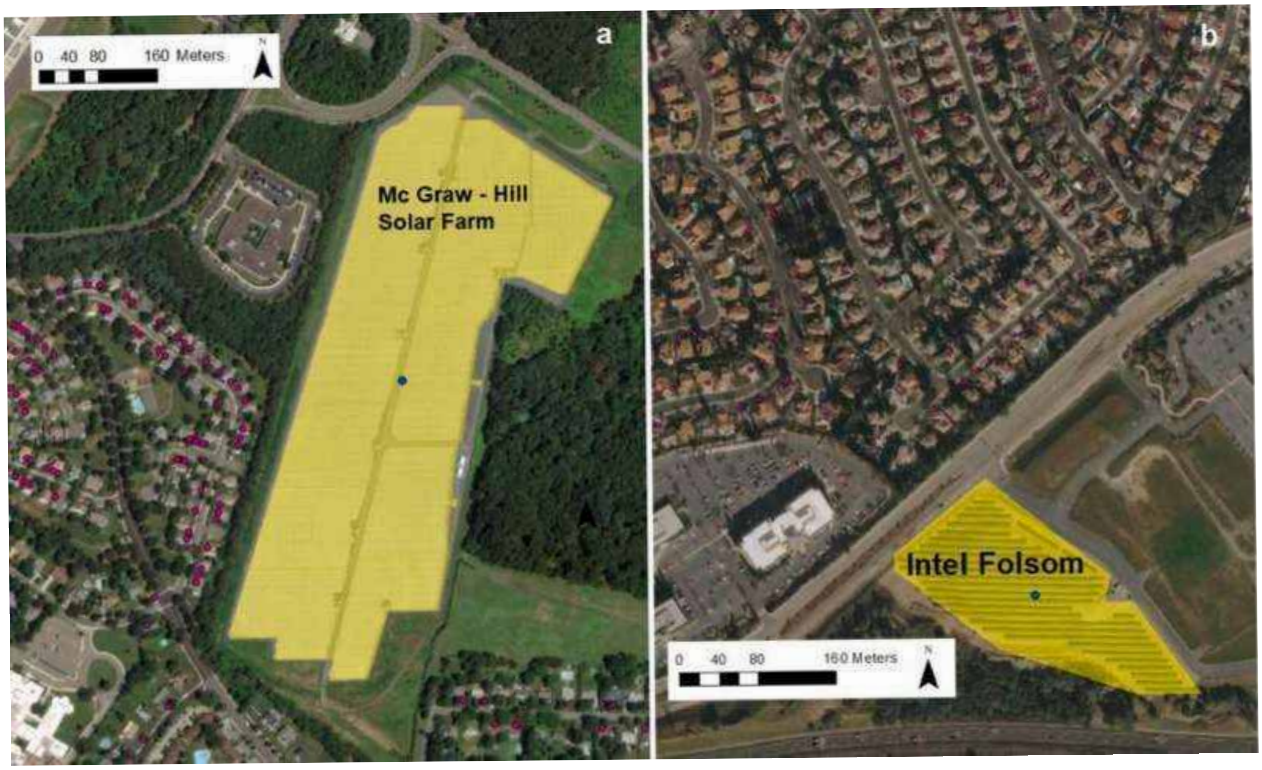
This analysis concludes on Page 21 of the study "Although there are no direct effects of solar farms on nearby agricultural land values, we do find evidence that suggests construction of a solar farm may create a small, positive, option -value for land owners that is capitalized into land prices. Specifically, after construction of a nearby solar farm, we find that agricultural land that is also located near transmission infrastructure may increase modestly in value."

This study supports a finding of no impact on adjoining agricultural property values and in some cases could support a modest increase in value.

E. Lawrence Berkeley National Lab, March 2023

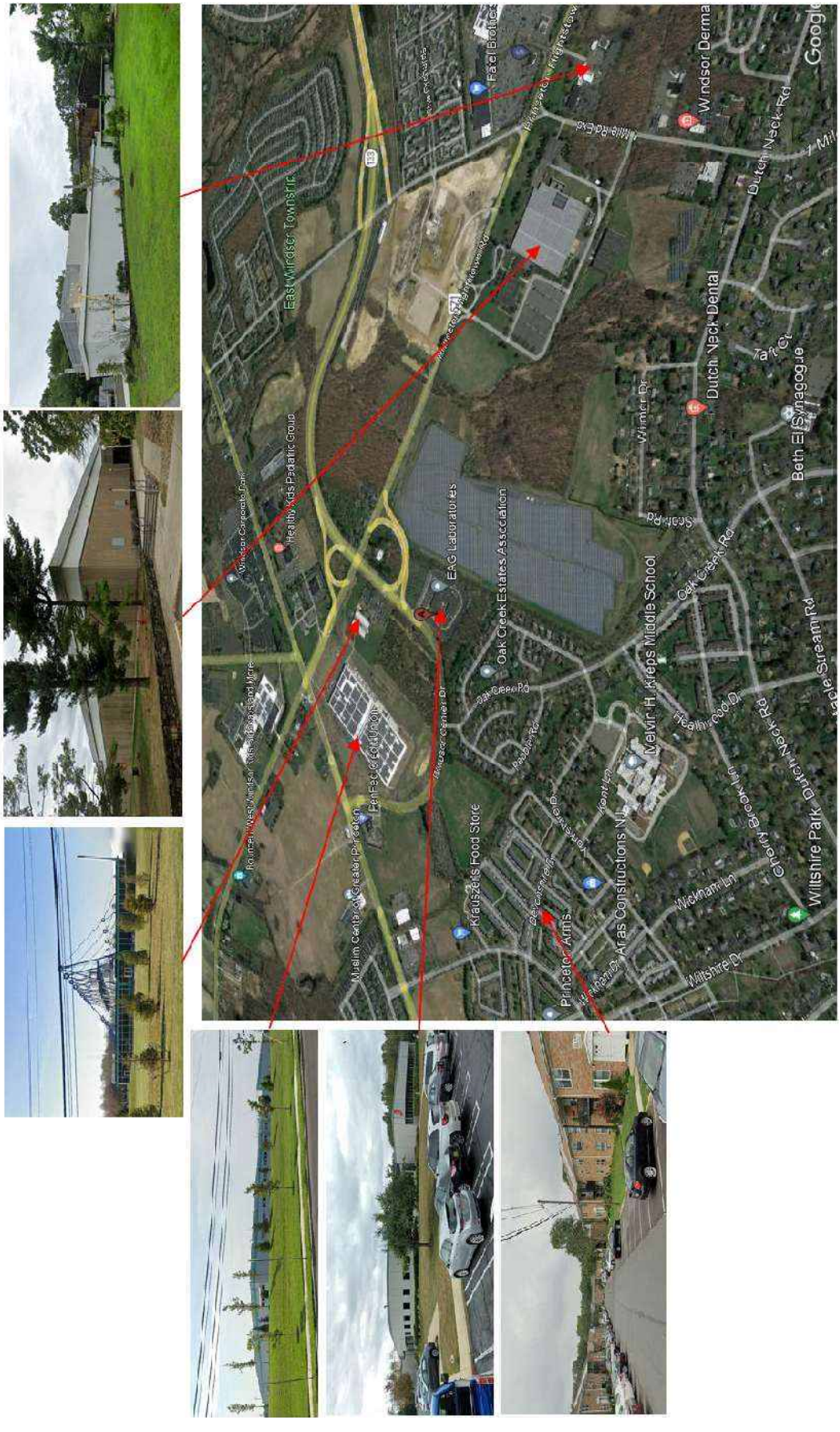
Shedding light on large-scale solar impacts: An analysis of property values and proximity to photovoltaics across six U.S. states

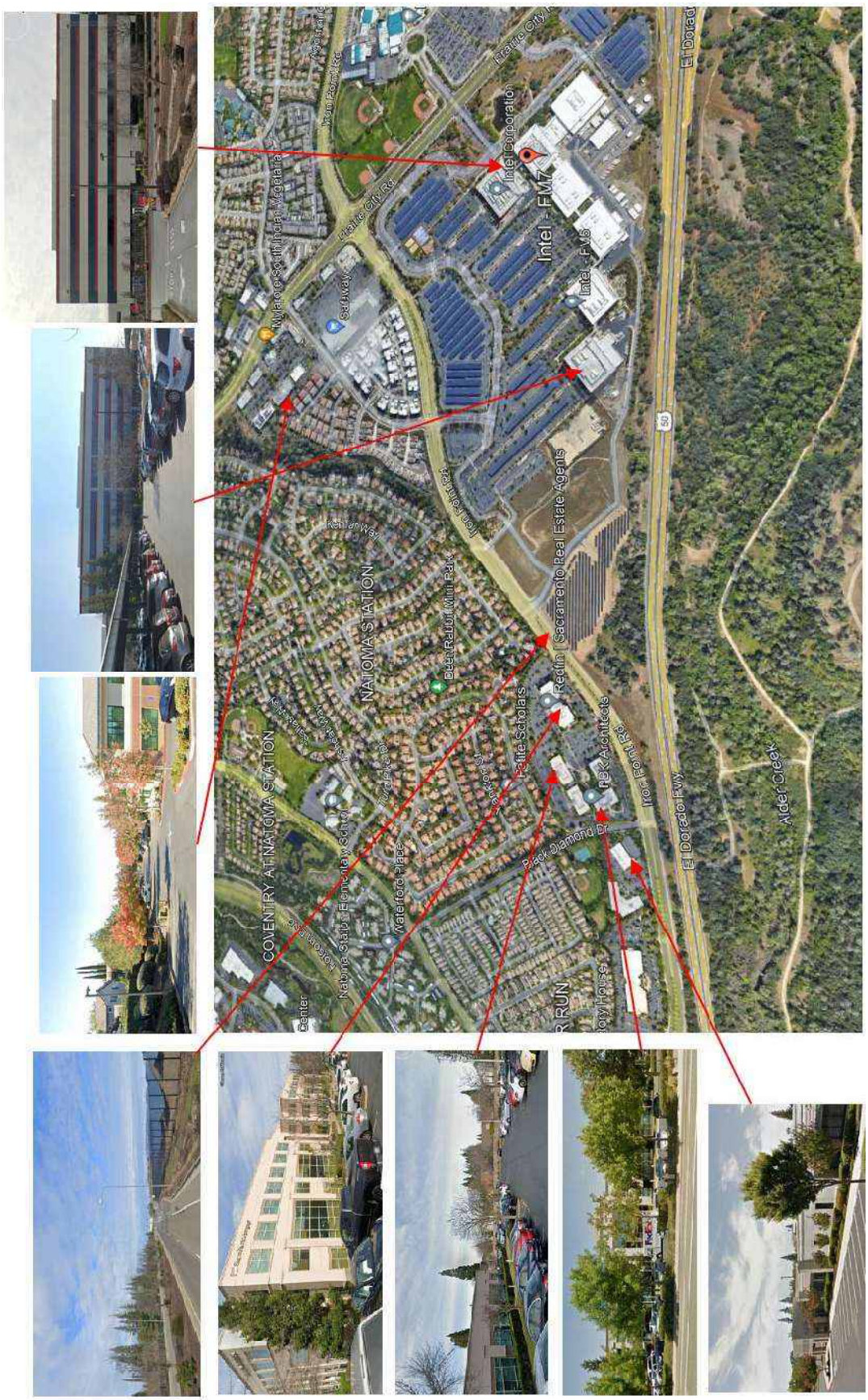
This study was completed by researchers including Salma Elmallah, Ben Hoen, K. Sydny Fujita, Dana Robson, and Eric Brunner. This analysis considers home sales before and after solar farms were installed within a 1-mile radius and compared them to home sales before and after the solar farms at a 2-4-mile radius. The conclusion found a 1.5% impact within 0.5 mile of a solar farm as compared to homes 2-4 miles from solar farms. This is the largest study of this kind on solar and addresses a number of issues, but also does not address a number of items that could potentially skew these results. First of all, the study found no impact in the three states with the most solar farm activity and only found impacts in smaller sets of data. The data does not in any way discuss actual visibility of solar farms or address existing vegetation screens. This lack of addressing this is highlighted by the fact that they suggest in the abstract that vegetative shading may be needed to address possible impacts. Another notable issue is the fact that they do not address other possible impacts within the radii being considered. This lack of consideration is well illustrated within the study on Figure A.1 where they show satellite images of McGraw Hill Solar Farm in NJ and Intel Folsom in CA. The Folsom image clearly shows large highways separating the solar farm from nearby housing, but with tower office buildings located closer to the housing being considered. In no place do they address the presence of these towers that essentially block those homes from the solar farm in some places. An excerpt of Fig. A.1. is shown below.



For each of these locations, I have panned out a little further on Google Earth to show the areas illustrated to more accurately reflect the general area. For the McGraw Hill Solar Farm you can see there is a large distribution warehouse to the west along with a large offices and other industrial uses. Further to the west is a large/older apartment complex (Princeton Arms). To the east there are more large industrial buildings. However, it is even more notable that 1.67 miles away to the west is Cranbury Golf Club. Given how this analysis was set up, these homes around the industrial buildings are being compared to homes within this country club to help establish impacts from the solar farm. Even considering the idea that each set is compared to itself before and after the solar farm, it is not a reasonable supposition that homes in each area would appreciate at the same rates

even if no solar farm was included. Furthermore the site where the solar farm is located an all of the surrounding uses not improved with residential housing to the south is zoned Research Office (RO) which allows for: manufacturing, preparation, processing or fabrication of products, with all activities and product storage taking place within a completely enclosed building, scientific or research laboratories, warehousing, computer centers, pharmaceutical operations, office buildings, industrial office parks among others. Homes adjoining such a district would likely have impacts and influences not seen in areas zoned and surrounded by zoning strictly for residential uses.


East Windsor Township
Windsor Dermatology
Dutch Neck Dental
Beth El Synagogue
Wiltshire Park
Melvin H. Kreps Middle School
Oak Creek Estates Association
EAG Laboratories
Princeton Arms
Kraus's Food Store
Muslim Center of Greater Princeton
Healthy Kids Pediatric Group
Oak Creek Rd
Dutch Neck Rd
Wiltshire Dr
Wicklow Ln
Taft Ct
Google


Intel - FM7
Intel - FM8
Intel Corporation
Prairie City Rd
Iron Point Rd
Iron Point Rd
Sacramento Real Estate Agents
El Dorado Fwy
Alder Creek
NATOMA STATION
COVENTRY AT NATOMA STATION
Natoma Station Elementary School
Waterford Place
Deer Radish Mini Park
Petite Scholars
Redin
NBBJ Architects
Prairie City Rd
Skyline South Indian Vegetarian
Safeway
Agricultural
Iron Point Rd
Folsom Blvd
Natoma St
Lembert Way
Lembert Way
Center
R RUN
Glory Houses
Diesel Diamond Dr
Iron Point Rd
69

On the Intel Folsom map I have shown the images of two of the Intel Campus buildings, but there are roughly 8 such buildings on that site with additional solar panels installed in the parking lot as shown in that image. I included two photos that show the nearby housing having clear and close views of adjoining office parking lots. This illustrates that the homes in that 0.5-mile radius are significantly more impacted by the adjoining office buildings than a solar farm located distantly that are not within the viewshed of those homes. Also, this solar farm is located on land adjoining the Intel Campus on a tract that is zoned M-1 PD, which is a Light Industrial/Manufacturing zoning. Furthermore, the street view at the solar farm shows not only the divided four-lane highway that separates the office buildings and homes from the solar farm, but also shows that there is no landscaping buffer at this location. All of these factors are ignored by this study. Below is another image of the Folsom Solar at the corner of Iron Point Road and Intel West Driveway which shows just how close and how unscreened this project is.



Compare that image from the McGraw Hill Street view facing south from County Rte 571. There is a distant view and much of the project is hidden by a mix of berms and landscaping. The analysis makes no distinction between these projects.



The third issue with this study is that it identifies impacts following development in areas where they note that "more adverse home price impacts might be found where LSPVPS (large-scale photovoltaic project) displace green space (consistent with results that show higher property values

near green space." The problem with this statement is that it assumes that the greenspace is somehow guaranteed in these areas, when in fact, they could just as readily be developed as a residential subdivision and have the same impacts. They have made no effort to differentiate loss of greenspace through other development purposes such as schools, subdivisions, or other uses versus the impact of solar farms. In other words, they may have simply identified the impact of all forms of development on property value. This would in fact be consistent with the comments in the Rhode Island study where the researchers noted that the loss of greenspace in the highly urban areas was likely due to the loss of greenspace in particular and not due to the addition of solar panels.

Despite these three shortcomings in the analysis – the lack of differentiating landscape screening, the lack of consideration of other uses within the area that could be impacting property values, and the lack of consideration of alternative development impacts – the study still only found impacts between 0 and 5% with a conclusion of 1.5% within a 0.5-mile radius. As discussed later in this report, real estate is an imperfect market and real estate transactions typically sell for much wider variability than 5% even where there are no external factors operating on property value.

I therefore conclude that the minor impacts noted in this study support a finding of no impact on property value. Most appraisals show a variation between the highest and lowest comparable sale that is substantially greater than 1.5% and this measured impact for all its flaws would just be lost in the static of normal real estate transactions.

F. Loyola University Chicago by Simeng Hao and Gilbert Michaud, 2024

Assessing Property Value Impacts Near Utility-Scale Solar in the Midwest

This was originally part of the Master's Thesis by Simeng Hao in 2023 but updated for publication.

This study considered 70 utility-scale facilities built in the Midwest from 2009 to 2022 using data from the Lawrence Berkley National Laboratory. Using the difference-in-differences, method he found that proximity to solar project increased property values by 0.5% to 2.0%.

Furthermore, the research in this project shows that solar farms tend to be located in places with lower average home values by 2 to 3% compared to other random adjoining zip codes. This is not to say those areas are depressed, but those rural areas on average have lower prices than more suburban or urban areas nearby. This highlights the problem with a number of the studies on this issue in that they compare home values near the solar project to homes further from the solar project, but they are largely identifying the difference between rural and less-rural areas. The impact range identified by the Berkeley Study for example is exactly in line with that random difference identified by Simeng Hao.

The original Master's Thesis included a summary of seven other studies including many of those noted above that considered a total of 3,296 projects with results ranging from 1.7% decline in value to no impact. Only 2 of the studies identified found negative results that ranged from 0.82% to 1.7% impact on property value, while the other five studies found no consistent negative impact.

Given that 5 of the 7 studies identified show no negative impact and the analysis by Mr. Hao shows a positive relationship up to 2%, I consider this analysis to support my conclusions on no impact on property value. While statistical studies note impacts of +/- 2%, as noted earlier in this report, market imperfection is generally greater than that rate and supports a conclusion of no impact. Essentially, while the statistical studies are showing minor variation, applying that to any one particular property whether plus or minus, would be unsupportable given that market imperfection is greater than that purported adjustment.

G. Purdue University by Binayak Kunwar, 2024

Impact of Commercial and Utility-Scale Solar Energy on Farmland Price

This was completed as part of the Master of Science Thesis by the author to the Department of Agricultural Economics at Purdue University. This study focuses on farmland prices between 2015 and 2020 in Indiana. This study identified a premium up to 2.1% for higher priced farmland in proximity to solar projects. The study further identified adjustments for size, crop productivity and proximity to urban areas. The study interestingly notes that the higher priced farmland is both with high productivity and closer to urban areas, while the enhancement from adjoining or nearby solar is greatest on those types of farmland.

H. Virginia Polytechnic Institute and Sates University by Chenyang Hu et al, 2025

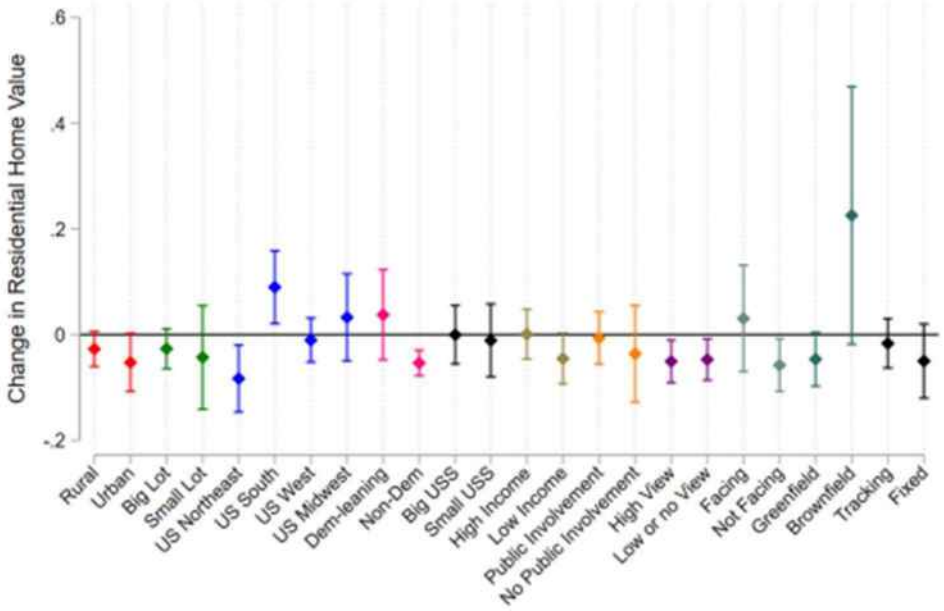
Impact of large-scale solar on property values in the United States: Diverse effects and causal mechanisms

This study follows a similar pattern of the Lawrence Berkeley study using analysis looking at properties within 3 miles of existing solar farms and comparing that data to property data 3 to 6 miles away. The findings of this study indicate a reduction in value for homes within 0.5-miles of 7.2% if it has no view of the project or 7.9% if it has a view of the project. It also concluded on a 4.8% impact up to 3 miles away. The same study concluded on an increase in value for undeveloped or farm land by an average of 19.4% within 2 miles of a solar project.

Of note, this analysis did not consider the size of the homes to be a relevant statistic and made no efforts to compare similar sized homes or adjustments for dissimilar sized homes which is a significant limitation of relying on this data.

Furthermore, this study, like the other studies that use this methodology, assumes that it is reasonable to compare home sales data within the 3-mile radius to activity in the outer ring area. However, this assumption fails to show that this is a reasonable assumption. In countless examples of solar projects we have identified across the country, the 3 to 5 mile radius includes towns and higher development areas closer to town and necessarily is showing a difference between rural values and town values. The Loyola University study illustrates this effect as outlined above.

This study also concluded that there are different factors that can influence these impacts. As shown in the chart below the lines above the line show positive impacts with the biggest positive impact being solar projects in Brownfield areas, but also includes positive impacts in the South, Midwest, Democrat leaning area, and facing of the panels.



I. Appraisal Journal by Erin Kiella, PhD, Jennifer Pitts, MAI, and Christopher Yost-Bremm, PhD – 2025, Appraisal Journal, Issue 2

Do Utility-Scale Solar Projects Affect Nearby Residential Real Estate Markets?

This study references the Lawrence Berkeley National Lab study as well as some studies out of Europe for context and other methodologies. The main focus of this study is an analysis of three utility-scale projects in two Texas counties and focused on historical sales prices, ratio between sales prices and listing prices and exposure time. They used one or more control areas for each project. They looked at data out to 3 miles around projects. The Rambler Solar facility studies showed no negative impact with the announcement or construction of the project. The Concho Valley Solar facility similarly found no impact and they were able to identify specific sales in close proximity to the site and able to confirm that those nearby single family homes were not impacted by the project and both buyers and brokers confirmed this. The Five Wells Solar facility likewise showed no impact on property values.

Discussions with realtors noted that they were not seeing impacts on property values though some buyers expressed concerns where they had direct views. The researchers note "This reinforces the need for property-specific analysis when estimating diminution in value at an individual property"

Summary of Formal Studies

I have shown in the chart below a breakdown of the conclusions from these studies. The Low end of the range is showing the greatest negative or lowest positive while the High end is the lowest negative and highest positive. Where the impacts are positive they are showing an increase in value from proximity to a solar project.

The overall range is -7.9% to a +19.04% with an average between -2.81% and +2.88%. These ranges are clearly hovering in a nominal range that correspond with Market Imperfection as identified earlier in this report. With a range that tight, it is not a significant impact shown by these studies and is suggesting a positive potential that is almost as great as the negative potential.

These generalized studies do not address landscaping screens, differences in school districts, physical conditions of the homes, considerations for higher priced subdivisions near lower priced subdivisions, ages of homes, renovations or updates, whether the homes were on gravel or paved

roads, lot size differences, amenity differences, lot premiums for river or conservation adjacency, and there was no data verification to identify atypical motivations of buyers and sellers. These generalized studies suggest a level of precision that should be considered with caution by appraisers for adjustments as they do not account for those other factors and they fall within typical market imperfection.

Table 2: Breakdown of Formal Study Findings

	Source	Type	Year	Low	High	Conclusion	Note on Proximity
A	UTA	Published Study	2018	-5.00%	1.00%		1000 feet
B	URI	Published Study	2020	-1.70%	0.00%	-1.70%	1 mile
						0.00%	1mile rural
C	URI	Published Study	2023	-3.60%	-1.50%		1/2 mile
D	GATech	Published Study	2020	0.00%	0.00%		Farmland
E	Lawrence	Published Study	2023	-5.60%	0.00%	-2.30%	1/4 mile
						-1.50%	1/2 mile
						-0.80%	1/2 to 1 mile
F	Loyola	Published Study	2024	0.50%	2.00%		Proximity
G	Purdue	Masters Thesis	2024	0.80%	2.10%		Proximity
H	VATech	Published Study	2025	-7.90%	19.40%	-7.20%	1/2 mile
						-4.80%	3 mile
						19.40%	Farmland - 2 mi
I	Appr. Journal	Published Study	2025	0.00%	0.00%	0.00%	

Average	-2.50%	2.56%
Median	-1.70%	0.00%
High	0.80%	19.40%
Low	-7.90%	-1.50%
Residential		
Average	-2.81%	2.88%
Median	-2.65%	0.50%
High	0.80%	2.10%
Low	-7.90%	-1.50%
Farmland		
Average	9.70%	9.70%
Median	9.70%	9.70%
High	19.40%	19.40%
Low	0.00%	0.00%

VI. Assessor Surveys

I have completed a survey of assessors in Kentucky, I have excluded responses from assessors with no existing and no pending solar farms in those counties. The breakdown is shown below.

Kentucky Property Valuation Administrator				
		Existing	Proposed	
County	Assessor	Solar	Solar	Impact on Adjacent?
Breckinridge	Dana Bland	0	2	No
Caldwell	Ronald Wood	0	2	No
Christian	Angie Strader	4	n/a	No
Clark	Jada Brady	1	n/a	No response
Green	Sean Curry	0	2	No
Martin	Bobby Hale, Jr.	0	1	No response/hasn't come up yet
Mercer	Jessica Elliott	1	0	No
Russell	Tim Popplewell	0	1	No response/depends on sales after built
Webster	Jeffrey Kelley	0	1	No response/depends on sales after built
Whitley	Ronnie Moses	0	1	No
	Total Responses	10		
	No Impact Responses	6		
	No Response on Impact	4		

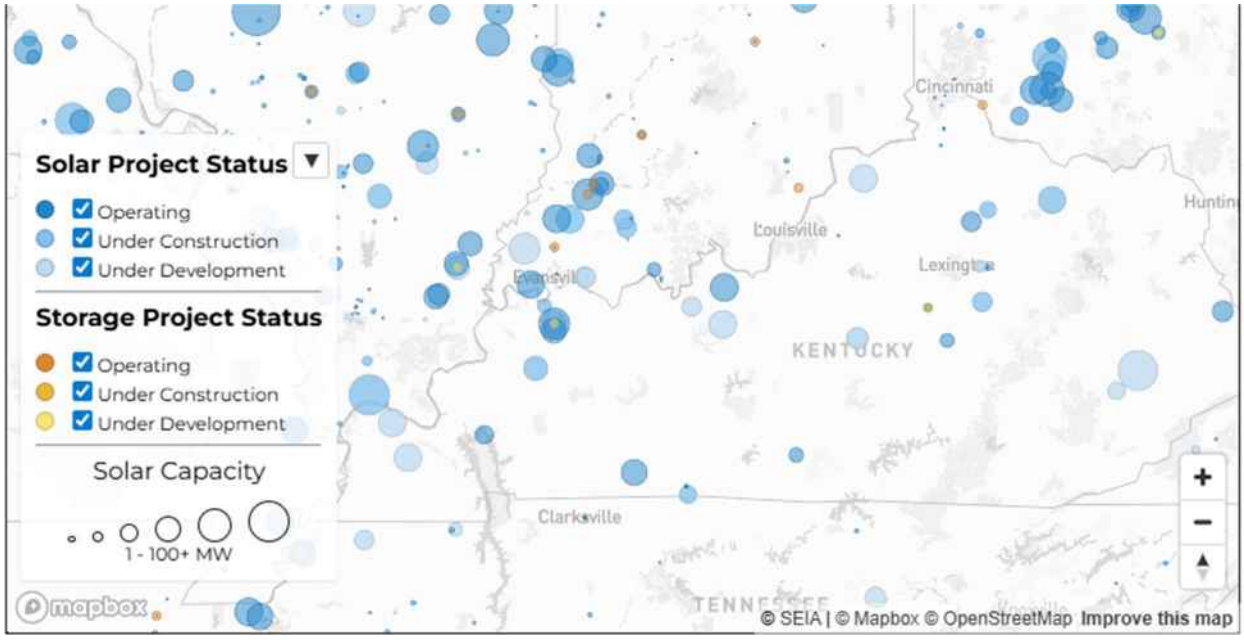
I have not had any assessor indicate a negative adjustment due to adjacency to a solar farm in any state. These responses total 189 with 172 definitively indicating no negative adjustments are made to adjoining property values, 17 providing no response to the question, and 0 indicating that they do address a negative impact on adjoining property value.

Summary of Assessor Surveys

State	Responses	No Impact	Yes Impact	No Comment
North Carolina	39	39		
Virginia	17	17		
Indiana	31	31		
Colorado	15	8		7
Georgia	33	33		
Kentucky	10	6		4
Mississippi	4	2		2
New Mexico	5	5		
Ohio	24	20		4
South Carolina	11	11		
Totals	189	172	0	17

VII. Summary of Solar Projects in Kentucky

I have researched the solar projects in Kentucky. I identified the solar farms through the Solar Energy Industries Association (SEIA) Major Projects List and then excluded the roof mounted facilities. This leaves only six solar farms in Kentucky for analysis at this time. Below is a map pulled from SEIA on Major Projects and it shows projects under development in shades of blue to represent proposed and existing solar projects. It was from this map that I have identified a list of existing and under construction solar farms researched in Kentucky as well as other sources.



I have provided a summary of projects below and additional detailed information on the projects on the following pages. I specifically note the similarity in most of the sites in Kentucky in terms of mix of adjoining uses, topography, and distances to adjoining homes to each other as well as to the data identified throughout the southeast. The list includes a number of built solar projects as well as a number of proposed or approved projects that are still to be built. The data on these projects that are not built are consistent with the data on the built projects in terms of mix of adjoining uses and distances to homes.

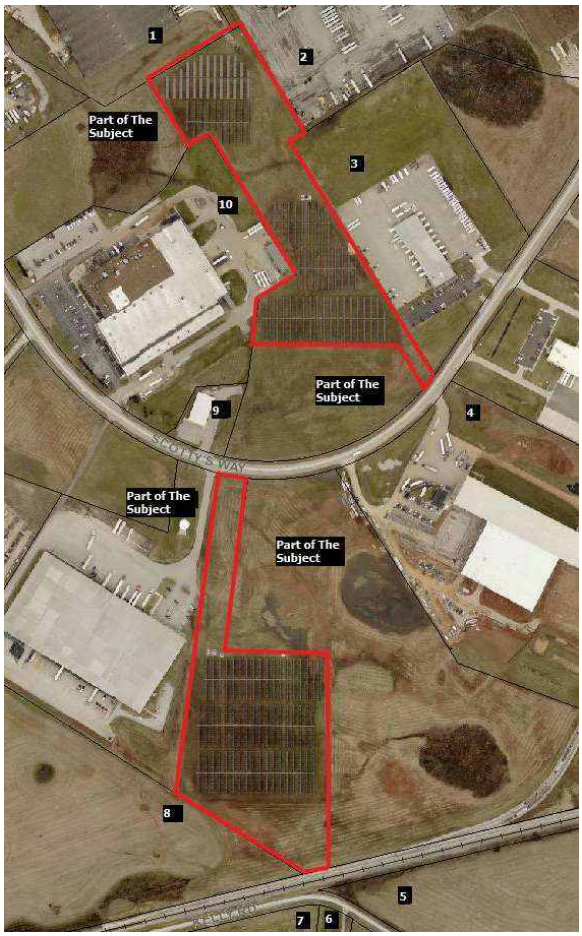
The number of solar farms currently in Kentucky is low compared to a number of other states and North Carolina in particular. I have looked at solar farms in Kentucky for sales activity, but the small number of sites coupled with the relatively short period of time these solar farms have been in place has not provided as many examples of sales adjoining a solar farm as I am able to pull from other places. I have therefore also considered sales in other states, but I have shown in the summary how the demographics around the solar farms in other locations relate to the demographics around the proposed solar farm to show that generally similar locations are being considered. The similarity of the sites in terms of adjoining uses and surrounding demographics makes it reasonable to compare the lack of significant impacts in other areas would translate into a similar lack of significant impacts at the subject site.

Solar #	Name	State	County	Output (MW)	Total Acres	Used Acres	Avg. Dist to home	Closest Home	Adjoining Use by Acre			
									Res	Agri	Agri/Res	Com
610	Bowling Green	KY	Warren	2	17.36	17.36	720	720	1%	64%	0%	36%
611	Cooperative Solar I	KY	Clarky	8.5	181.47	63	2,110	2,040	0%	96%	3%	0%
612	Walton 2	KY	Kenton	2	58.03	58.03	891	120	21%	0%	60%	19%
613	Crittenden	KY	Grant	2.7	181.7	34.1	1,035	345	22%	27%	51%	0%
617	Glover Creek	KY	Metcalfe	55	968.2	322.44	1,731	375	6%	25%	69%	0%
618	Turkey Creek	KY	Garrard	50	752.8	297.05	976	240	8%	36%	51%	5%
656	Mount Olive Creek	KY	Russell		526.02	420.82	759	150	24%	28%	47%	0%
657	Horseshoe Bend	KY	Greene	60	585.65	395	1,140	285	8%	51%	41%	0%
658	Flat Run	KY	Taylor	55	518.94	518.94	540	220	11%	70%	18%	0%
659	Cooperative Shelby	KY	Shelby	4	35	35			6%	11%	32%	52%
660	E.W. Brown	KY	Mercer	10	50	50	1,026	565	3%	44%	29%	25%
665	Northern Bobwhite	KY	Marion	121	1539.9	1281	1,162	200	5%	38%	56%	0%
695	Madison	KY	Madison	100	1357	1357	575	90	17%	51%	32%	0%
696	Fleming	KY	Fleming	188	2350	2350	1,036	175	12%	37%	50%	0%
699	Mercer County	KY	Mercer	175	1827.6	1500	1,413	230	5%	33%	62%	0%
700	Ashwood	KY	Lyon	86	1537.7	1537.7	785	170	4%	46%	23%	27%
716	Horus	KY	Simpson	74.36	592.06	547.6	551	110	4%	46%	47%	3%
717	Meade County	KY	Meade		2087.1	830	-	-	5%	76%	19%	0%
720	Fleming 1	KY	Fleming	98	764.5	598.6	585	150	3%	48%	49%	0%
721	McCracken	KY	McCracken	60	615	615	1,696	535	3%	92%	5%	0%
722	Henderson KY	KY	Henderson		1113	725.13	1,395	180	14%	57%	28%	1%
770	Bluebird KY	KY	Harrison	90	1943.2	1345	2,056	350	3%	21%	76%	0%
771	Martin County	KY	Martin	111	4122		4,029	1,450	5%	94%	2%	0%
783	Rhudes Creek	KY	Hardin	100	1078	1078	1,007	305	8%	62%	30%	0%
794	Logan County	KY	Logan	145	1612	1100	1,058	250	4%	51%	45%	0%
796	Blue Moon	KY	Harrison	74.9	949.87	949.87	1,545	250	6%	55%	39%	0%
804	Hardin KY	KY	Hardin	85			1,056	470	8%	37%	55%	0%
808	Stonefield	KY	Hardin	120	902.16	902.16	1,780	300	1%	47%	52%	0%
855	Pine Grove	KY	Madison	50	475	475	1,207	155	15%	31%	54%	0%
857	Telesto	KY	Hardin	110	1180	1180	941	500	15%	58%	27%	0%
859	Hummingbird	KY	Fleming	200	3115	3115	885	290	5%	37%	58%	0%
868	Keeneland	KY	Barren	38	613	613	906	105	6%	46%	48%	0%
893	Dogwood KY	KY	Christian	125	1565	1565	1,628	350	8%	61%	31%	0%
905	Ragland	KY	McCracken	125	4158	4158	1,162	225	9%	83%	7%	0%
958	Clover Creek KY	KY	Breckinridge	200	3908	3908	1,777	300	6%	64%	19%	11%
973	Mantle Rock	KY	Livingston	65	562	562	1,836	360	1%	25%	74%	0%
977	Wood Duck	KY	Barren	100	2259.4	1126.7	1,297	280	6%	35%	59%	0%
988	LGE-KU	KY	Shelby	2.1	35.51	35.51	1,003	595	5%	34%	9%	52%
989	Banjo Creek	KY	Graves	120	1270	1270	824	180	21%	56%	23%	0%
997	Gage	KY	Balard	240	1748	1748	704	150	4%	65%	31%	0%
1022	Frontier	KY	Washington, M	120	921.72	921.72	2,050	275	3%	26%	71%	0%
1046	Starfire	KY	Breathitt, Knott, Perry		7860	7860	2456	850	1%	95%	4%	0%
1066	Bluegrass	KY	Fayette	40	388	315	920	285	32%	15%	51%	2%
1073	Lynn Barker	KY	Martin	200	2353	2353	3122	1575	3%	96%	1%	0%
1074	Pleasant Valley	KY	Lyon & Caldwel	125	732.31	732.31	544	230	3%	81%	16%	0%
1075	Pike	KY	Pike		2023	2023	2654	1395	16%	72%	7%	5%
1111	Lost City	KY	Muhlenberg	250	1413	1413	688	330	15%	77%	9%	0%

Identified 47

	Output (MW)	Total Acres	Used Acres	Avg. Dist to home	Closest Home	Adjoining Use by Acre			
						Res	Agri	Agri/Res	Com
Average	94.9	1409.7	1206.7	1317	416	8%	51%	36%	5%
Median	94.0	1023.1	902.2	1056	285	6%	48%	32%	0%
High	250.0	7860.0	7860.0	4029	2040	32%	96%	76%	52%
Low	2.0	17.4	17.4	540	90	0%	0%	0%	0%

610: Bowling Green Solar, Bowling Green, KY



This project was built in 2011 and located on 17.36 acres for a 2 MW project on Scotty's Way with the adjoining uses being primarily industrial. The closest dwelling is 720 feet from the nearest panel.

Adjoining Use Breakdown

	Acreage	Parcels
Residential	0.58%	10.00%
Agricultural	63.89%	30.00%
Industrial	35.53%	60.00%
Total	**100.00%**	**100.00%**

611: Cooperative Solar I, Winchester, KY



This project was built in 2017 on 63 acres of a 181.47-acre parent tract for an 8.5 MW project with the closest home at 2,040 feet from the closest solar panel.

Adjoining Use Breakdown

	Acreage	**Parcels**
Residential	0.15%	11.11%
Agricultural	96.46%	77.78%
Agri/Res	3.38%	11.11%
Total	**100.00%**	**100.00%**

612: Walton 2 Solar, Walton, KY

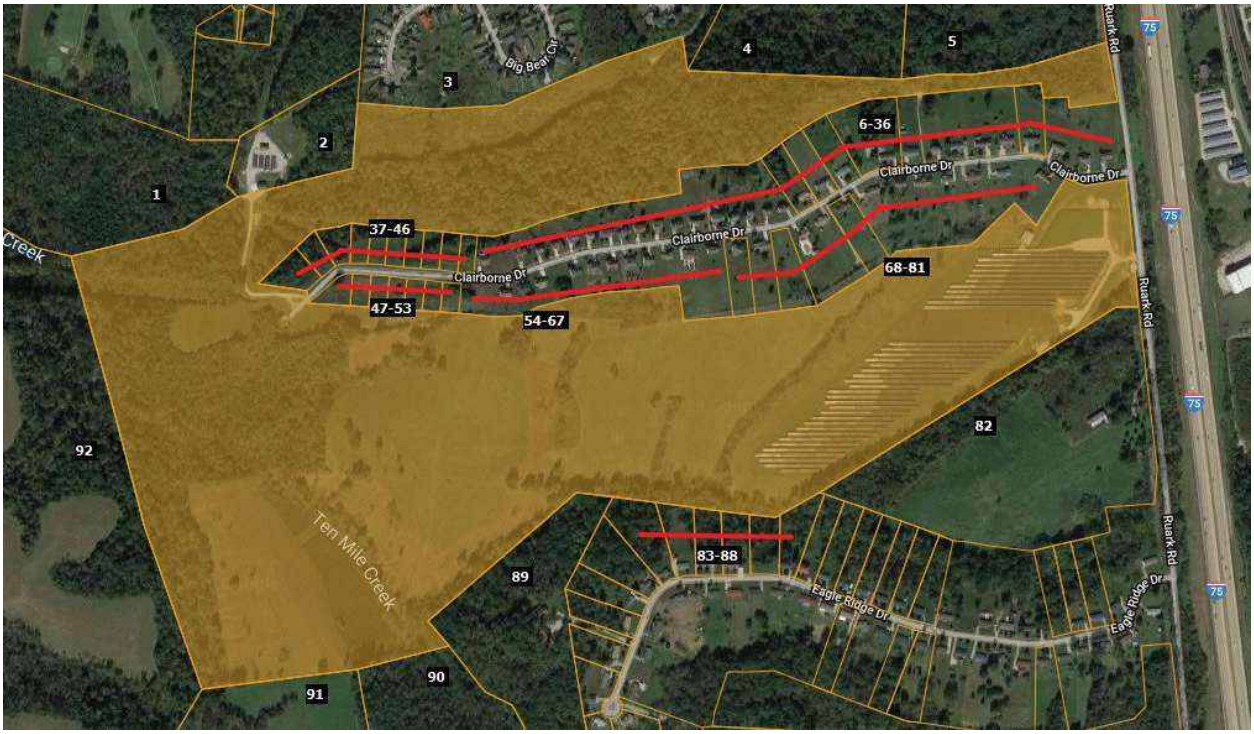


This project was built in 2017 on 58.03 acres for a 2 MW project with the closest home 120 feet from the closest panel.

Adjoining Use Breakdown

	Acreage	Parcels
Residential	20.84%	47.06%
Agri/Res	59.92%	17.65%
Commercial	19.25%	35.29%
Total	**100.00%**	**100.00%**

613: Crittenden Solar, Crittenden, KY



This project was built in late 2017 on 34.10 acres out of a 181.70-acre tract for a 2.7 MW project where the closest home is 345 feet from the closest panel.

Adjoining Use Breakdown

	Acreage	**Parcels**
Residential	1.65%	32.08%
Agricultural	73.39%	39.62%
Agri/Res	23.05%	11.32%
Commercial	0.64%	9.43%
Industrial	0.19%	3.77%
Airport	0.93%	1.89%
Substation	0.15%	1.89%
Total	**100.00%**	**100.00%**

617: Glover Creek Solar, Summer Shade, Metcalfe County, KY



This project under construction in 2023 and 2024 on 322.44 acres out of a 968.20-acre parent tract assemblage for a 55 MW project where the closest home is 175 feet from the closest panel.

Adjoining Use Breakdown

	Acreage	Parcels
Residential	5.78%	37.50%
Agricultural	19.81%	12.50%
Agri/Res	74.41%	50.00%
Total	**100.00%**	**100.00%**

I identified a sale of 194 acres adjoining this solar farm on January 22, 2021 for $430,000, or $2,216 per acre. This land was improved with a dwelling from the early 1900s and while 74 acres were in timber, the timber was reserved. Given the reserved timber and the fact that this sold prior to the construction of the solar farm, it is difficult to analyze this sale for impact.

618: Turkey Creek Solar, Lancaster, Garrard County, KY



This project was built in 2022 on 297.05 acres out of a 752.80-acre parent tract assemblage for a 50 MW project where the closest home is 240 feet from the closest panel. This project was announced in 2019 with approvals in 2020.

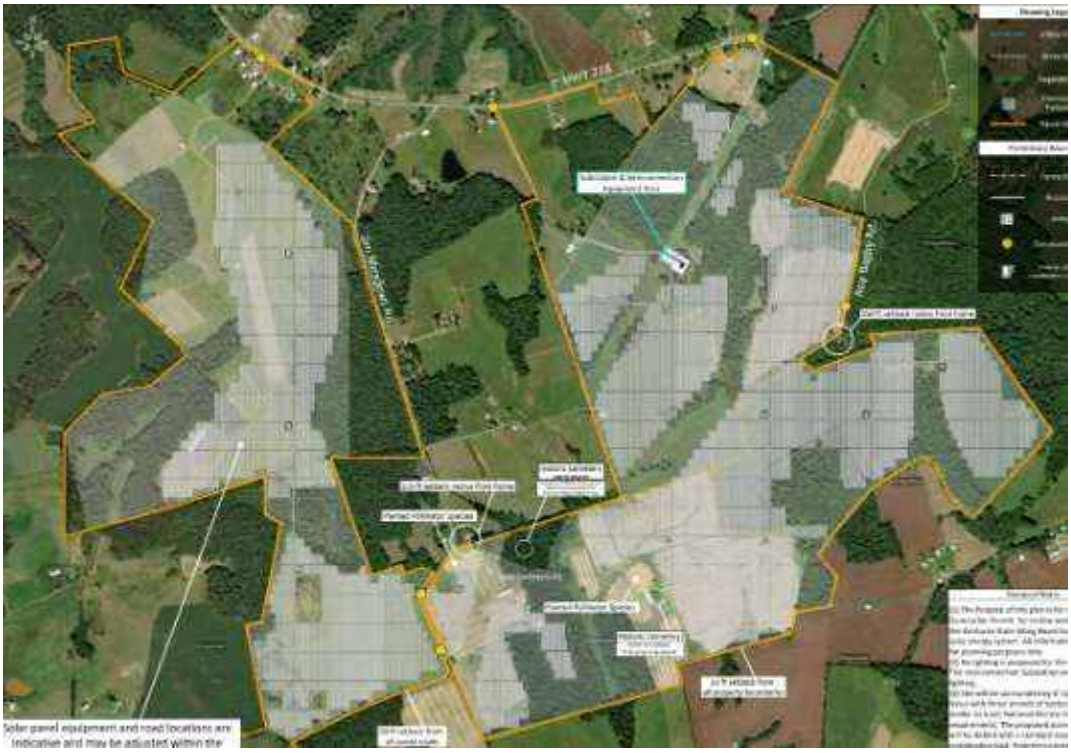
656: Mount Olive Creek Solar, Russell Springs, Russell County, KY



This project is proposed to be built by 2025 on 420.82 acres out of a parent tract assemblage of 526.02 acres for this 60 MW project.

The closest adjoining home is 150 feet from the nearest panel.

657: Horseshoe Bend Solar, Greensburg, Green County, KY



This project is proposed to be built in 2025 on 395 acres out of a parent tract assemblage of 585.65 acres for this 60 MW project.

A home located at 2814 Highway 218, Greensburg sold on March 17, 2023 for $199,500 for a 3BR, 3 bathroom brick range on 3.75 acres located across the Highway and 1,275 feet from the nearest panel. The home is very well screened by trees and very distant and across a highway from the project. It is not a great candidate for testing for solar farm values. Furthermore it was updated since it was purchased in 2018, which minimizes the potential for a Sale/Resale analysis. All I can say is that the home was purchased in 2018 for $127,000 and sold 5 years later at a significantly higher price, though I don't know how much of that is attributable to the updates.

658: Flat Run Solar, Campbellsville, Taylor County, KY



This project is currently proposed to begin commercial operation in 2025 and to be located on 518.94 acres for this 55 MW project. The closest dwelling was proposed to be 220 feet from the nearest panel.

Adjoining Use Breakdown

	Acreage	**Parcels**
Residential	11.11%	55.56%
Agricultural	70.45%	37.04%
Agri/Res	18.44%	7.41%
Total	**100.00%**	**100.00%**

659: Cooperative Shelby Solar, Simpsonville, KY



This project was built in 2020 on 35 acres for a 0.5 MW project that is approved for expansion up to 4 MW.

Adjoining Use Breakdown

	Acreage	Parcels
Residential	6.04%	44.44%
Agricultural	10.64%	11.11%
Agri/Res	31.69%	33.33%
Institutional	51.62%	11.11%
Total	**100.00%**	**100.00%**

660: E.W. Brown Solar, Harrodsburg, KY

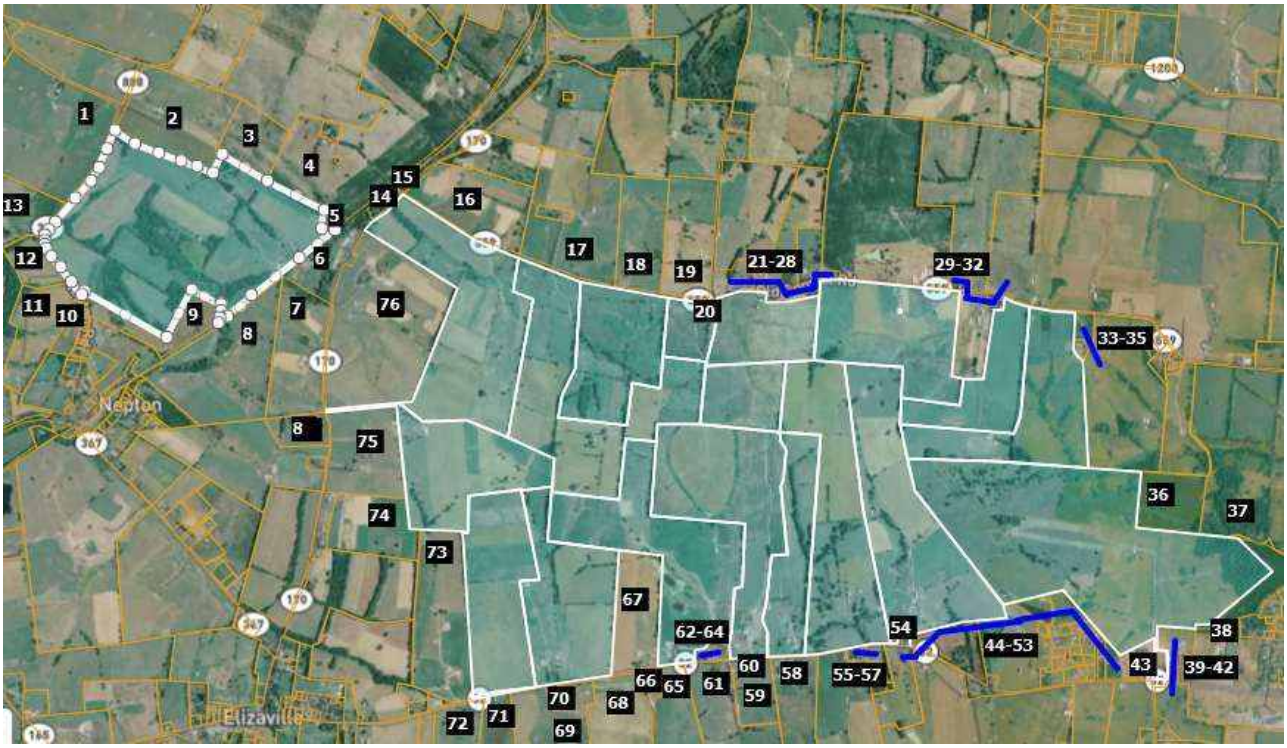


This project was built in 2016 on 50 acres for a 10 MW project. This solar facility adjoins three coal-fired units, which makes analysis of these nearby home sales problematic as it is impossible to extract the impact of the coal plant on the nearby homes especially given the lake frontage of the homes shown.

Adjoining Use Breakdown

	Acreage	**Parcels**
Residential	2.77%	77.27%
Agricultural	43.92%	9.09%
Agri/Res	28.56%	9.09%
Industrial	24.75%	4.55%
Total	**100.00%**	**100.00%**

696: AEUG Fleming Solar, Elizaville, Fleming County, KY



This project is proposed to be developed in 2026 for a 188 MW project on a parent tract of 2,350 acres. The closest adjoining home is to be 175 feet from the nearest panel.

Adjoining Use Breakdown

	Acreage	Parcels
Residential	11.80%	48.68%
Agricultural	37.47%	18.42%
Agri/Res	50.22%	30.26%
Religious	0.20%	1.32%
Commercial	0.30%	1.32%
Total	**100.00%**	**100.00%**

700: Ashwood Solar, Fredonia, Lyon County, KY

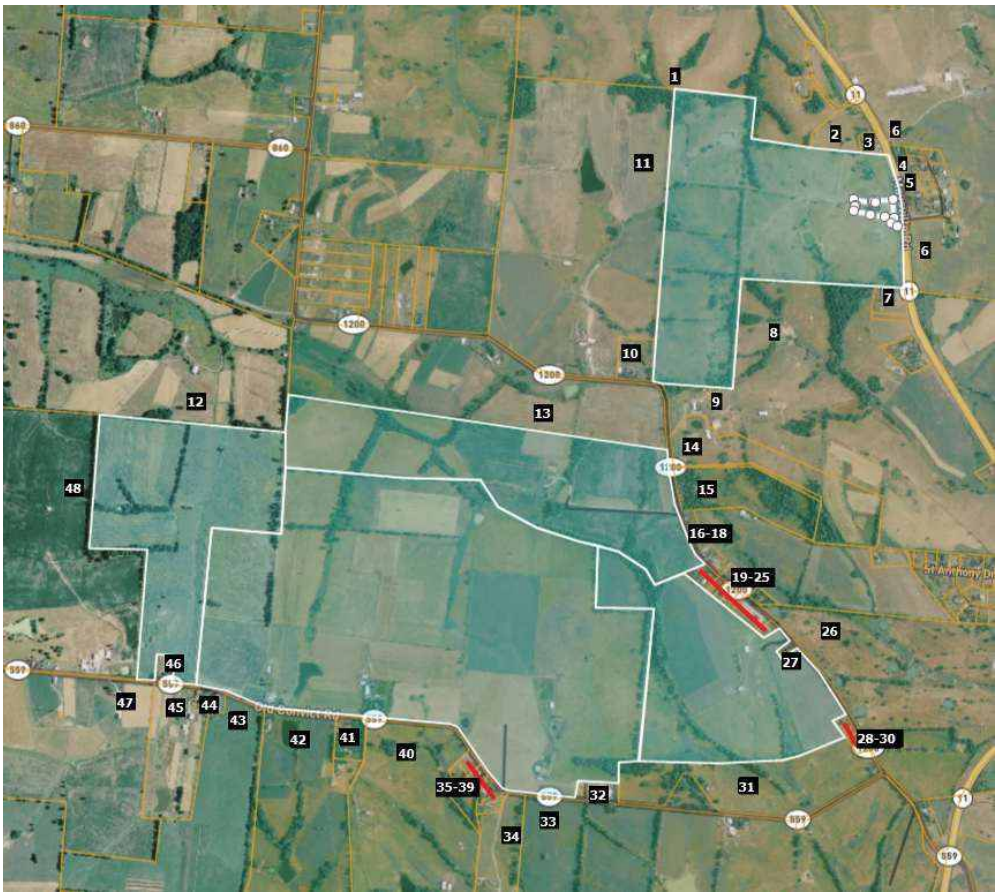


This project broke ground in 2023 and expected to be complete in 2024 according to RWE's website. It is located on 1,537.70 acres for an 86 MW project on Coleman Doles Road near Fredonia. The closest dwelling was proposed to be 170 feet from the nearest panel.

Adjoining Use Breakdown

	Acreage	**Parcels**
Residential	3.70%	54.05%
Agricultural	46.11%	24.32%
Agri/Res	22.99%	18.92%
Correctional	27.20%	2.70%
Total	**100.00%**	**100.00%**

720: Fleming Solar, Flemingsburg, Fleming County, KY

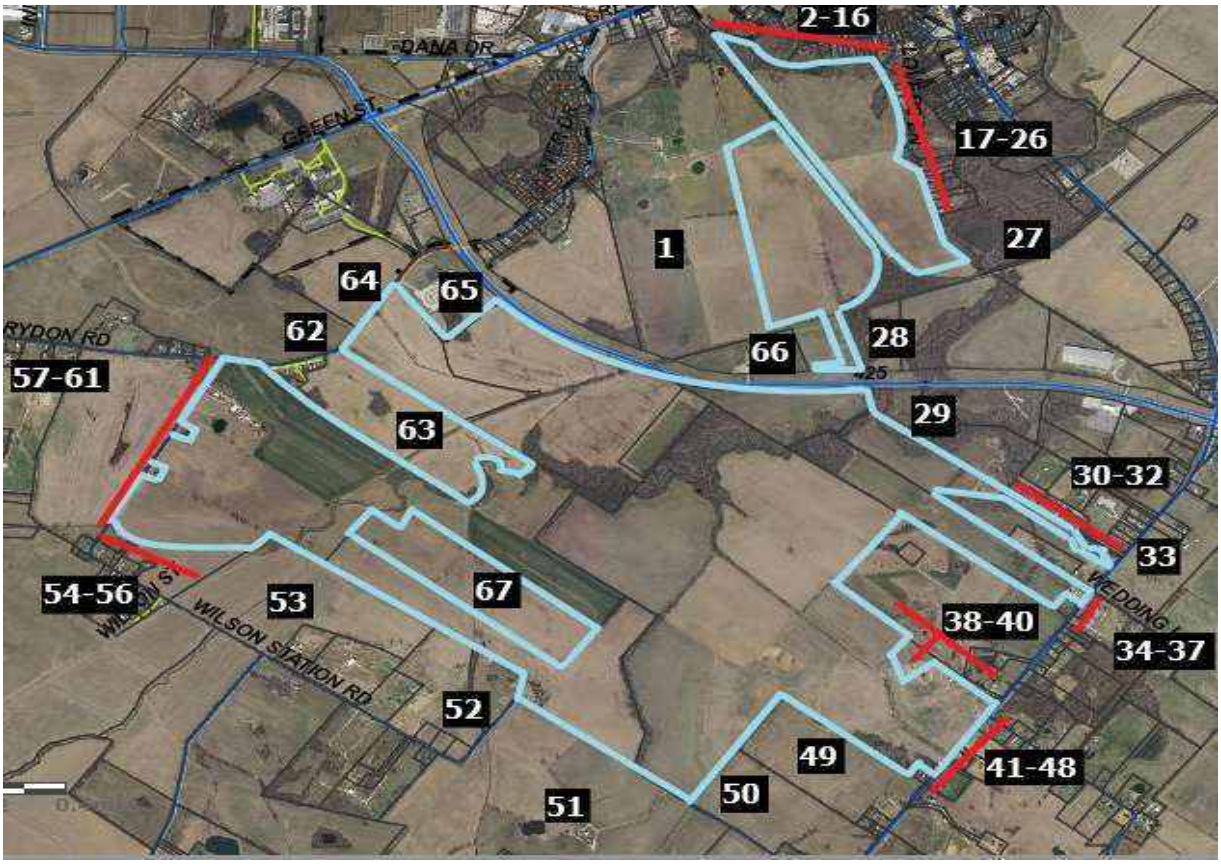


This project is proposed and located on 598.60 acres out of a 764.50-acre assemblage for a 98 MW project on Old Convict Road. The closest dwelling was proposed to be 150 feet from the nearest panel. This is part of the same project as the AEUG Fleming Solar located just north and east of the earlier reported section.

Adjoining Use Breakdown

	Acreage	**Parcels**
Residential	2.93%	56.25%
Agricultural	47.56%	20.83%
Agri/Res	49.27%	18.75%
Religious	0.12%	2.08%
Warehouse	0.12%	2.08%
Total	**100.00%**	**100.00%**

722: Henderson County Solar, Henderson, Henderson County, KY

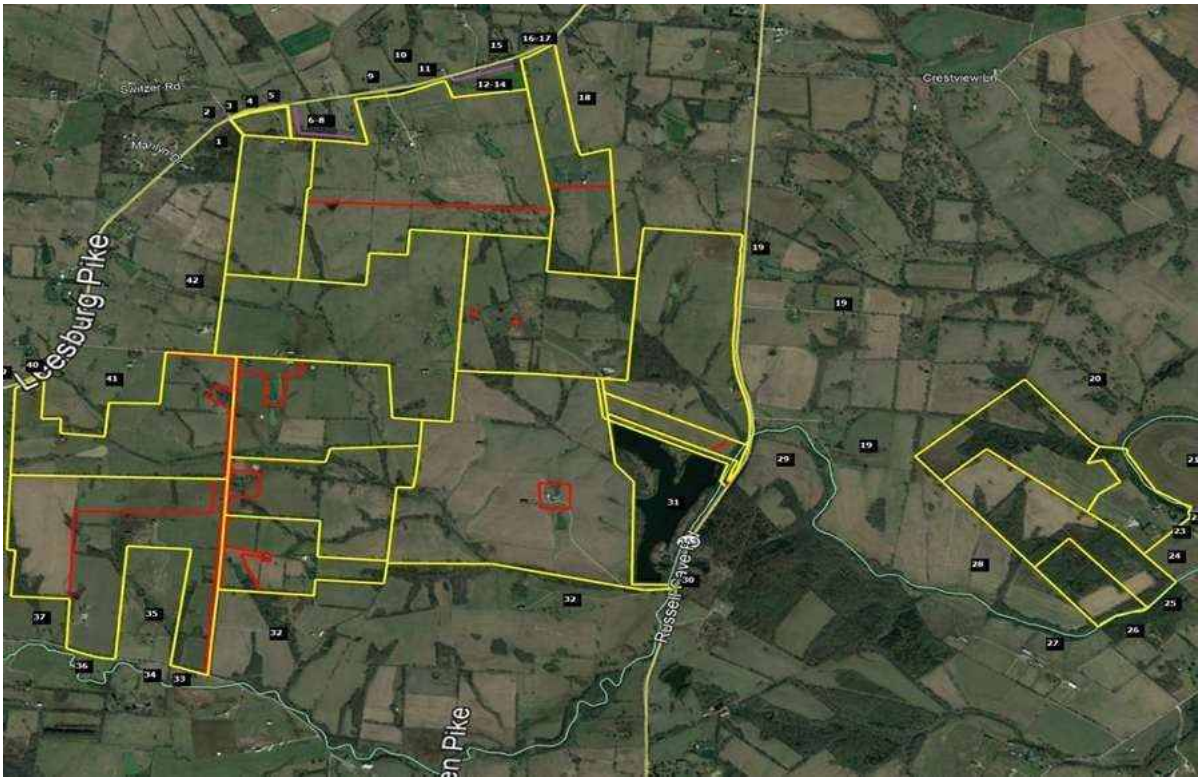


This project was originally proposed to be completed in 2023 and is located on 725.13 acres out of a 1,113.03-acre assemblage for a 50 MW project on Wilson Station Road. The original company Community Energy was acquired by AES in 2021 and this project was taken over by Stellar Renewable Power which projects to begin operations in December 2026. The closest dwelling was proposed to be 180 feet from the nearest panel.

Adjoining Use Breakdown

	Acreage	**Parcels**
Residential	12.77%	71.64%
Agricultural	56.98%	14.93%
Agri/Res	27.96%	7.46%
Religious	0.03%	1.49%
School	1.45%	1.49%
Substation	0.45%	1.49%
Cell Tower	0.35%	1.49%
Total	**100.00%**	**100.00%**

770: Bluebird Solar, Cynthia, Harrison County, KY

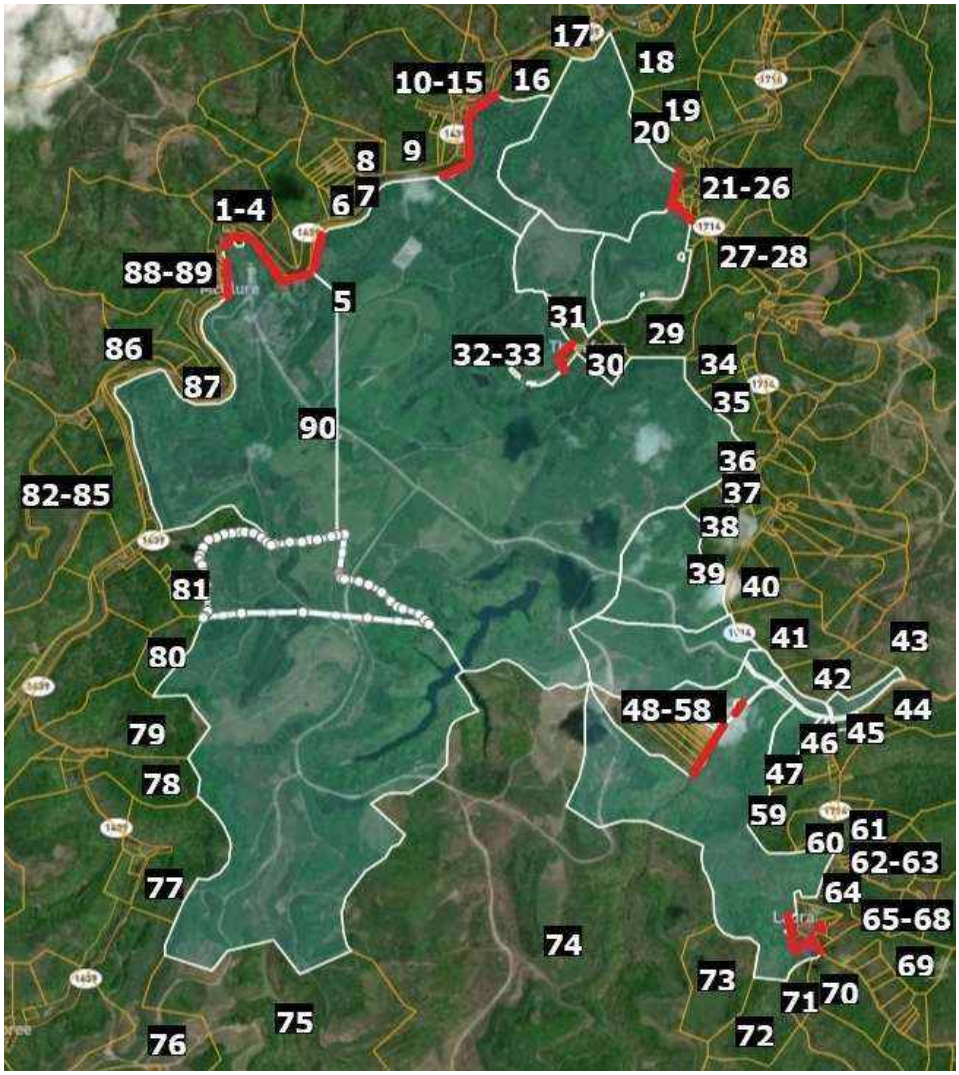


This project is currently under construction in early 2025 and is located on 1,345 acres out of a 1,943.24-acre assemblage for a 90 MW project on Hwy 32 W near Cynthia. The closest dwelling was proposed to be 350 feet from the nearest panel.

Adjoining Use Breakdown

	Acreage	**Parcels**
Residential	3.47%	47.62%
Agricultural	20.51%	26.19%
Agri/Res	76.01%	26.19%
Total	**100.00%**	**100.00%**

771: Martin County Solar, Threeforks, Martin County, KY

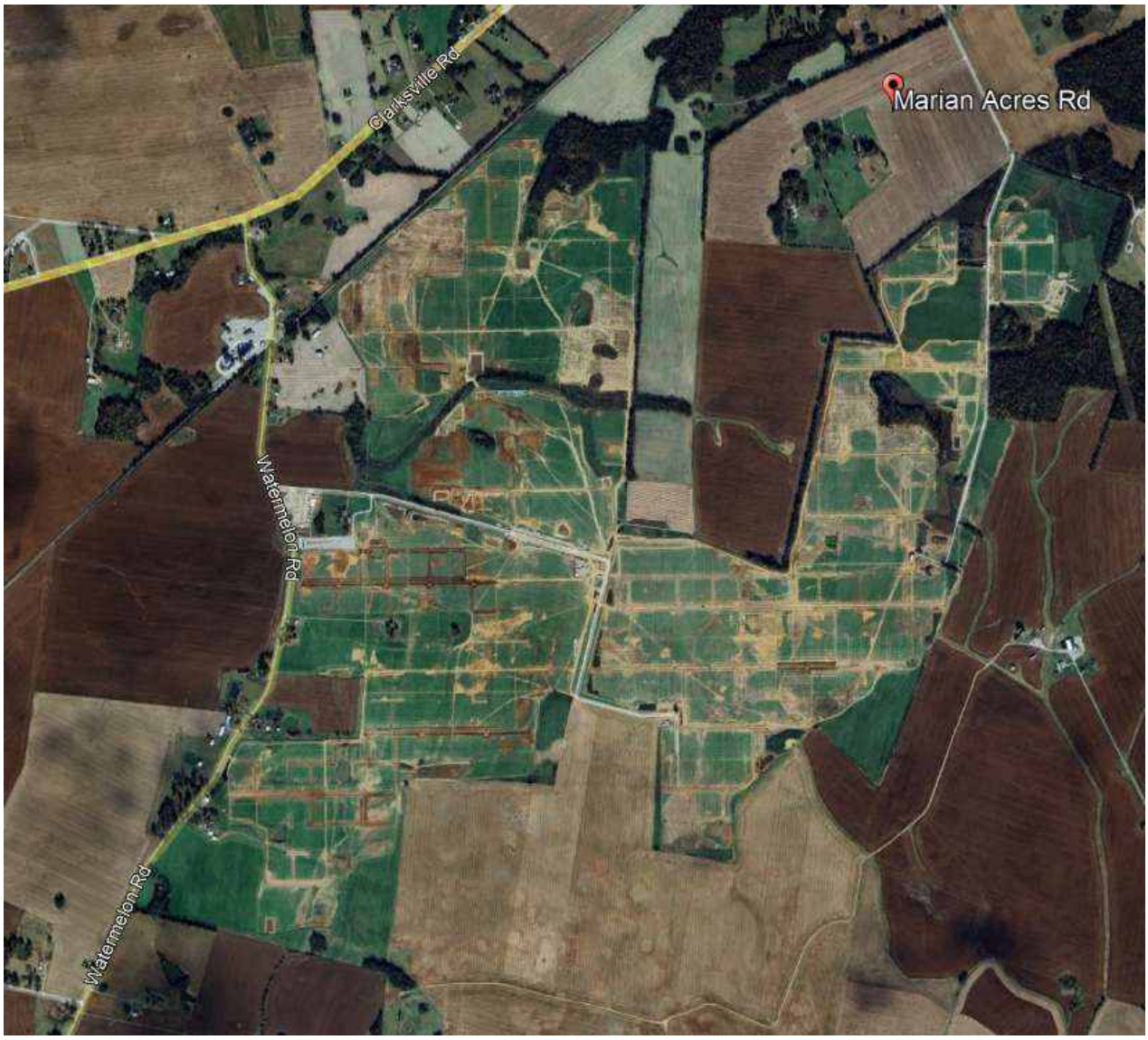


This project began construction in 2023 and completed in January 2025 on a 900-acre portion of a 2,500-acre assemblage for a 111 MW project. This was the former Martiki Coal Mine land. The closest dwelling is 1,450 feet from the nearest panel.

Adjoining Use Breakdown

	Acreage	**Parcels**
Residential	4.65%	60.44%
Agricultural	93.60%	31.87%
Agri/Res	1.69%	2.20%
Cemetery	0.06%	5.49%
Total	**100.00%**	**100.00%**

794: Logan County Solar, Russelville, Logan County, KY

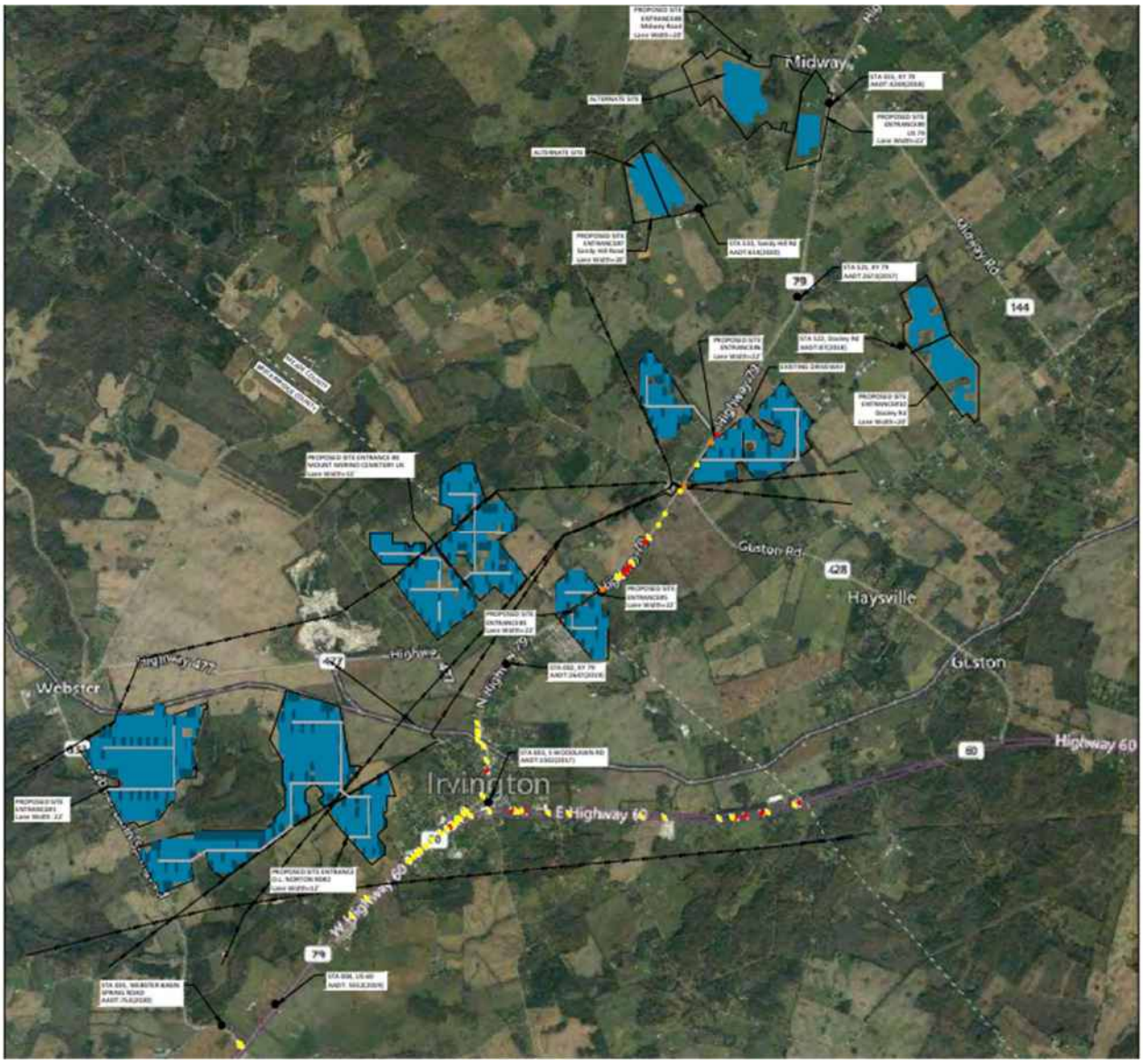


This project began construction in 2023 and proposed to be complete in early 2025. It is located on 1,100 acres for a 173 MW project. The closest dwelling was proposed to be 225 feet from the nearest panel.

Adjoining Use Breakdown

	Acreage	**Parcels**
Residential	3.54%	45.71%
Agricultural	51.29%	37.14%
Agri/Res	45.05%	14.29%
Religious	0.12%	2.86%
Total	**100.00%**	**100.00%**

Green River Solar, Guston, Meade and Breckinridge County, KY

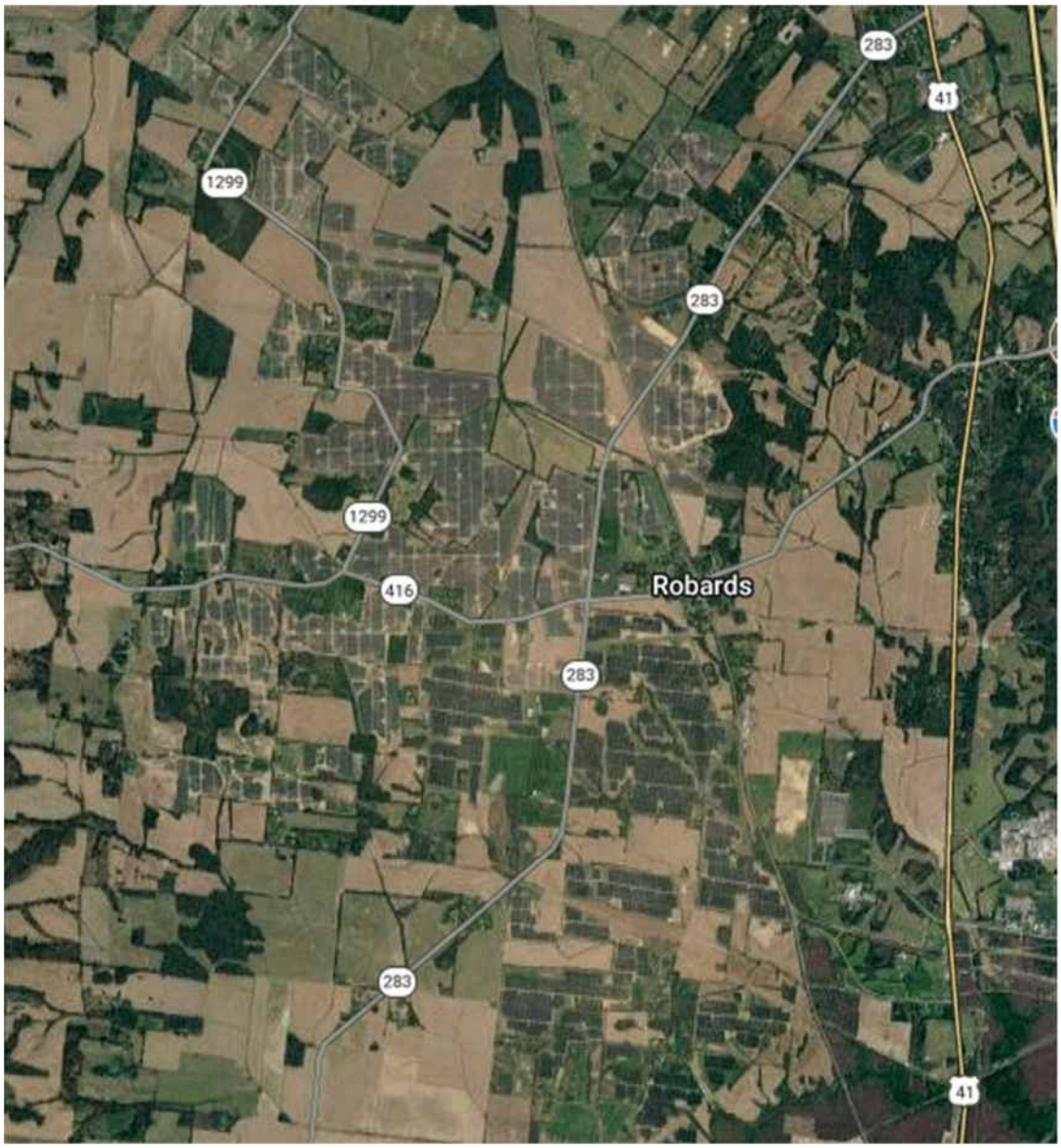


This project was built in 2025 for this 200 MW solar project. The aerial images are not readily available on this though some of the maps show the project during early construction.

I identified a sale of 7636 Highway 79 that sold on September 17, 2024 during the solar farm construction for $329,900. I reached out to Brian Chsim with NextHome Chism Realty (270-600-3777) about this home sale. The sale appears to be out of an estate which could limit the reliability of this sale.

I identified a sale at 34 Joyce Court that sold on June 24, 2025 for $320,000 for this 1,852 s.f. ranch with 3 BR, 2 BA built in 2025 on 1.63 acres. This home was constructed in the same time frame as the solar project. I reached out to Amy Chism with Stonegate Realty for comment about this sale as well as other new homes built and sold in the same time frame on Joyce Court.

Sebree Solar, Robards, Henderson County, KY



This project was built in 2025 for this 400 MW solar project in two phase.

VIII. Market Analysis of the Impact on Value from Solar Farms

I have researched hundreds of solar farms in numerous states to determine the impact of these facilities on the value of adjoining properties. This research has primarily been in North Carolina, but I have also conducted market impact analyses in Virginia, South Carolina, Tennessee, Texas, Oregon, Mississippi, Maryland, New York, California, Missouri, Florida, Montana, Georgia, Kentucky, and New Jersey.

The data collection on the following pages will be used in the Sale/Resale Analysis, Paired Sales Analysis, and the Broker Comment Summary in the following sections of this report.

I have derived a breakdown of the adjoining uses to show where solar farms are located. A summary showing the results of compiling that data over hundreds of solar farms is shown later in the Scope of Research section of this report.

I also consider whether the properties adjoining a solar farm in one location have characteristics similar to the properties abutting or adjoining the proposed site so that I can make an assessment of market impact on each proposed site. Notably, in most cases solar farms are placed in areas very similar to the site in question, which is surrounded by low density residential and agricultural uses. In my over 700 studies, I have found a striking repetition of that same typical adjoining property use mix in over 90% of the solar farms I have looked at. Matched pair results in multiple states are strikingly similar, and all indicate that solar farms – which generate very little traffic, and do not generate noise, dust or have other harmful effects – do not negatively impact the value of adjoining or abutting properties.

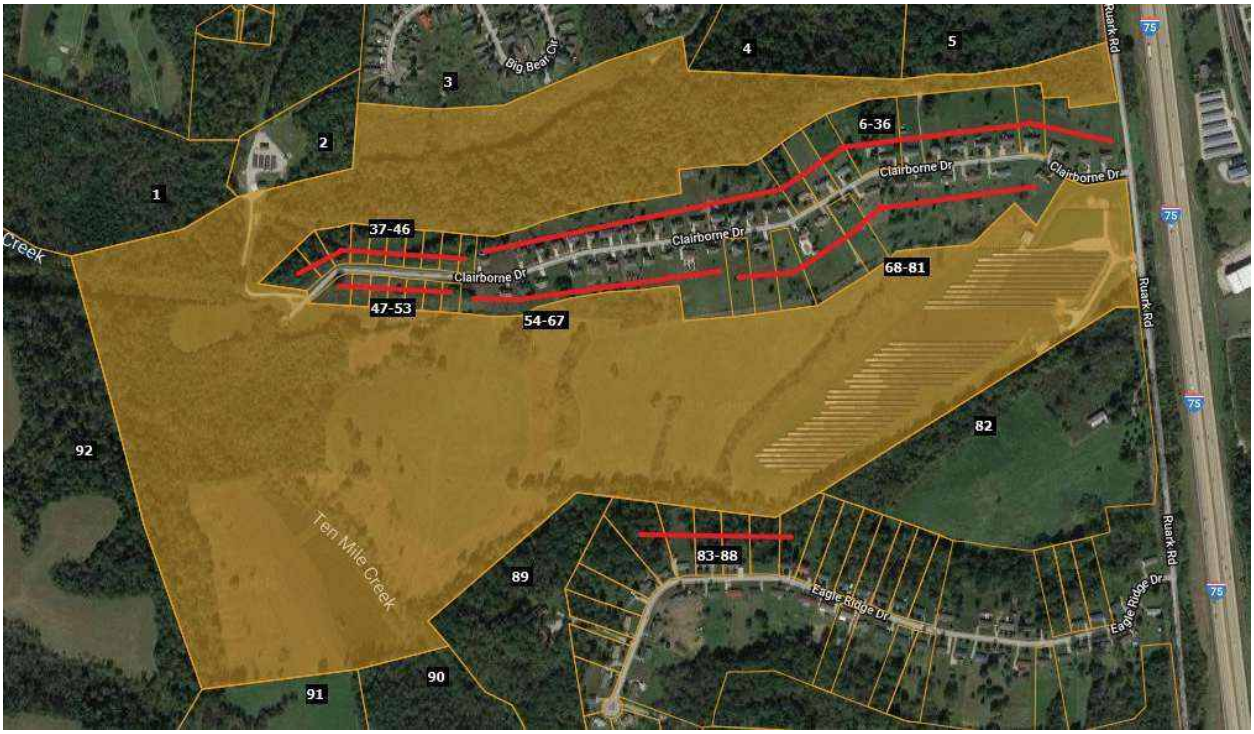
I have previously been asked by the Kentucky Siting Board about how the solar farms and the matched pair sets were chosen. This is the total of all the usable home sales adjoining the 900+ solar farms that I have looked at over the last 18 years. Most of the solar farms that I have looked at are only a few years old and have not been in place long enough for home or land sales to occur next to them for me to analyze. There is nothing unusual about this given the relatively rural locations of most of the solar farms where home and land sales occur much less frequently than they do in urban and suburban areas and the number of adjoining homes is relatively small.

I review the solar farms that I have looked at periodically to see if there are any new sales. If there is a sale I have to be sure it is not an inhouse sale or to a related family member. A great many of the rural sales that I find are from one family member to another, which makes analysis impossible given that these are not "arm's length" transactions. There are also numerous examples of sales that are "arm's length" but are still not usable due to other factors such as adjoining significant negative factors such as a coal fired plant or at a landfill or prison. I have looked at homes that require a driveway crossing a railroad spur, homes in close proximity to large industrial uses, as well as homes adjoining large state parks, or homes that are over 100 years old with multiple renovations. Such sales are not usable as they have multiple factors impacting the value that are tangled together. You can't isolate the impact of the coal fired plant, the industrial building, or the railroad unless you are comparing that sale to a similar property with similar impacts. Matched pair analysis requires that you isolate properties that only have one differential to test for, which is why the type of sales noted above is not appropriate for analysis.

After my review of all sales and elimination of the family transactions and those sales with multiple differentials, I am left with the matched pairs shown in this report to analyze. I do have additional matched pair data in other areas of the United States that were not included in this report due to being states less comparable to Kentucky than those shown. The only other sales that I have eliminated from the analysis are home sales under $100,000, which there haven't been many such examples, but at that price range it is difficult to identify any impacts through matched pair analysis. I have not cherry picked the data to include just the sales that support one direction in value, but I have included all of them both positive and negative with a preponderance of the evidence supporting no impact to mild positive impacts.

Kentucky Data

1. Crittenden Solar, Crittenden, Grant County, KY



This solar farm was built in December 2017 on a 181.70-acre tract but utilizing only 34.10 acres. This is a 2.7 MW facility with residential subdivisions to the north and south.

I have identified a number of home sales to the north of this solar farm on Clairborne Drive and a couple of home sales to the south on Eagle Ridge Drive since the completion of this solar farm. The home sales on Eagle Drive are challenging to consider given that local broker Steve Glacken with Cutler Real Estate indicated that these are the lowest price range/style home in the market. I have not analyzed those sale as it would unlikely provide significant data to other homes in the area.

Mr. Glacken has been selling lots at the west end of Clairborne for new home construction. He indicated in 2020 that the solar farm near the entrance of the development has been a complete non-factor and none of the home sales are showing any concern over the solar farm. Most of the homes are in the $250,000 to $335,000 price range. The vacant residential lots are being marketed for $28,000 to $30,000. The landscaping buffer is considered light, but the rolling terrain allows for distant views of the panels from the adjoining homes along Clairborne Drive.

The first home considered is a bit of an anomaly for this subdivision in that it is the only manufactured home that was allowed in the community. It sold on January 3, 2019. I compared that sale to three other manufactured home sales in the area making minor adjustments as shown on the next page to account for the differences. After all other factors are considered the adjustments show a -1% to +13% impact due to the adjacency of the solar farm. The best indicator is 1250 Cason, which shows a 3% impact. A 3% impact is within the normal static of real estate transactions and therefore not considered indicative of a positive impact on the property, but it strongly supports an indication of no negative impact.

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
	Adjoins	250 Claiborne	0.96	1/3/2019	$120,000	2000	2,016	$59.52	3/2	Drive	Manuf	
	Not	1250 Cason	1.40	4/18/2018	$95,000	1994	1,500	$63.33	3/2	2-Det	Manuf	Carport
	Not	410 Reeves	1.02	11/27/2018	$80,000	2000	1,456	$54.95	3/2	Drive	Manuf	
	Not	315 N Fork	1.09	5/4/2019	$107,000	1992	1,792	$59.71	3/2	Drive	Manuf	

Adjustments

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
Adjoins	250 Claiborne								$120,000			373
Not	1250 Cason	$2,081		$2,850	$26,144		-$5,000	-$5,000	$116,075	3%		
Not	410 Reeves	$249		$0	$24,615				$104,865	13%		
Not	315 N Fork	-$1,091		$4,280	$10,700				$120,889	-1%		
											5%	

I also looked at 350 Claiborne as shown below. These are stick-built homes and show a higher price range.

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
	Adjoins	350 Claiborne	1.00	7/20/2018	$245,000	2002	1,688	$145.14	3/3	2-Car	Ranch	Brick
	Not	460 Claiborne	0.31	1/3/2019	$229,000	2007	1,446	$158.37	3/2	2-Car	Ranch	Brick
	Not	2160 Sherman	1.46	6/1/2019	$265,000	2005	1,735	$152.74	3/3	2-Car	R/FBsmt	Brick
	Not	215 Lexington	1.00	7/27/2018	$231,200	2000	1,590	$145.41	5/4	2-Car	Ranch	Brick

Adjustments

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
Adjoins	350 Claiborne								$245,000			720
Not	460 Claiborne	-$3,223		-$5,725	$30,660	$5,000			$255,712	-4%		
Not	2160 Sherman	-$7,057		-$3,975	-$5,743				$248,225	-1%		
Not	215 Lexington	-$136		$2,312	$11,400	-$5,000			$239,776	2%		
											-1%	

The following photograph shows the light landscaping buffer and the distant view of panels that was included as part of the marketing package for this property. The panels are visible somewhat on the left and somewhat through the trees in the center of the photograph. The first photograph is from the home, with the second photograph showing the view near the rear of the lot.





This set of matched pairs shows no negative impact for this property. The range of adjusted impacts is -4% to +2%. The best indication is -1%, which as described above is within the typical market static and supports no impact on adjoining property value.

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
	Adjoins	370 Claiborne	1.06	8/22/2019	$273,000	2005	1,570	$173.89	4/3	2-Car	2-Story	Brick
	Not	2160 Sherman	1.46	6/1/2019	$265,000	2005	1,735	$152.74	3/3	2-Car	R/FBsmt	Brick
	Not	2290 Dry	1.53	5/2/2019	$239,400	1988	1,400	$171.00	3/2.5	2-Car	R/FBsmt	Brick
	Not	125 Lexington	1.20	4/17/2018	$240,000	2001	1,569	$152.96	3/3	2-Car	Split	Brick

Adjustments

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
Adjoins	370 Claiborne								$273,000			930
Not	2160 Sherman	$1,831		$0	-$20,161				$246,670	10%		
Not	2290 Dry	$2,260		$20,349	$23,256	$2,500			$287,765	-5%		
Not	125 Lexington	$9,951		$4,800					$254,751	7%		
											4%	

This set of matched pairs shows a general positive impact for this property. The range of adjusted impacts is -5% to +10%. The best indication is +7%. I typically consider measurements of +/-5% to be within the typical variation in real estate transactions. This indication is higher than that and suggests a positive relationship.

The photograph from the listing shows panels visible between the home and the trampoline shown in the picture.



Adjoining Residential Sales After Solar Farm Approved

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
Adjoins	330 Claiborne	1.00	12/10/2019	$282,500	2003	1,768	$159.79	3/3	2-Car	Ranch	Brick/pool
Not	895 Osborne	1.70	9/16/2019	$249,900	2002	1,705	$146.57	3/2	2-Car	Ranch	Brick/pool
Not	2160 Sherman	1.46	6/1/2019	$265,000	2005	1,735	$152.74	3/3	2-Car	R/FBsmt	Brick
Not	215 Lexington	1.00	7/27/2018	$231,200	2000	1,590	$145.41	5/4	2-Car	Ranch	Brick

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
Adjoins	330 Claiborne								$282,500			665
Not	895 Osborne	$1,790		$1,250	$7,387	$5,000		$0	$265,327	6%		
Not	2160 Sherman	$4,288		-$2,650	$4,032			$20,000	$290,670	-3%		
Not	215 Lexington	$9,761		$3,468	$20,706	-$5,000		$20,000	$280,135	1%		
											1%	

This set of matched pairs shows a general positive impact for this property. The range of adjusted impacts is -3% to +6%. The best indication is +6%. I typically consider measurements of +/-5% to be within the typical variation in real estate transactions. This indication is higher than that and suggests a positive relationship. The landscaping buffer on these is considered light with a fair visibility of the panels from most of these comparables and only thin landscaping buffers separating the homes from the solar panels.

I also looked at four sales that were during a rapid increase in home values around 2021, which required significant time adjustments based on the FHFA Housing Price Index. Sales in this time frame are less reliable for impact considerations as the peak buyer demand allowed for homes to sell with less worry over typical issues such as repairs.

The home at 250 Claiborne Drive sold with no impact from the solar farm according to the buyer's broker Lisa Ann Lay with Keller Williams Realty Service. As noted earlier, this is the only manufactured home in the community and is a bit of an anomaly. There was an impact on this sale due to an appraisal that came in low likely related to the manufactured nature of the home. Ms. Lay indicated that there was significant back and forth between both brokers and the appraiser to address the low appraisal, but ultimately, the buyers had to pay $20,000 out of pocket to cover the difference in appraised value and the purchase price. The low appraisal was not attributed to the solar farm, but the difficulty in finding comparable sales and likely the manufactured housing.

Adjoining Residential Sales After Solar Farm Built

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
Adjoins	250 Claiborne	1.05	1/5/2022	$210,000	2002	1,592	$131.91	4/2	Drive	Ranch	Manuf
Not	255 Spillman	0.64	3/4/2022	$166,000	1991	1,196	$138.80	3/1	Drive	Ranch	Remodel
Not	546 Waterworks	0.28	4/29/2021	$179,500	2007	1,046	$171.61	4/2	Drive	Ranch	3/4 Fin B
Not	240 Shawnee	1.18	6/7/2021	$180,000	1977	1,352	$133.14	3/2	Gar	Ranch	N/A

Solar	Address	Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
Adjoins	250 Claiborne							$210,000			365
Not	255 Spillman	-$379	$9,130	$43,971	$10,000		-$20,000	$208,722	1%		
Not	546 Waterworks	$1,772	-$4,488	$74,958			-$67,313	$184,429	12%		
Not	240 Shawnee	$1,501	$22,500	$25,562		-$10,000		$219,563	-5%		
										3%	

The photograph of the rear view from the listing is shown below.



The home at 260 Claiborne Drive sold with no impact from the solar farm according to the buyer's broker Jim Dalton with Ashcraft Real Estate Services. He noted that there was significant wood rot and a heavy smoker smell about the house, but even that had no impact on the price due to high demand in the market.

Adjoining Residential Sales After Solar Farm Built

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
Adjoins	260 Claiborne	1.00	10/13/2021	$175,000	2001	1,456	$120.19	3/2	Drive	Ranch	N/A
Not	355 Oakwood	0.58	10/27/2020	$186,000	2002	1,088	$170.96	3/2	Gar	Ranch	3/4 Fin B
Not	30 Ellen Kay	0.50	1/30/2020	$183,000	1988	1,950	$93.85	3/2	Gar	2-Story	N/A
Not	546 Waterworks	0.28	4/29/2021	$179,500	2007	1,046	$171.61	4/2	Drive	Ranch	3/4 Fin B

Solar	Address	Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
Adjoins	260 Claiborne							$175,000			390
Not	355 Oakwood	$18,339	-$930	$50,329		-$10,000	-$69,750	$173,988	1%		
Not	30 Ellen Kay	$31,974	$11,895	-$37,088		-$10,000		$179,781	-3%		
Not	546 Waterworks	$8,420	-$5,385	$56,287			-$67,313	$171,510	2%		
										0%	

The photograph of the rear view from the listing is shown below.

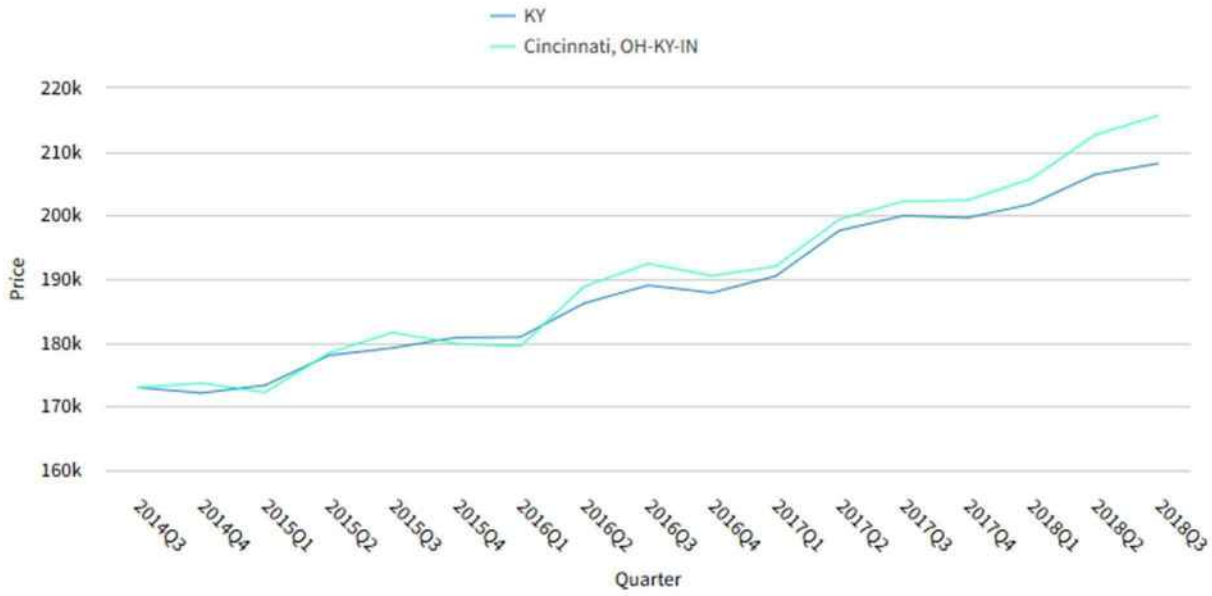


These next two were brick and with unfinished basements which made them easier to compare and therefore more reliable.

For 300 Claiborne I found a sale in 2022, a sale in 2021, and a sale in 2018. All three were after the solar project was completed. I also considered the 2014 sale of the home prior to the announcement of the solar project for a Sale/Resale analysis.

The July 2014 sales price was $173,000 and then it sold after the solar project in 2018 for $212,720. The FHFA HPI shows an expected increase over that time period for an expected home value of $208,183. This is very similar to the actual sales price in 2018 and supports a finding of no impact due to the solar project.

Estimated Value for MSA:	Estimated Value for State:	MSA Percentage Change:
$215,720	$208,183	24.69%



The paired sales data for the 2018, 2021, and 2022 sales of 300 Claiborne are shown below.

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
	Adjoins	300 Claiborne	1.08	9/20/2018	$212,720	2003	1,568	$135.66	3/3	2-Car	Ranch	Brick
	Not	460 Claiborne	0.31	1/3/2019	$229,000	2007	1,446	$158.37	3/2	2-Car	Ranch	Brick
	Not	2160 Sherman	1.46	6/1/2019	$265,000	2005	1,735	$152.74	3/3	2-Car	Ranch	Brick
	Not	215 Lexington	1.00	7/27/2018	$231,200	2000	1,590	$145.41	5/4	2-Car	Ranch	Brick

Adjustments

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
Adjoins	300 Claiborne								$213,000			488
Not	460 Claiborne	-$2,026		-$4,580	$15,457	$5,000			$242,850	-14%		
Not	2160 Sherman	-$5,672		-$2,650	-$20,406				$236,272	-11%		
Not	215 Lexington	$1,072		$3,468	-$2,559	-$5,000			$228,180	-7%		
											-11%	

djoining Residential Sales After Solar Farm Built

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
Adjoins	300 Claiborne	0.89	12/18/2021	$290,000	2002	1,568	$184.95	3/3	2-Car	Br Rnch	Bsmt
Not	405 Claiborne	0.41	2/1/2022	$267,750	2004	1,787	$149.83	3/2	2-Car	Br Rnch	Bsmt
Not	39 Pinhook	0.68	3/31/2022	$299,000	1992	1,680	$177.98	3/2	2-Car	Br Rnch	Bsmt
Not	5 Pinhook	0.70	4/7/2022	$309,900	1992	1,680	$184.46	3/2	2-Car	Br Rnch	Bsmt

Solar	Address	Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
Adjoins	300 Claiborne							$290,000			570
Not	405 Claiborne	-$3,384	-$2,678	-$26,251				$235,437	19%		
Not	39 Pinhook	-$8,651	$14,950	-$15,947				$289,352	0%		
Not	5 Pinhook	-$9,576	$15,495	-$16,528				$299,291	-3%		
										5%	

The photograph of the rear view from the 2021 listing is shown below.



This same home, 300 Claiborne sold again on October 14, 2022 for $332,000, or $42,000 higher or 15% higher than it had just 10 months earlier. The FHFA Home Price Index indicates an 8.3% increase over that time for the overall market, suggesting that this home is actually increasing in value faster than other properties in the area.

Adjoining Residential Sales After Solar Farm Built

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
Adjoins	300 Claiborne	0.89	10/14/2022	$332,000	2002	1,568	$211.73	3/3	2-Car	Br Rnch	Bsmt
Not	202 Shady	0.94	4/20/2023	$300,000	1980	1,620	$185.19	4/2.5	2-Det	Br Rnch	Bsmt
Not	145 Liza	0.31	8/5/2022	$325,000	2015	1,650	$196.97	3/2	2-Car	Br Rnch	
Not	120 Sheffield	0.21	7/26/2023	$344,900	2023	1,570	$219.68	3/2	2-Car	Rnch	Bsmt

Solar	Address	Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
Adjoins	300 Claiborne							$332,000			570
Not	202 Shady	-$14,258	$33,000	-$3,852	-$5,000	$5,000		$314,890	5%		
Not	145 Liza	$5,751	-$21,125	-$6,461			$10,000	$313,166	6%		
Not	120 Sheffield	-$24,850	-$36,215	-$176			$17,245	$300,905	9%		
										7%	

An updated photo from the 2022 listing is shown below.



The home at 410 Claiborne included an inground pool with significant landscaping around it that was a challenge. Furthermore, two of the comparables had finished basements. I made no adjustment for the pool on those two comparables and considered the two factors to cancel out

Adjoining Residential Sales After Solar Farm Built

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
Adjoins	410 Claiborne	0.31	2/10/2021	$275,000	2006	1,595	$172.41	3/2	2-Car	Br Rnch	Bsmt/Pool
Not	114 Austin	1.40	12/23/2020	$248,000	1994	1,650	$150.30	3/2	2-Car	Br Rnch	Bsmt
Not	125 Liza	0.29	6/25/2021	$315,000	2005	1,913	$164.66	4/3	2-Car	Br Rnch	Ktchn Bsmt
Not	130 Hannahs	0.42	2/9/2021	$295,000	2007	1,918	$153.81	3/3	2-Car	Br Rnch	Fin Bsmt

Solar	Address	Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
Adjoins	410 Claiborne							$275,000			1080
Not	114 Austin	$3,413	$14,880	-$6,613			$20,000	$279,680	-2%		
Not	125 Liza	-$11,945	$1,575	-$41,890	-$10,000			$252,740	8%		
Not	130 Hannahs	$83	-$1,475	-$39,743	-$10,000			$243,864	11%		
										6%	

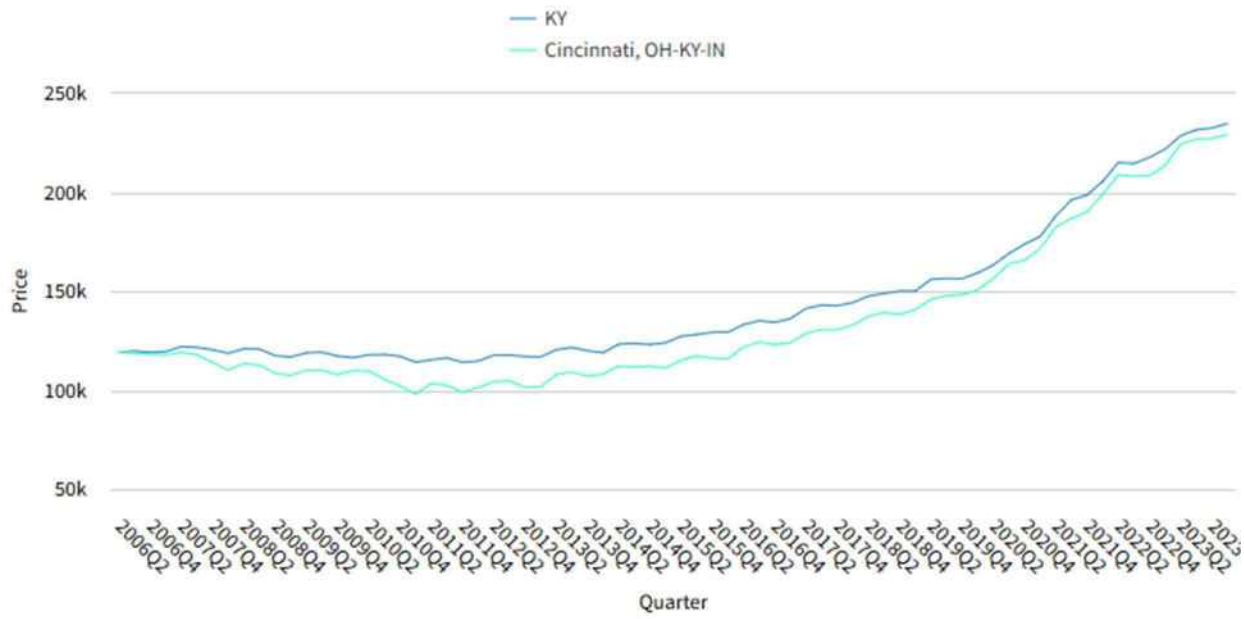
Another home sale was identified at 280 Claiborne which sold on March 27, 2024 for $295,500 for this 2,100 s.f. 1.5-story home built in 1998 with 3 BR, 2.5 BA, on 1.05 acres. In the listing photographs you can see the solar panels in the background as shown below. The closest panel is 500 feet from the home.



This home last sold on April 28, 2006 for $119,200 before the solar farm was built. Using the FHFA HPI over that time period, that home was expected to appreciate between those two sales to $234,745, whereas it actually appreciated to $295,500. This home was noted as having "neat additions" such as a storm shelter, fenced gardens, and tasteful décor. Some of this may explain the higher sales price, but this Sale/Resale strongly supports a finding of no impact on property value. A typical new roof adds $6,000 to $7,000 in resale value based on some online estimates. A new kitchen typically adds around $26,000 on average as of 2022. Adding an additional $5,000 for the granite counter tops the total kitchen remodel estimate is $31,000. Add in the new roof and you get an estimated value of the upfit at $38,000. Even if I increase this estimate by 25% to $47,500, the indicated adjusted value including the time adjustment is $282,245, which supports a finding of no impact on property value.

The home was sold by Carol Jackson with The Realty Place (859-393-6282). Ms Jackson replied via text on 1/18/25 that this was an arm's length transaction and that the solar project had no impact on the property value due to the distance involved. She indicated that they had multiple offers on this home.

Estimated Value for MSA:	Estimated Value for State:	MSA Percentage Change:
$229,205	$234,745	92.29%



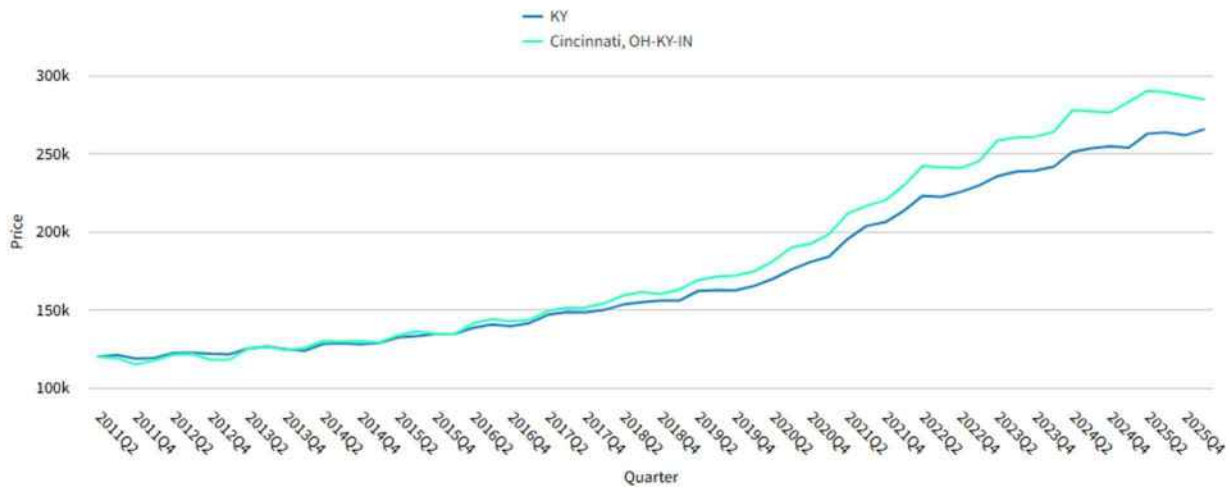
Adjoining Residential Sales After Solar Farm Built

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
Adjoins	410 Claiborne	0.31	2/10/2021	$275,000	2006	1,595	$172.41	3/2	2-Car	Br Rnch	Bsmt/Pool
Not	114 Austin	1.40	12/23/2020	$248,000	1994	1,650	$150.30	3/2	2-Car	Br Rnch	Bsmt
Not	125 Liza	0.29	6/25/2021	$315,000	2005	1,913	$164.66	4/3	2-Car	Br Rnch	Ktchn Bsmt
Not	130 Hannahs	0.42	2/9/2021	$295,000	2007	1,918	$153.81	3/3	2-Car	Br Rnch	Fin Bsmt

Solar	Address	Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
Adjoins	410 Claiborne							$275,000			1080
Not	114 Austin	$3,413	$14,880	-$6,613			$20,000	$279,680	-2%		
Not	125 Liza	-$11,945	$1,575	-$41,890	-$10,000			$252,740	8%		
Not	130 Hannahs	$83	-$1,475	-$39,743	-$10,000			$243,864	11%		
										6%	

I identified a sale at 310 Claiborne Drive on April 30, 2026 for $290,400 for this brick ranch with 3 BR, 2 BA on a 1.12 acre lot. This home previously sold on June 2, 2011 for $120,000. The FHFA HPI indicates this home should have appreciated to $284,605. This strongly supports a finding of no impact due to the solar project given the higher appreciation over this time period. This home is 580 feet from the nearest solar panel.

Estimated Value for MSA: $284,605	Estimated Value for State: $265,464	MSA Percentage Change: 137.17%



2. Walton 2, Walton, Kenton County, KY

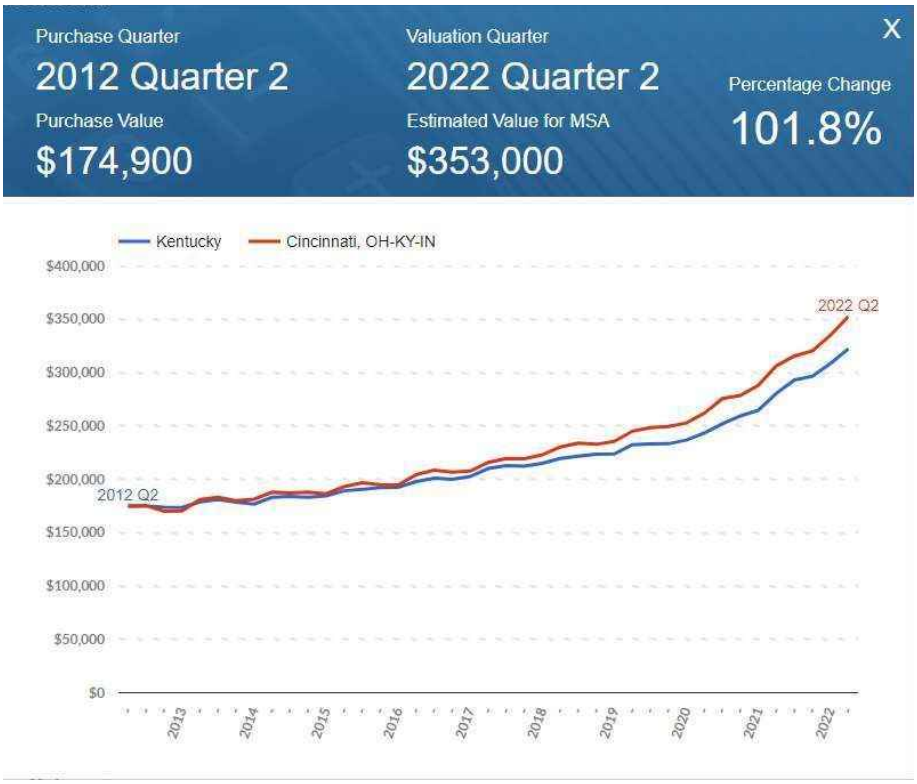


This project was built in 2017 on 58.03 acres for a 2 MW project with the closest home 120 feet from the closest panel.

The home located on Parcel 1 (783 Jones Road, Walton, KY) in the map above sold on May 4, 2022 for $346,000. This home is 410 feet from the nearest solar panel. I have considered a Sale/Resale analysis of this home as it previously sold on May 7, 2012 for $174,900. This analysis compares that 2012 purchase price and uses the FHFA House Price Index Calculator to identify what real estate values in the area have been appreciating at to determine where it was expected to appreciate to. I have then compared that to the actual sales price to determine if there is any impact attributable to the addition of the solar farm.

As can be seen on the calculator form, the expected value for $174,900 home sold in 2nd quarter 2012 would be $353,000 for 2nd quarter 2022. This is within 2% of the actual sales price and supports a finding of no impact on property value.

I have not attempted a paired sales analysis with other sales, as this property also has the nearby recycling and car lot that would be a potential factor in comparing to other sales. But based on aerial imagery, these same car lots were present in 2012 and therefore has no additional impact when comparing this home sale to itself.



This same home was then renovated with a new roof, updated kitchen with granite counters and listed again on January 4, 2025 and went under contract for the asking price of $428,500 on January 5, 2025. The property closed on February 14, 2025 for $427,675. The property increased in value since 2022 by $82,125, whereas the FHFA HPI indicates an increase in value to $398,698. The additional increase over that is attributable to the recent updates, which makes it difficult to use this as a Sale/Resale analysis, but is suggestive.



3. Turkey Creek, Lancaster, Garrard County, KY



This project was built in 2022 on 297.05 acres out of a 752.80-acre parent tract assemblage for a 50 MW project where the closest home is 240 feet from the closest panel. This project was announced in 2019 with approvals in 2020.

I identified a sale at 166 Long Branch Drive, Lancaster that sold on November 25, 2020 after the solar farm was announced for $180,000 for this 3 BR, 2 BA brick ranch with 2,100 s.f. built in 1997 on 0.50 acres with a 2 car basement garage and walkout basement. The prior sale of the property on February 28, 2019 was for $160,000. Adjusting the earlier sale by the FHFA Home Price Index, the anticipated increase in value was $181,000. This is a difference of 1% which is within typical market deviation and supports a finding of no impact on property value due to the announcement of the solar farm. This home is approximately 250 feet from the nearest solar panel.

This same home sold again on April 22, 2025 for $315,000. I reached out to Tammy Jeffries with Central Kentucky Realty & Assoc (859-339-5936) who indicated that the home was heavily upgraded between these two sales, which makes Sale/Resale problematic. Ms. Jeffries indicated that she did no see the solar project have any impact on the sales price or the marketing. She specifically noted that none of the potential buyers saw it as a negative and the buyers liked that there would be no future homes behind them.

I considered the following matched pair analysis. The home at Pin Oak is included but the broker indicated that the home was sold As-Is but home inspections welcome, which makes that data point somewhat less reliable. The best indication of value is 723 Cave Spring, though the 1443 Richmond data point suggests a positive impact.

Adjoining Residential Sales After Solar Farm Built

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
Adjoins	166 Long Branch	0.50	4/22/2025	$315,000	1997	2,100	$150.00	3/2	2-Car	Br Rnch	Bsmt/Updt
Not	1443 Richmond	1.04	1/14/2025	$295,000	2004	2,269	$130.01	3/2	1-Car	Br Rnch	Bsmt
Not	723 Cave Spr	1.20	11/15/2024	$315,000	1999	2,018	$156.10	4/3	2-Car	Br Rnch	Bsmt
Not	150 Pin Oak	0.32	6/13/2024	$299,000	2001	2,090	$143.06	3/2	2-Car	Br Rnch	As Is

Solar	Address	Time	YB	GLA	BR/BA	Park	Total	% Diff	Avg % Diff	Distance
Adjoins	166 Long Branch						$315,000			250
Not	1443 Richmond	$4,425	-$10,325	-$8,789		$10,000	$290,311	8%		
Not	723 Cave Spr	$9,450	-$3,150	$5,120	-$15,000		$311,420	1%		
Not	150 Pin Oak	$17,940	-$5,980	$572			$311,532	1%		
									3%	

I also identified 209 Ashlock Drive that sold on June 14, 2022 near the time construction was to be begin at this solar project. This home sold for $500,000 for a 3,968 s.f. home with 4 BR, 4.5 BA built in 1985 on 3.06 acres. This is a unique home and it is over 1,000 feet to the nearest solar panel. It was purchased out of a larger tract that now includes 5 additional lots and this home adjoins an industrial use to the northwest. All of these factors make it difficult to analyze this sale. I have therefore not attempted to do so as any result would be non-credible given these other factors.

I also identified 1439 Stanford Road that sold on June 27, 2023 for $1,300,000 for this 3,400 s.f. historic home on 206 acres. The home is over 1,500 feet from the panels and the site includes acreage zoned for commercial use according to the listing. There are too many unique features to this for a valid paired sales analysis. I have not attempted one for this sale.

I identified 239 Ashlock Drive that sold on June 20, 2024 for $329,900 for this 1,600 s.f. brick ranch with 3 BR, 2.5 BA, with 2-car garage built in 2024 on 1 acre. This home is approximately 700 feet from the nearest panel. It is located on the north side of Elmwood Court and therefore one lot away from adjoining the solar project. This home was sold by Hannah Hulett with Danny Ayres Realty & Auction. The home was listed on April 19, 204 for $339,900 and then reduced to

$329,900 on May 1, 204. The home went under contract on May 16, 2024 and sold on June 20, 2024 for $329,900. The purchase price works out to be $206.19 per square foot.

There were not many new homes in that size range in the area for comparison. I considered 126 Bethany Trace that sold on April 14, 2023 for $300,000 for a 1,385 s.f. home with 2 car garage, 3 BR and 2 BA built in 2023 on 0.26 acres. The purchase price works out to $216.61 per s.f. This is a little higher than the subject property, but it is also 215 s.f. smaller, which would suggest a slightly higher price per s.f. This home is on a smaller lot but also sold for $10,000 less than asking price and was on the market for 3 months before closing. I will not rely heavily on this comparison as I only found this one comparable sale of a new home in a similar time frame.

Merriwood Development, LLC purchased 15 lots along Elmwood Court on May 18, 2023 for $750,000, or $50,000 per lot. These lots were developed in 2022/2023 by Wimbledon Holdings and WRH Investments following the purchase of the raw land on March 25, 2022. The raw land was purchased for development after the solar farm was approved and the subdivision infrastructure was developed during the construction of the solar farm. The developer clearly foresaw no negative impact on the property from the solar farm or they would not have invested in the development. The sales price is not a good indication of market value as Wimbledon and Merriwood are noted as related entities.

I searched for recent lot sales in the area and found 1 to 3 acre lots to the northeast selling for $15,000 to $30,000 each. The lots at Merriwood are in close proximity to Garrard County High School off Industry Road.

Lot 95 sold to Rebecca Meade on December 17, 2025 for $42,000.

Lot 96 sold to Robert and Avonda Noe on January 24, 2023 for $44,900 and was subsequently developed with a single family home. This lot directly adjoins the solar farm with the nearest panel 625 feet away. The panels appear to be visible in the background of the tax card photo.



Lot 97 sold to Michael and Jill Stevens on July 28, 2023 for $60,800. This lot directly adjoins the solar farm with a likely home site 820 feet from the nearest panel. A home was built in 2025 with the tax card photo shown below.



Lot 98 was sold to Walter and Hannah Hulett for $1 as an entity related to Wimbledon Holdings. This is the home visible in the map just underneath the word Elmwood Court. The Huletts are WRH Investments, LLC that developed the site with Wimbledon Holdings, LLC. I spoke with Hannah Hulett on June 30, 2026 about these lots and homes and she indicated that the solar project was having no impact on the lot prices or home values. She noted that she lives in a home in this development on Lot 98. The home here is 1,090 feet from the nearest panel and does not directly adjoin the solar project.

Lot 99 was sold to Nicolai Freeman on August 8, 2025 for $40,000.

Lot 100 sold on July 28, 2023 to Jimmie McCulley for $39,900. This lot does not directly adjoin the solar farm. A home was built in 2023.

Lot 101 sold on November 22, 2023 to Willie and Tiffany Skeens for $50,000. This lot directly adjoins the solar farm with a likely home site 450 feet from the nearest panel. A home was built in 2024.

Lot 102 sold on December 16, 2024 for $40,000 to Dustin and Jaycee Butner.

Lots 103 and 104 sold on July 14, 2025 for $109,800, or $54,900 per lot to Glifton and Jennifer Gross.

Lot 105 is larger than the other lots and it sold on November 26, 2024 for $100,000 to Kelly and Lora McBee.

Lot 106 sold on October 2, 2024 for $47,500 to Donnelly and Rebecca Barnes. A home was built in 2026.

The various lot prices range from $39,900 to $100,000. The sales data on the lots do not support any finding of a negative impact on property value. Comparing the most common lot value of $50,000 per lot suggests an impact range of -10% for Lot 96 that sold for $44,900 to +22% for Lot 97 that sold for $60,800. Those two lots are adjacent to each other. Blending the two impacts

suggests a 12% enhancement for adjoining the solar farm. But given the wide ranges of lot values in this development, I consider this to simply support a finding of no impact on property value.



I identified a sale at 171 Longview Court that sold on March 20, 2026 for $342,000 for this brick ranch with 4 BR, 3 BA, 2,697 s.f. built in 1979 on 0.64 acres. This home includes a walkout basement with a finished bedroom and bathroom. I reached out to Joshua Webb with Real Broker, LLC (859-388-4785) the listing broker. Mr. Webb indicated that the solar farm had no impact on the sales price or the marketing time. He indicated that the property was on the market for an extended period as the home was overpriced initially due to the home needing updates. The property sold with an $8,000 concession to the buyer to replace the HVAC, which was also not reflected in that sales price. The effective purchase price was therefore $334,000 accounting for the HVAC payment. This home is 525 feet from the nearest solar panel.

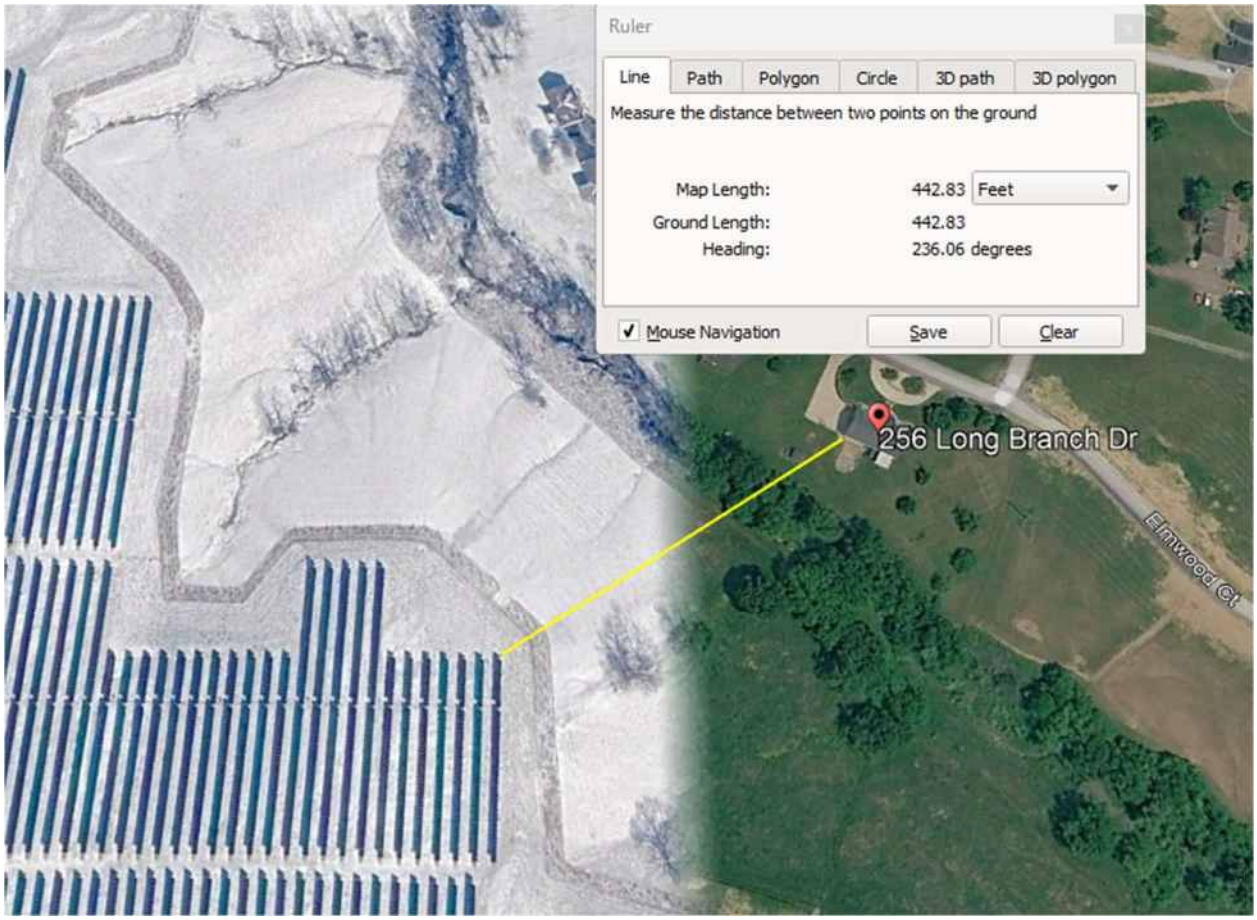


I also reached out to Karen Amon with Danny Ayres Realty & Auction (859-339-1779) the buyer's broker. The last referenced sale of this home is from 1987 which does not support a Sale/Resale analysis.

I only found one usable comparable for a matched pair analysis, which is 465 Clubside Drive in Stanford that sold on April 18, 2025 for $314,000 for this 2,912 s.f. home with 4 BR, 2 BA built in 1974 on 1 acre. Adjusting this upward by 5% for growth in the market based on the FHFA HPI as well at $15,000 for the additional bathroom the adjusted indication of value is $344,700, which is very similar to the subject property adjusted purchase price even without accounting for this comparable sale being over 200 s.f. larger than the subject property and the fact that this property indicates it has many updates. I have made no adjustments for the larger size and the updates both of which would support a downward adjustment to this sales price, which makes this a strong matched pair supporting no impact on property value.

I identified a sale at 256 Long Branch Drive that sold on November 10, 2025 for $415,000 for this 4 BR, 3 BA, 3,170 s.f. two-story brick home built in 1997 on 1.3 acres. This home is 445 feet from the nearest solar panel. This same home last sold on September 23, 2016 for $237,000, prior to the solar farm. Considering a Sale/Resale analysis the FHFA HPI indicates growth in this market over

that time period of 94.23% for an expected sales price of $460,325. This suggests a -10% impact due to the solar project. The primary limitation of this indication is that it is over a 9 year period of time, but is still considered a reliable indicator for analysis.



4. Mount Olive Creek Solar, Russell Springs, Russell County, KY



This project is proposed to be built on 420.82 acres out of a parent tract assemblage of 526.02 acres for this 60 MW project.

I identified a home sale at 2985 KY-1729 that sold on December 2, 2022 for $150,000. This home is around 1,250 feet from the nearest panel which is located to the northeast and through the intersection of Sano Road and Sulphur Creek Road (Highway 1729). It fronts on the highway and adjoins a church. Given these various issues, it would be difficult to complete a paired sales analysis on this home. However, this home did sell on September 18, 2018 for $110,000 prior to the solar farm announcement. Adjusting this purchase price upward by the FHFA Home Price Index for the area, this home would have been expected to appreciate to $160,119. This was within 7% of the anticipated sales price and supports a finding of an impact on property value. Still given the distance to the solar farm and the other factors. This is a sale of a home in proximity to a proposed solar project and not an existing project which may be indicating an impact relative to the fear of a solar farm as opposed to the reality of a solar farm. Still, I have included this indication in the overall breakdown of findings.

5. E. W. Brown Solar, Harrodsburg, KY

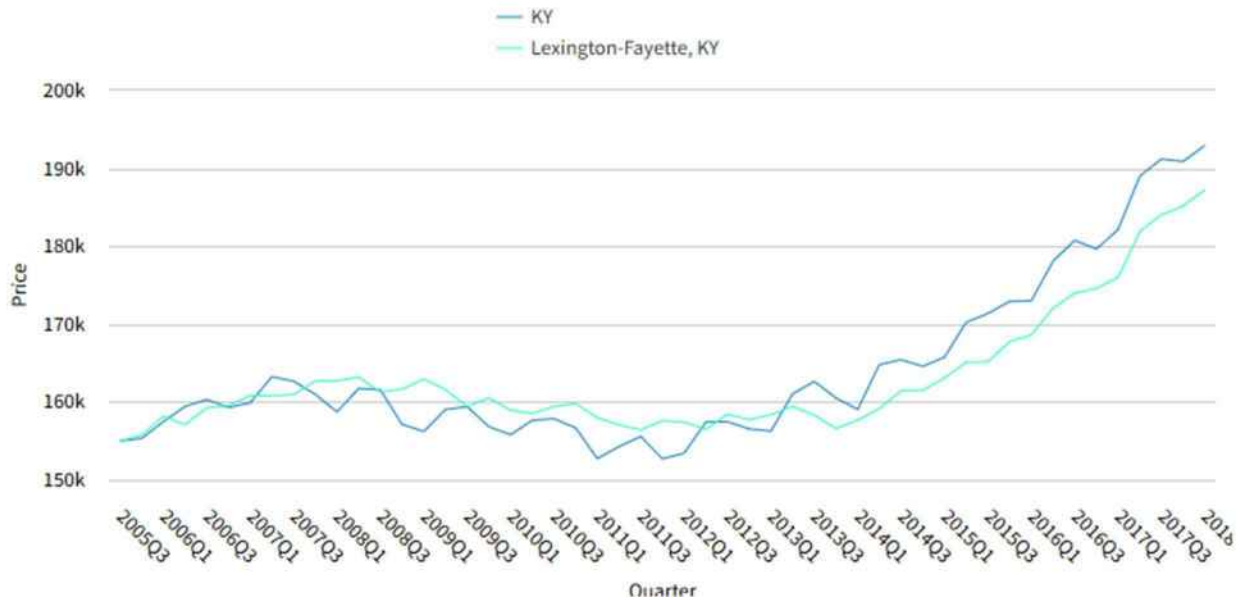


This project was built in 2016 on 50 acres for a 10 MW project. This solar facility adjoins three coal-fired units shown to the north which makes it difficult to do a paired sales analysis on the nearby homes. I have however considered Sale/Resale analysis as the impact of the nearby coal power plant as well as the impact of the river frontage is the same in both sales prices, which leaves the primary difference of the solar project as what we are testing for.

A home at 837 Hardin Hts sold on September 12, 2005 for $155,000 before the solar project and sold again on March 29, 2018 for $212,500 after the solar farm was built. The tax assessor identified both of these sales at Arms-Length transactions. Over that time period, the FHFA HPI indicates that a home that sold in 2005 in the area for $155,000 would be expected to appreciate to $187,274. This strongly supports a finding of no impact on this home value due to the solar project. The river frontage and the proximity to the power plant was the same in both the before and after. The solar panels are 1,015 feet from the nearest point on this home.

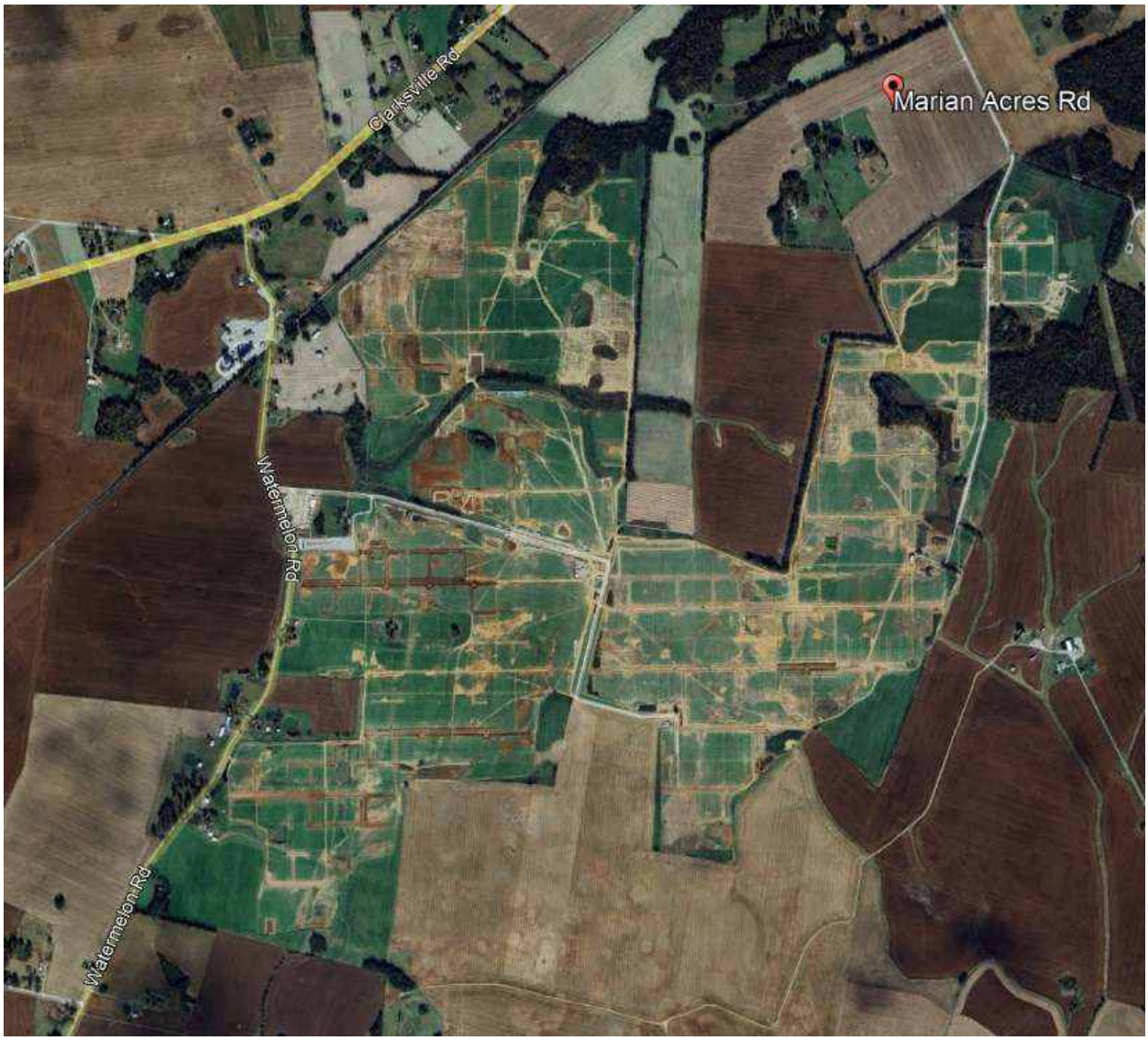
I will not rely heavily on this indicator, but it is included for additional information.

Estimated Value for MSA:	Estimated Value for State:	MSA Percentage Change:
$187,274	$192,956	20.82%



A home at 831 Hardin Heights sold on October 1, 2020 for $225,000 after the solar project and sold again on May 27, 2026 for $573,000. The FHFA HPI indicates an increase in value to $339,878 over that time period. However, the listing indicates significant updates to this home. Given the updates, the Sale/Resale analysis is not applicable. Given the proximity to the E. W. Brown power plant a matched pair analysis is not applicable. All I can say about this sale is someone updated the home and sold it for a substantial increase in value.

6. Logan County Solar, Russelville, Logan County, KY



This project began construction in 2023 and proposed to be complete in early 2025. It is located on 1,100 acres for a 173 MW project.

I identified a May 17, 2022 sale of 528 Watermelon Road for $275,000 for a home on 1.29 acres with 2,370 s.f. with 3 BR and 2 BR built in 1940 with 2 carport spaces. This homes is 1,460 feet from the nearest panel through an existing wooded patch. The distance and age makes it difficult to compare this home in this area to similar properties for a paired sale analysis. This home last sold on September 12, 2016 for $149,000. Using the FHFA Home Price Index the anticipated appreciated value as of the date of the most recent sale was expected to be $234,000. This Sale/Resale analysis suggests a 17.5% increase in value due to the solar farm.

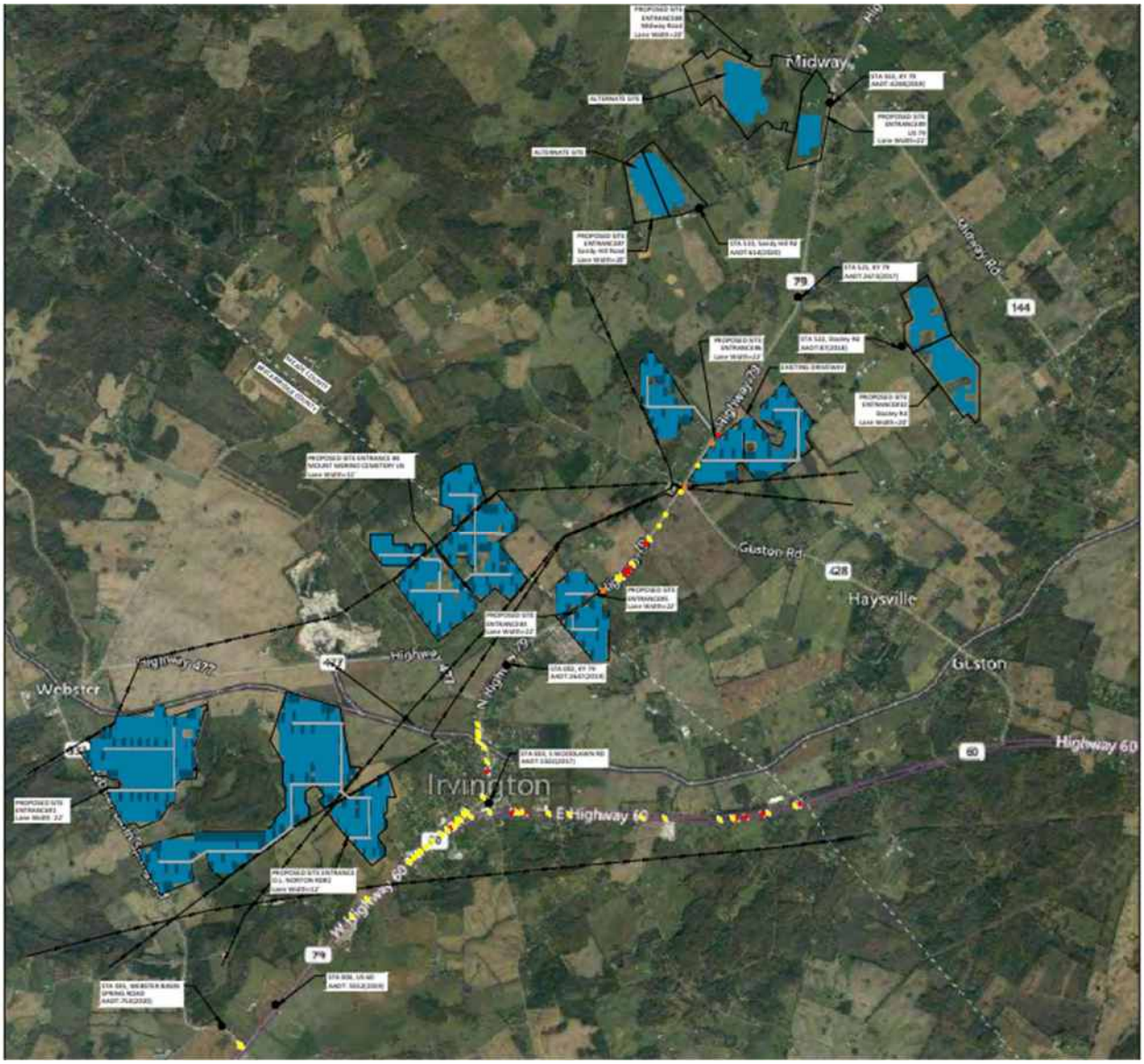
I also identified 557 J Montgomery Road that sold on December 8, 2021 for $185,000 for a 4 BR, 2 BA with 2,200 s.f. of living space on 1 acre that was built in 1980. This home has a pool that is noted as needing work but was otherwise in average condition. I spoke with Dewayne Whittaker the listing agent who indicated that the proposed nearby solar farm had no impact on the sales price or marketing of the home. This home previously sold on May 5, 2016 for $114,000 and also on June 17, 2008 for $125,000. The 2008 sales price was higher than the 2016 due to the crash in the

housing market in 2008. Adjusting each of these former sales to a December 2021 value expectation based on the FHFA Home Price Index, I derive expectations of $174,000 from the 2016 sale and $210,000 from the 2008 sale. The Sale/Resale difference from the 2008 sale is considered more reliable as it covers a shorter period of time. It shows a 6% increase in value over the expected value and supports a mild increase in value due to the adjacency to the solar farm. This home is over 1,900 feet to the nearest panel through existing woods. Given the distance involved this is not a strong indicator for properties closer to solar panels.

Similarly, 263 Donald Lane sold on October 3, 2022 for $263,400 for a brick ranch with 4 BR, 2.5 BA with 1,704 s.f. of living area on 5 acres. This home is about 1400 feet from the nearest panel through existing woods. This home previously sold in May 2010 for $141,000. Adjusting this for time using the FHFA HPI, I derive an expected value of $262,000. This is within 1% of the actual closed price and strongly supports a finding of no impact at this distance. It is not a strong indicator for properties closer to panels.

I identified a sale at 5990 Clarksville Road that sold on December 5, 2025 for $400,000 for this 3 BR, 2 BA, 2,100 s.f. ranch built in 1989 on 1.94 acres. This same home previously sold on September 3, 2019 for $177,500. Using the FHFA HPI the expected appreciation over this period should be $285,616. That differential is a significant outlier and suggests significant upgrades between these two sales. I will not rely on this Sale/Resale analysis. I reached out to Ronald Miller with Keller Williams First Choice (270-991-1318) for comment or explanation. This is especially less useful given that this home is over 3,000 feet from the nearest panel and there are intervening train tracks.

7. Green River Solar, Guston, Meade and Breckinridge County, KY

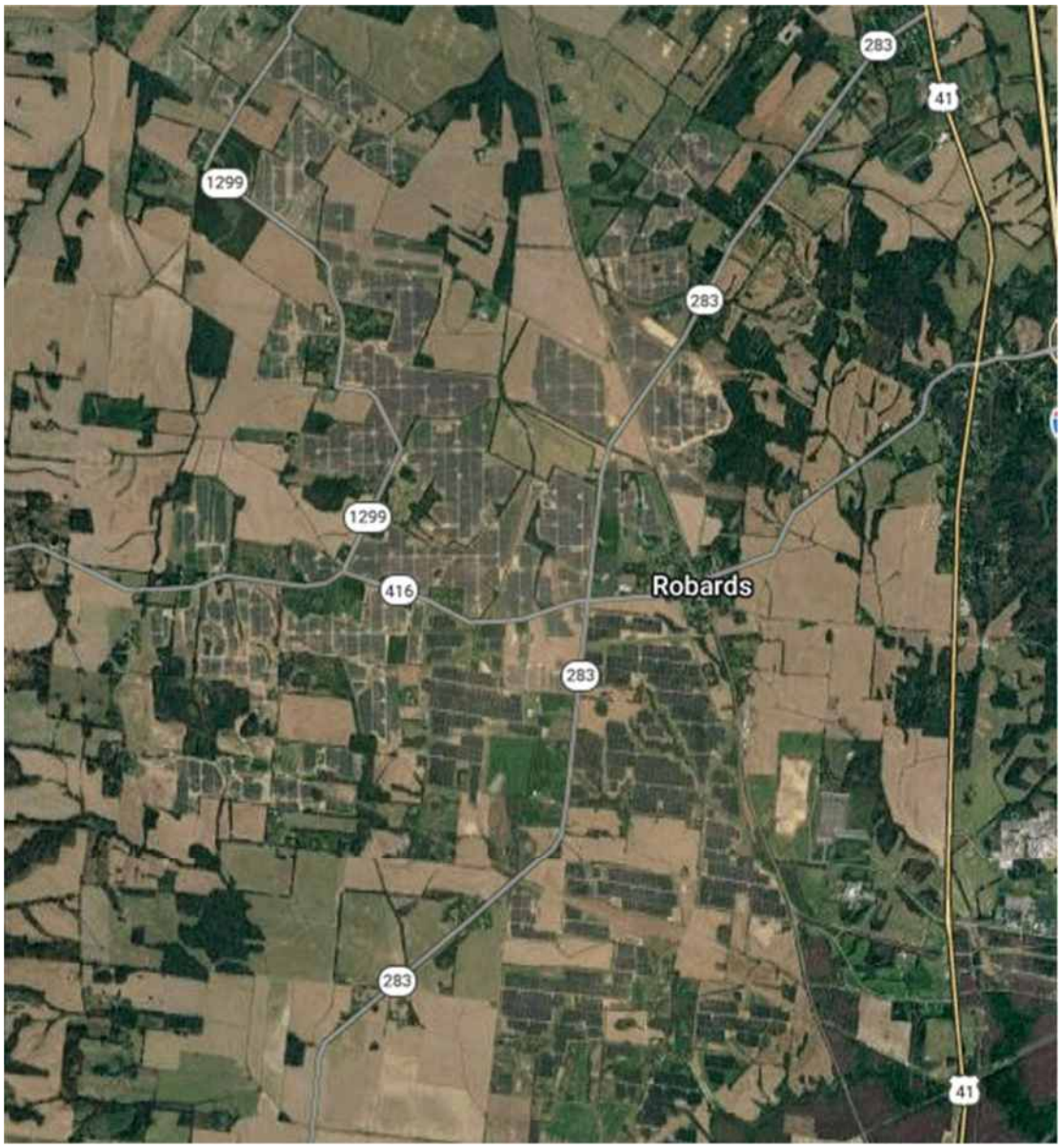


This project was built in 2025 for this 200 MW solar project. The aerial images are not readily available on this though some of the maps show the project during early construction.

I identified a sale of 7636 Highway 79 that sold on September 17, 2024 during the solar farm construction for $329,900. I reached out to Brian Chsim with NextHome Chism Realty (270-600-3777) about this home sale. The sale appears to be out of an estate which could limit the reliability of this sale.

I identified a sale at 34 Joyce Court that sold on June 24, 2025 for $320,000 for this 1,852 s.f. ranch with 3 BR, 2 BA built in 2025 on 1.63 acres. This home was constructed in the same time frame as the solar project and was designed with a number of upgrades. I reached out to Amy Chism with Stonegate Realty for comment about this sale as well as other new homes built and sold in the same time frame on Joyce Court.

8. Sebree Solar, Robards, Henderson County, KY



This project was built in 2025 for this 400 MW solar project in two phase.

I identified a sale at 8592 Thomason Road, Robards on October 3, 2024 for $255,900 for this 2,134 s.f. ranch with 3 BR, 2 BA built in 2001 on a 2.55 acre lot. The same home previously sold on September 22, 2022 for $159,000. The tax assessor indicates the 2022 sale was just a partial sale and is not suited to comparison. So no Sale/Resale is applicable for this home.

I only identified one nearby home sale for comparison which is located at 615 Watkins School Road that sold on February 23, 2024 for $180,000 for a 2,108 s.f. ranch with 3 BR, 2 BA built in 2003 on 1 acres. Given the larger size of the Thomason Road home sale and larger lot size, this home would be adjusted downward and not upward. I did not do an analysis as there needs to be more data given that the differential on this is so large.

I identified a sale at 8948 W N Royster Road on March 19, 2026 for $276,500 for this two-story home with 1,680 s.f. 4 BR, 3 BA, 2-car garage built in 1998 on 1 acre. This home is noted as completely renovated which makes a Sale/Resale analysis difficult without significant information on those upgrades.

I identified a sale at 392 Royster Robards Road that sold on November 1, 2024 for $200,000 for this manufactured home with 1,716 s.f., 4 BR, 2 BA, built in 1991 on 10 acres. The last sale of this property was just for the land in 1992 so a Sale/Resale is not feasible. Manufactured homes are selling at similar prices in the surrounding areas – mostly stretching to the north and west to Corydon, but comparing manufactured homes requires more information from all of the brokers regarding the condition as depreciation can vary considerably. I therefore did not pursue this further.

I identified a sale at 6216 State Route 283 that sold on December 16, 2025 for $320,000 for this brick ranch with 2,058 s.f., 3 BR, 2 BA, built in 1982 on 2.86 acres with a stocked fish pond and 2-car garage. This home last sold on June 1, 1995 for $109,000, which can be used for a Sale/Resale analysis, but given the 20 year span I will not rely on it in the larger analysis, but I have completed that calculation here for consideration. The FHFA HPI indicates the home should have appreciated to $319,235, which supports a finding of no impact on property value quite well, though I will not include it in the larger data set in the conclusions. This home is 1030 feet from the nearest solar panel.

I considered the following matched pair analysis as well, which also supports a finding of no impact on property value. I have included this within the larger data set.

Adjoining Residential Sales After Solar Farm Built

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style
Nearby	6216 SR 283	2.86	12/16/2025	$320,000	1982	2,058	$155.49	3/2	2-Car	Br Rnch
Not	4282 WT Royster	1.04	8/27/2024	$297,000	2007	2,226	$133.42	3/2	2-Car	Ranch
Not	6091 SR 370E	1.90	8/11/2025	$330,000	2021	2,016	$163.69	3/2	2-Car	Ranch
Not	1606 Schuette	0.68	6/17/2025	$340,000	1995	2,198	$154.69	3/2	2-Car	Br Rnch

Solar	Address	Time	YB	GLA	Other	Total	% Diff	Avg % Diff	Distance
Nearby	6216 SR 283					$320,000			1030
Not	4282 WT Royster	$5,940	-$37,125	-$8,966	$44,550	$301,399	6%		
Not	6091 SR 370E	$0	-$64,350	$2,750	$49,500	$317,900	1%		
Not	1606 Schuette	$0	-$22,100	-$8,662	$17,000	$326,238	-2%		
								2%	

IX. Conclusions from Market Research

A. Demographic Data from Solar Projects Identified

The solar developments identified in the earlier section are not all of the ones that I looked at, but all of the ones where I found usable data of some sort. In the following sections, I will address the analysis conclusions based on Sale/Resale Analysis, Paired Sale Analysis, and Broker Comments.

Below I have simply summarized the demographic data around the solar projects identified to illustrate the mix of uses and demographics around these projects.

Based on the similarity of adjoining uses and demographic data between these sites and the subject property, I consider it reasonable to compare these sites to the subject property.

Matched Pair Summary

							Adj. Uses By Acreage				1 mile Radius (2020 Data)		
	Name	City	State	Acres	MW	Topo Shift	Res	Ag	Ag/Res	Com/Ind	Population	Med. Income	Avg. Housing Unit
1	Crittenden	Crittenden	KY	34	2.70	40	22%	51%	27%	0%	1,419	$60,198	$178,643
2	Walton 2	Walton	KY	58	2.00	90	21%	0%	60%	19%	880	$81,709	$277,717
3	Mt. Olive Crk	Russell Spr	KY	421	60.00	N/A	N/A	N/A	N/A	N/A	149	$60,646	$152,778
4	EW Brown	Harrodsburg	KY	50	10.00	N/A	3%	44%	29%	25%	182	$68,772	$294,444
5	Logan Cnty	Russellville	KY	1,100	173.00	N/A	N/A	N/A	N/A	N/A	177	$54,545	$284,459
6	Turkey Crk	Lancaster	KY	297	50.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	Green River	Guston	KY	N/A	200.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	Sebree	Robards	KY	N/A	400.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

				Adj. Uses By Acreage				1 mile Radius (2010-2020 Data)		
	Acres	MW	Topo Shift	Res	Ag	Ag/Res	Com/Ind	Population	Med. Income	Avg. Housing Unit
Average	327	112.21	65	15%	32%	39%	15%	561	$65,174	$237,608
Median	178	55.00	65	21%	44%	29%	19%	182	$60,646	$277,717
High	1,100	400.00	90	22%	51%	60%	25%	1,419	$81,709	$294,444
Low	34	2.00	40	3%	0%	27%	0%	149	$54,545	$152,778

B. Sale/Resale Analysis

In the market data I was able to identify a number of home sales where I was able to complete a Sale/Resale Analysis. The summary of that data is shown below.

Residential Dwelling Sale/Resale Analysis

Pair	Solar Farm	City	State	Area	MW	Approx Distance	Tax ID/Address	Date	Sale Price	Adj. Sale Price	% Diff
1	Crittenden	Crittenden	KY	Suburban	2.7	500	280 Clairborne	Mar-24	$295,500		
							280 Clairborne	Apr-06	$119,200	$282,245	4%
2	Crittenden	Crittenden	KY	Suburban	2.7	488	300 Clairborne	Sep-18	$212,720		
							300 Clairborne	Jul-14	$173,000	$208,183	2%
3	Walton 2	Walton	KY	Suburban	2	410	783 Jones	May-22	$346,000		
							783 Jones	May-12	$174,900	$353,000	-2%
4	Turkey Crk	Lancaster	KY	Rural	50	250	166 Long Branch	Nov-20	$180,000		
							166 Long Branch	Feb-19	$160,000	$181,000	-1%
5	Turkey Crk	Lancaster	KY	Rural	50	1050	209 Ashlock	Jun-22	$180,000		
							209 Ashlock	Feb-19	$160,000	$181,000	-1%
6	Mt Olive Crk	Russell Spng	KY	Rural	60	1250	2985 KY 1729	Dec-22	$150,000		
							2985 KY 1729	Sep-18	$110,000	$160,119	-7%
7	EW Brown	Harrodsburg	KY	Rural	10	1015	837 Hardin Hts	Mar-18	$212,500		
							837 Hardin Hts	Sep-05	$155,000	$187,274	12%
8	Logan Cnty	Russellville	KY	Rural	173	1460	528 Watermelon	May-22	$275,000		
							528 Watermelon	Sep-16	$149,000	$234,000	15%
9	Logan Cnty	Russellville	KY	Rural	173	1900	557 J Montgomery	Dec-21	$185,000		
							557 J Montgomery	May-16	$114,000	$174,000	6%
10	Logan Cnty	Russellville	KY	Rural	173	1400	263 Donald	Oct-22	$263,400		
							263 Donald	May-10	$141,000	$262,000	1%
11	Crittenden	Crittenden	KY	Suburban	2.7	580	310 Claiborne	Apr-26	$290,400		
							310 Claiborne	Jun-11	$120,000	$284,605	2%

	MW	Avg. Distance
Average	63.55	937
Median	50.00	1,015
High	173.00	1,900
Low	2.00	250

	Indicated Impact
Average	3%
Median	2%
High	15%
Low	-7%

The Sale/Resale Analysis includes 11 examples with impacts ranging from -7% to +15% with an average impact of +3% and a median impact of +2%.

The closest adjoining home is 250 feet and the range of solar projects range from 2 MW up to 178 MW.

The Sale/Resale Analysis uses no appraiser judgement and links the consideration of appreciation to the FHFA Home Price Index. The advantage of this approach is that there is only one factor to address and it is linked to a national source. The disadvantage is that there is generally a more limited pool of homes that are usable in this type of analysis. Homes with significant updates or renovations between sales are less reliable and extended periods of time between the sales could lead to less reliable results.

I have attempted to minimize any usage of homes with updates, though there are a few examples of those as discussed in the data. I have also attempted to minimize the usage of homes with extended period of time between the first and second sale.

C. Paired Sale/Matched Pair Analysis

In the market data I was able to identify a number of home sales where I was able to complete a Paired Sale or Matched Pair Analysis. The summary of that data is shown on the next page.

Residential Dwelling Matched Pairs Adjoining Solar Farms

Pair	Solar Farm	City	State	Area	MW	Approx Distance	Tax ID/Address	Date	Sale Price	Adj. Sale Price	% Diff
1	Crittenden	Crittenden	KY	Suburban	2.7	373	250 Claiborne	Jan-19	$120,000		
							315 N Fork	May-19	$107,000	$120,889	-1%
2	Crittenden	Crittenden	KY	Suburban	2.7	488	300 Clairborne	Sep-18	$213,000		
							1795 Bay Valley	Dec-17	$231,200	$228,180	-7%
3	Crittenden	Crittenden	KY	Suburban	2.7	720	350 Clairborne	Jul-18	$245,000		
							2160 Sherman	Jun-19	$265,000	$248,225	-1%
4	Crittenden	Crittenden	KY	Suburban	2.7	930	370 Clairborne	Aug-19	$273,000		
							125 Lexington	Apr-18	$240,000	$254,751	7%
5	Crittenden	Crittenden	KY	Suburban	2.7	365	250 Clairborne	Jan-22	$210,000		
							240 Shawnee	Jun-21	$166,000	$219,563	-5%
6	Crittenden	Crittenden	KY	Suburban	2.7	390	260 Clairborne	Oct-21	$175,000		
							355 Oakwood	Oct-20	$186,000	$173,988	1%
7	Crittenden	Crittenden	KY	Suburban	2.7	570	300 Clairborne	Dec-21	$290,000		
							39 Pinhook	Mar-22	$299,000	$289,352	0%
8	Crittenden	Crittenden	KY	Suburban	2.7	1080	410 Clairborne	Feb-21	$275,000		
							114 Austin	Dec-20	$248,000	$279,680	-2%
9	Turkey Crk	Lancaster	KY	Rural	50	525	171 Longview	Mar-26	$334,000		
							465 Clubside	Apr-25	$314,000	$334,700	0%
10	Turkey Crk	Lancaster	KY	Rural	50	250	166 Long Branch	Apr-25	$315,000		
							723 Cave Spr	Nov-24	$315,000	$311,420	1%
11	Sebree	Robards	KY	Rural	400	1030	6216 SR 283	Dec-25	$320,000		
							1606 Schuette	Jun-25	$340,000	$326,238	-2%

	MW	Avg. Distance
Average	47.42	611
Median	2.70	525
High	400.00	1080
Low	2.70	250

	Indicated Impact
Average	-1%
Median	-1%
High	7%
Low	-7%

The Matched Pairs includes 11 examples with impacts ranging from -7% to +7% with an average impact of -1% and a median impact of -1%.

The closest adjoining home is 250 feet and the range of solar projects range from 2.7 MW up to 400 MW.

The Matched Pair Analysis includes numerous examples and many were also supported with supporting broker data, which strengthens the reliability of these results. Furthermore, these results show a very similar breakdown of values to the Sale/Resale Analysis.

D. Summary of Broker Opinions from Research

From the research identified in the earlier section, I was able to identify and speak with the brokers identified below. The full comments provided by the brokers are shown in the market research, but the summary below shows that 7 of the 7 brokers who had sold a home adjoining a solar development identified no impact on property value.

Broker Comments

#	Solar Farm	City	MW	Approx Distance	Tax ID/Address	Date	Sale Price	Impact	Broker	Company
1	Crittenden	Crittenden	2.7	365	250 Clairborne	Jan-22	$210,000	No	Lisa Ann Lay	Keller Williams
2	Crittenden	Crittenden	2.7	390	260 Clairborne	Oct-21	$175,000	No	Jim Dalton	Ashcroft RE
3	Crittenden	Crittenden	2.7	500	289 Clairborne	Mar-24	$295,500	No	Carol Jackson	Realty Place
4	Crittenden	Logan Cnty	173	1900	557 J Montgomery	Dec-21	$185,000	No	Dewayne Whittaker	
5	Turkey Crk	Lancaster	50	525	171 Longview	Mar-26	$334,000	No	Joshua Webb	Real Broker, LLC
6	Turkey Crk	Lancaster	50	250	166 Long Brnch	Apr-25	$315,000	No	Tammy Jeffries	Central KY Realty &
7	Turkey Crk	Lancaster	50	530	Lot 95 Elmwood Ct	Dec-25	$42,000	No	Hannah Hulett	Danny Ayres Realty

MW	Avg. Distance
47.30	637
50.00	500
173.00	1,900
2.70	250

7 Data Points

	Sale Price	Impact	
Average	$222,357	7	**NO**
Median	$210,000	0	**Yes**
High	$334,000	0	**Maybe**
Low	$42,000		

X. Supporting Data

A. Southeast Data

I have been compiling data across numerous states and the following chart identifies the solar projects throughout the Southeast. I have focused on projects 5 MW or larger.

Matched Pair Summary							Adj. Uses By Acreage				1 mile Radius (2020 Data)		
	Name	City	State	Acres	MW	Topo Shift	Res	Ag	Ag/Res	Com/Ind	Population	Med. Income	Avg. Housing Unit
1	AM Best	Goldsboro	NC	38	5.00	2	38%	0%	23%	39%	1,523	$37,358	$148,375
2	Mulberry	Selmer	TN	160	5.00	60	13%	73%	10%	3%	467	$40,936	$171,746
3	Leonard	Hughesville	MD	47	5.00	20	18%	75%	0%	6%	525	$106,550	$350,000
4	Gastonia SC	Gastonia	NC	35	5.00	48	33%	0%	23%	44%	4,689	$35,057	$126,562
5	Summit	Moyock	NC	2,034	80.00	4	4%	0%	94%	2%	382	$79,114	$281,731
6	Tracy	Bailey	NC	50	5.00	10	29%	0%	71%	0%	312	$43,940	$99,219
7	Manatee	Parrish	FL	1,180	75.00	20	2%	97%	1%	0%	48	$75,000	$291,667
8	McBride	Midland	NC	627	75.00	140	12%	10%	78%	0%	398	$63,678	$256,306
9	Dominion	Indianapolis	IN	134	8.60	20	3%	97%	0%	0%	3,774	$61,115	$167,515
10	Mariposa	Stanley	NC	36	5.00	96	48%	0%	52%	0%	1,716	$36,439	$137,884
11	Clarke Cnty	White Post	VA	234	20.00	70	14%	39%	46%	1%	578	$81,022	$374,453
12	Simon	Social Circle	GA	237	30.00	71	1%	63%	36%	0%	203	$76,155	$269,922
13	Candace	Princeton	NC	54	5.00	22	76%	24%	0%	0%	448	$51,002	$107,171
14	Walker	Barhamsville	VA	485	20.00	N/A	12%	68%	20%	0%	203	$80,773	$320,076
15	Innov 46	Hope Mills	NC	532	78.50	0	17%	83%	0%	0%	2,247	$58,688	$183,435
16	Innov 42	Fayetteville	NC	414	71.00	0	41%	59%	0%	0%	568	$60,037	$276,347
17	Sunfish	Willow Spring	NC	50	6.40	30	35%	35%	30%	0%	1,515	$63,652	$253,138
18	Sappony	Stony Crk	VA	322	20.00	N/A	2%	98%	0%	0%	74	$51,410	$155,208
19	Camden Dam	Camden	NC	50	5.00	0	17%	72%	11%	0%	403	$84,426	$230,288
20	Grandy	Grandy	NC	121	20.00	10	55%	24%	0%	21%	949	$50,355	$231,408
21	Champion	Pelion	SC	100	10.00	N/A	4%	70%	8%	18%	1,336	$46,867	$171,939
22	Barefoot Bay	Barefoot Bay	FL	504	74.50	0	11%	87%	0%	3%	2,446	$36,737	$143,320
23	Miami-Dade	Miami	FL	347	74.50	0	26%	74%	0%	0%	127	$90,909	$403,571
24	Spotyslvania	Paytes	VA	3,500	617.00	160	37%	52%	11%	0%	74	$120,861	$483,333
25	Whitehorn	Gretna	VA	N/A	50.00	N/A	N/A	N/A	N/A	N/A	166	$43,179	$168,750
26	Altavista	Altavista	VA	720	80.00	N/A	N/A	N/A	N/A	N/A	7	$50,000	$341,667
27	Solidago	Isle of Wight	VA	193	20.00	N/A	N/A	N/A	N/A	N/A	62	$88,375	$312,500
28	Buckingham	Cumberland	VA	240	39.80	50	4%	6%	90%	0%	120	$59,445	$251,562
29	Twiggs	Dry Branch	GA	N/A	200.00	N/A	N/A	N/A	N/A	N/A	15	$55,000	$50,000
30	Kings Bay	Kings Bay	GA	N/A	30.00	N/A	N/A	N/A	N/A	N/A	721	$102,293	$364,808
31	Dougherty	Albany	GA	N/A	120.00	N/A	N/A	N/A	N/A	N/A	30	$60,354	$204,167
32	Mustang	Robbins	NC	50	5.00	N/A	N/A	N/A	N/A	N/A	941	$54,430	$369,398
33	Logansport	Logansport	IN	N/A	6.80	N/A	N/A	N/A	N/A	N/A	4,534	$51,694	$122,099
34	Anderson 6	Anderson	IN	N/A	6.80	N/A	N/A	N/A	N/A	N/A	736	$77,343	$181,635
35	Dunns Brdge	Wheatfield	IN	N/A	435.00	N/A	N/A	N/A	N/A	N/A	208	$71,098	$203,986
36	Bedford	Chesapeake	VA	N/A	70.00	N/A	N/A	N/A	N/A	N/A	993	$127,047	$509,365
37	Mt. Olive Crk	Russell Spr	KY	421	60.00	N/A	N/A	N/A	N/A	N/A	149	$60,646	$152,778
38	EW Brown	Harrodsburg	KY	50	10.00	N/A	3%	44%	29%	25%	182	$68,772	$294,444
39	Logan Cnty	Russellville	KY	1,100	173.00	N/A	N/A	N/A	N/A	N/A	177	$54,545	$284,459
40	Bluebird	La France	SC	N/A	3.00	N/A	N/A	N/A	N/A	N/A	634	$81,446	$302,527
41	Centerfield	Chesterfield	SC	N/A	75.00	N/A	N/A	N/A	N/A	N/A	248	$51,170	$91,364
42	Harts Mill	Tarboro	NC	N/A	80.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
43	Lenoir	Kinston	NC	N/A	5.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
44	Tate	Castalia	NC	N/A	5.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
45	Powhatan	Powhatan	VA	89	5.00	50	23%	77%	N/A	N/A	280	$98,856	$427,604
46	Watlington	S. Boston	VA	N/A	20.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
47	Endless Cave	New Market	VA	324	31.40	100	15%	27%	51%	7%	247	$72,180	$377,872
48	Westmoreland	Warsaw	VA	100	19.90	N/A	N/A	N/A	N/A	N/A	140	$56,042	$308,152
49	Virginia Line	Manson	NC	600	35.00	N/A	3%	89%	0%	8%	223	$30,565	$350,977
50	Turkey Crk	Lancaster	KY	297	50.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
51	Green River	Guston	KY	N/A	200.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Average			430	61.89	41	21%	50%	24%	6%	796	$65,479	$251,216
	Median			236	20.00	21	15%	59%	11%	0%	382	$60,354	$253,138
	High			3,500	617.00	160	76%	98%	94%	44%	4,689	$127,047	$509,365
	Low			35	3.00	0	1%	0%	0%	0%	7	$30,565	$50,000

From these 51 solar projects I have identified 145 data points (combined Sale/Resale, Matched Pair and Broker Opinions) as summarized below.

Sale/Resale Comparable Stats — **23 Data Points**

	MW	Avg. Distance		Indicated Impact
Average	45.66	658	**Average**	3%
Median	20.00	500	**Median**	2%
High	173.00	1,900	**High**	15%
Low	2.00	155	**Low**	-7%

Matched Pair Comparable Stats — **92 Data Points**

	MW	Avg. Distance		Indicated Impact
Average	97.20	614	**Average**	1%
Median	30.00	488	**Median**	1%
High	617.00	1,950	**High**	10%
Low	2.00	145	**Low**	-10%

Broker Comment Breakdown — **30 Data Points**

	MW	Avg. Distance		Sale Price	Impact	
Average	35.01	507	**Average**	$319,663	28	**NO**
Median	20.00	480	**Median**	$275,000	2	**Yes**
High	173.00	1,900	**High**	$834,000	0	**Maybe**
Low	2.00	105	**Low**	$42,000		

B. National Data

I have compiled data nationally on 120 solar projects with similar breakdowns on the demographic data. I have showed the summary of these 120 below.

				Adj. Uses By Acreage				1 mile Radius (2010-2020 Data)		
	Acres	MW	Topo Shift	Res	Ag	Ag/Res	Com/Ind	Population	Med. Income	Avg. Housing Unit
Average	304	34.50	30	25%	52%	19%	5%	1,616	$64,584	$245,030
Median	128	10.30	15	17%	60%	6%	0%	568	$62,363	$231,408
High	3,500	617.00	160	98%	98%	94%	44%	9,257	$120,861	$515,399
Low	24	0.22	0	1%	0%	0%	0%	7	$28,545	$96,555

From these 120 solar developments I have identified 300 data points as summarized below.

Sale/Resale Comparable Stats — **47 Data Points**

	MW	Avg. Distance	Indicated Impact
Average	57.78	575	4%
Median	20.00	375	3%
High	200.00	2,000	15%
Low	2.00	150	-11%

Matched Pair Comparable Stats — **174 Data Points**

	MW	Avg. Distance	Indicated Impact
Average	64.59	533	1%
Median	16.00	400	1%
High	617.00	1,950	12%
Low	2.00	135	-10%

Broker Comment Breakdown — **79 Data Points**

	MW	Avg. Distance	Sale Price	Impact	
Average	68.31	514	$293,475	77	**No**
Median	20.00	378	$255,000	2	**Yes**
High	435.00	2,200	$835,000	0	**Maybe**
Low	2.00	105	$42,000		

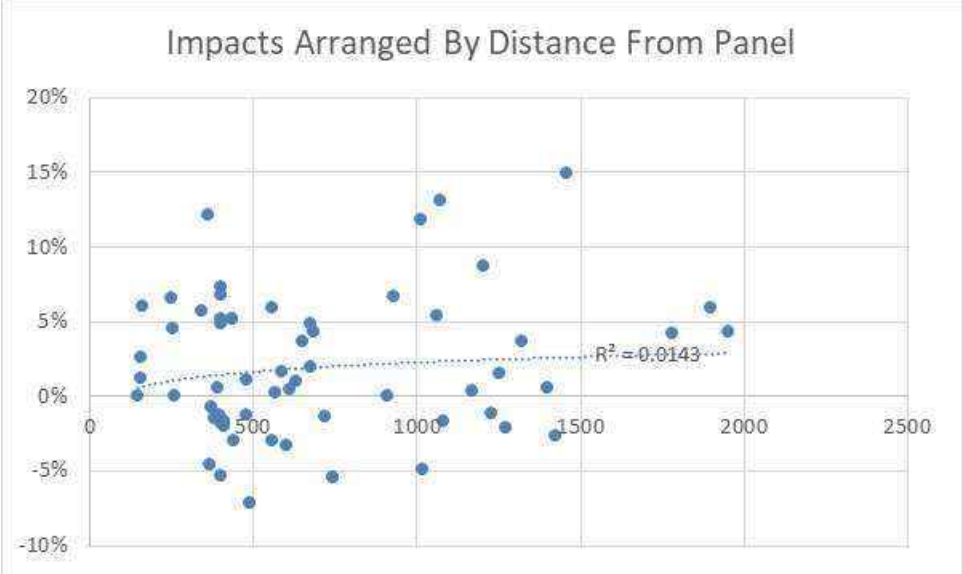
C. Distance Between Homes and Panels

I have measured distances at matched pairs as close as 105 feet between panel and home to show no impact on value. This measurement goes from the closest point on the home to the closest solar panel. This is a strong indication that at this distance there is no impact on adjoining homes.

However, in tracking other approved solar farms across Kentucky, North Carolina and other states, I have found that it is common for there to be homes within 100 to 150 feet of solar panels. Given the visual barriers in the form of privacy fencing or landscaping, there is no sign of negative impact.

I have also tracked a number of locations where solar panels are between 50 and 100 feet of single-family homes. In these cases the landscaping is typically a double row of more mature evergreens at time of planting. There are many examples of solar farms with one or two homes closer than 100-feet, but most of the adjoining homes are further than that distance.

I looked specifically at the Sale/Resale data points and Matched Pair Data points showing the percentage difference and charted that against the distance from home to panel to generate the chart below showing the relative measured impacts to the distances identified as well as the trendline for all of these data points. The best trendline shows a levelling of the impacts with the closest homes showing a trend at 0% impact around 150 feet. Again, even minor negatives on this chart would be consistent with typical market deviation.



D. Topography

As shown on the summary charts for the solar farms, I have been identifying the topographic shifts across the solar farms considered. Differences in topography can impact visibility of the panels, though typically this results in distant views of panels as opposed to up close views. The topography noted for solar farms showing no impact on adjoining home values range from as much as 160-foot shifts across the project. Given that appearance is the only factor of concern and that distance plus landscape buffering typically addresses up close views, this leaves a number of potentially distant views of panels. I specifically note that in Crittenden in KY there are distant views of panels from the adjoining homes that showed no impact on value.

General rolling terrain with some distant solar panel views are showing no impact on adjoining property value.

E. Potential Impacts During Construction

I have previously been asked by the Kentucky Siting Board about potential impacts during construction. This is not a typical question I get as any development of a site will have a certain amount of construction, whether it is for a commercial agricultural use such as large-scale poultry operations or a new residential subdivision. Construction will be temporary and consistent with other development uses of the land and in fact dust from the construction will likely be less than most other construction projects given the minimal grading. I would not anticipate any impacts on property value due to construction on the site.

I note that in the matched pairs that I have included there have been a number of home sales that happened after a solar farm was approved but before the solar farm was built showing no impact on property value. Therefore the anticipated construction had no impact as shown by that data.

F. Scope of Research

I have researched over 1,000 solar farms and sites on which solar farms are existing and proposed in Kentucky, Illinois, Tennessee, North Carolina, Virginia as well as other states to determine what uses are typically found in proximity with a solar farm. The data I have collected and provide in this report strongly supports the assertion that solar farms are having no negative consequences on adjoining agricultural and residential values.

Beyond these references, I have quantified the adjoining uses for a number of solar farm comparables to derive a breakdown of the adjoining uses for each solar farm. The chart below shows the breakdown of adjoining or abutting uses by total acreage.

Percentage By Adjoining Acreage

	Res	Ag	Res/AG	Comm	Ind	Avg Home	Closest Home	All Res Uses	All Comm Uses
Average	19%	53%	20%	2%	6%	887	344	91%	8%
Median	11%	56%	11%	0%	0%	708	218	100%	0%
High	100%	100%	100%	93%	98%	5,210	4,670	100%	98%
Low	0%	0%	0%	0%	0%	90	25	0%	0%

Res = Residential, Ag = Agriculture, Com = Commercial

Total Solar Farms Considered: 705

I have also included a breakdown of each solar farm by number of adjoining parcels to the solar farm rather than based on adjoining acreage. Using both factors provides a more complete picture of the neighboring properties.

Percentage By Number of Parcels Adjoining

	Res	Ag	Res/AG	Comm	Ind	Avg Home	Closest Home	All Res Uses	All Comm Uses
Average	61%	24%	9%	2%	4%	887	344	93%	6%
Median	65%	19%	5%	0%	0%	708	218	100%	0%
High	100%	100%	100%	60%	78%	5,210	4,670	105%	78%
Low	0%	0%	0%	0%	0%	90	25	0%	0%

Res = Residential, Ag = Agriculture, Com = Commercial

Total Solar Farms Considered: 705

Both of the above charts show a marked residential and agricultural adjoining use for most solar farms. Every single solar farm considered included an adjoining residential or residential/agricultural use.

G. Specific Factors Related To Impacts on Value

I have completed a number of Impact Studies related to a variety of uses and I have found that the most common areas for impact on adjoining values typically follow a hierarchy with descending levels of potential impact. I will discuss each of these categories and how they relate to a solar farm.

1. Hazardous material
2. Odor
3. Noise
4. Traffic
5. Stigma
6. Appearance

1. Hazardous material

A solar farm presents no potential hazardous waste byproduct as part of normal operation. Any fertilizer, weed control, vehicular traffic, or construction will be significantly less than typically applied in a residential development and especially most agricultural uses.

The various solar farms that I have inspected and identified in the addenda have no known environmental impacts associated with the development and operation.

2. Odor

The various solar farms that I have inspected produced no odor.

3. Noise

Whether discussing passive fixed solar panels, or single-axis trackers, there is no negative impact associated with noise from a solar farm. The transformer has a hum similar to an HVAC that can only be heard in close proximity and the buffers on the property are sufficient to make emitted sounds effectively inaudible from the adjoining properties. A wide variety of noise studies have been conducted on solar farms to illustrate compatibility between solar properties and nearby residential uses. The noise factor is even less at night.

The various solar farms that I have inspected were inaudible from the roadways.

4. Traffic

The solar farm will have no onsite employee's or staff. The site requires only minimal maintenance. Relative to other potential uses of the site (such as a residential subdivision), the additional traffic generated by a solar farm use on this site is insignificant.

5. Stigma

There is no stigma associated with solar farms and solar farms and people generally respond favorably towards such a use. While an individual may express concerns about proximity to a solar farm, there is no specific stigma associated with a solar farm. Stigma generally refers to things such as adult establishments, prisons, rehabilitation facilities, and so forth.

Solar panels have no associated stigma and in smaller collections are found in yards and roofs in many residential communities. Solar farms are adjoining elementary, middle and high schools as well as churches and subdivisions. I note that one of the solar farms in this report not only adjoins

a church, but is actually located on land owned by the church. Solar panels on a roof are often cited as an enhancement to the property in marketing brochures.

I see no basis for an impact from stigma due to a solar farm.

6. Appearance

I note that larger solar farms using fixed or tracking panels are a passive use of the land that is in keeping with a rural/residential area. As shown below, solar farms are comparable to larger greenhouses. This is not surprising given that a greenhouse is essentially another method for collecting passive solar energy. The greenhouse use is well received in residential/rural areas and has a similar visual impact as a solar farm.









The solar panels are all less than 15 feet high, which means that the visual impact of the solar panels will be similar in height to a typical greenhouse and lower than a single-story residential dwelling. Were the subject property developed with single family housing, that development would have a much greater visual impact on the surrounding area given that a two-story home with attic could be three to four times as high as these proposed panels.

Whenever you consider the impact of a proposed project on viewshed or what the adjoining owners may see from their property it is important to distinguish whether or not they have a protected viewshed or not. Enhancements for scenic vistas are often measured when considering properties that adjoin preserved open space and parks. However, adjoining land with a preferred view today conveys no guarantee that the property will continue in the current use. Any consideration of the impact of the appearance requires a consideration of the wide variety of other uses a property already has the right to be put to, which for solar farms often includes subdivision development, agricultural business buildings such as poultry, or large greenhouses and the like.

Dr. Randall Bell, MAI, PhD, and author of the book **Real Estate Damages**, Third Edition, on Page 146 "Views of bodies of water, city lights, natural settings, parks, golf courses, and other amenities are considered desirable features, particularly for residential properties." Dr. Bell continues on Page

147 that "View amenities may or may not be protected by law or regulation. It is sometimes argued that views have value only if they are protected by a view easement, a zoning ordinance, or covenants, conditions, and restrictions (CC&Rs), although such protections are relatively uncommon as a practical matter. The market often assigns significant value to desirable views irrespective of whether or not such views are protected by law."

Dr. Bell concludes that a view enhances adjacent property, even if the adjacent property has no legal right to that view. He then discusses a "borrowed" view where a home may enjoy a good view of vacant land or property beyond with a reasonable expectation that the view might be partly or completely obstructed upon development of the adjoining land. He follows that with "This same concept applies to potentially undesirable views of a new development when the development conforms to applicable zoning and other regulations. Arguing value diminution in such cases is difficult, since the possible development of the offending property should have been known." In other words, if there is an allowable development on the site then arguing value diminution with such a development would be difficult. This further extends to developing the site with alternative uses that are less impactful on the view than currently allowed uses.

This gets back to the point that if a property has development rights and could currently be developed in such a way that removes the viewshed such as a residential subdivision, then a less intrusive use such as a solar farm that is easily screened by landscaping would not have a greater impact on the viewshed of any perceived value adjoining properties claim for viewshed. Essentially, if there are more impactful uses currently allowed, then how can you claim damages for a less impactful use.

7. Conclusion

On the basis of the factors described above, it is my professional opinion that the proposed solar farm will not negatively impact adjoining property values. The only category of impact of note is appearance, which is addressed through setbacks and landscaping buffers. The matched pair data supports that conclusion.

H. Conclusion

The sale/resale analysis and matched pair analysis show no negative impact in 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 there are sufficient setbacks and/or screenings. The proposed setbacks are further than those measured showing no impact for similar price ranges of homes and for areas with similar demographics to the subject area. Interviews with market participants identified in this report as brokers who have sold homes adjoining solar projects overwhelmingly support a conclusion of no impact on value.

The criteria that typically correlates with downward adjustments on property values such as noise, odor, and traffic all support a finding of no impact on property value.

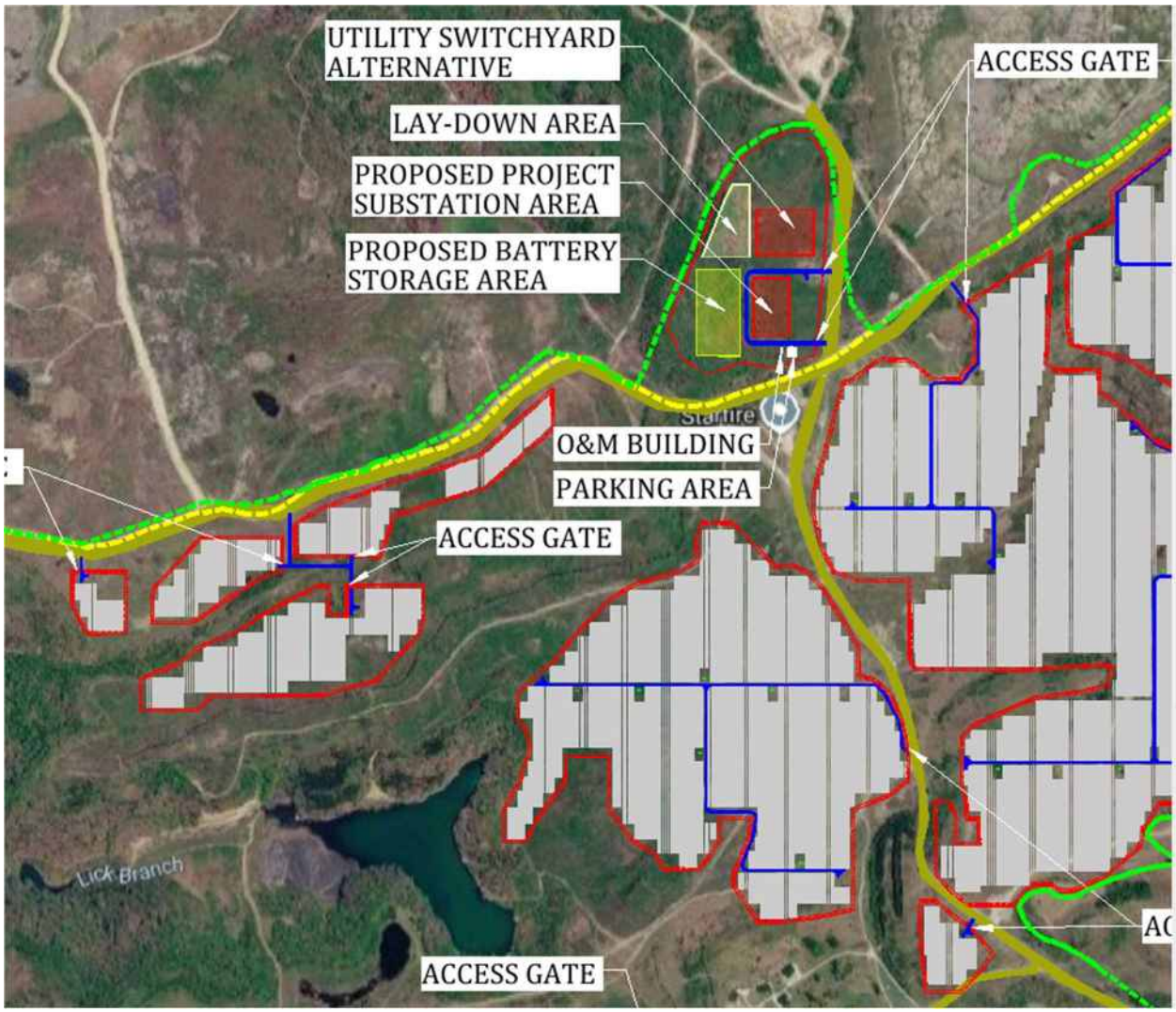
Very similar solar farms in very similar areas have been found by hundreds of towns and counties not to have a substantial injury to abutting or adjoining properties, and many of those findings of no impact have been upheld by appellate courts. Similar solar farms have been approved adjoining agricultural uses, schools, churches, and residential developments.

I have found no difference in the mix of adjoining uses or proximity to adjoining homes based on the size of a solar farm and I have found no significant difference in the matched pair data adjoining larger solar farms versus smaller solar farms. The data in the Southeast is consistent with the larger set of data that I have nationally, as is the more specific data located in and around Kentucky.

Based on the data and analysis in this report, it is my professional opinion that the solar farm proposed at the subject property will have no negative impact on the value of adjoining or abutting property. I note that some of the positive implications of a solar farm that have been expressed by people living next to solar farms include protection from future development of residential developments or other more intrusive uses, reduced dust, odor and chemicals from former farming operations, protection from light pollution at night, it's quiet, and there is no traffic.

XI. Battery Energy Storage System Data

The 400 MW/1600MWH BESS is proposed to be located as shown below. This location is well away from any nearby housing. The closest home identified is over 4,800 feet away to the south beyond the solar panels shown below.



I considered the following battery storage facilities in a variety of states for a comparison of similar battery energy storage systems (BESS) in proximity to residential uses. I have also searched these areas for recent sales to see if there is any impact on property values near these battery storage facilities, which will be addressed in the following section.

I have focused on stand-alone BESS instead of BESS collocated with solar to better isolate the conditions associated with BESS versus solar.

The primary use of this larger set is to show compatibility of BESS and residential uses as well as showing typical setbacks between these uses. These measured distances are from the closest point on the home to the closest piece of equipment. Where I have N/A, the facility does not have an aerial image that I can use to measure that distance. These distances were measured using Google Earth.

Summary of Battery Data

#	Name	City/State	Acres	Year Built	Capacity (MW)	Distance from Closest Home	Average Distance Adjoining Home	Soundwall
1	Diablo	Pittsburg, CA	11.45	2021	200.0	320	361	4 ft
2	Bat Cave	Mason, TX	N/A	2021	100.5	1,280	1984	No
3	Gambit	Angleton, TX	6.24	2021	100.0	215	243	8 ft
4	Chisholm	Ft Worth, TX	21.74	2021	100.0	840	875	No
5	Roughneck	W. Columbia, TX	4.55	2021	50.0	460	460	No
6	Vista	Vista, CA	0.88	2023	40.0	80	184	Yes
7	Outer Cape	Provincetown, MA	N/A	2020	25.0	435	N/A	Yes
8	N. New York Energy	Burke, NY	10.47	2023	20.0	945	945	N/A
9	West Chicago	Chicago, IL	5	2015	20.0	430	450	Yes
10	McHenry	McHenry, IL	2.75	2016	20.0	260	283	No
11	Plumstead	Cream Ridge, NJ	14.39	2019	20.0	155	943	12 ft
12	Rush Springs	Marlow, OK	N/A	2020	10.0	N/A	N/A	No
13	Prospect	W. Columbia, TX	2.3	2019	10.0	400	400	Yes
14	Brazoria	Brazoria, TX	17.58	2020	10.0	130	438	No
15	Port Lavaca	Prt Lavaca, TX	1.44	2020	10.0	N/A	N/A	No
16	Magnolia	Houston, TX	0.87	2020	10.0	180	190	Yes
17	Rabbit Hill	Georgtown, TX	5.99	2020	10.0	130	338	Yes
18	Asheville	Asheville, NC	12.36	2020	9.0	130	452	Yes
19	Micanopy	Micanopy, FL	2.53	2022	8.3	255	708	No
20	East Hampton	E. Hampton, NY	17.58	2024	5.0	470	733	Yes
21	Montauk Energy	Montauk, NY	1.63	2019	5.0	N/A	N/A	Yes
22	Little Field ESS	Staten Island, NY	0.22	2023	4.3	40	84	Yes
23	Ozone Park	Queens, NY	0.35	2018	3.0	30	203	Yes
24	Pomona	Rockland, NY	28.5	2020	N/A	270	1196	No
25	Tibbits	Branch,MI	71	2024	104.9	1100	2,633	No
26	Callisto	Houston, TX	N/A	2024	200.0	685	1,391	N/A
27	KCE NY 1	Stillwater, NY	154.24	2019	20.0	N/A	N/A	No
28	KCE NY 6	Blasdell, NY	7.5	2023	20.0	N/A	N/A	No
29	Orangville Energy	Warsaw,NY	9.67	2022	24.7	1,060	2,353	No
30	Station 9	Braintree, MA	N/A	2018	2.0	N/A	N/A	No
31	Great Kiskadee Stg	Alamo, TX	50.9	2025	100.0	1,320	1,423	No
32	Caballero	Nipomo, CA	20	2025	99.7	485	836	No
33	Jarvis	Manvel, TX	8	2025	404.0	135	302	No
34	Happy Valley	Nampa, ID	10	2025	77.0	570	638	No
35	Padua	San Antonio, TX	36.65	2025	400.0	830	2,415	No
36	Lower Rio	Donna, TX	14.76	2025	60.0	310	429	No
37	Hidden Lakes	Galveston, TX	15	2025	220.0	720	720	No
38	Jackson Fuller	Colorado Springs, CO	36.56	2025	100.0	475	557	Yes
39	Mossy Branch	Shiloh, GA	20	2025	680.0	580	761	No
40	Canyon Country	Santa Clarita, CA	3.4	2024	80.0	205	205	Yes
41	Beaumont	Beaumonont, CA	7	2024	100.0	165	206	No
42	KCE TX 12	Pflugerville, TX	10.76	2023	100.0	245	928	no
43	Stanton	Stanton, CA	3.18	2023	100.0	110	110	Yes
44	Goleta	Goleta, CA	1.91	2023	60.0	75	75	No
45	Elkhorn	Moss Landing, CA	262	2022	182.5	340	340	No
46	Project Cathode	Long Beach, CA	16	2023	200.0	35	111	Yes
47	Bocanova	Alvin, TX	23	2025	150.0	610	728	No
48	Kuna	Kuna, ID	9.22	2025	150.0	250	358	No
49	Connolly	Decatur, TX	15.43	2024	125.0	525	699	No
50	Beebe	Wakefield, MA	12.55	2019	3.0	160	687	No

	Capacity	Distance from Closest Home	Average Distance Adjoining Home
Average	93 MW	419	706
Median	60 MW	315	460
High	680 MW	1,320	2,633
Low	2 MW	30	75

As can be seen from this list of 50 projects, the average distance to the closest home is 419 feet and the median distance to the closest home is 315 feet.

These projects include soundwalls in some locations and many of these are for much larger BESS facilities.

On the following page I have shown the breakdown of projects under 100 MW.

Summary of Battery Data - 100 MW or Less

#	Name	City/State	Acres	Year Built	Capacity (MW)	Distance from Closest Home	Average Distance Adjoining Home	Soundwall
3	Gambit	Angleton, TX	6.24	2021	100.0	215	243	8 ft
4	Chisholm	Ft Worth, TX	21.74	2021	100.0	840	875	No
5	Roughneck	W. Columbia, TX	4.55	2021	50.0	460	460	No
6	Vista	Vista, CA	0.88	2023	40.0	80	184	Yes
7	Outer Cape	Provincetown, MA	N/A	2020	25.0	435	N/A	Yes
8	N. New York Energy	Burke, NY	10.47	2023	20.0	945	945	N/A
9	West Chicago	Chicago, IL	5	2015	20.0	430	450	Yes
10	McHenry	McHenry, IL	2.75	2016	20.0	260	283	No
11	Plumstead	Cream Ridge, NJ	14.39	2019	20.0	155	943	12 ft
12	Rush Springs	Marlow, OK	N/A	2020	10.0	N/A	N/A	No
13	Prospect	W. Columbia, TX	2.3	2019	10.0	400	400	Yes
14	Brazoria	Brazoria, TX	17.58	2020	10.0	130	438	No
15	Port Lavaca	Prt Lavaca, TX	1.44	2020	10.0	N/A	N/A	No
16	Magnolia	Houston, TX	0.87	2020	10.0	180	190	Yes
17	Rabbit Hill	Georgtown, TX	5.99	2020	10.0	130	338	Yes
18	Asheville	Asheville, NC	12.36	2020	9.0	130	452	Yes
19	Micanopy	Micanopy, FL	2.53	2022	8.3	255	708	No
20	East Hampton	E. Hampton, NY	17.58	2024	5.0	470	733	Yes
21	Montauk Energy	Montauk, NY	1.63	2019	5.0	N/A	N/A	Yes
22	Little Field ESS	Staten Island, NY	0.22	2023	4.3	40	84	Yes
23	Ozone Park	Queens, NY	0.35	2018	3.0	30	203	Yes
24	Pomona	Rockland, NY	28.5	2020	N/A	270	1196	No
27	KCE NY 1	Stillwater, NY	154.24	2019	20.0	N/A	N/A	No
28	KCE NY 6	Blasdell, NY	7.5	2023	20.0	N/A	N/A	No
29	Orangville Energy	Warsaw,NY	9.67	2022	24.7	1,060	2,353	No
30	Station 9	Braintree, MA	N/A	2018	2.0	N/A	N/A	No
31	Great Kiskadee Stg	Alamo, TX	50.9	2025	100.0	1,320	1,423	No
32	Caballero	Nipomo, CA	20	2025	99.7	485	836	No
34	Happy Valley	Nampa, ID	10	2025	77.0	570	638	No
36	Lower Rio	Donna, TX	14.76	2025	60.0	310	429	No
38	Jackson Fuller	Colorado Springs, CO	36.56	2025	100.0	475	557	Yes
40	Canyon Country	Santa Clarita, CA	3.4	2024	80.0	205	205	Yes
41	Beaumont	Beaumonont, CA	7	2024	100.0	165	206	No
42	KCE TX 12	Pflugerville, TX	10.76	2023	100.0	245	928	no
43	Stanton	Stanton, CA	3.18	2023	100.0	110	110	Yes
44	Goleta	Goleta, CA	1.91	2023	60.0	75	75	No
50	Beebe	Wakefield, MA	12.55	2019	3.0	160	687	No

	Capacity	Distance from Closest Home	Average Distance Adjoining Home
Average	40 MW	356	586
Median	20 MW	255	451
High	100 MW	1,320	2,353
Low	2 MW	30	75

I have further condensed this list down to the projects without a soundwall as shown below. The median closest home is 472 feet and the median closest home is 290 feet, with homes as close as 75 feet with no soundwall. Of the 21 projects with no soundwalls shown below there are 9 that are closer than 380 feet.

Summary of Battery Data - 100 MW or Less with No Soundwall

#	Name	City/State	Acres	Year Built	Capacity (MW)	Distance from Closest Home	Average Distance Adjoining Home	Soundwall
4	Chisholm	Ft Worth, TX	21.74	2021	100.0	840	875	No
5	Roughneck	W. Columbia, TX	4.55	2021	50.0	460	460	No
8	N. New York Energy	Burke, NY	10.47	2023	20.0	945	945	N/A
10	McHenry	McHenry, IL	2.75	2016	20.0	260	283	No
12	Rush Springs	Marlow, OK	N/A	2020	10.0	N/A	N/A	No
14	Brazoria	Brazoria, TX	17.58	2020	10.0	130	438	No
15	Port Lavaca	Prt Lavaca, TX	1.44	2020	10.0	N/A	N/A	No
19	Micanopy	Micanopy, FL	2.53	2022	8.3	255	708	No
24	Pomona	Rockland, NY	28.5	2020	N/A	270	1196	No
27	KCE NY 1	Stillwater, NY	154.24	2019	20.0	N/A	N/A	No
28	KCE NY 6	Blasdell, NY	7.5	2023	20.0	N/A	N/A	No
29	Orangville Energy	Warsaw,NY	9.67	2022	24.7	1,060	2,353	No
30	Station 9	Braintree, MA	N/A	2018	2.0	N/A	N/A	No
31	Great Kiskadee Stg	Alamo, TX	50.9	2025	100.0	1,320	1,423	No
32	Caballero	Nipomo, CA	20	2025	99.7	485	836	No
34	Happy Valley	Nampa, ID	10	2025	77.0	570	638	No
36	Lower Rio	Donna, TX	14.76	2025	60.0	310	429	No
41	Beaumont	Beaumonont, CA	7	2024	100.0	165	206	No
42	KCE TX 12	Pflugerville, TX	10.76	2023	100.0	245	928	No
44	Goleta	Goleta, CA	1.91	2023	60.0	75	75	No
50	Beebe	Wakefield, MA	12.55	2019	3.0	160	687	No

	Capacity	Distance from Closest Home	Average Distance Adjoining Home
Average	45 MW	472	780
Median	22 MW	290	698
High	100 MW	1,320	2,353
Low	2 MW	75	75

Data Set Conclusions

The data shown above shows 50 BESS examples with a breakdown of adjoining residential uses. The examples support homes for projects of similar size to the proposed project as well as projects much larger than the proposed BESS in similar proximity to houses. The average capacity for the projects under 100 MW without soundwalls is 45 MW and the median is 22 MW. This data set shows distances to closest homes as close as 75 feet and with a median closest distance of 290 feet.

The proposed project is for a 40 MW project with the closest home at over 4,000 feet away. The data set shown above is very similar to the proposed project and the larger data set shows significant consistency with the specific data set for larger projects making it reasonable to discuss smaller projects in terms of property value impacts as well.

I have used the larger data set to identify nearby sales of homes in proximity to those projects. Many of these projects are fairly new and with relatively few nearby homes which reduces the potential for finding usable sales data.

E. Market Data

From the larger set of BESS data, I searched for recent sales activity for analysis. The examples that I was able to identify are shown on the following pages.

1 – Diablo Energy Storage System, Pittsburg, California

This 200 MW battery storage system is located on a parcel in Pittsburg, California with significant adjacency to industrial uses and residential uses. For these reasons it would be difficult to measure impacts due to the adjoining industrial uses that might also have an impact. Given that most of the adjoining uses are industrial a matched pair analysis is inappropriate but a Sale/Resale analysis is as the nearby industrial uses would be consistent both before and after the battery project.



The most recent and nearest sale that I identified is 401 Travis Court that is located to the southeast of the BESS at a distance of 605 feet from the nearest battery. The only sound barrier at the site is between 4 and 6 feet tall but there is an additional 6 foot wall at the rear of the homes as part of the subdivision separating the homes from the nearby industrial uses. This home sold on June 6, 2023 for $665,000 for this 1,867 s.f., 2-story home, 2-car garage with 4 BR, 2.5 BA built in 2004 on a 0.10-acre lot. This same hold sold prior to the BESS announcement on July 28, 2017 for $425,000. I have adjusted the 2017 sale upward based on the Federal Housing Finance Agency House Price Index for the growth in that market between those two dates, which indicates the home was expected to appreciate by 58%, or $671,500. This is within 1% of the actual closed sales price which strongly supports a finding of no impact from the nearby BESS.

3 - Gambit Energy Storage, Angleton, Texas

This 102.4 MW battery storage system is located off W. Live Oak Street, Angleton, Texas. This is a new facility and placed online in June 2021. This system is a good location as there are no other externalities adjoining it to potentially impact the analysis. The substation associated with this is located to the east along N. Walker Street.



The adjoining homes to the north were selling with new homes ranging from $400,000 to $600,000 in 2022.

The most recent adjoining home sale to the west was 852 Marshall Road that sold on April 5, 2021 and presumably they were aware of the battery storage facility as it would have been under construction at the time of sale. This brick ranch with 3 BR, 1 BA with 1,220 s.f. of gross living area and built in 1980 on 0.40 acres sold for $165,000, or $135 per s.f.

I have compared that sale to 521 Catalpa Street that sold on September 11, 2020 for $155,000 for a 3 BR, 2 BA brick ranch with 1,220 s.f. built in 1973 with a single car garage. Adjusting this price upward by 9% for growth in the market for time, 3.5% for difference in age, downward by $6,000 for the additional bathroom, and $4,000 for the garage, the adjusted indicated value of this home is $164,375, which is right in line with 852 Marshall Road and supports a finding of no impact on property value.

I have also compared that sale to 521 W Mimosa Street that sold on February 26, 2021 for $150,000 for this brick ranch with 3 BR, 1.5 BA with 1,194 s.f. built in 1976. Adjusting this sale upward by 4% for growth in the market over time, upward 2% for difference in age, and downward by $5,000 for the additional half bathroom, I derive an adjusted indication of $154,000. This is 7% less than the home price at 852 Marshall Road which suggests an enhancement due to proximity to the battery storage system.

I have also compared this sale to 1164 Thomas Drive that sold on May 20, 2020 for $187,000 for this brick ranch with 2-car garage, 3 BR, 2 BA with 1,259 s.f. and built in 1998. Adjusting this upward by 13% for growth over time, downward by 9% for difference in age of construction, downward by $8,000 for the garage, downward $6,000 for the additional bathroom, I derive an indicated value of $180,480. This is a 9% difference suggesting a negative impact on property value. However, this comparable required the largest amount of adjustments and is not considered as heavily as the other two comparables. This home is 18 years newer and with better bathroom situation as a 1-bathroom house is a significant issue for most buyers.

The second comparable considered required the least adjustment and suggests a positive impact on property value. The median indication is the first comparable which shows no impact on property value. Given this data set I conclude that the best indication from these matched pairs supports a finding of no impact on property value. The home at 852 Marshall is 180 feet from the project outline shown.

I also considered a Sale/Resale analysis on this home. This same home at 852 Marshall sold on April 20, 2016 at $69,900. Adjusting this upward by 38% which is typical appreciation in this area based on the FHFA HPI indicates an expected appreciation to $96,462. However, this home was completely renovated between those two dates so this analysis is not very useful other than to show that the home was updated and sold at a higher price despite being located next to the BESS.

6 - Vista Energy Storage System, Vista, California

This 40 MW battery storage system is located off Olive Avenue, Vista, California. This facility has significant commercial development around it but also housing to the south as close as 50 feet from the closest equipment as shown in the aerial map below and an average distance of 98 feet.



I identified a sale at 508 Dove Circle that sold on April 3, 2023 for $740,000 and is 100 feet from the nearest electrical equipment. This same home last sold on May 21, 2002 sold for $258,000. The recent sale notes that the owner is a general contractor and kept the maintenance very well and the 2nd bath was upgraded. Based on the FHFA HPI this home was expected to appreciate over that time period from 2002 to 2023 by 177%, which works out to $714,660. This is lower than the sales price in 2023, but that difference is readily attributable to the upgraded bathroom and supports a finding of no impact on property value due to the proximity of the BESS.

7 – Outer Cape Community, Provincetown, Massachusetts

This 25 MW battery storage system is located in Provincetown, Massachusetts. This adjoins an industrial building, small solar farm and small landfill. There are nearby houses to the east as close as 435 feet.

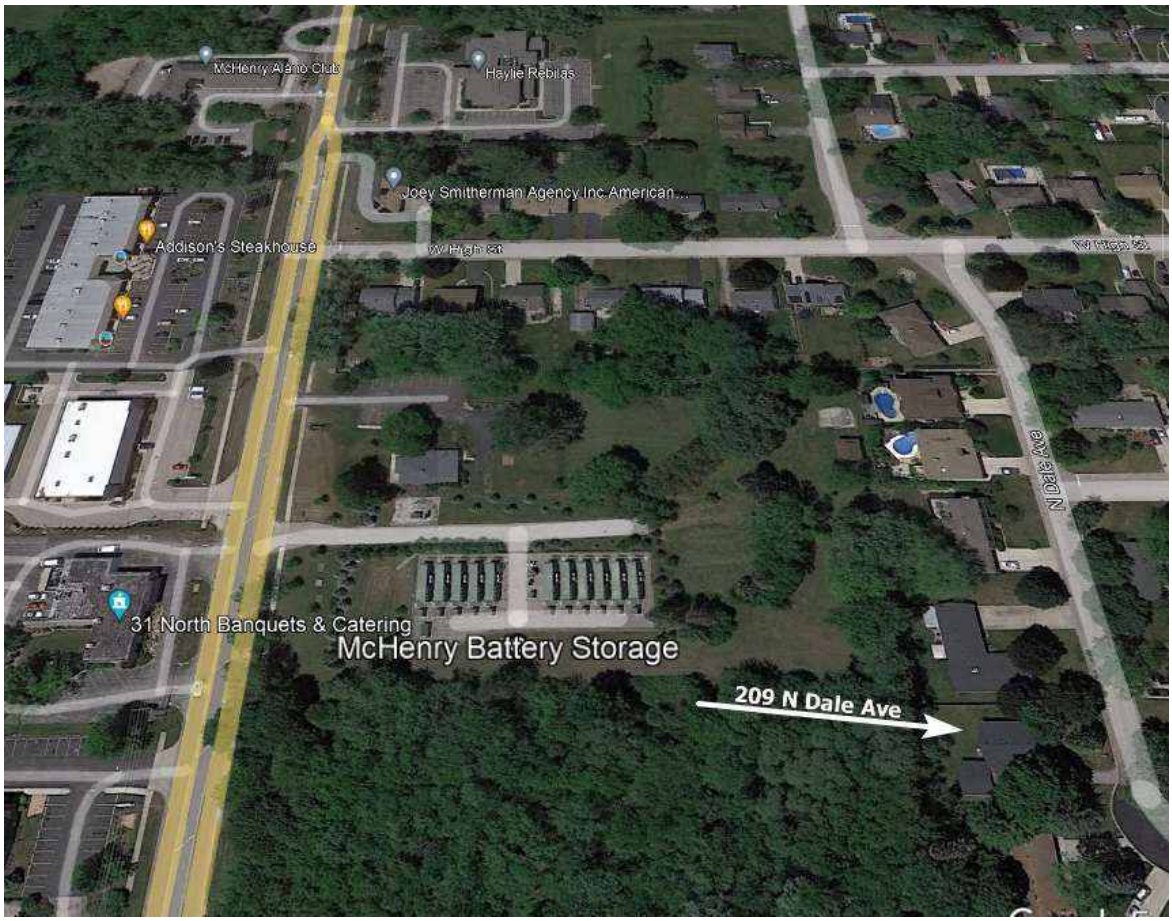


A home located at 72 Race Point Road, Provincetown sold on August 23, 2024 for $1,400,000 for this 3,100 s.f. home with 3 BR, and 4 BA built in 2001 on a 0.16-acre lot. The prior sale of this home was on October 22, 2008 for $625,000. Based on the FHFA HPI this home was expected to appreciate over this time difference by 113%, which works out to $1,331,250, which is 5% less than what it actually sold for, This strongly supports a conclusion of no negative impact from the BESS. This home is 425 feet from the BESS.

The closest home sold on November 28, 2023 after the batteries were put in place for $1,750,000 for this 2,454 s.f. home built in 2005 located at 64 Race Point Road. The most recent sale of this same home prior to the BESS was in 2002 which was just for the lot prior to construction of the home so I was not able to do any analysis on this.

10 - McHenry Battery Storage, McHenry, Illinois

This 19.8 MW battery storage system is located off Illinois Highway 31, McHenry, Illinois that was built around 2016. This is facility fronts on the highway but has rear adjacency to a number of houses.



I have considered the recent sale of 209 N Dale Avenue that adjoins the battery storage site and is 290 feet from the nearest equipment.

That home sold on June 30, 2021 for $265,000 for a vinyl-siding ranch with 3 BR, 2.5 BA, built in 1960 with a gross living area of 1,437 square feet, or $184.41 per s.f. The property has 5 attached garage spaces. As identified in the listing the home was completely renovated with stainless steel appliances and granite countertops. This was listed by Lynda Steidinger with Berkshire Hathaway HomeServices Starck Real Estate and the buyer's agent was Ivette Rodriguez Anderson with Keller Williams. The heavy renovations make it impossible to do a Sale/Resale analysis, so I have looked at paired sales instead.

The home directly across the street, 208 N Dale Avenue, sold on June 16, 2021 for $275,000 for a cedar siding and stone ranch with 3 BR, 2.5 BA, built in 1961, with a gross living area of 1,446 s.f., or $190.18 per s.f. This home also has 1,101 square feet of finished basement space that is currently used as an office but could be an additional bedroom. This home also has been updated and includes stainless steel appliances and granite counter tops.

The size difference is nominal and the additional 3-car garage bays at the 209 N Dale is considered to be balanced by the finished basement space at 208 N Dale, though the finished office space is somewhat superior to garage space. But balancing those two factors out the difference in price per

square foot is 3%. This is considered negligible and attributable to the slightly superior finished basement space and not any impact relative to the battery storage facility.

I also looked at 3802 Clover Avenue, which is two blocks to the north. This stone and siding ranch with 3 BR, 2 BA, built in 1956, with a gross living area of 1,200 s.f. sold on October 21, 2021 for $231,000 or $192.50 per s.f. The property has been updated with a new kitchen and a new bay window and includes a partially finished basement with an additional bathroom in it and the total basement area is an additional 1,200 s.f. This is the smallest home in the neighborhood that I found and it further illustrates that the price per square foot typically goes up as the size goes down. Adjusting this gross sale price upward by $36,498 for the smaller size based on 80% of the price per square foot for this purchase, I derive an adjusted sales price to compare to the subject property of $267,498. I consider the basement to balance out the extra garage space at the subject. This indicates a difference of 1% from the purchase price of the 209 N Dale Avenue, which is attributable to the 4 months difference in time. I consider this comparable to further support a finding of no impact on value.

There are numerous recent home sales in the neighborhood ranging from $172,000 to $306,000, but most of these homes are also over 2,000 square feet in size. The subject property sold for more per square foot than most of these other sales partly due to the smaller overall size, partly due to the significant renovations, and partly due to the additional garage space. Still, this shows that the 209 N Dale Avenue sale is not being impacted by the battery storage facility and has in fact been updated above what is typical for the neighborhood, though given the similar updates at 208 N Dale Avenue, this may be the trend for the area.

The two sales compared to the 209 N Dale Avenue sale supports a finding of no impact on property value due to the battery storage facility.

I also looked at a more recent sale of 205 N Dale Avenue which adjoins 209 N. Dale to the south. This home sold on May 31, 2023 for $255,000 for this 3 BR, 2 BA home with 1,592 s.f. with a 2-car garage built in 1962 on a 0.40-acre lot. This home sold earlier that year for significantly less and underwent heavy renovations. The property was advertised as backing up to woods, it is 1 lot off adjacent to the BESS and shows no sign of impact. The heavy renovations make it difficult to compare this to other non-updated homes in the area, but someone purchased it for updating and sold it for more after the BESS was built.

Another home located at 3815 W High Street sold on October 28, 2022 for $260,000. This home also adjoins a medical office which makes matched pair analysis difficult and the prior sale is much older and not suitable for Sale/Resale analysis.

Another home located at 2813 W High Street sold on April 14, 2022 for $180,000. This home also adjoins a medical office and was sold “as-is” and therefore not appropriate for analysis.

18 - Asheville Energy Storage System, Asheville, NC

This 9 MW battery storage system is located on a parcel with a substation built in 2020 (substation was built much earlier).





There is a nearby home sale that is located on Tax Parcel 8047 (just below the identifier for Parcel 9). This home is 550 feet from the nearest battery equipment and most of that distance is heavily wooded. This home has a street address of 95 Forest Lake Drive, Asheville, NC and it sold on April

26, 2022 for $510,000 for this 4 BR/3 BA ranch with 1,931 square feet including the daylight basement area. The home also has a 2-car garage. I did not attempt a paired sale as this home has no visibility of the BESS despite the proximity and arguably has a better view with less screening to the substation, which is also closer to the home.

Similarly, new homes are being built to the south on Rangley Drive with prices ranging from $431,000 to $566,000. These homes include those that back up to the Parcels 11 through 14 in the adjacent parcel map.

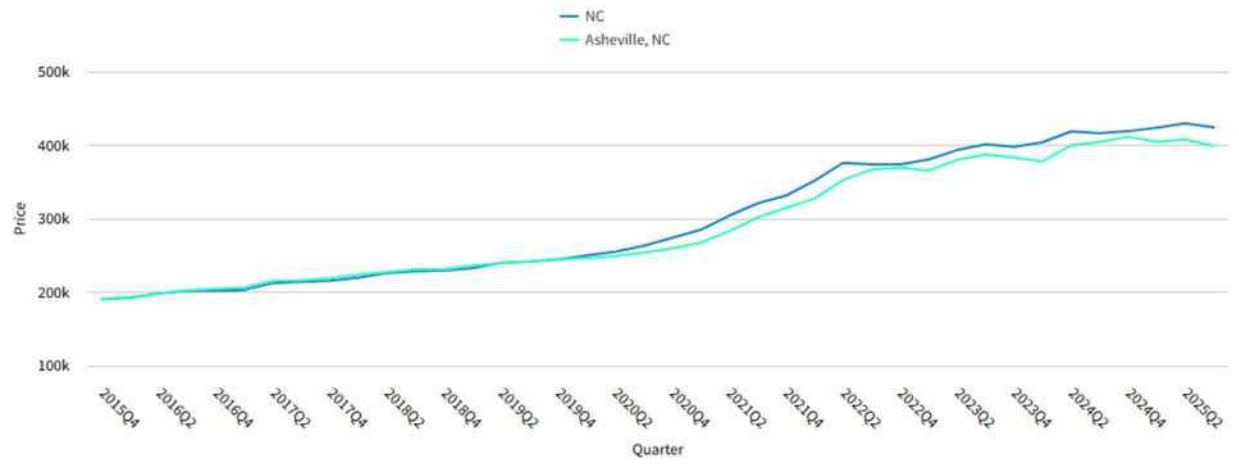
Also, Parcel 4 sold in March of 2022, but it has the substation between it and the BESS, which makes it challenging to draw conclusions from and I attempted no analysis.

I did look at 129 Graham Lane, Asheville, which is Adjoining Parcel 11. It sold on November 6, 2023 for $550,000 for this 4 BR, 3 BA home with 2,913 s.f. with a 2 car garage built in 1970 on a 1.21-acre lot. This home last sold on August 2, 2017 for $298,500 prior to the BESS being constructed. Adjusting this earlier sale using the Federal Housing Finance Agency Home Price Index over that time period, homes in the area indicate that the home should have appreciated to $544,000 as shown below. The home actually sold for slightly more than this which supports a finding of no impact on property value. This home was 510 feet from the BESS and was screened.



I also looked at 106 Graham Lane that sold on December 9, 2025 for $399,000 for this 1,580 s.f. ranch with 2 BR, 2 BA and solar panels on the roof. This home was built in 2000 on 0.29 acres. This same home last sold on November 25, 2015 for $190,500. Adjusting this earlier sale using the Federal Housing Finance Agency Home Price Index over that time period, homes in the area indicate that the home should have appreciated to $399,136 as shown below. The home actually sold for almost exactly that figure showing no impact from proximity to the BESS. This home was 335 feet from the BESS and was screened.

Estimated Value for MSA: $399,136	Estimated Value for State: $424,180	MSA Percentage Change: 109.52%



22 – Littlefield Energy Storage System, Richmond County, New York

This 4.3 MW battery storage system is located on a 4.25-acre parcel and built in 2023 in Staten Island, Richmond County, New York. Adjoining uses are a mix of commercial and residential. The closest adjoining home is 40 feet from the closest electrical equipment.



A home located at 89 Littlefield Avenue sold on October 10, 2024 for $695,000 which is 100 feet from the BESS, but also a unit of a duplex that adjoins a gas station but on the far side from the gas station. This same home sold previously on April 27, 2021 for $420,000. Based on the FHFA HPI this home should have appreciated at 28% over this time period, which works out to $537,600, which is well below the actual sales price. However, the listing indicates that this home was entirely updated, which makes a Sale/Resale analysis unreliable. I reached out to the listing agent Gennady Gary Papirov (917-856-2012) with Homes R Us Realty of NY for comments. When I asked if the nearby BESS had any impact on the marketing or sales price, he indicated that the adjoining gas station had a significant impact. I asked him again about the BESS and he said that the gas station was the main impact and had no comments on the BESS. I also reached out to the buyer's agent Malic Klobucista with Better Homes and Gardens Real Estate Safari (malic1968@yahoo.com, or 973-296-9498).

23 - Ozone Park Batteries, Queens, New York

This system is located on 99th Street in Jamaica, Queens, New York. The below image shows the battery pack parcel outlined in red with a bowling alley to the north, a school to the south and homes to the east and west as well as a church to the west. Based on aerial imagery, this site was installed in early to mid-2018.

The two closest structures are the school at 65 feet and a church at 30 feet from the batteries. The nearby homes are on the opposing blocks, but the proximity to the school does illustrate a high confidence in public safety related to the battery facility and acceptance within that community.



I looked at a sale at 10726 101st Street that sold on October 9, 2018, after the battery storage facility was installed. This home is 345 feet from the closest battery and has a very obstructed view of that area based on the shrubs around the battery storage site as well as a strip of landscape greenery between the two sites. The sales price was $600,000 for this 3 BR/1.5 BA home that was built in 1930 on a 0.06-acre site.

I compared this to a similar home built in 1930 in the same style and same size that sold on the same day at 10762 101st Street on October 9, 2018 for $590,000. This home is just down the street but further from the battery storage system and sold on the same day for $10,000 less. The proximity to the battery does not correlate to value impact in this instance as the home further away sold for less. This second home is across the street from the three-story John Adams High School which likely accounts for the lower price for this second property compared to the first which was adjacent to the same school, but not across from the building itself.

The matched pairs support a finding of no impact on value due to proximity to the battery system.

I identified a sale at 10624 98th Street that sold on November 13, 2023 for $1,150,000. This home last sold on August 26, 2015 for $485,000. Considering the FHFA HPI this price point should have appreciated by 62% over that time frame to $785,700. However, it appears this home was heavily renovated and it does not provide a credible analysis and I will not rely on this sale as I was not able to speak to a broker about this transaction.

25 – Tibbits Energy Storage, Branch County, Michigan

This 104.9 MW battery storage system is near Coldwater Michigan and was built in 2025.



I did not identify any nearby home sales and the closest home is about 1,100 feet from the nearest equipment and is located just to the west as shown in the map above.

The closest home sale that I identified is located at 564 E State Road to the east of I-69 approximately 1,750 feet from the nearest equipment, but with the Interstate being closer than the BESS. This home sold for $165,000 on December 13, 2024 for this 3 BR, 2 BA ranch with 1,612 s.f. built in 1960 on 0.70 acres. There is no good analysis I could do on this home sale given the proximity to the Interstate, the distance from the BESS and the proximity to the Asama Coldwater Manufacturing plant just south of this BESS that is in similar proximity to this home.

34 – Happy Valley, Nampa, ID

This 77 MW battery storage system was built in 2025 and there is a new subdivision being developed across the street as shown in the image below.



There are a number of new home sales in that subdivision that may be useful for analysis, but I currently have not gathered that information as Idaho is a non-reporting state and I do not have access to the local MLS. This is an area that I hope to explore in more detail in the future.

38 – Jackson Fuller, Colorado Springs, CO

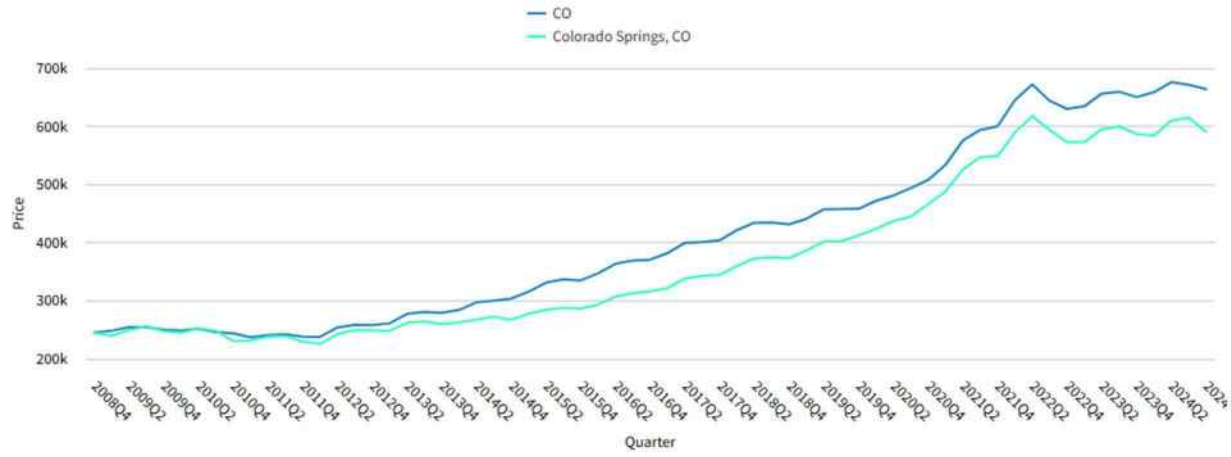
This 100 MW battery storage system was built in 2025.



I identified a sale at 7725 Antelope Meadows Circle, Peyton, Colorado that is located 470 feet east of the northern section of batteries. Since this home backs up to a powerline and the substation that pre-existed the batteries, I could only do a Sale/Resale analysis on this home. The substation and powerlines existed in proximity to this home both in the earlier sale and the sale after the BESS, so it accurately identifies any changes associated with the BESS only.

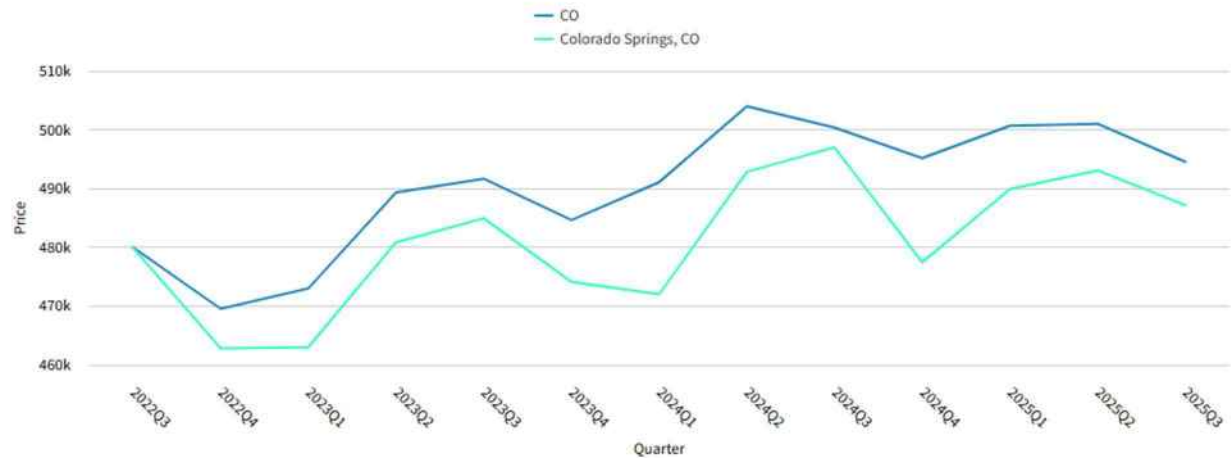
This home sold during the construction of the batteries on September 9, 2024 for $565,000 for this 2,790 s.f. home with 3 BR, 3.5 BA built in 2006 with a 3-car garage on 0.52 acres. This same home sold on November 20, 2008 for $245,000. Based on the FHFA House Price Index, the growth in value for this home was expected to increase from 2008 to the time of the 2024 sale to $590,929. This is a difference of -5%. However, the tax card specifically notes that this was a sale between related parties, which likely explains the discount. Even if you treat this as an arm's length transaction, it still supports a finding of no impact as it is within typical market imperfection.

Estimated Value for MSA: $590,929	Estimated Value for State: $664,493	MSA Percentage Change: 141.2%



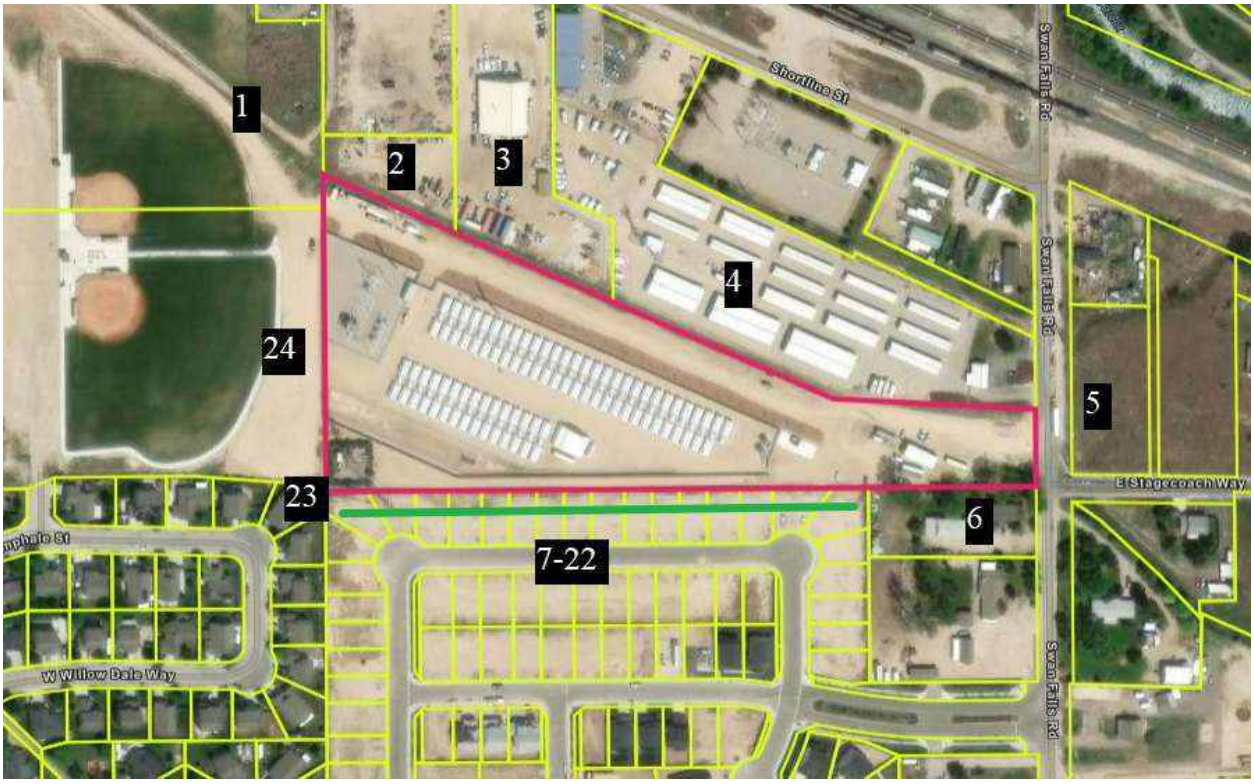
I also considered a sale at 7815 Antelope Meadows Circle that sold on January 6, 2026 for $515,600. This home backs up to the lower section of the BESS and is 900 feet from the nearest equipment of the BESS. This is a 2,996 s.f. 2-story home, with 3 BR, 2.5 BA, built in 2007 on 0.29 acres with a 2-car garage. This home last sold on July 20, 2022 before the BESS for $480,000. Based on the FHFA HPI, the home should have increased to $487,182 by 3rd quarter 2025. The FHFA HPI is not current beyond that date, but the sales price is currently showing a 6% increase over the anticipated value which strongly supports a finding of no impact on property value.

Estimated Value for MSA: $487,182	Estimated Value for State: $494,561	MSA Percentage Change: 1.5%



48 – Kuna BESS, Kuna, ID

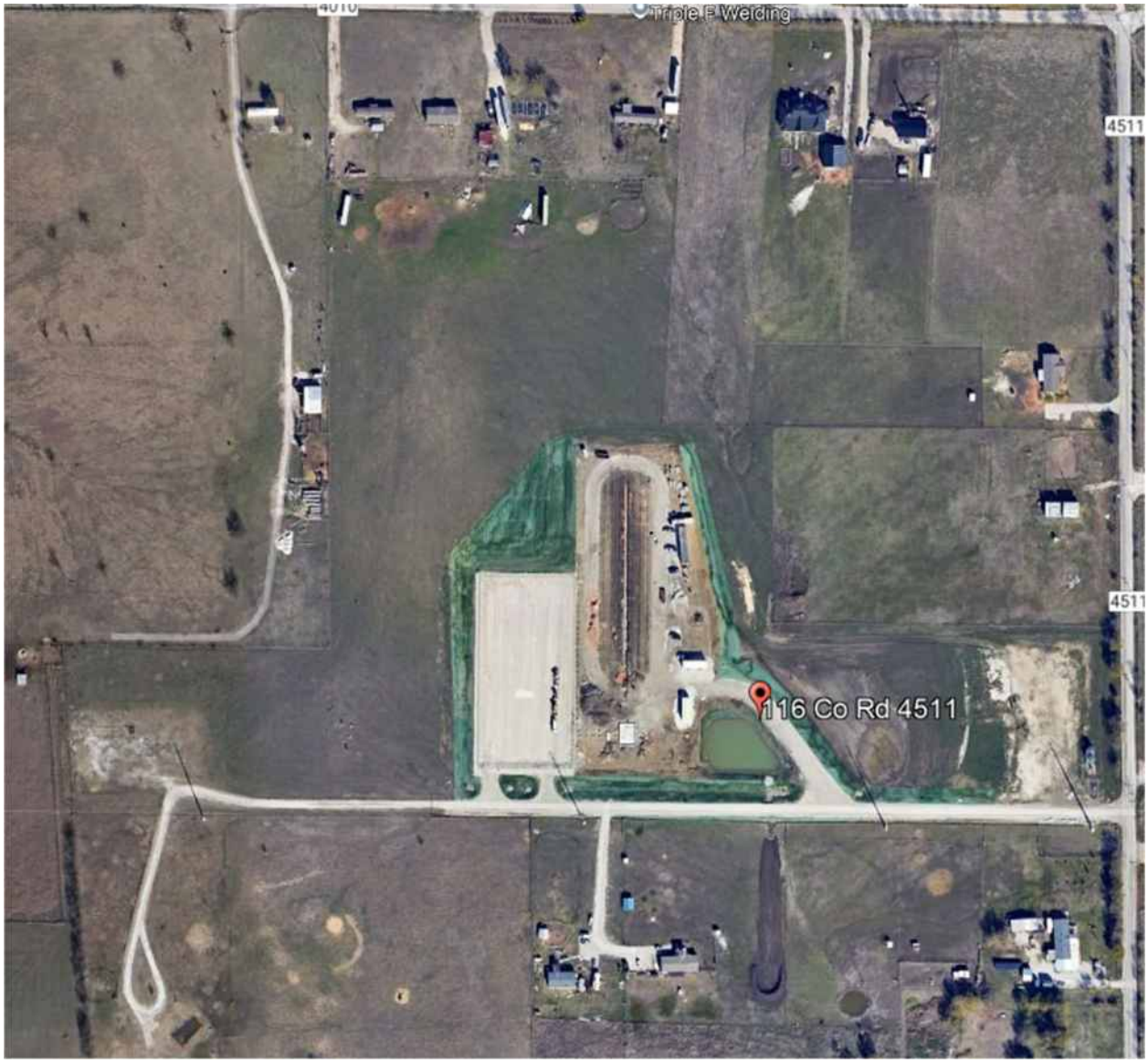
This battery storage system is located at 411 S Swan Falls Road in Kuna, ID and was built in 2025 for this 150 MW facility.



There is a new subdivision being developed just south of this BESS with new homes being sold, but at this time I don't have access to this sales data. This is an area that would likely provide good sales data as these are new homes being built with home sites as close as 100 feet from this project.

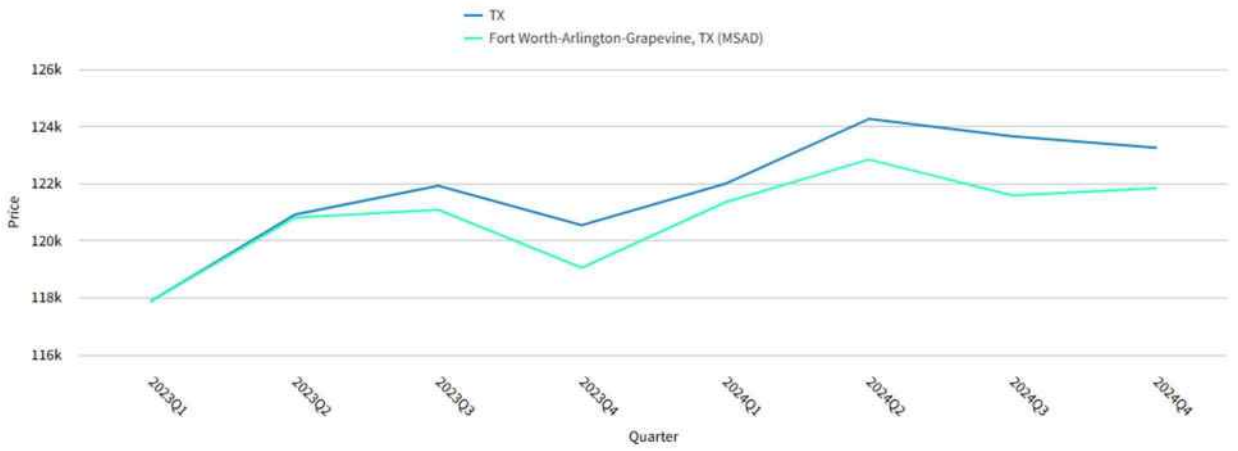
49 – Connolly BESS, Decatur, TX

This battery storage system is located at 116 County Rd 4511, Decatur, TX 76234 and was built in November 2024 but operational in 2025 for this 125 MW, 250 MWH facility.



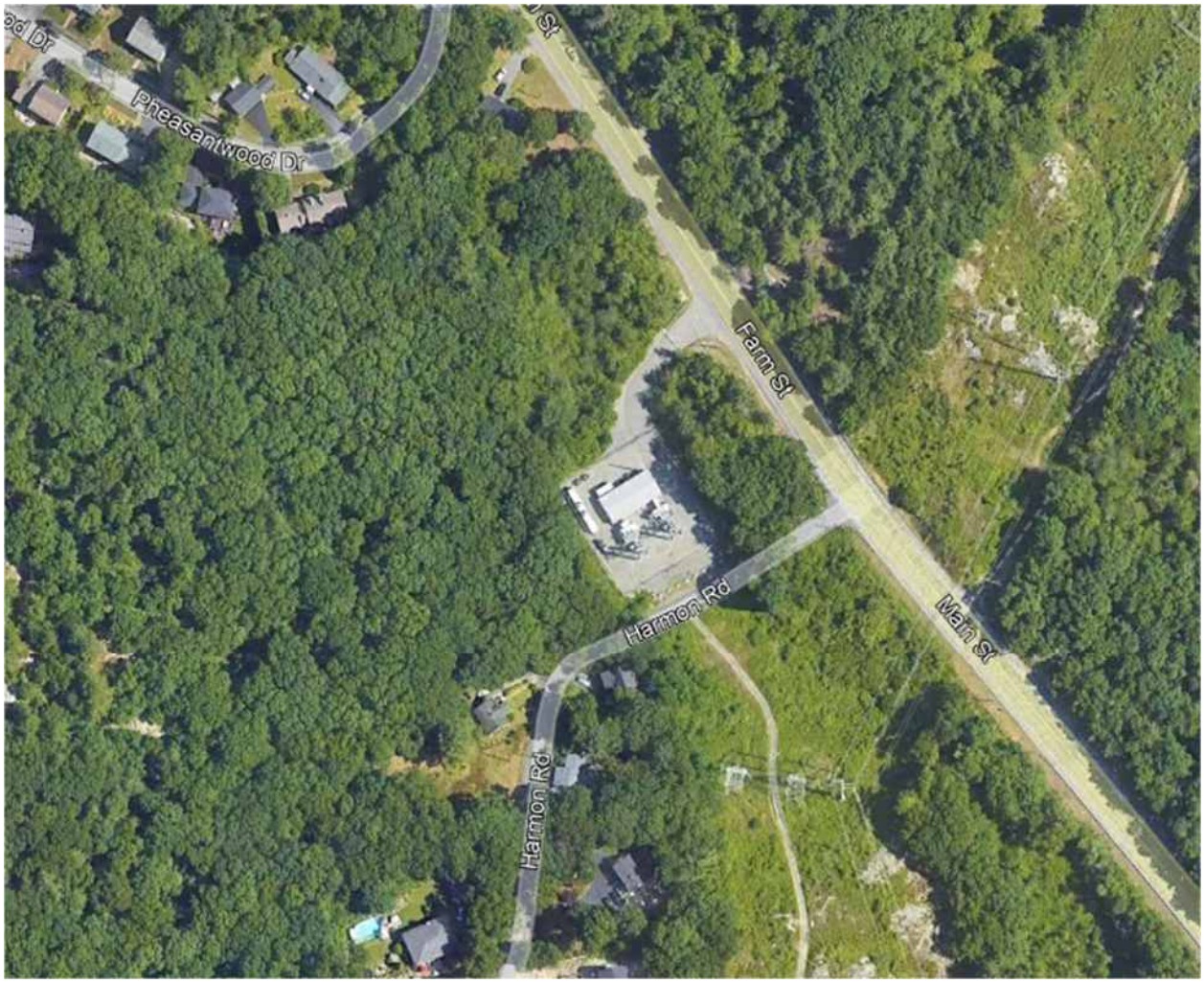
I identified a sale of 5046 County Road 4010, Decatur for 2.62 acres of unimproved land on February 18, 2025 for $125,000. This same property sold previously on March 27, 2023 for $117,900. I considered a Sale/Resale analysis looking at the FHFA House Price Index and applied in to appreciation for this lot over that time period, which indicated it should have appreciated to $123,260. The lot sold for $125,000 after the project was built, which strongly supports a finding of no impact. The likely homesite on this lot is 630 feet based on the homes built on either side of this lot.

Estimated Value for MSA: $121,837	Estimated Value for State: $123,260	MSA Percentage Change: 3.34%



50 – Beebe Substation Battery Storage, Wakefield, Massachusetts

This 3 MW battery storage system is in Wakefield, Massachusetts built in 2019. The closest adjoining home is 150 feet away to the southwest.



I looked at 4 Twilight Road to the south that is 600 feet away. It sold in September 2023, but that home is closer to a large powerline easement that makes it difficult to complete a paired sales analysis.

I also looked at 22 Pheasant Wood Drive that sold on August 2023 for $1,050,000 for a 3,038 s.f. brick ranch with 3 BR, 3.5 BA, 2 car garage built in 1992 on 0.33 acres. This home has a finished basement with a full in-law suite with kitchen. The price per square foot works out to $345.62. This home is 480 feet to the north of the battery system.

I have compared this to 7 June Circle that sold December 2023 for $1,109,000 for a 3,473 s.f. 2 story home built in 1971 on 0.36 acres. The home has 5 BR, 4.5 BA, 2 car attached garage and 2 car detached garage with finished basement and a pool. The purchase price works out to $319.32 per s.f. Adjusting this price upward by 10% for the difference in year built, this price is adjusted to $351.24 per s.f. and multiplying that by the square footage at 22 Pheasant Wood Drive works out to $1,067,067. This is within 1.6% of the Pheasant Wood sale and supports a finding of no impact on value.

Summary

From the sales data presented on the prior pages, I was able to compile the following summary of the findings. While I looked at all of the identified BESS projects for sales data, these are the ones that had sales data that could be analyzed. I did identify a number of areas where additional research could be continued, especially in Idaho.

Residential Dwelling Sale/Resale and Paired Sale Analysis/Broker Opinion

Pair	BESS#	BESS	State	MW	Approx Distance	Address	Date	Sale Price	Adj. Sale Price	% Diff	Sound Wall
1	1	Diablo	CA	200	605	401 Travis	Jun-23	$665,000			4 ft
						401 Travis	Jul-17	$425,000	$671,500	-1%	
2	3	Gambit	TX	102.4	180	852 Marshall	Apr-21	$165,000			8 ft
						521 Catalpa	Sep-20	$155,000	$164,375	0%	
3	6	Vista	CA	40	100	508 Dove	Apr-23	$740,000			Yes
						508 Dove	May-02	$258,000	$714,660	3%	
4	7	Outer Cape	MA	25	425	72 Race Point	Aug-24	$1,400,000			Yes
						72 Race Point	Oct-08	$625,000	$1,331,250	5%	
5	10	McHenry	IL	20	290	209 N Dale	Jun-21	$265,000			No
						3802 Clover	Oct-21	$231,000	$267,498	-1%	
6	18	Asheville	NC	9	510	129 Graham	Nov-23	$550,000			Yes
						129 Graham	Aug-17	$298,500	$544,000	1%	
7	18	Asheville	NC	9	335	106 Graham	Dec-25	$399,000			Yes
						106 Graham	Nov-15	$190,500	$399,136	0%	
8	22	Littlefield	NY	4.3	100	89 Littlefield	Oct-24	$695,000			Yes
						Broker Comment: Gennady Gary Papirov				0%	
9	23	Ozone	NY	3	345	10726 101st	Oct-18	$600,000			Yes
						10762 101st	Oct-18	$590,000	$590,000	2%	
10	38	Jackson Ful	CO	100	470	7725 Antelope	Sep-24	$565,000			Yes
						7725 Antelope	Nov-08	$245,000	$590,929	-5%	
11	38	Jackson Ful	CO	100	900	7815 Antelope	Jan-26	$515,600			Yes
						7815 Antelope	Jul-22	$480,000	$487,182	6%	
12	49	Connolly	TX	125	630	5046 CR 4010	Feb-25	$125,000			No
						5046 CR 4010	Mar-23	$117,900	$123,260	1%	
13	50	Beebe	MA	3	480	22 Pheasant Wood	Aug-23	$1,050,000			No
						7 June Cir	Dec-23	$1,109,000	$1,067,067	-2%	

Comparable Stats

	MW	Avg. Distance		Indicated Impact
Avg	56.98	413	**Average**	1%
Med.	25.00	425	**Median**	0%
High	200.00	900	**High**	6%
Low	3.00	100	**Low**	-5%

Comparable Stats Over 100 MW

	MW	Avg. Distance		Indicated Impact
Avg	125.48	557	**Average**	0%
Med.	102.40	605	**Median**	0%
High	200.00	900	**High**	6%
Low	100.00	180	**Low**	-5%

The sales data includes 8 sales comparables adjoining projects of less than 100 MW and 8 sales comparables adjoining projects 100 MW or larger and they show very consistent findings. Overall the buffer overall averages about 400 feet for those over 100 MW, while the larger projects have buffers averaging 550 feet. The closest comparable identified for analysis to a 100 MW or larger facility is at Gambit in Texas at 180 feet.

The data points adjoining projects under 100 MW show an average distance of 322 feet and a median distance of 385 feet.

The data points for projects with no soundwalls under 100 MW shows distances of 290 feet and 425 feet and both support a finding of no impact on property value.

The Sale/Resale analysis set of data has impacts of -5% to +6% with an average of +1% and median of 0%. All of this strongly supports a finding of no impact on value as this is a very tight range and easily explained by market imperfection.

I also communicated with a broker involved in the sale of a home within 100 feet of Littlefield Energy Storage System in Staten Island who noted that the BESS was not a significant factor in the decision process.

It's also notable that the home prices involved show a wide range with adjoining home sales ranging from $165,000 up to $1,400,000.

Conclusion

I conclude that based on the comparable data presented that the proposed facility will not have a negative impact on adjoining property values. Furthermore, there are numerous examples in the data set of homes that are closer than that distance to batteries which reinforces the opinion developed based on the paired sales analysis and sale/resale analysis.

I note that an article published in Summer 2016 in The Appraisal Journal by Ted Tatos, Mark Glick, PHD, JD and Troy A. Lunt, MAI titled **Property Value Impacts from Transmission Lines, Substransmission Lines, and Substations** addresses substations in particular. They measured impacts around substations with value impacts for projects less than 50 meters and impacts for projects greater than 50 meters between home and substations. At greater than 50 meters they found no impact and at less than 50 meters they found -2.92% impact on home values. Given that 50 meters would be 164 feet and the closest electrical equipment will be 382 feet, I consider that to be additional strong support for no impact on property value. Substations are taller and harder to screen than a typical BESS operation.

Given the lack of impact for battery projects at distances as close as 100 feet, I consider the distance to the proposed BESS to be a non-factor and no impact would be expected.

XII. Specific Factors Related to Property Impacts - BESS

I have completed a number of Impact Studies related to a variety of uses and I have found that the most common areas for impact on adjoining values typically follow a hierarchy with descending levels of potential impact. I will discuss each of these categories and how they relate to a battery energy storage system.

1. Hazardous material
2. Odor
3. Noise
4. Traffic
5. Stigma
6. Appearance

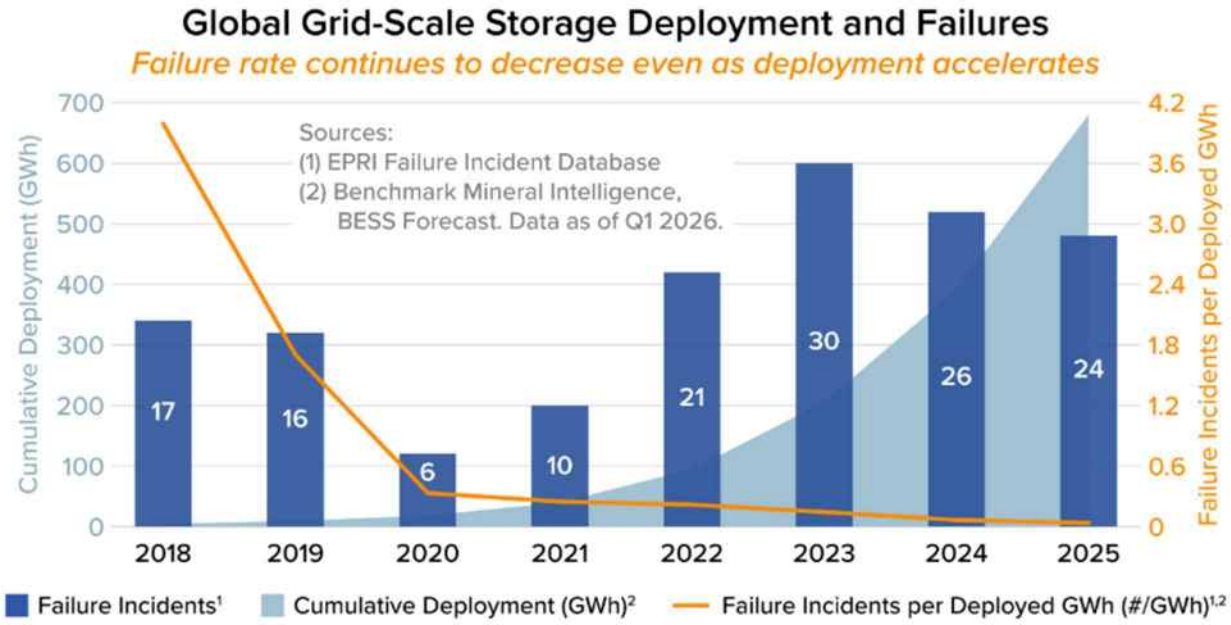
1. Hazardous material

Typically, where hazardous material presents an impact on adjoining or nearby property values is due to pollution, risk of spillage, or other impacts that could get into the soil, water table, or into the air. Examples include heavy industrial uses, coal burning uses, or even some heavy agricultural uses.

According to Ms. Judy McElroy, president of Fractal Energy out of Austin Texas, she has been studying battery storage systems since 2012. She indicated that the risk of fire is very limited as designs now are incorporating changes learned from past fire events and that they typically use a closed system as a failsafe to contain and control if a fire did occur. She indicated that any of the gases that would escape from such a fire would be similar to the chemicals that would be released if your kitchen garbage caught on fire and therefore no risk to the surrounding properties even in such an extreme situation.

A battery storage facility presents no potential hazardous waste byproduct as part of normal operation. According to Ms. McElroy, there is no risk to the soils, water supply, or air from the operation of a battery storage facility.

The EPRI Battery Energy Storage System Failure Incidence Database was initiated in 2021 as part of BESS safety research and tracks data back to 2018 globally. The following chart shows that while incident rates are relatively consistent across the time period, the actual failure rate has dropped precipitously on a failure per GW. So, despite substantial growth, the failure rate is dropping.



Based on that information I conclude that the proposed battery storage system does not have the characteristics of a hazardous material byproduct and no related external obsolescence on adjoining property value.

2. Odor

Odor is the next category that has the second highest potential impact on nearby property values. Odor is an impact often considered with wastewater treatment facilities, solid waste facilities, manufacturing, and related uses. There is no significant odor related to a battery storage system and therefore no impact on adjoining or nearby properties related to odor.

3. Noise

Noise is the next category that has the next highest potential for impact on property values. Noise impacts are found near airports, railroads, heavy industry, or other significant generators of noise including outdoor music venues and the like.

I have reviewed three different noise studies by three different experts on this topic specific to BESS, which all support a finding of no impact on property value related to noise concerns.

The systems shown in the market data include a system adjoining a school, a church, and in close proximity to numerous homes including rural homes near park land. I conclude that the battery storage system is not a significant contributor to noise and therefore would not have a negative impact on adjoining property values.

4. Traffic

Traffic impacts come from traffic patterns related to a site that could cause queuing outside the property or putting too much new traffic within a confined area.

The battery storage system would be remotely monitored and other than occasional maintenance would not have a significant number of trips per day. In fact, it would have fewer trips per day than a single-family dwelling. I therefore conclude that traffic related to this use will not have a negative impact on adjoining property values.

5. Stigma

There is no stigma associated with battery storage facilities.

Stigma is most often associated with adult establishments and would not typically be connected with infrastructure like this use.

6. Appearance

Appearance or viewshed impacts are typically more for scenic areas where there could be premiums for a view, but also include negative impacts related to less aesthetic uses in proximity to housing. This is a category that could be considered for a battery storage facility.

However, the boxes will be 9 feet tall and will be screened by existing vegetation from the nearest homes. The distances to the nearest homes are further than what was identified in most of the other BESS examples, which substantially mitigates visual impacts even if there were not a landscaping screen.

Substations are much taller and harder to effectively screen, whereas the proposed battery storage use would be lower to the ground.

Given the similar use of screens for taller substations, I consider this a good mitigation method for the appearance of the subject property.

Whenever you consider the impact of a proposed project on viewshed or what the adjoining owners may see from their property it is important to distinguish whether or not they have a protected viewshed or not. Enhancements for scenic vistas are often measured when considering properties that adjoin preserved open space and parks. However, adjoining land with a preferred view today conveys no guarantee that the property will continue in the current use. Any consideration of the impact of the appearance requires consideration of the wide variety of other uses a property already has the right to be put to which could include significant agricultural structures.

F. BESS Conclusion

The proposed use of the subject property is consistent with adjoining industrial and residential uses as shown by the similar projects. They also show compatibility with schools, churches, homes, and parks.

The paired sales in New York as well as the ones in Massachusetts, North Carolina, Illinois and Texas illustrate that the battery storage facilities had no impact on the nearby home sales prices at ranges of 180 to 600 feet. The closest home at the subject property to the BESS component will be at least 4,800 feet away.

The breakdown of potential factors that cause a negative impact (or external obsolescence) on adjoining property value shows that the only area for consideration is appearance, which is well addressed through the existing and proposed landscaping. Landscaping was a mitigating factor used with many of the projects identified.

Based on those various considerations, I conclude that there is no reasonable basis to anticipate a negative impact on adjoining property value.

I. Certification

I certify that, to the best of my knowledge and belief:

1. The statements of fact contained in this report are true and correct;

2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, unbiased professional analyses, opinions, and conclusions;

3. I have no present or prospective interest in the property that is the subject of this report and no personal interest with respect to the parties involved;

4. I have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment;

5. My engagement in this assignment was not contingent upon developing or reporting predetermined results;

6. My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of the appraisal;

7. The reported analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute;

8. My analyses, opinions and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice.

9. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives;

10. I have not made a personal inspection of the property that is the subject of this report, and;

11. No one provided significant real property appraisal assistance to the person signing this certification.

12. As of the date of this report I have completed the continuing education program for Designated Members of the Appraisal Institute;

13. I have not performed services, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.

Disclosure of the contents of this appraisal report is governed by the bylaws and regulations of the Appraisal Institute and the National Association of Realtors.

Neither all nor any part of the contents of this appraisal report shall be disseminated to the public through advertising media, public relations media, news media, or any other public means of communications without the prior written consent and approval of the undersigned.





Richard C. Kirkland, Jr., MAI
State Certified General Appraiser

Kirkland Appraisals, LLC

Richard C. Kirkland, Jr., MAI, ARA
9408 Northfield Court
Raleigh, North Carolina 27603
Mobile (919) 414-8142
rkirkland2@gmail.com
www.kirklandappraisals.com

Professional Experience

Kirkland Appraisals, LLC, Raleigh, N.C. 2003 – Present
Commercial appraiser
Hester & Company, Raleigh, N.C.
Commercial appraiser 1996 – 2003

Professional Affiliations

MAI (Member, Appraisal Institute) designation #11796 2001
ARA (American Society of Farm Managers and Rural Appraisers) 2025
NC State Certified General Appraiser # A4359 1999
VA State Certified General Appraiser # 4001017291
SC State Certified General Appraiser # 6209
KY State Certified General Appraiser # 5522
TN State Certified General Appraiser # 6240
FL State Certified General Appraiser # RZ3950
GA State Certified General Appraiser # 321885
MI State Certified General Appraiser # 1201076620
PA State Certified General Appraiser # GA004598
OH State Certified General Appraiser # 2021008689
IN State Certified General Appraiser # CG42100052
IL State Certified General Appraiser # 553.002633
LA State Certified General Appraiser # APR.05049-CGA
TX State Certified General Appraiser # 1380528-CG
ND State Certified General Appraiser # CG-224129
OR State Certified General Appraiser # C001665

Education

Bachelor of Arts in English, University of North Carolina, Chapel Hill 1993

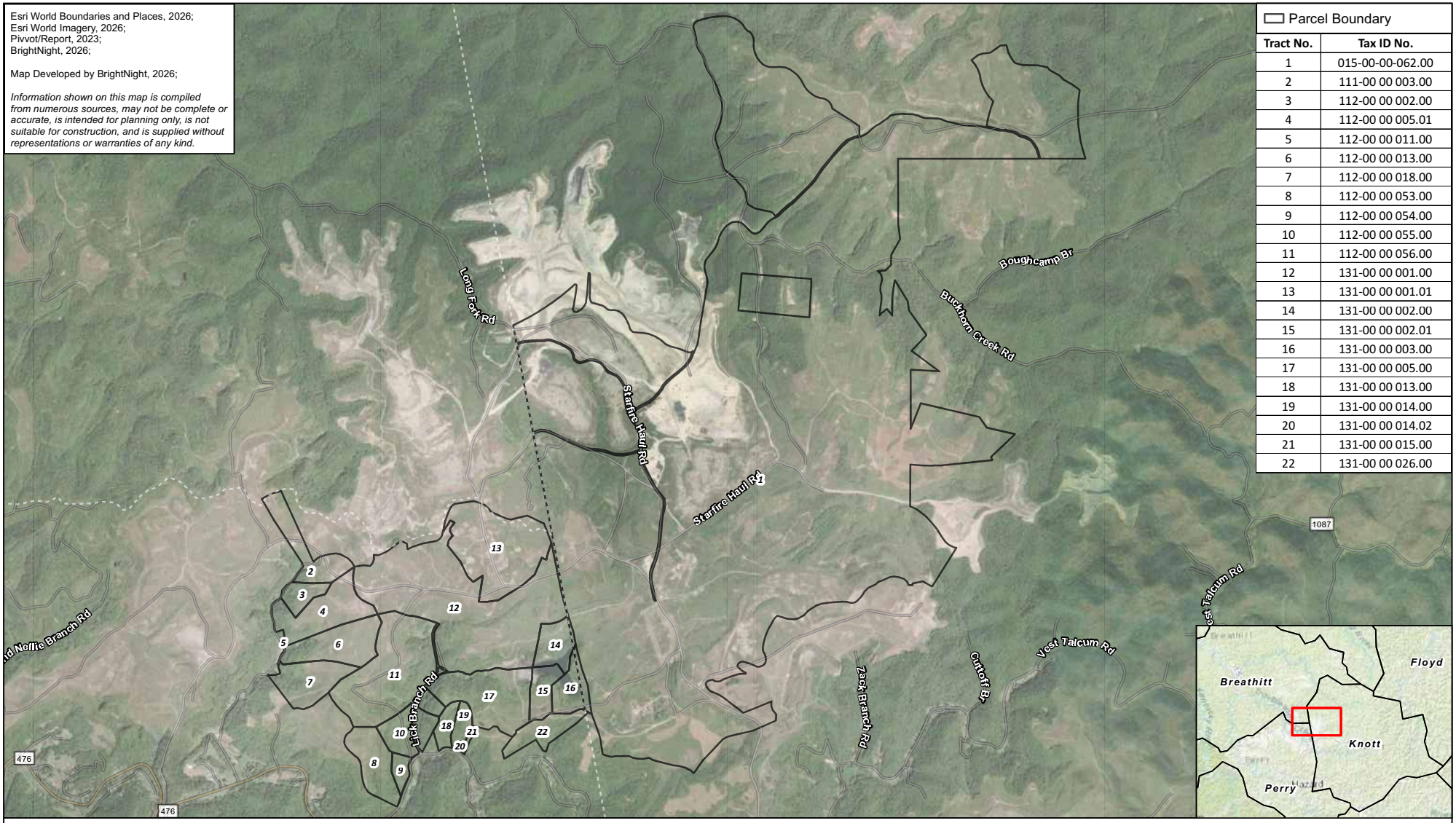
Continuing Education

Uniform Standards of Professional Appraisal Practice Update	2026
National Valuation Bias and Fair Housing Laws and Regulations	2026
Advanced Exam Preparation Course - ARA	2025
Valuation of Residential Solar	2025
Fair Housing Bias and Discrimination	2025
The Cost Approach	2025
Uncovering and Valuing Current Luxury Home Trends	2025
Uniform Standards of Professional Appraisal Practice Update	2024
ASFMRA Integrated Approaches to Value (A360)	2024
ASFMRA Best in Business Ethics	2023
Appraising Natural Resources Series – Oil, Gas & Minerals	2023
Appraisal of Industrial and Flex Buildings	2023

Commercial Land Valuation	2023
Fair Housing, Bias and Discrimination	2023
Pennsylvania State Mandated Law for Appraisers	2023
What NOT to Do (NCDOT Course)	2023
The Income Approach – A Scope of Work Decision	2023
Valuation of Residential Solar	2022
Residential Property Measurement and ANSI	2022
Business Practices and Ethics	2022
Uniform Standards of Professional Appraisal Practice Update	2022
Sexual Harassment Prevention Training	2021
Appraisal of Land Subject to Ground Leases	2021
Michigan Appraisal Law	2020
Uniform Standards of Professional Appraisal Practice Update	2020
Uniform Appraisal Standards for Federal Land Acquisitions (Yellow Book)	2019
The Cost Approach	2019
Income Approach Case Studies for Commercial Appraisers	2018
Introduction to Expert Witness Testimony for Appraisers	2018
Appraising Small Apartment Properties	2018
Florida Appraisal Laws and Regulations	2018
Uniform Standards of Professional Appraisal Practice Update	2018
Appraisal of REO and Foreclosure Properties	2017
Appraisal of Self Storage Facilities	2017
Land and Site Valuation	2017
NCDOT Appraisal Principles and Procedures	2017
Uniform Standards of Professional Appraisal Practice Update	2016
Forecasting Revenue	2015
Wind Turbine Effect on Value	2015
Supervisor/Trainee Class	2015
Business Practices and Ethics	2014
Subdivision Valuation	2014
Uniform Standards of Professional Appraisal Practice Update	2014
Introduction to Vineyard and Winery Valuation	2013
Appraising Rural Residential Properties	2012
Uniform Standards of Professional Appraisal Practice Update	2012
Supervisors/Trainees	2011
Rates and Ratios: Making sense of GIMs, OARs, and DCFs	2011
Advanced Internet Search Strategies	2011
Analyzing Distressed Real Estate	2011
Uniform Standards of Professional Appraisal Practice Update	2011
Business Practices and Ethics	2011
Appraisal Curriculum Overview (2 Days – General)	2009
Appraisal Review - General	2009
Uniform Standards of Professional Appraisal Practice Update	2008
Subdivision Valuation: A Comprehensive Guide	2008
Office Building Valuation: A Contemporary Perspective	2008
Valuation of Detrimental Conditions in Real Estate	2007
The Appraisal of Small Subdivisions	2007
Uniform Standards of Professional Appraisal Practice Update	2006
Evaluating Commercial Construction	2005
Conservation Easements	2005
Uniform Standards of Professional Appraisal Practice Update	2004
Condemnation Appraising	2004
Land Valuation Adjustment Procedures	2004
Supporting Capitalization Rates	2004
Uniform Standards of Professional Appraisal Practice, C	2002
Wells and Septic Systems and Wastewater Irrigation Systems	2002

Appraisals 2002	2002
Analyzing Commercial Lease Clauses	2002
Conservation Easements	2000
Preparation for Litigation	2000
Appraisal of Nonconforming Uses	2000
Advanced Applications	2000
Highest and Best Use and Market Analysis	1999
Advanced Sales Comparison and Cost Approaches	1999
Advanced Income Capitalization	1998
Valuation of Detrimental Conditions in Real Estate	1999
Report Writing and Valuation Analysis	1999
Property Tax Values and Appeals	1997
Uniform Standards of Professional Appraisal Practice, A & B	1997
Basic Income Capitalization	1996

SAR Attachment 3



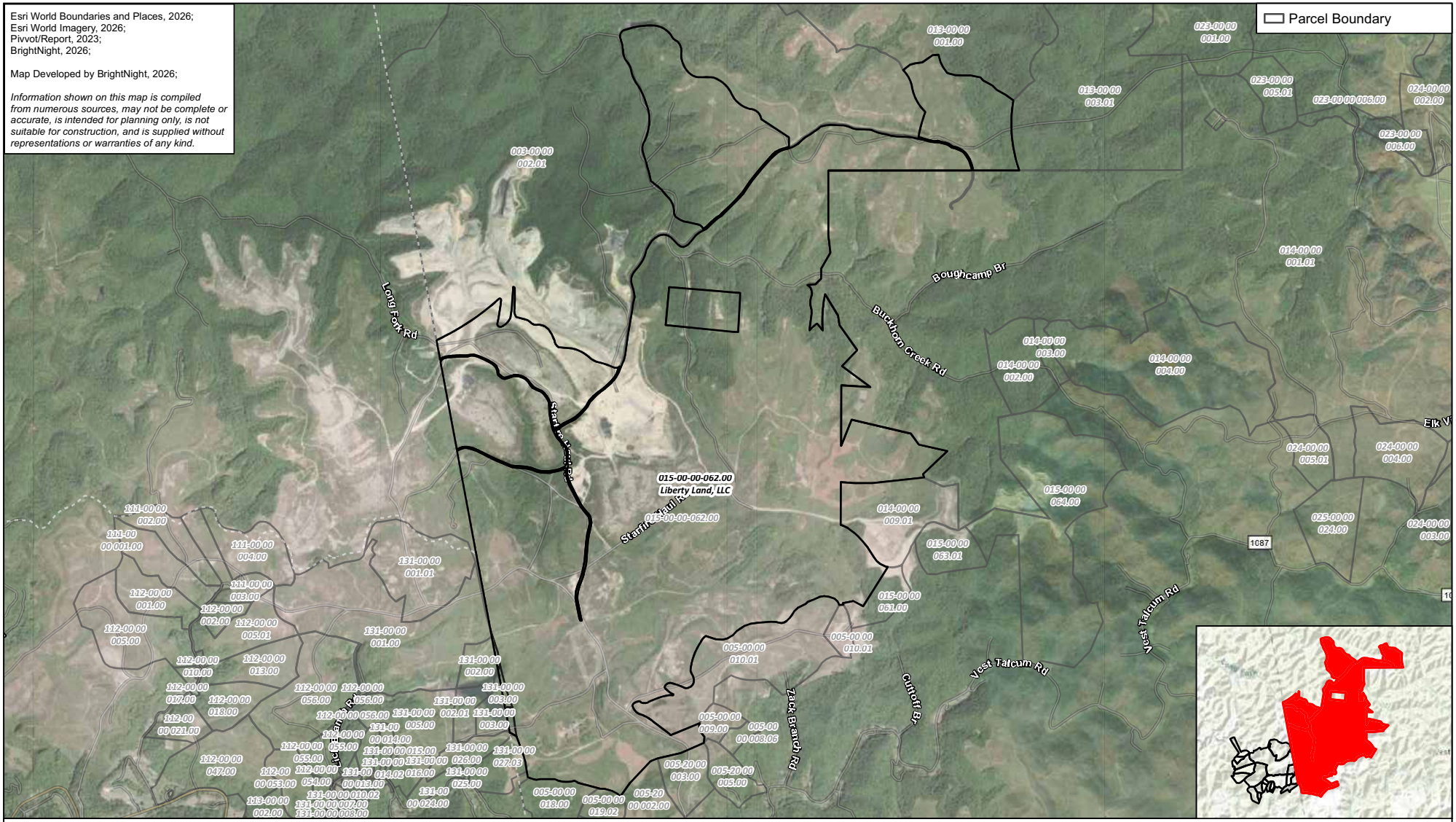
Legal Description Inventory Overview

Wednesday, August 12, 2026

Starfire Mountain (STMO)

Knott, and Perry Co., KY

VR C:\Users\VVSatyanarayanaRajuM\BrightNight\bnGIS - Documents\Dev\Projects\America_North\US\STMO\Pro\Mapbook-STMO-KYSB-LegalDescriptionInventory-Overview-Aerial-v03-11x17-L.aprx



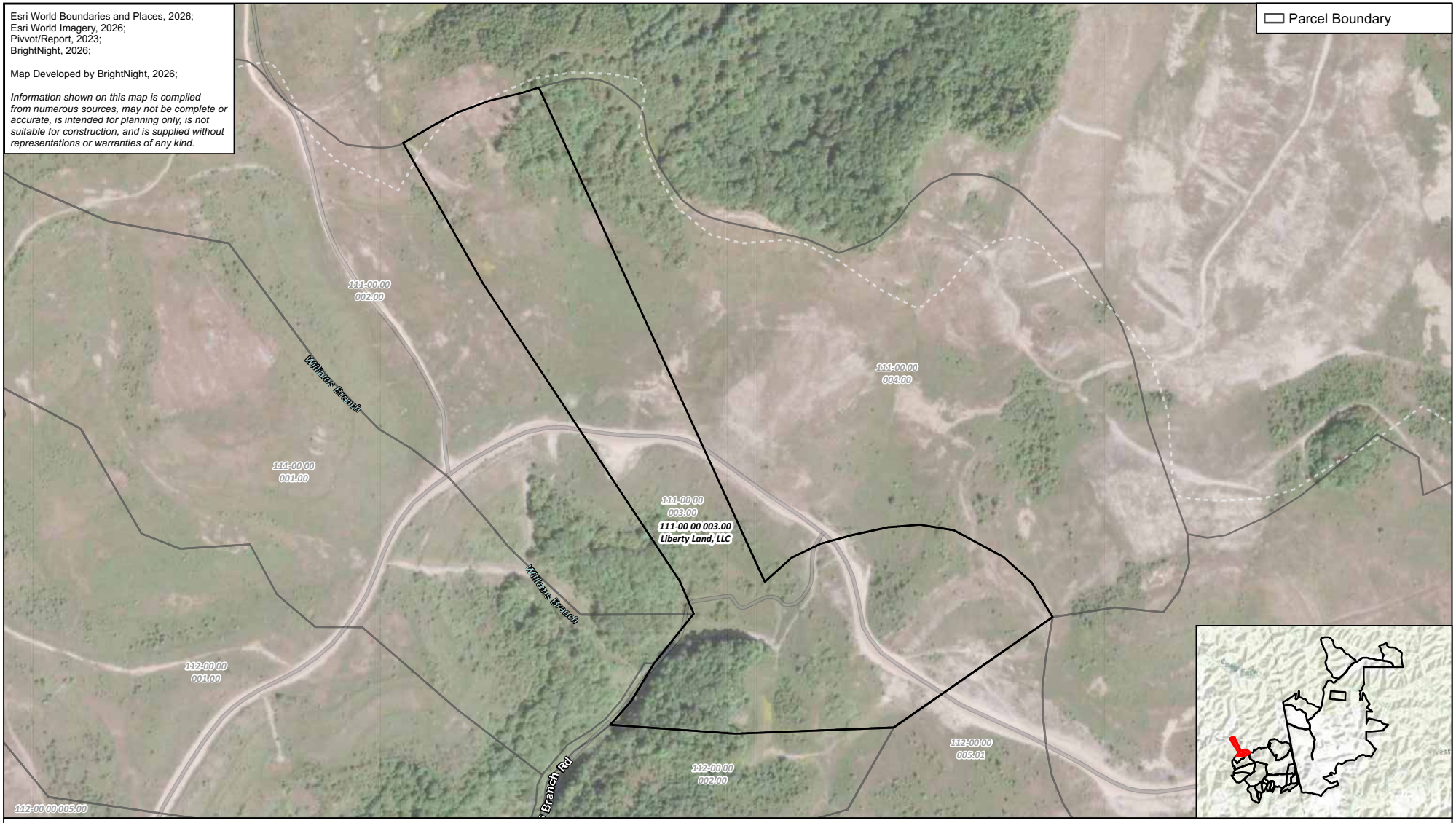
BRIGHTNIGHT
Power when you need it

1 inch = 2,750 feet

Legal Description Inventory
Overview Mapbook - Aerial - 015-00-00-062.00
Wednesday, August 12, 2026

Starfire Mountain (STMO)
Knott, and Perry Co., KY

VR C:\Users\VVSatyanarayanaRajuM\BrightNight\bnGIS - Documents\Dev\Projects\America_North\US\STMO\Pro\Mapbook-STMO-KYSB-LegalDescriptionInventory-SubsetPages-Aerial-v02-11x17-L.aprx



BRIGHTNIGHT

1 inch = 400 feet

Legal Description Inventory
Overview Mapbook - Aerial - 111-00 00 003.00
Wednesday, August 12, 2026

Starfire Mountain (STMO)

Knott, and Perry Co., KY

VR C:\Users\VVSatyanarayanaRajuM\BrightNight\bnGIS - Documents\Dev\Projects\America_North\US\STMO\Pro\Mapbook-STMO-KYSB-LegalDescriptionInventory-SubsetPages-Aerial-v02-11x17-L.aprx



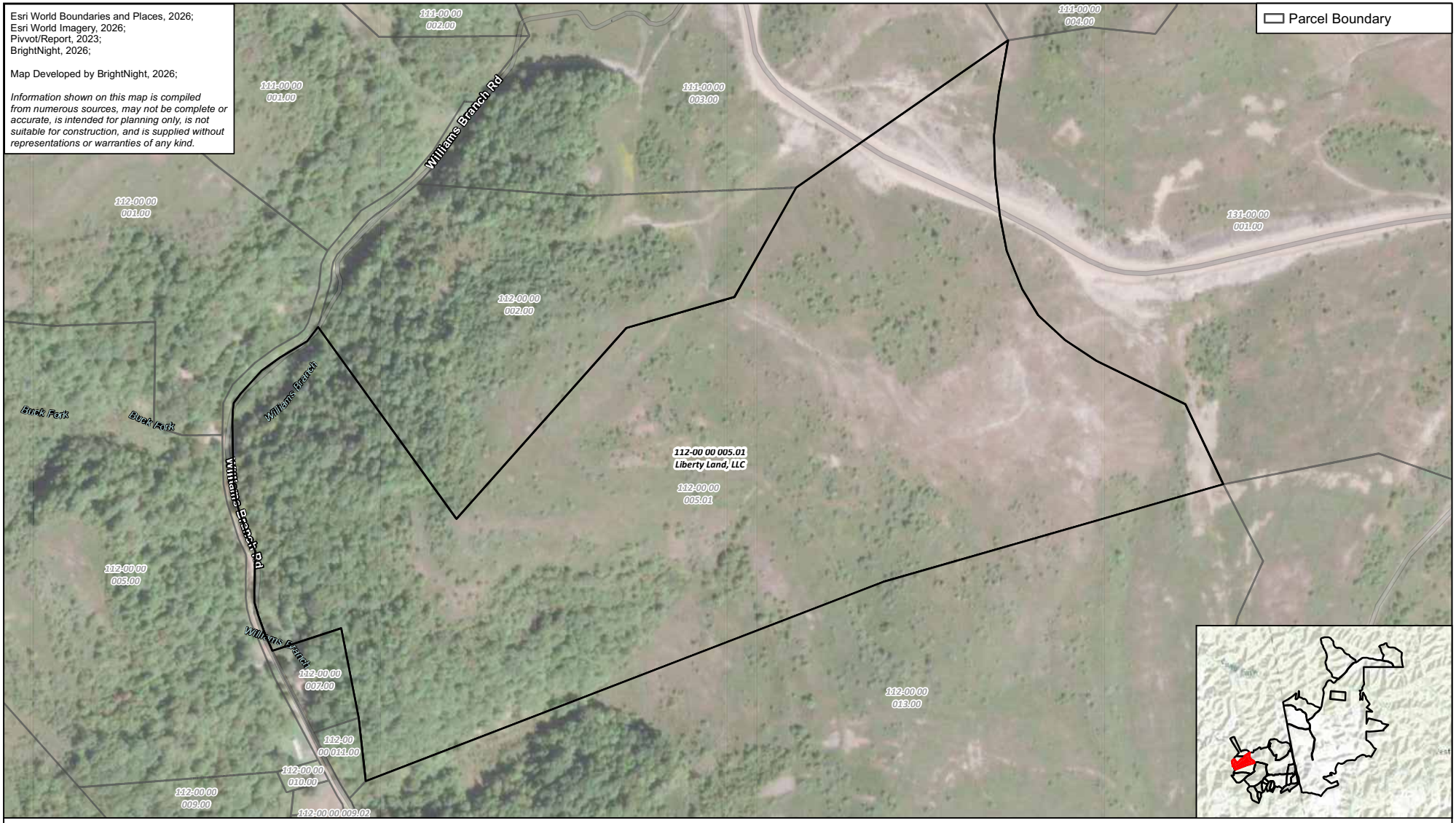
BRIGHTNIGHT
Power when you need it

1 inch = 150 feet

Legal Description Inventory
Overview Mapbook - Aerial - 112-00 00 002.00
Wednesday, August 12, 2026

Starfire Mountain (STMO)
Knott, and Perry Co., KY

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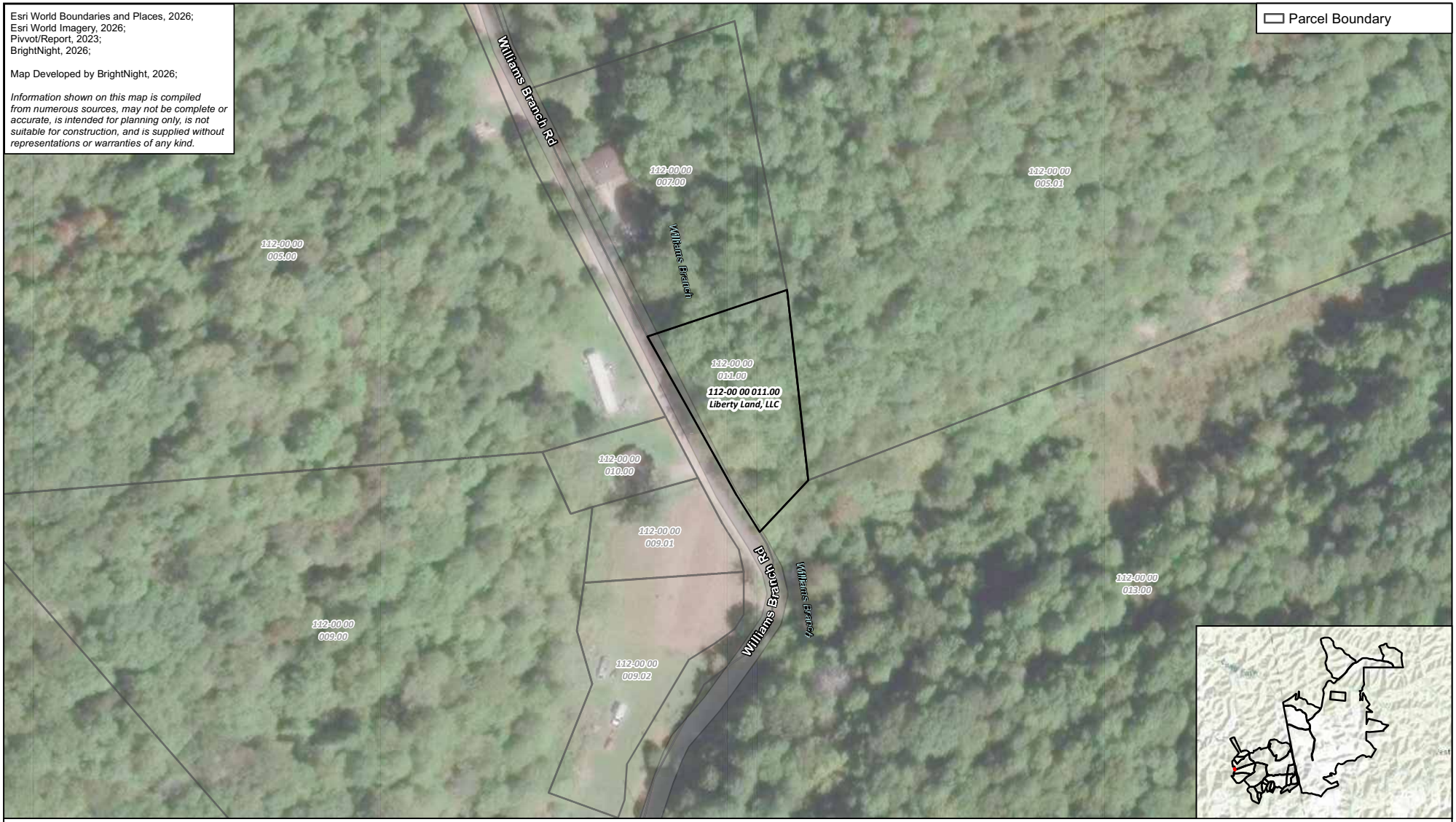
BRIGHTNIGHT
Power when you need it

1 inch = 300 feet

Legal Description Inventory
Overview Mapbook - Aerial - 112-00 00 005.01
Wednesday, August 12, 2026

Starfire Mountain (STMO)
Knott, and Perry Co., KY

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BRIGHTNIGHT
Power when you need it

1 inch = 100 feet

Legal Description Inventory
Overview Mapbook - Aerial - 112-00 00 011.00
Wednesday, August 12, 2026

Starfire Mountain (STMO)
Knott, and Perry Co., KY

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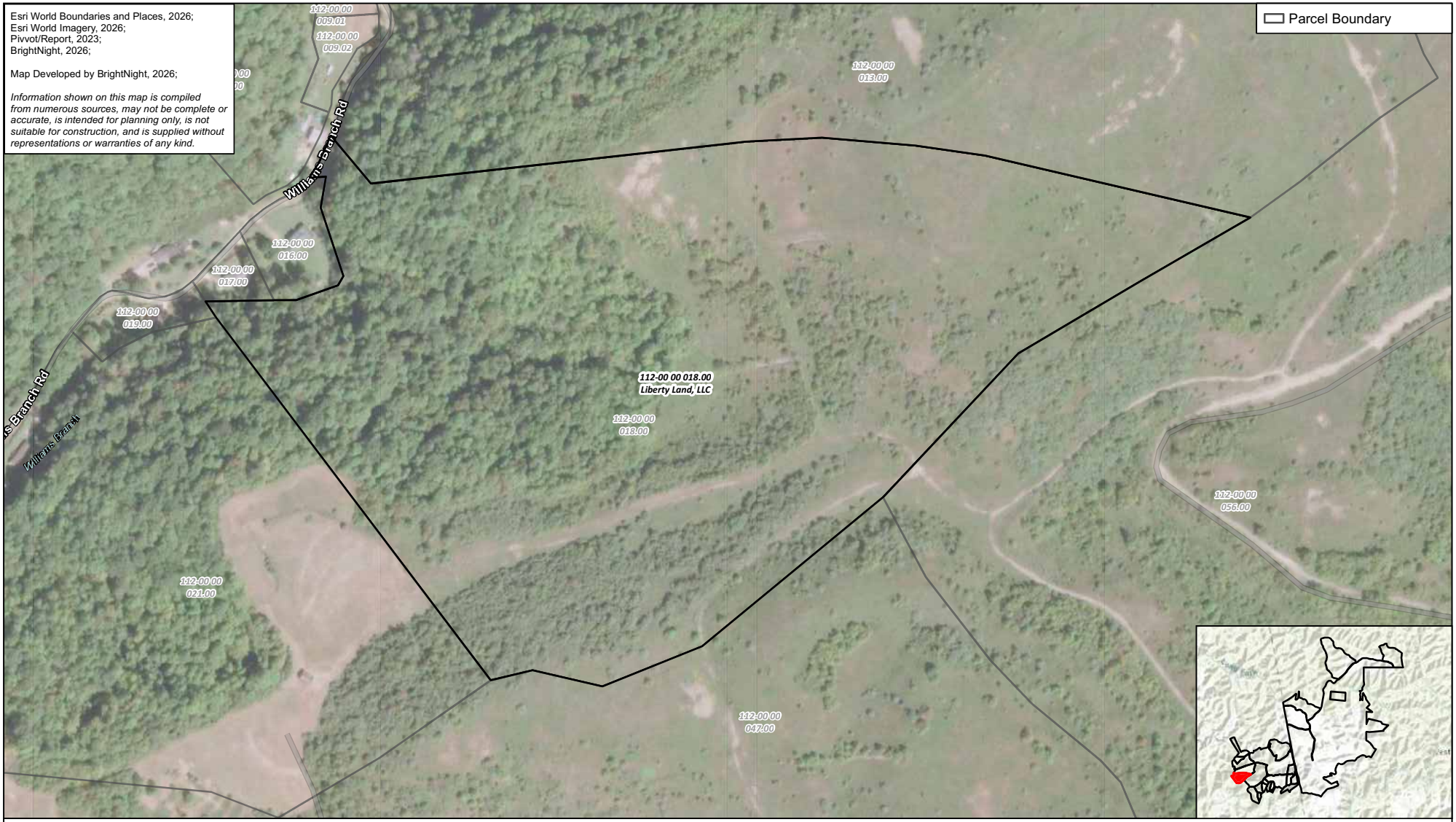
BRIGHTNIGHT
Power when you need it

1 inch = 250 feet

Legal Description Inventory
Overview Mapbook - Aerial - 112-00 00 013.00
Wednesday, August 12, 2026

Starfire Mountain (STMO)
Knott, and Perry Co., KY

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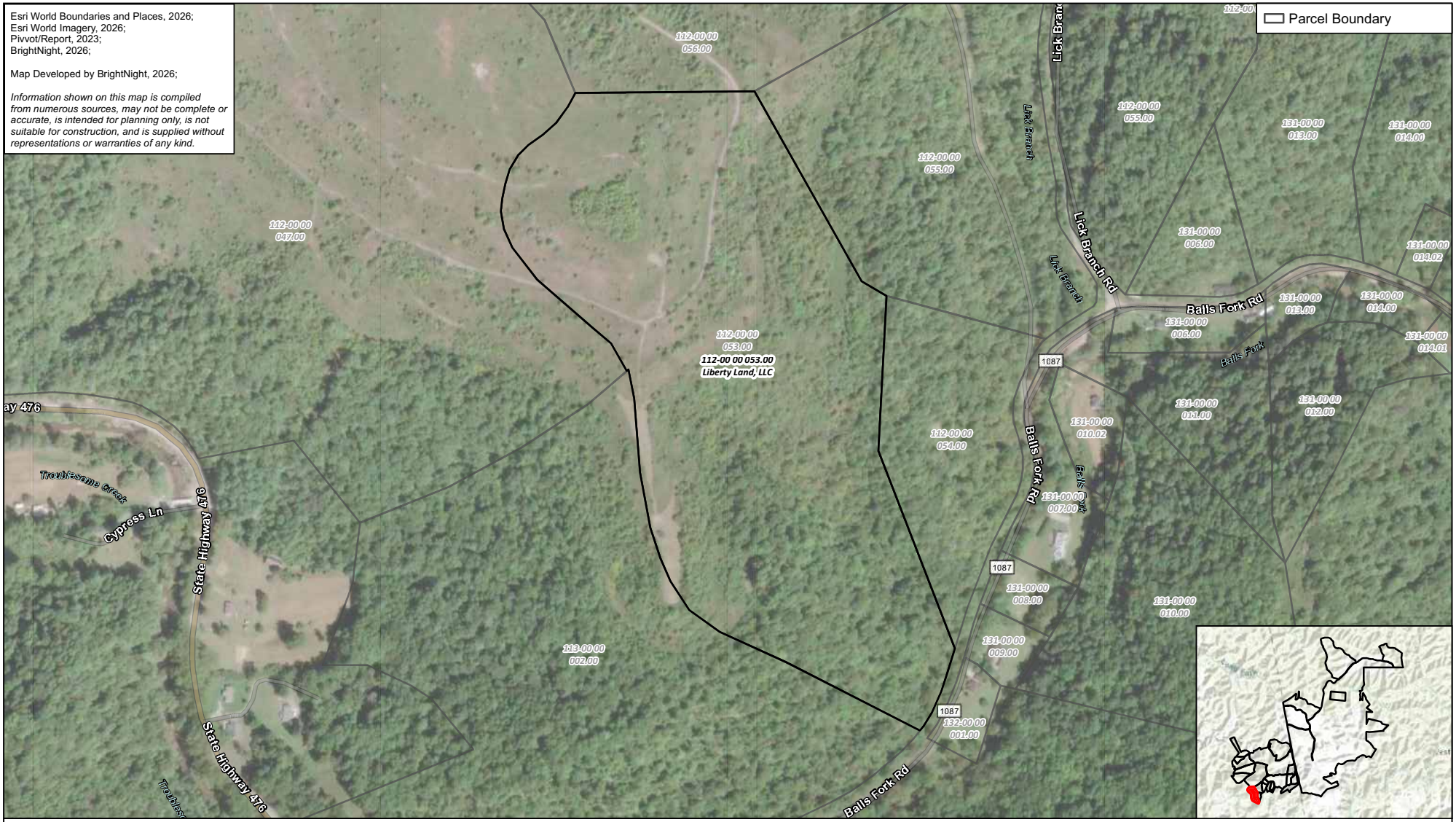


1 inch = 250 feet

Legal Description Inventory
Overview Mapbook - Aerial - 112-00 00 018.00
Wednesday, August 12, 2026

Starfire Mountain (STMO)
Knott, and Perry Co., KY

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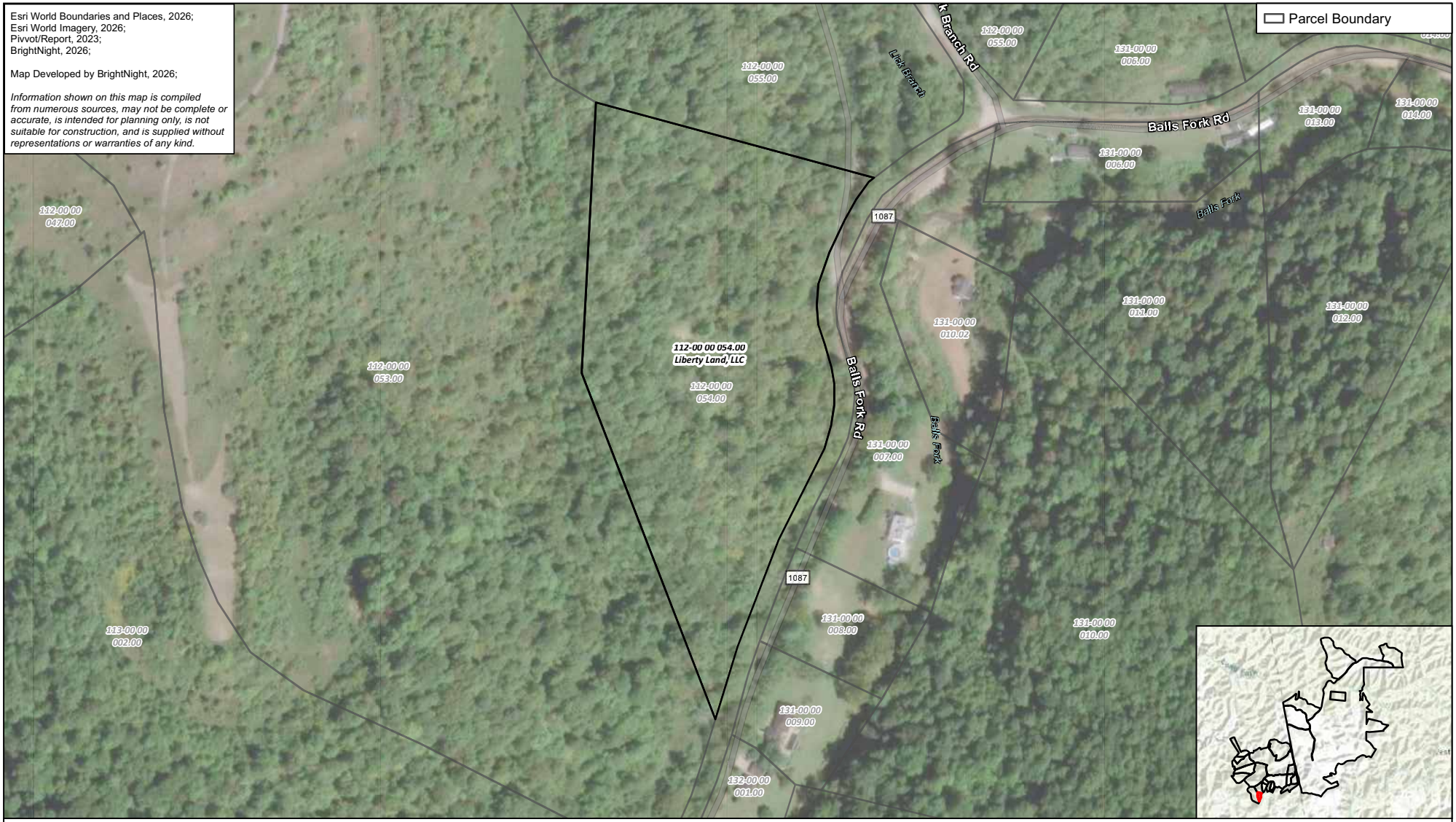
BRIGHTNIGHT

1 inch = 350 feet

Legal Description Inventory
Overview Mapbook - Aerial - 112-00 00 053.00
Wednesday, August 12, 2026

Starfire Mountain (STMO)
Knott, and Perry Co., KY

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BRIGHTNIGHT

1 inch = 200 feet

Legal Description Inventory
Overview Mapbook - Aerial - 112-00 00 054.00
Wednesday, August 12, 2026

Starfire Mountain (STMO)
Knott, and Perry Co., KY

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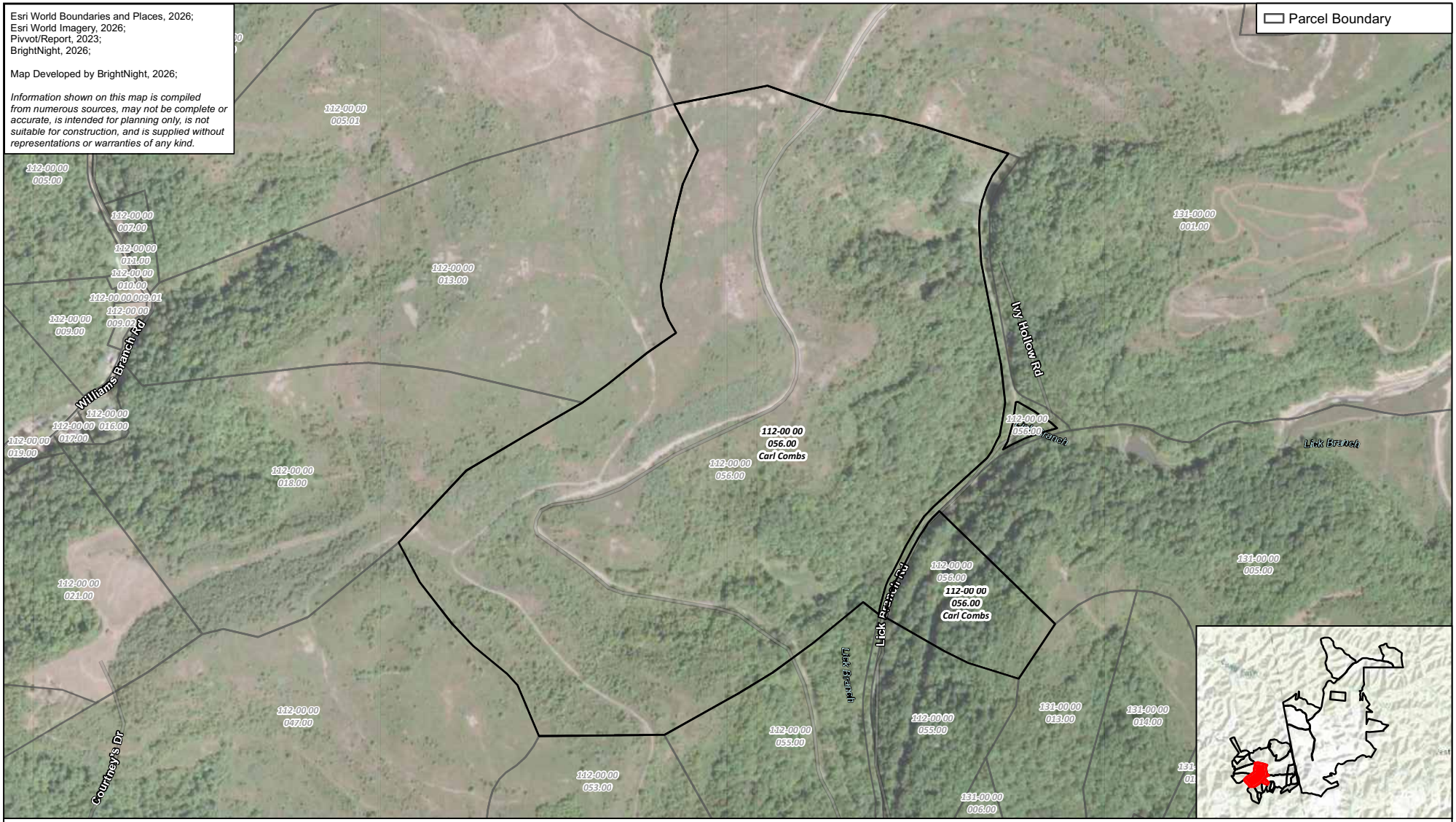
BRIGHTNIGHT

1 inch = 200 feet

Legal Description Inventory
Overview Mapbook - Aerial - 112-00 00 055.00
Wednesday, August 12, 2026

Starfire Mountain (STMO)
Knott, and Perry Co., KY

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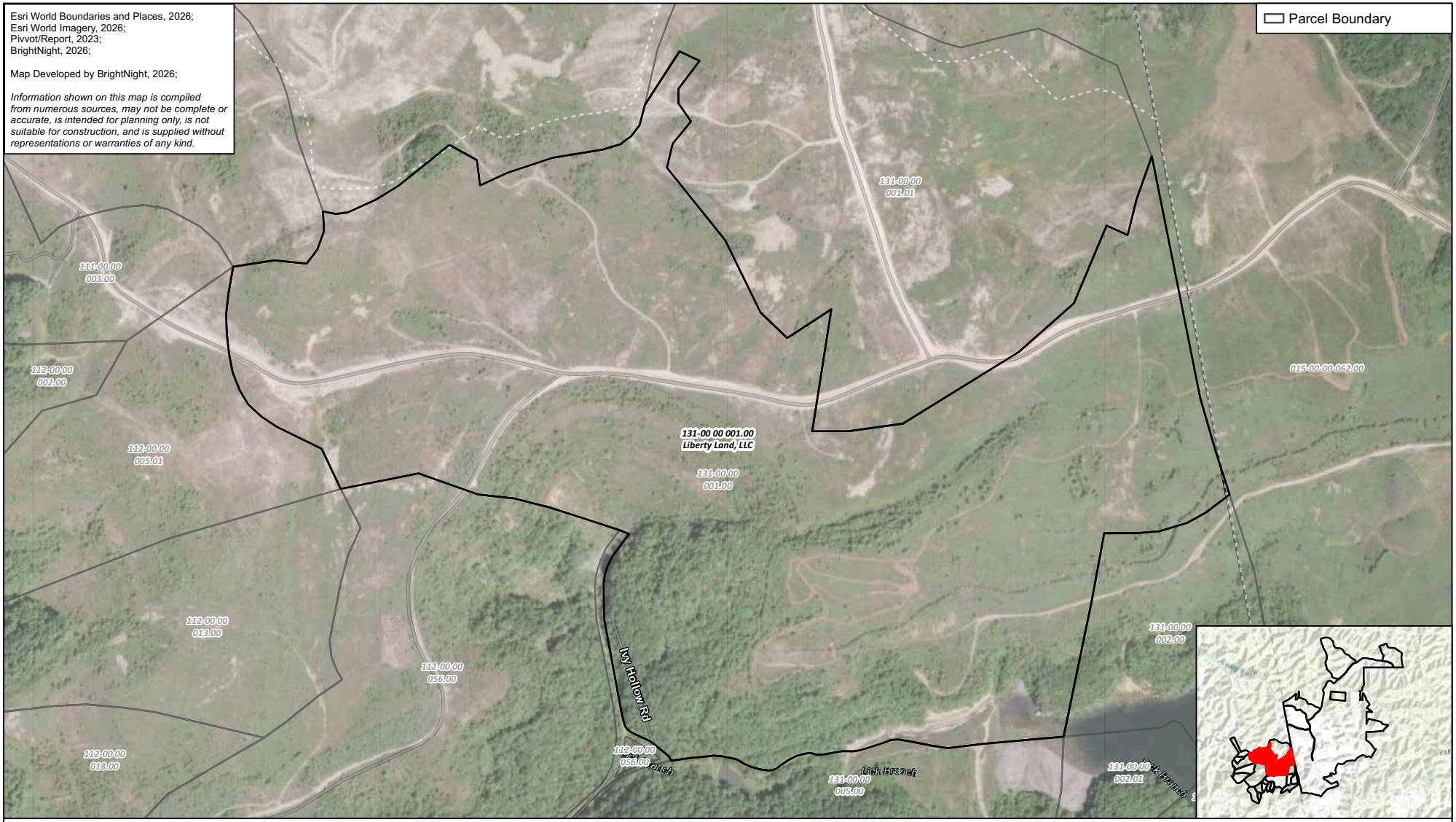
BRIGHTNIGHT

1 inch = 500 feet

Legal Description Inventory
Overview Mapbook - Aerial - 112-00 00 056.00
Wednesday, August 12, 2026

Starfire Mountain (STMO)
Knott, and Perry Co., KY

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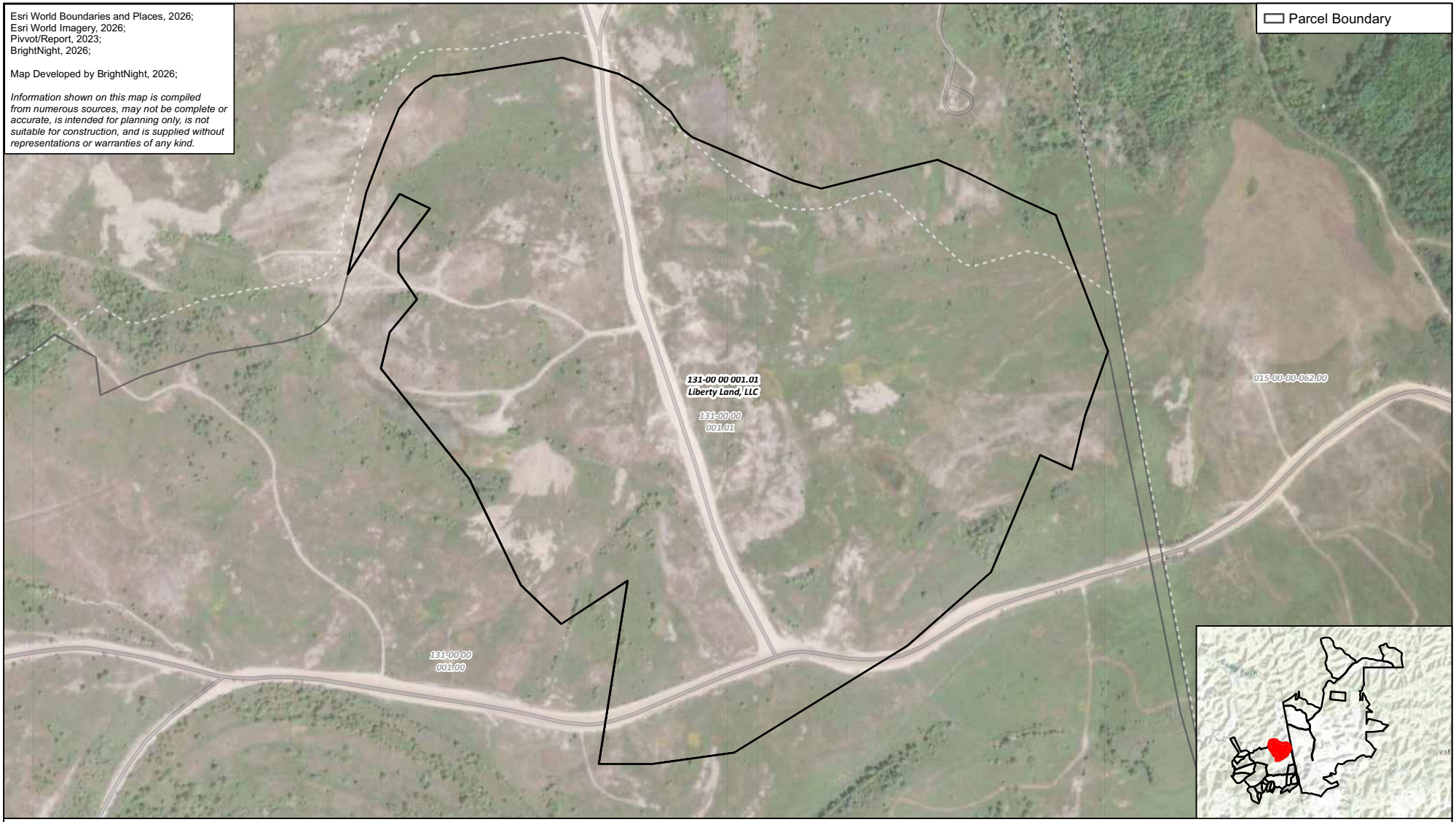
BRIGHTNIGHT
Power when you need it

1 inch = 600 feet

Legal Description Inventory
Overview Mapbook - Aerial - 131-00 00 001.00
Wednesday, August 12, 2026

Starfire Mountain (STMO)
Knott, and Perry Co., KY

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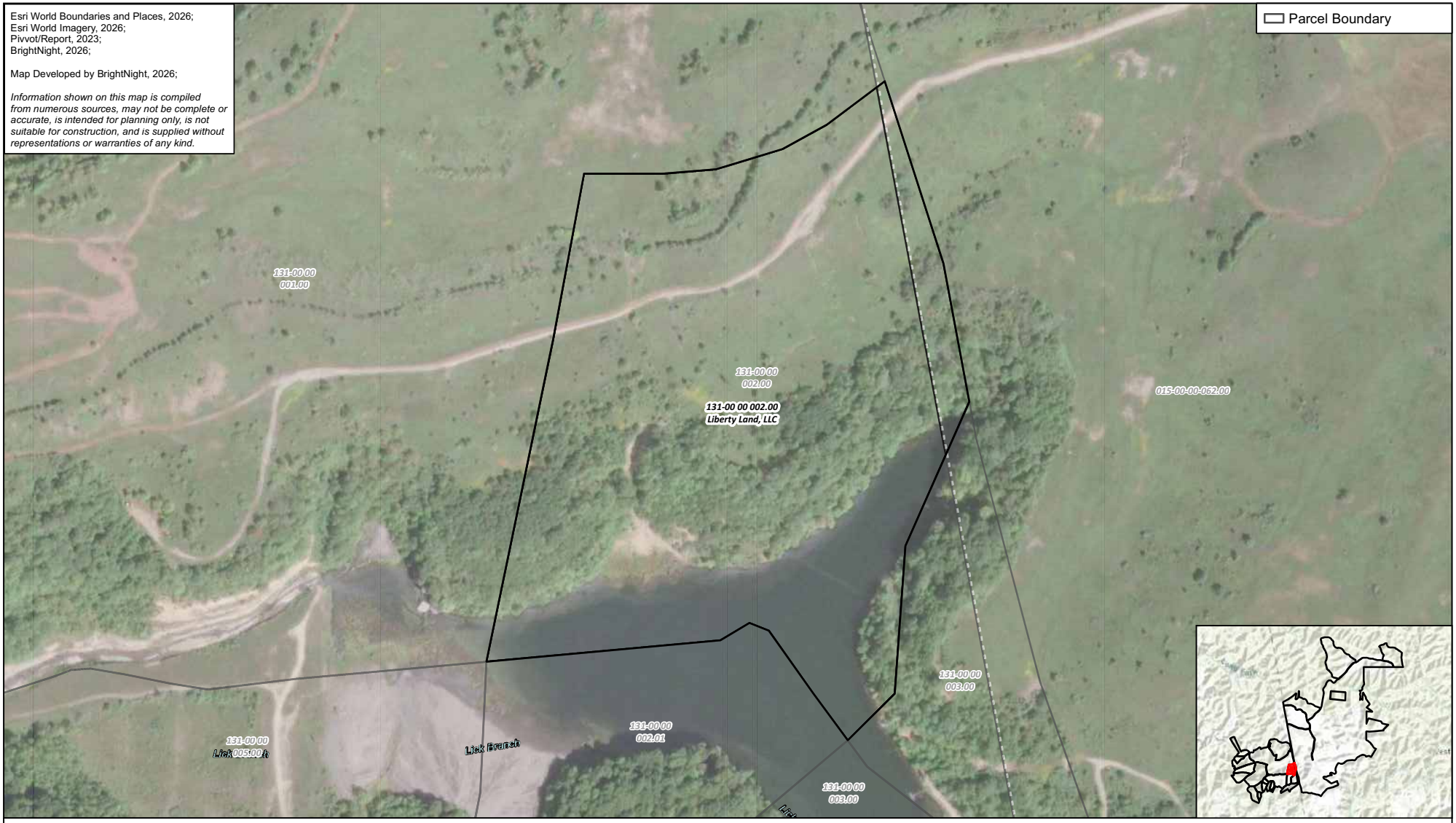
BRIGHTNIGHT
Power when you need it

1 inch = 400 feet

Legal Description Inventory
Overview Mapbook - Aerial - 131-00 00 001.01
Wednesday, August 12, 2026

Starfire Mountain (STMO)
Knott, and Perry Co., KY

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BRIGHTNIGHT
Power when you need it

1 inch = 250 feet

Legal Description Inventory
Overview Mapbook - Aerial - 131-00 00 002.00
Wednesday, August 12, 2026

Starfire Mountain (STMO)
Knott, and Perry Co., KY

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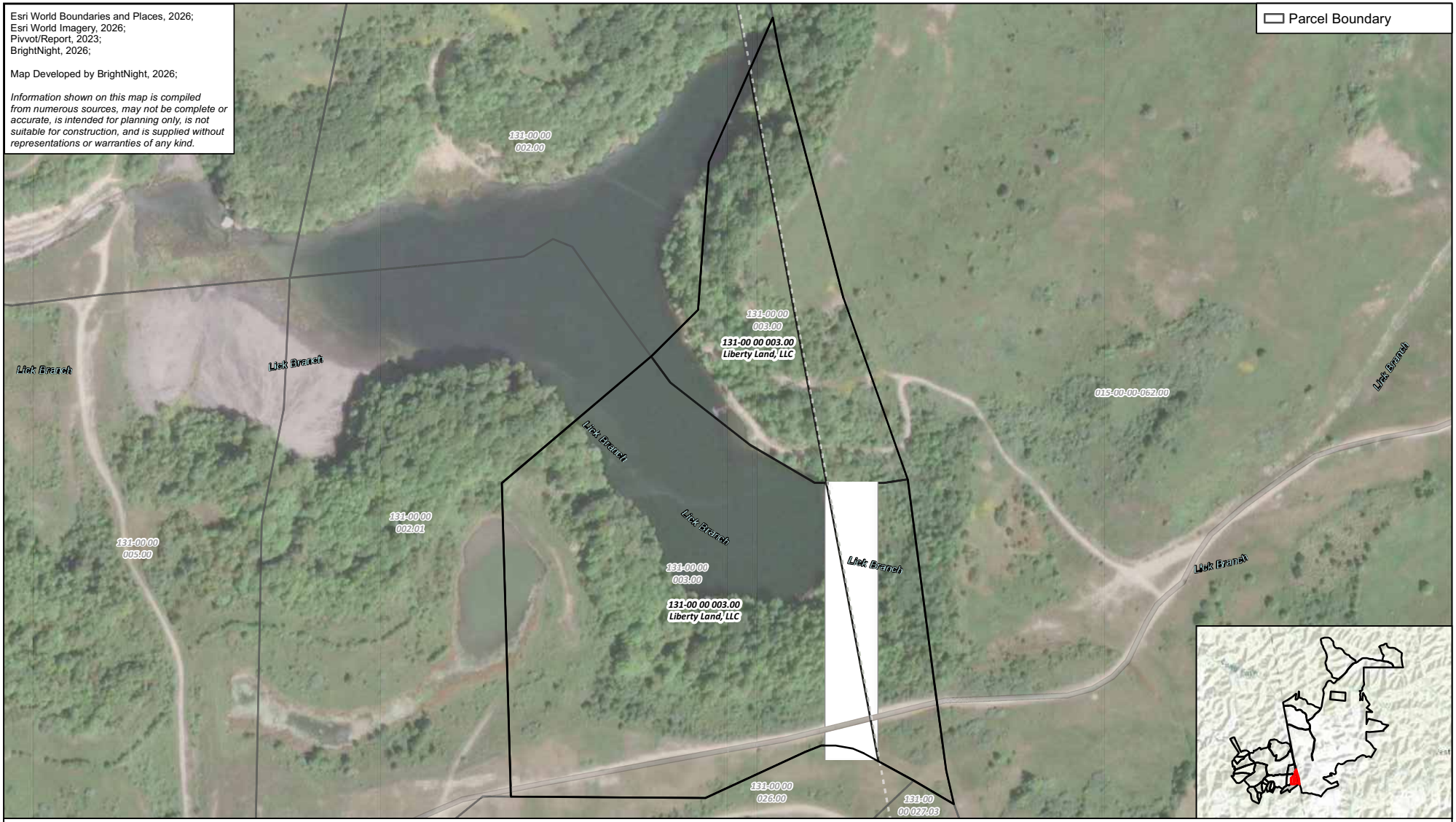
BRIGHTNIGHT
Power when you need it

1 inch = 250 feet

Legal Description Inventory
Overview Mapbook - Aerial - 131-00 00 002.01
Wednesday, August 12, 2026

Starfire Mountain (STMO)
Knott, and Perry Co., KY

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1 inch = 250 feet

Legal Description Inventory
Overview Mapbook - Aerial - 131-00 00 003.00
Wednesday, August 12, 2026

Starfire Mountain (STMO)
Knott, and Perry Co., KY

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1 inch = 350 feet

Legal Description Inventory
Overview Mapbook - Aerial - 131-00 00 005.00
Wednesday, August 12, 2026

Starfire Mountain (STMO)
Knott, and Perry Co., KY

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BRIGHTNIGHT

1 inch = 250 feet

Legal Description Inventory
Overview Mapbook - Aerial - 131-00 00 013.00
Wednesday, August 12, 2026

Starfire Mountain (STMO)
Knott, and Perry Co., KY

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BRIGHTNIGHT

1 inch = 250 feet

Legal Description Inventory
Overview Mapbook - Aerial - 131-00 00 014.00
Wednesday, August 12, 2026

Starfire Mountain (STMO)
Knott, and Perry Co., KY

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BRIGHTNIGHT
Power when you need it

1 inch = 100 feet

Legal Description Inventory
Overview Mapbook - Aerial - 131-00 00 014.02
Wednesday, August 12, 2026

Starfire Mountain (STMO)
Knott, and Perry Co., KY

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BRIGHTNIGHT
Power when you need it

1 inch = 150 feet

Legal Description Inventory
Overview Mapbook - Aerial - 131-00 00 015.00
Wednesday, August 12, 2026

Starfire Mountain (STMO)
Knott, and Perry Co., KY

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BRIGHTNIGHT
Power when you need it

1 inch = 250 feet

Legal Description Inventory
Overview Mapbook - Aerial - 131-00 00 026.00
Wednesday, August 12, 2026

Starfire Mountain (STMO)
Knott, and Perry Co., KY

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Knott County, Kentucky

Parcel 1:

Tax ID No: 015-00-00-062.00

The following land bound now or formerly by the following according to the Knott County, Kentucky Property Valuation Administration:

On the North by the lands of ICG Natural Resources, LLC, Tax ID No. 003-00-00-002.01 and the University of Kentucky, Tax ID No. 013-00-00-001.00

On the East by the lands of ICG Natural Resources, LLC, Tax ID No. 013-00-00-003.01, ICG Natural Resources, LLC, Tax ID No. 014-00-00-001.01 and Mountain Properties, Inc., Tax ID No. 014-00-00-009.01

On the South by the lands of Mountain Properties, Inc., Tax ID No. 015-00-00-061.00, John Stacy, et al, Tax ID No. 005-00-00-007.01, ICG Natural Resources, LLC, Tax ID No. 005-00-00-010.01, Core Capital, LLC, Tax ID No. 005-20-00-003.00, Core Capital, LLC, Tax ID No. 005-20-00-002.00, Core Capital, LLC, Tax ID No. 005-00-00-019.02 and Sam Fugate, Tax ID No. 005-00-00-018.00

On the West by the Perry County, Kentucky county line

Parcel contains 5,403.00 acres, more or less

Being the property conveyed to Liberty Land, LLC by Deed Book 294, Page 138 of the Knott County, Kentucky Clerk's Office.

Perry County, Kentucky

Parcel 2:

Tax ID No: 131-00-00-001.01

The following land bound now or formerly by the following according to the Perry County, Kentucky Property Valuation Administration:

On the North by the lands of the Breathitt County, Kentucky county line

On the East by the Knott County, Kentucky county line

On the South by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-001.00

On the West by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-001.00 and the Breathitt County, Kentucky county line

Parcel contains 149.00 acres, more or less

Parcel 3:

Tax ID No: 131-00-00-001.00

The following land bound now or formerly by the following according to the Perry County, Kentucky Property Valuation Administration:

On the North by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-001.01

On the East by the Knott County, Kentucky county line and Liberty Land, LLC, Tax ID No. 131-00-00-002.00

On the South by the lands of Carl Combs, Tax ID No. 131-00-00-005.00 and Carl Combs, Tax ID No. 112-00-00-056.00

On the West by the lands of Carl Combs, Tax ID No. 112-00-00-056.00, Liberty Land, LLC, Tax ID No. 112-00-00-005.01 and ICG Natural Resources, LLC, Tax ID No. 111-00-00-004.00

Parcel contains 383.00 acres, more or less

Parcel 4:

Tax ID No: 131-00-00-002.00

The following land bound now or formerly by the following according to the Perry County, Kentucky Property Valuation Administration:

On the North by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-001.00

On the East by the Knott County, Kentucky county line and Liberty Land, LLC, Tax ID No. 131-00-00-003.00

On the South by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-002.01

On the West by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-001.00

Parcel contains 64.00 acres, more or less

Parcel 5:

Tax ID No: 131-00-00-003.00

The following land bound now or formerly by the following according to the Perry County, Kentucky Property Valuation Administration:

On the North by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-002.00

On the East by the Knott County, Kentucky county line

On the South by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-026.00

On the West by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-002.01 and Liberty Land, LLC, Tax ID No. 131-00-00-002.00

Parcel contains an unstated acreage amount

Parcel 6:

Tax ID No: 131-00-00-026.00

The following land bound now or formerly by the following according to the Perry County, Kentucky Property Valuation Administration:

On the North by the lands of Carl Combs, Tax ID No. 131-00-00-005.00, Liberty Land, LLC, Tax ID No. 131-00-00-002.01 and Liberty Land, LLC, Tax ID No. 131-00-00-003.00

On the East by the Knott County, Kentucky county line

On the South by the lands of George Dalton, Tax ID No. 131-00-00-027.03, Nancy Moore, Tax ID No. 131-00-00-025.00 and Mrs. Biram Smith, Tax ID No. 131-00-00-024.00

On the West by the lands of Kinzer Business Realty LTS, Tax ID No. 131-00-00-016.00 and Carl Combs, Tax ID No. 131-00-00-005.00

Parcel contains 38.00 acres, more or less

Parcel 7:

Tax ID No: 131-00-00-002.01

The following land bound now or formerly by the following according to the Perry County, Kentucky Property Valuation Administration:

On the North by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-002.00

On the East by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-002.00 and Liberty Land, LLC, Tax ID No. 131-00-00-003.00

On the South by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-026.00

On the West by the lands of Carl Combs, Tax ID No. 131-00-00-005.00

Parcel contains 5.00 acres, more or less

Parcel 8:

Tax ID No: 131-00-00-015.00

The following land bound now or formerly by the following according to the Perry County, Kentucky Property Valuation Administration:

On the North by the lands of Carl Combs, Tax ID No. 131-00-00-005.00

On the East by the lands of Kinzer Business Realty LTS, Tax ID No. 131-00-00-016.00

On the South by Balls Fork Road

On the West by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-014.02 and Liberty Land, LLC, Tax ID No. 131-00-00-014.00

Parcel contains 3.00 acres, more or less

Parcel 9:

Tax ID No: 131-00-00-014.02

The following land bound now or formerly by the following according to the Perry County, Kentucky Property Valuation Administration:

On the North by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-014.00

On the East by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-015.00

On the South by Balls Fork Road

On the West by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-014.00

Parcel contains an unstated acreage amount

Parcel 10:

Tax ID No: 131-00-00-014.00

The following land bound now or formerly by the following according to the Perry County, Kentucky Property Valuation Administration:

On the North by the lands of Carl Combs, Tax ID No. 131-00-00-005.00

On the East by the lands of Carl Combs, Tax ID No. 131-00-00-005.00, Liberty Land, LLC, Tax ID No. 131-00-00-015.00 and Liberty Land, LLC, Tax ID No. 131-00-00-014.02

On the South by Balls Fork Road

On the West by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-013.00

Parcel contains 17.00 acres, more or less

Parcel 11:

Tax ID No: 131-00-00-013.00

The following land bound now or formerly by the following according to the Perry County, Kentucky Property Valuation Administration:

On the North by the lands of Carl Combs, Tax ID No. 131-00-00-005.00

On the East by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-014.00

On the South by Balls Fork Road

On the West by the lands of Paula Napier, 131-00-00-006.00, Liberty Land, LLC, Tax ID No. 112-00-00-055.00 and Carl Combs, Tax ID No. 112-00-00-056.00

Parcel contains 10.00 acres, more or less

Parcel 12:

Tax ID No: 112-00-00-055.00

The following land bound now or formerly by the following according to the Perry County, Kentucky Property Valuation Administration:

On the North by the lands of Carl Combs, Tax ID No. 112-00-00-056.00

On the East by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-013.00 and Paula Napier, 131-00-00-006.00

On the South by Balls Fork Road and Liberty Land, LLC, Tax ID No. 112-00-00-054.00

On the West by the lands of Liberty Land, LLC, Tax ID No. 112-00-00-053.00 and Carl Combs, Tax ID No. 112-00-00-056.00

Parcel contains 43.54 acres, more or less

Parcel 13:

Tax ID No: 112-00-00-054.00

The following land bound now or formerly by the following according to the Perry County, Kentucky Property Valuation Administration:

On the North by the lands of Liberty Land, LLC, Tax ID No. 112-00-00-055.00

On the East by Balls Fork Road

On the South by Balls Fork Road and Liberty Land, LLC, Tax ID No. 112-00-00-053.00

On the West by the lands of Liberty Land, LLC, Tax ID No. 112-00-00-053.00

Parcel contains 11.00 acres, more or less

Parcel 14:

Tax ID No: 112-00-00-053.00

The following land bound now or formerly by the following according to the Perry County, Kentucky Property Valuation Administration:

On the North by the lands of Carl Combs, Tax ID No. 112-00-00-056.00

On the East by the lands of Liberty Land, LLC, Tax ID No. 112-00-00-055.00, Liberty Land, LLC, Tax ID No. 112-00-00-054.00 and Balls Fork Road

On the South by the lands of Dwight Helmuth, et al, Tax ID No. 113-00-00-002.02

On the West by the lands of Dwight Helmuth, et al, Tax ID No. 113-00-00-002.02 and Victor Spurlock, et al, Tax ID No. 112-00-00-047.00

Parcel contains 55.00 acres, more or less

Parcel 15:

Tax ID No: 112-00-00-018.00

The following land bound now or formerly by the following according to the Perry County, Kentucky Property Valuation Administration:

On the North by the lands of Liberty Land, LLC, Tax ID No. 112-00-00-013.00

On the East by the lands of Carl Combs, Tax ID No. 112-00-00-056.00

On the South by the lands of Victor Spurlock, et al, Tax ID No. 112-00-00-047.00

On the West by the lands of Robin Stacy, et al, Tax ID No. 112-00-00-021.00, Rebecca Hall, Tax ID No. 112-00-00-019.00, Regina Davis, Tax ID No. 112-00-00-017.00, Keisha Calhoun, Tax ID No. 112-00-00-016.00 and Williams Branch Road

Parcel contains 57.00 acres, more or less

Parcel 16:

Tax ID No: 112-00-00-013.00

The following land bound now or formerly by the following according to the Perry County, Kentucky Property Valuation Administration:

On the North by the lands of Liberty Land, LLC, Tax ID No. 112-00-00-005.01, Liberty Land, LLC, Tax ID No. 112-00-00-011.00 and Liberty Land, LLC, Tax ID No. 131-00-00-001.00

On the East by the lands of Carl Combs, Tax ID No. 112-00-00-056.00

On the South by the lands of Carl Combs, Tax ID No. 112-00-00-056.00 and Liberty Land, LLC, Tax ID No. 112-00-00-018.00

On the West by Williams Branch Road

Parcel contains 74.00 acres, more or less

Parcel 17:

Tax ID No: 112-00-00-005.01

The following land bound now or formerly by the following according to the Perry County, Kentucky Property Valuation Administration:

On the North by the lands of Liberty Land, LLC, Tax ID No. 112-00-00-002.00 and Liberty Land, LLC, Tax ID No. 111-00-00-003.00

On the East by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-001.00

On the South by the lands of Liberty Land, LLC, Tax ID No. 112-00-00-013.00

On the West by the lands of Liberty Land, LLC, Tax ID No. 112-00-00-011.00, ICG Natural Resources, LLC, Tax ID No. 112-00-00-007.00 and Williams Branch Road

Parcel contains 109.00 acres, more or less

Parcel 18:

Tax ID No: 112-00-00-011.00

The following land bound now or formerly by the following according to the Perry County, Kentucky Property Valuation Administration:

On the North by the lands of ICG Natural Resources, LLC, Tax ID No. 112-00-00-007.00

On the East by the lands of Liberty Land, LLC, Tax ID No. 112-00-00-005.01

On the South by the lands of Liberty Land, LLC, Tax ID No. 112-00-00-013.00

On the West by Williams Branch Road

Parcel contains an unstated acreage amount

Parcel 19:

Tax ID No: 112-00-00-002.00

The following land bound now or formerly by the following according to the Perry County, Kentucky Property Valuation Administration:

On the North by the lands of Liberty Land, LLC, Tax ID No. 111-00-00-003.00

On the East by the lands of Liberty Land, LLC, Tax ID No. 112-00-00-005.01

On the South by the lands of Liberty Land, LLC, Tax ID No. 112-00-00-005.01

On the West by Williams Branch Road

Parcel contains 23.00 acres, more or less

Parcel 20:

Tax ID No: 111-00-00-003.00

The following land bound now or formerly by the following according to the Perry County, Kentucky Property Valuation Administration:

On the North by the Breathitt County, Kentucky county line and lands of ICG Natural Resources, LLC, Tax ID No. 111-00-00-004.00

On the East by the lands of ICG Natural Resources, LLC, Tax ID No. 111-00-00-004.00

On the South by the lands of Liberty Land, LLC, Tax ID No. 112-00-00-005.01 and Liberty Land, LLC, Tax ID No. 112-00-00-002.00

On the West by the lands of ICG Natural Resources, LLC, Tax ID No. 111-00-00-001.00, ICG Natural Resources, LLC, Tax ID No. 111-00-00-002.00 and Williams Branch Road

Parcel contains 59.00 acres, more or less

Being the property conveyed to Liberty Land, LLC by Deed Book 413, Page 648 of the Perry County, Kentucky Clerk's Office.

Parcel 21:

Tax ID No: 112-00-00-056.00

The following land bound now or formerly by the following according to the Perry County, Kentucky Property Valuation Administration:

On the North by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-001.00

On the East by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-001.00, Carl Combs, Tax ID No. 131-00-00-005.00 and Liberty Land, LLC, Tax ID No. 131-00-00-013.00

On the South by the lands of Liberty Land, LLC, Tax ID No. 112-00-00-055.00, Liberty Land, LLC, Tax ID No. 112-00-00-053.00

On the West by the lands of Victor Spurlock, et al, Tax ID No. 112-00-00-047.00, Liberty Land, LLC, Tax ID No. 112-00-00-018.00 and Liberty Land, LLC, Tax ID No. 112-00-00-013.00

Parcel contains 193.00 acres, more or less

Parcel 22:

Tax ID No: 131-00-00-005.00

The following land bound now or formerly by the following according to the Perry County, Kentucky Property Valuation Administration:

On the North by the lands of Carl Combs, Tax ID No. 112-00-00-056.00 and Liberty Land, LLC, Tax ID No. 131-00-00-001.00

On the East by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-002.01

On the South by the lands of Liberty Land, LLC, Tax ID No. 131-00-00-026.00, Kinzer Business Realty LTS, Tax ID No. 131-00-00-016.00, Liberty Land, LLC, Tax ID No. 131-00-00-015.00, Liberty Land, LLC, Tax ID No. 131-00-00-014.00 and Liberty Land, LLC, Tax ID No. 131-00-00-013.00

On the West by the lands of Carl Combs, Tax ID No. 112-00-00-056.00 and Lost Mountain Road

Parcel contains 105.00 acres, more or less

Being the property conveyed to Carl Salyer Combs by Will Book 31, Page 88 of the Perry County, Kentucky Clerk's Office.

SAR Attachment 4

Acoustic Assessment Report for the Starfire Phase II Solar Project

Perry and Knott Counties, Kentucky

August 2026

Prepared for:

STMO Bn, LLC
515 N Flagler Dr. Suite 250,
West Palm Beach, FL, 33401

Prepared by:

Tetra Tech, Inc.
4101 Cox Road, Suite 100
Glen Allen, VA 23060

TETRA TECH

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APPENDICES

Appendix A. Detailed Acoustic Modeling Results

ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
%	percent
µPa	microPascal
dB	decibel
dBA	A-weighted decibel
dBL	decibel (unweighted)
Ft	feet
Hp	horsepower
Hz	Hertz
ISO	International Organization for Standardization
L_{10}	the sound level exceeded 10% of the time
L_{90}	the sound level exceeded 90% of the time
L_{dn}	day-night sound level
L_{eq}	equivalent sound level
L_{max}	maximum sound level
L_P	sound pressure level
L_W	sound power level
M	meter
MVA	megavolt ampere
MW	megawatt
MWh	megawatt-hour
NSA	noise sensitive area
Project	Starfire Phase II Solar Project
pW	picowatt
Tetra Tech	Tetra Tech, Inc.
USGS	United States Geological Survey
W	watt

1.0 INTRODUCTION

STMO Bn, LLC (STMO) proposes to construct and operate the Starfire Phase II Solar Project (Project), a solar photovoltaic power generation facility which will consist of an up to 200-megawatt AC (MWac) ground-mounted solar photovoltaic system, a substation, and related interconnection and ancillary facilities located within the counties of Knott and Perry, Kentucky.

The proposed Project is located on a former mine site in the counties of Knott and Perry, Kentucky. The Project area, generally the area of disturbance where the Project infrastructure will be located, includes approximately 1,500 acres within the larger Project site after site constraints. The Project is north of Kentucky Route 80 with site access from Routes 476 and 1087.

Noise-sensitive areas (NSAs) relative to the Project include multiple residential land uses, one church, and four cemetery locations. There are no participating receptors. The closest residential NSA (R-5) to the Project boundary is located less than 1 foot away, while the closest NSA (R-2) to the Project fence line is located 807 feet away. The closest residential NSA (R-2) to the Project infrastructure (panels) is located 884 feet away. The closest residential NSA (R-2) to an inverter is located 1,451 feet away. The closest residential NSA (R-50) to the substation is located 7,245 feet away.

On behalf of STMO, Tetra Tech, Inc. (Tetra Tech) prepared an acoustic assessment for the Project, evaluating the sound contribution of the Project to the surrounding area. An acoustic modeling analysis was conducted simulating sound produced during both construction and operation. Operational sound sources consisted primarily of the inverter skids and the main transformers at the onsite collector substation. The overall objectives of this assessment were to: 1) identify Project sound sources and estimate sound propagation characteristics; 2) computer-simulate sound levels using internationally accepted calculation standards; and 3) determine whether the Project will operate in compliance with the applicable noise regulations.

2.0 ACOUSTIC METRICS AND TERMINOLOGY

This section outlines relevant concepts in acoustics to help non-specialist readers better understand the acoustic modeling assessment and results as presented in this report.

Sound is described as a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure creating a sound wave. Sound energy is characterized by the properties of sound waves, which include frequency, wavelength, period, amplitude, and velocity. A sound source is defined by a sound power level (L_W), which is independent of any external factors. Sound power is the rate at which acoustical energy is radiated outward and is expressed in units of watts (W). Sound energy propagates through a medium where it is sensed and then interpreted by a receiver. A sound pressure level (L_P) is a measure of this fluctuation at a given receiver location and can be obtained using a microphone or calculated from information about the source L_W and the surrounding environment. Sound power, however, cannot be measured directly. It is calculated from measurements of sound intensity or sound pressure at a given distance from the source.

While the concept of sound is defined by the laws of physics, the term 'noise' has further qualities, such as being excessive or loud. The perception of sound as noise is influenced by several technical factors as intensity, sound quality, tonality, duration, and the existing background levels. Sound levels are presented on a logarithmic scale to account for the large range of acoustic pressures that the human ear is exposed to and is expressed in units of decibels (dB). A dB is defined as the ratio between a measured value and a reference value, usually corresponding to the lower threshold of human hearing defined as 20 microPascals (µPa). Conversely, sound power is referenced to 1 picowatt (pW).

Broadband sound includes sound energy summed across the frequency spectrum. In addition to broadband sound pressure, analysis of the various frequency components of the sound spectrum is completed to determine tonal characteristics. The unit of frequency is Hertz (Hz), measuring the cycles per second of the sound pressure waves; the frequency analysis typically examines 11 octave bands ranging from 16 Hz (low) to 16,000 Hz (high), encompassing the entire human audible frequency range. Since the human ear does not perceive every frequency with equal loudness, spectrally varying sounds are often adjusted with a weighting filter. The A-weighted filter is applied to compensate for the frequency response of the human auditory system and sound exposure in acoustic assessments is designated in A-weighted decibels (dBA). Unweighted sound levels are referred to as linear. Linear decibels (dBL) are used to determine a sound's tonality and to engineer solutions to reduce or control noise as techniques are different for low- and high-frequency noise.

Sound can be measured, modeled, and presented in various formats, with the most common metric being the equivalent sound level (L_{eq}). The L_{eq} value is the energy-averaged sound level over a given measurement period. Levels of many sounds change from moment to moment. Some impulses last 1 second or less, while others rise and fall over much longer periods of time. The equivalent sound level has been shown to provide both an effective and uniform method for comparing time-varying sound levels. Another commonly used sound metric is maximum sound level (L_{max}), which can be used to quantify the maximum instantaneous sound pressure level. When there is no variation of operational sound levels, the L_{eq} will be equivalent with the L_{max}. The day-night sound level (L_{dn}) is used to describe the average sound levels over the course of a 24-hour period, with a 10-dB correction to reflect the increased noise-sensitivity of nighttime (10:00 pm to 7:00 am). Sound levels can also be described using statistical levels (L_n). This descriptor identifies the sound level that is exceeded "n" percent of the time over a measurement period (e.g., L_{90} = sound level exceeded 90 percent of the time). The sound level exceeded for a small percent of the time, L_{10}, closely corresponds to short-term, higher-level, intrusive noises (such as vehicle pass-by noise near a roadway). The sound level exceeded for a large percent of the time, L_{90}, closely corresponds to continuous, lower-level background noise (such as continuous noise from a distant industrial facility). L_{50}

is the level exceeded 50 percent of the time and is typically referred to the median sound level over a given period. Typical sound levels associated with various activities and environments are presented in Table 1.

Table 1. Sound Pressure Levels of Typical Noise Sources and Acoustic Environments

Noise Source or Activity	Sound Level (dBA)	Subjective Impression
Jet aircraft takeoff from carrier (50 feet [ft])	140	Threshold of pain
50-horsepower (hp) siren (100 ft)	130	
Loud rock concert near stage Jet takeoff (200 ft)	120	Uncomfortably loud
Crop dusting plane takeoff (100 ft)	110	
Jet takeoff (2,000 ft)	100	Very loud
Heavy truck or motorcycle (25 ft)	90	
Garbage disposal Food blender (2 ft) Pneumatic drill (50 ft)	80	Loud
Vacuum cleaner (10 ft)	70	Moderate
Passenger car at 65 miles per hour (25 ft)	65	
Large store air-conditioning unit (20 ft)	60	
Large office household refrigerator	55	Quiet
Light auto traffic (100 ft)	50	
Quiet rural residential area with no activity	45	
Bedroom or quiet living room, bird calls	40	Faint
Typical wilderness area	35	
Quiet library, soft whisper (15 ft)	30	Very quiet
Wilderness with no wind or animal activity	25	Extremely quiet
High-quality recording studio	20	
Acoustic test chamber	10	Just audible
	0	Threshold of human hearing

3.0 NOISE REGULATIONS

A review was conducted of noise regulations applicable to the Project at the federal, state, county, and local levels. There are no federal, state, county, or local environmental noise requirements specific to this Project.

While the U.S. EPA has no regulation governing environmental noise, the agency has conducted several extensive studies to identify the effects of sound level on public health and welfare. In 1974 the U.S. EPA published "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin on Safety". In this publication, the U.S. EPA evaluated the effects of environmental noise with respect to health and safety and determined an L_{dn} of 55 dBA (equivalent to an L_{eq} (1-hour) of 48.6 dBA assuming continuous 24-hour operation) to be the maximum sound level that will not adversely affect public health and welfare by interfering with speech or other activities in outdoor areas.

In the absence of relevant environmental noise requirements, received sound levels at the closest NSA were calculated and compared to the U.S. EPA level of 55 dBA L_{dn}. Sound levels resulting from the Project at all identified NSAs located in the vicinity of the Project are absolute and independent of the existing acoustic environment; therefore, a baseline sound survey is not required to demonstrate conformance.

4.0 PROJECT CONSTRUCTION

Construction of the Project is expected to be typical of other solar power generating facilities in terms of schedule, equipment, and activities.

4.1 NOISE CALCULATION METHODOLOGY

Acoustic emission levels for activities associated with Project construction were based upon equipment levels provided by the Federal Highway Administration (FHWA, 2006). Using those equipment noise levels as input to a basic propagation model, construction noise levels were calculated at a series of set reference distances using the formula:

$$L_2 = L_1 - |20 * log(r_1/r_2)|,$$

Where $L_1 = L_{max}$ at distance r_1

$L_2 = L_{max}$ at distance r_2.

The basic model assumed spherical wave divergence from a point source located at the closest point of the Project site fence line to the NSA of interest. Furthermore, the model conservatively assumed that all pieces of construction equipment associated with an activity will operate simultaneously for the duration of that activity at their L_{max}. An additional level of conservatism was built into the construction noise model by excluding potential shielding effects due to intervening structures and buildings along the propagation path from the site to receiver locations.

In addition to the L_{max} calculation described above, the average noise level (L_{eq}) was also calculated by applying the utilization percentage for each piece of construction equipment. This is the percentage of time an individual piece of construction equipment will operate over an hour period. The following formula was used to calculate this:

$$L = L_{max} + |10 * log(UR/100)|,$$

Where $L = L_{eq}$

UR = Utilization Rate (%)

4.2 PROJECTED NOISE LEVELS DURING CONSTRUCTION

Construction will be limited to the hours between 6:00 a.m. through 7:00 p.m. Monday through Saturday, organized into the following work stages:

(1) Site Preparation and Grading,

(2) Trenching and Road Construction,

(3) Equipment Installation, and

(4) Commissioning. Work associated with these phases may overlap.

Equipment used for construction includes heavy equipment (e.g., bulldozers, loaders, dump trucks), which involve diesel engines that produce mechanical and exhaust noise with the latter typically the predominant sound source. Pile driving will be used during the equipment installation phase. Table 2 summarizes the construction equipment assessed for each work stage and the projected noise levels due to Project construction at the closest NSA (NSA R-2) to the Project fence line. Table A-1 in Appendix A shows the received construction noise levels at the remaining NSAs within 2,000-feet of the Project boundary. Received construction noise levels associated with pile driving are shown under the equipment installation columns within Table A-1 for all residential and non-residential receptors within 2,000 feet of the Project boundary.

Periodically, sound levels may be higher or lower than those presented in Table 2; however, the overall sound levels should generally be lower due to excess attenuation and the trend toward quieter construction equipment in the intervening decades since the FHWA data were developed. Noise from construction equipment will vary depending on a variety of factors including the number and class of equipment operating at a location at a given time. Received sound levels will also fluctuate, depending on the construction activity, equipment type, and distance between noise source and NSAs.

Due to the infrequent nature of loud construction activities at the site, the limited hours of construction and the implementation of noise mitigation measures, the temporary increase in noise due to construction is not anticipated to create a significant impact.

Table 2. Projected Construction Noise Levels by Phase (dBA L_{max}, L_{eq})

Construction Phase	Construction Equipment	Individual Equipment Noise Level at 50 feet (dBA, L_{max})	Usage Factor (%)	Work Stage Noise Level at NSA R-2, 807 feet from Project Fence Line	
				Peak, (dBA, L_{max})	Average, (dBA, L_{eq})
Site Preparation and Grading	(1) Grader (174 horsepower [hp]) (1) Rubber Tired Loader (164 hp) (1) Scraper (313 hp) (1) Water Truck (189 hp) (1) Generator Set	85 80 85 85 82	40 40 40 50 50	67	63
Trenching and Road Construction	(2) Excavator (168 hp) (1) Bar Trencher (600 hp) (1) Grader (174 hp) (1) Water Truck (189 hp) (1) Trencher (63 hp) (1) Rubber Tired Loader (164 hp) (1) Generator Set	85 82 85 85 82 80 82	40 50 40 50 50 40 50	68	64
Equipment Installation	(1) Crane (399 hp) (1) Crane (165 hp) (2) Forklift (145 hp) (2) Pile Driver (6) Pickup Truck/All-Terrain Vehicle (2) Water Truck (189 hp) (2) Generator Set	85 85 55 101 55 85 82	16 16 40 20 40 50 50	80	73
Commissioning	(2) Pickup Trucks/ATVs	55	40	33	29

4.3 CONSTRUCTION NOISE MITIGATION

Construction noise will be temporary in nature and, as such, no long term or significant noise impacts due to construction are anticipated. Regardless, reasonable efforts will be made to minimize the impact of noise resulting

from construction activities. Following is a list of recommended best management practices and noise mitigation measures:

- Pile driving activity occurring within 1,500 feet of an NSA will implement a construction method that will suppress the noise generated during the pile driving process (i.e., semi-tractor and canvas method, sound blankets on fencing surrounding the solar site, or any other comparable method);
- Construction equipment should be well-maintained and vehicles using internal combustion engines equipped with mufflers will be routinely checked to ensure they are in good working order;
- Noisy equipment will be located as far from possible from NSAs as practical; and
- A noise complaint hotline, complain resolution program, and local representative will be made available to address any noise-related issues.

Implementing the listed measures will aid in reducing offsite construction noise impacts. Due to the temporary nature of construction noise, no long-term impacts are anticipated.

5.0 OPERATIONAL NOISE

This section describes the model and input assumptions used to calculate noise levels due to the Project's normal operation, and the results of the noise impact analysis.

5.1 OPERATIONAL NOISE PROPAGATION MODEL

The acoustic modeling for the Project operation was conducted with the CadnaA sound model from DataKustik GmbH (2026). The outdoor noise propagation model is based on Organization for International Standardization (ISO) 9613, Part 1: "Calculation of the absorption of sound by the atmosphere," (1993) and Part 2: "General method of calculation," (1996). It is used by acoustic engineers to accurately describe sound emission and propagation from complex facilities and in most cases yields conservative results of operational sound levels in the surrounding community. Model predictions are accurate to within 1 dB of calculations based on the ISO 9613 standard.

ISO 9613 was used to calculate propagation and attenuation of sound energy with distance, surface and building reflection, and shielding effects by equipment, buildings, and ground topography. Offsite topography was determined using Unites States Geological Survey (USGS) digital elevation data. The sound model propagation calculation parameters are summarized in Table 3.

Table 3. Acoustic Model Setup Parameters

Model Input	Parameter Value
Standards	ISO 9613-2, Acoustics – Attenuation of sound during propagation outdoors.[1]
Reflection Loss	2 dB – indicates reduction in acoustic energy due to reflection
Grid Spacing	30 m, 1 m
Terrain Description	USGS topography
Ground Absorption	0.5 (semi-reflective)
Receiver Characteristics	1.52 m (5 ft) above ground level
Meteorological Factors	Omnidirectional downwind propagation / mild to moderate atmospheric temperature inversion
Temperature	50°F
Relative Humidity	70%
Search radius	12.5 miles

[1] Propagation calculations under the ISO 9613 standard incorporate the effects of downwind propagation from facility to receptor) with wind speeds of 1 to 5 m per second (3.6 to 18 kilometers per hour) measured at a height of 3 to 11 m above the ground.

The Project's general arrangement was directly imported into the acoustic model so that onsite equipment could be easily identified, structures could be added, and sound emissions ratings could be assigned to sources as appropriate. CadnaA allows for three basic types of sound sources to be introduced into the

model: point, line, and area sources. Each noise-radiating element was modeled based on its noise emission pattern. Larger dimensional sources, such as the transformer walls, were modeled as area sources. Transformers and inverter skids were modeled as solid structures because diffracted paths around and over structures tend to reduce noise levels in certain directions. The interaction between sound sources and structures was also considered with reflection loss. The reflective characteristic of the structure is quantified by its reflection loss, which is typically defined as smooth façade from which the reflected sound energy is 2 dB less than the incident sound energy.

Ground absorption rates are described by a numerical coefficient. For pavement and water bodies, the absorption coefficient is defined as G = 0 to account for reduced sound attenuation and higher reflectivity. In contrast, ground covered in vegetation, including suburban lawns, are acoustically absorptive and aid in sound attenuation, i.e., G = 1.0. For the acoustic modeling analysis, a conservative semi-reflective value of G = 0.5 was used to represent the Project area. The portions of the Project area containing solar panels were represented with a reflective value of G = 0.0.

5.2 OPERATIONAL SOUND SOURCE INFORMATION

The Project site layout was directly imported into the acoustic model and includes 55 inverter skids and 2 120 MW substation transformers. The principal sources of noise are the cooling fans on the inverters and transformers, the electrical components of the inverter skids, and the main power transformers at the substation. Please note that trackers are not commonly modeled when evaluating solar facility noise impacts since they are considered such a low-level sound source.

Substations have switching, protection, and control equipment, as well as the main power transformers, which generate the sound generally described as a low humming. There are three chief noise sources associated with a transformer: core noise, load noise, and noise generated by the operation of the cooling equipment. The core is the principal noise source and does not vary significantly with electrical load. The load noise is primarily caused by the load current in the transformers' conducting coils (or windings) and consequently the main frequency of this sound is twice the supply frequency: 120 Hz for 60 Hz transformers. The cooling equipment (fans and pumps) may also be an important noise component, depending on fan design. During air forced cooling method, cooling fan noise is produced in addition to the core noise. The resulting audible sound is a combination of the humming and the broadband fan noise. Breaker noise is a sound event of very short duration, expected to occur only a few times throughout the year. Just as horsepower ratings designate the power capacity of an electric motor, a transformer's megavolt amperes rating indicates its maximum power output capacity.

Table 4 summarizes the equipment L_W data used as inputs to the modeling analysis. Sound power level values of operational equipment were calculated based on typical equipment of similar type. It is assumed that installed equipment will have similar sound power profiles as those used in the acoustic modeling analysis; however, it is possible that the final manufacturer warranty values may vary.

Table 4. Modeled Octave-Band Sound Power Levels for Project Equipment

Operational Sound Sources	Sound Power Level (L_w) by Octave Band Frequency, (dBA)									Broadband L_w, dBA
	31.5	63	125	250	500	1000	2000	4000	8000	
Inverter	56	67	79	91	90	92	90	87	83	104
Substation Transformer	63	82	94	97	102	88	96	90	81	106

5.3 PROJECTED SOUND LEVELS DURING OPERATION

Broadband (dBA) sound pressure levels were calculated for expected normal Project operation assuming that all components identified previously are operating continuously and concurrently at the representative manufacturer-rated sound levels. The sound energy was then summed and weighted to determine the L_{eq} and L_{dn} at a point of reception. A sound contour plot displaying broadband (dBA) sound levels (L_{dn}) presented as color-coded isopleths is provided in Figure 1. The sound contours are graphical representations of the cumulative noise associated with full operation of the equipment and show how operational noise will be distributed over the surrounding area. Results from acoustic modeling are projected 5-dBA increments on scaled Project aerial. Results are independent of the existing acoustic environment, representative of Project-generated sound levels only. The sound contour isopleths are plotted at a height of 1.52 m above ground level, about the height of the ears of a standing person. The contour isopleths are analogous to elevation contours on a topographic map, i.e., the noise contours are continuous lines of equal noise level around some source, or sources, of noise.

Modeling results can be seen in Table A-2 in Appendix A and shows that the highest noise levels resulting from Project operations at a residential location will be 28 dBA L_{eq}/L_{max} and 34 dBA L_{dn} at NSA R-8, and at a non-residential location will be 35 dBA L_{eq}/L_{max} and 41 dBA L_{dn} at Chestnut Gap Cemetery, and thus under the U.S. EPA sound level criterion of 55 dBA L_{dn} at all NSAs. In addition, the highest sound level experienced at the Project's Property Boundary will be 53 dBA L_{eq}/L_{max}, with an L_{dn} of 60 dBA. This Property Boundary location is to the east of the substation area and approximately 7,825 feet from the nearest NSA to this location, which is NSA R-50. For reference, the operational noise level at NSA R-50 will be 22 L_{eq}/L_{max} and 28 L_{dn}.

In addition, all operational sound results shown above and in Table A-2 were calculated with the assumption that all equipment would operate at their maximum load throughout the daytime and nighttime periods. However, actual sound impacts will likely be lower as the inverters will not operate at full load during the nighttime period. Overall, sound emissions associated with the Project are expected to remain at a low level, consistent with other solar energy facilities of similar size and design sited in Kentucky.

Figure 1. Operational Sound Levels (L_{dn})

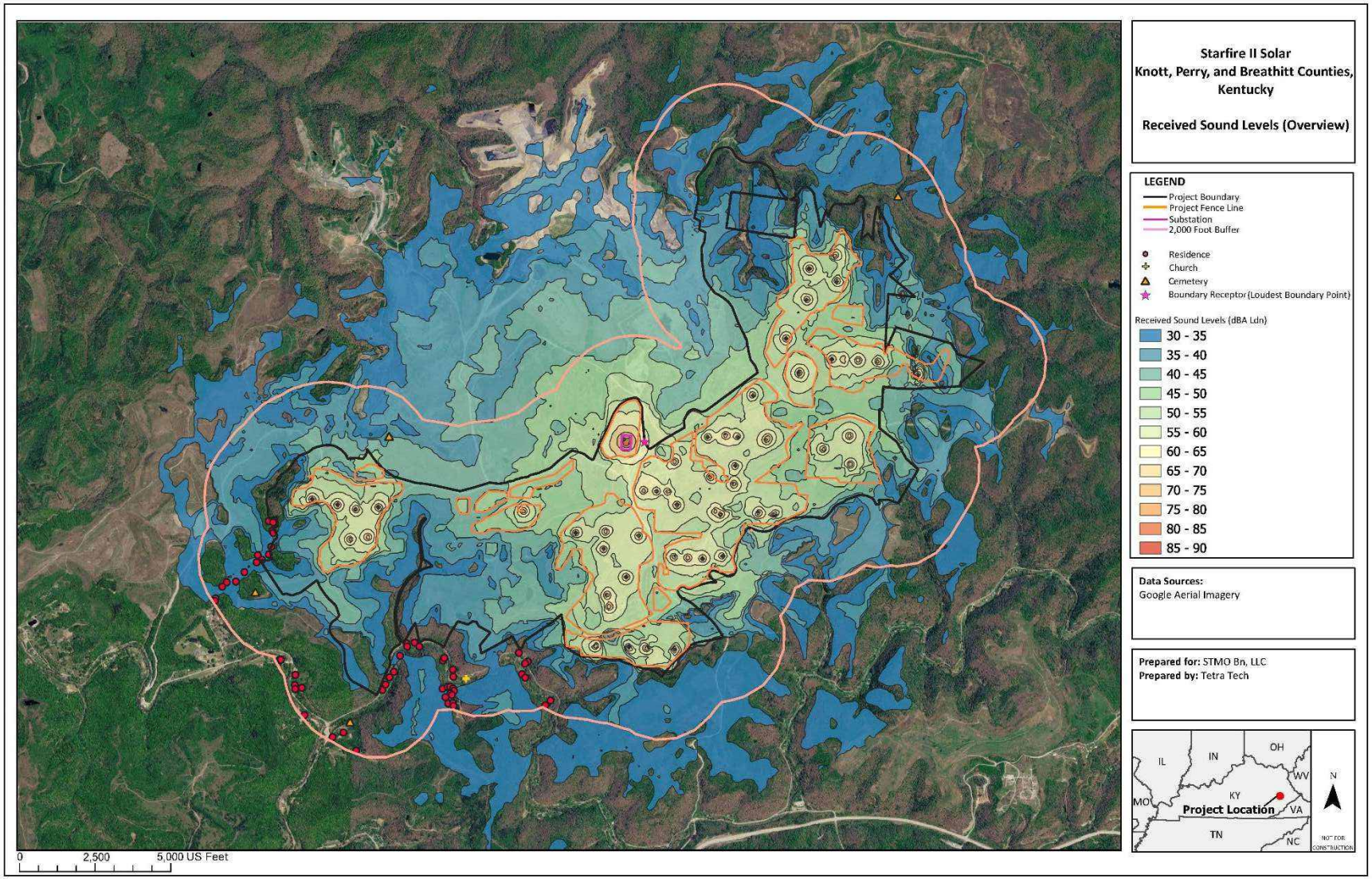


Figure 2. Operational Sound Levels (L_{dn}) (Zoomed-A)

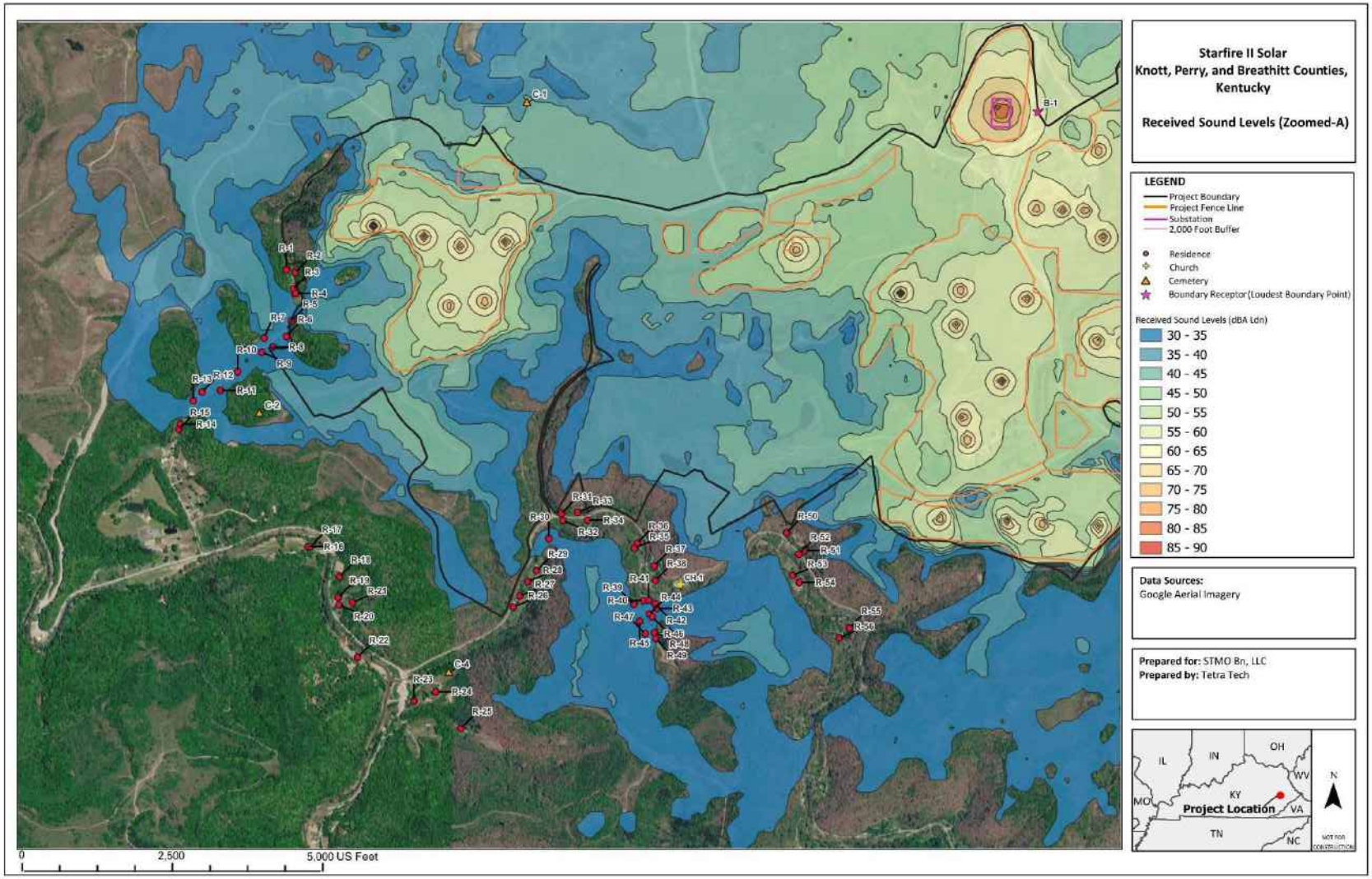
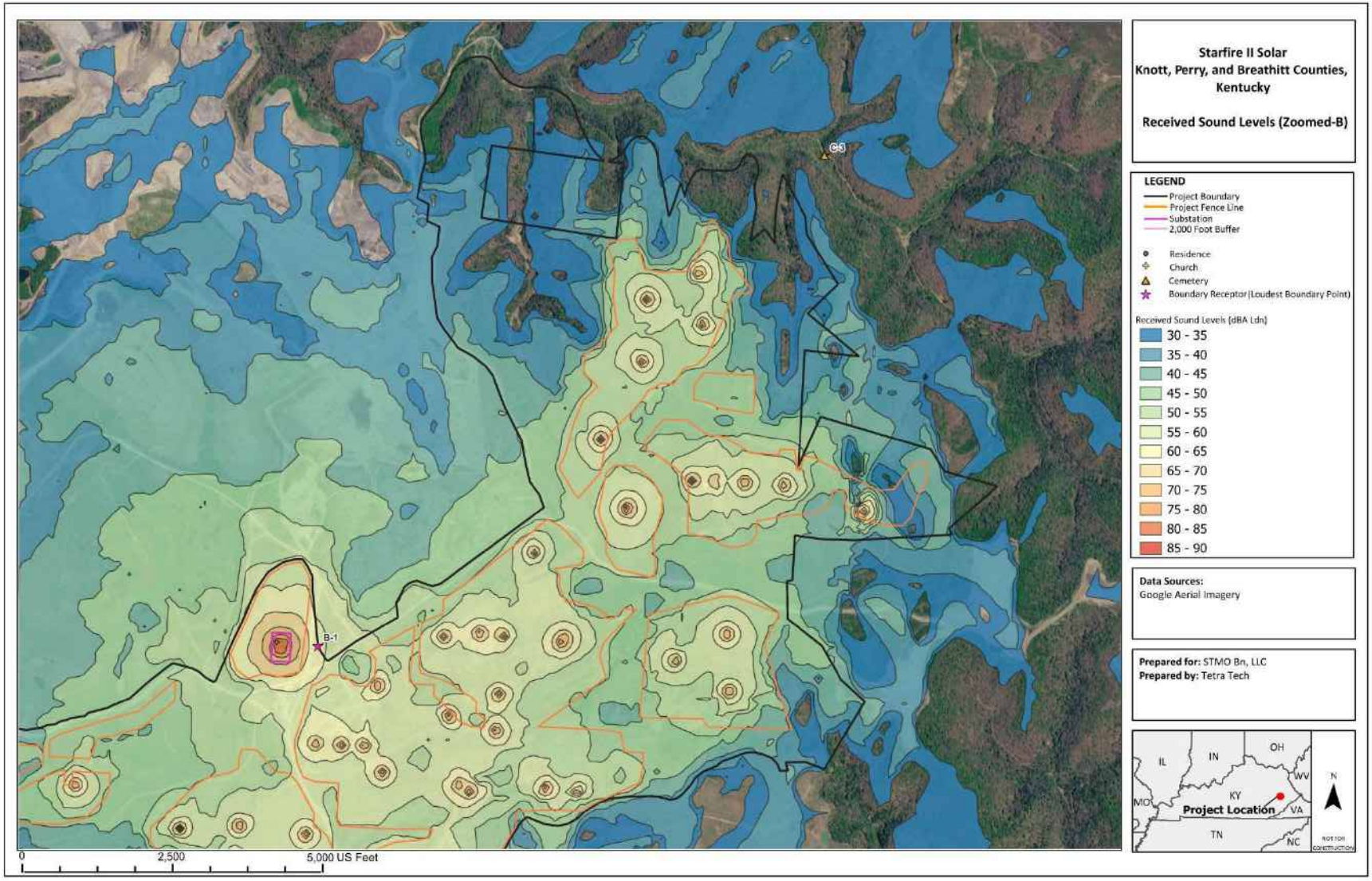


Figure 3. Operational Sound Levels (L_{dn}) (Zoomed-B)



6.0 CONCLUSIONS

Tetra Tech completed a detailed acoustic assessment of the proposed Starfire Phase II Solar Project, located in the counties of Knott and Perry, Kentucky. The assessment included an evaluation of Project sound contribution to the surrounding area during construction and operation phases.

The construction noise assessment indicated that construction noise will be periodically audible at offsite locations; however, that noise will be temporary and minimized to the extent practicable through implementation of best management practices and noise mitigation measures as identified in section 4.3. Traffic noise generated during construction on and offsite will also add to overall sound levels but will be intermittent and short-term.

Operational sound levels were modeled and evaluated at the closest NSAs to the Project area. Anticipated Project sound sources consist of the collector substation main power transformers and inverter skids. Modeling results show that noise levels resulting from Project operations will be under the U.S. EPA sound level criterion of 55 dBA L_{dn}. Overall, sound emissions associated with the Project are expected to remain at a low level, consistent with other solar energy facilities of similar size and design sited in the State of Kentucky.

7.0 REFERENCES

DataKustik GmbH 2026. Computer-Aided Noise Abatement Model CadnaA, Version 2026 [64 Bit]. Munich, Germany, 2017.

Federal Highway Administration (FHWA) 2006. Roadway Construction Noise Model User's Guide. U.S. Department of Transportation. January 2006.

ISO 1993. Standard ISO 9613-1 Acoustics – Attenuation of Sound during Propagation Outdoors. Part 1 General Calculation of the Absorption of Sound by the Atmosphere. Geneva, Switzerland.

ISO 1996. Standard ISO 9613-2 Acoustics – Attenuation of Sound during Propagation Outdoors. Part 2 General Method of Calculation. International Organization for Standardization. Geneva, Switzerland.

USEPA. 1974. Information on Levels of Environmental Noise Requisite to Protect the Public Health and Welfare with an Adequate Margin of Safety, Publication EPA-550/9-74-004, March.

APPENDIX A. DETAILED ACOUSTIC MODELING RESULTS

Table A-1. Detailed Construction Acoustic Modeling Results*

NSA ID	UTM Coordinates (meters)		Distance to Project Fence Line (feet)	Site Preparation and Grading		Trenching and Road Construction		Equipment Installation (Includes Pile Driving)		Commissioning	
	Easting	Northing		Peak (dBA, L_{max})	Average (dBA, L_{eq})	Peak (dBA, L_{max})	Average (dBA, L_{eq})	Peak (dBA, L_{max})	Average (dBA, L_{eq})	Peak (dBA, L_{max})	Average (dBA, L_{eq})
R-1	309319	4141114	902	66	62	68	64	79	72	33	29
R-2	309363	4141101	807	67	63	68	65	80	73	34	30
R-3	309354	4141021	985	65	61	67	63	78	72	32	28
R-4	309365	4141000	1,042	64	61	66	63	78	71	32	28
R-5	309344	4140866	1,474	63	58	63	60	75	68	29	25
R-6	309320	4140792	1,574	61	57	63	59	74	68	28	24
R-7	309211	4140784	1,929	59	56	61	57	73	66	26	22
R-8	309253	4140740	1,752	60	56	62	58	73	67	27	23
R-9	309199	4140715	2,006	59	55	61	57	72	65	26	22
R-10	309079	4140621	2,418	57	54	59	55	71	64	24	20
R-11	308995	4140530	2,763	56	52	58	54	69	63	23	19

NSA ID	UTM Coordinates (meters)		Distance to Project Fence Line (feet)	Site Preparation and Grading		Trenching and Road Construction		Equipment Installation (Includes Pile Driving)		Commissioning	
	Easting	Northing		Peak (dBA, L_{max})	Average (dBA, L_{eq})	Peak (dBA, L_{max})	Average (dBA, L_{eq})	Peak (dBA, L_{max})	Average (dBA, L_{eq})	Peak (dBA, L_{max})	Average (dBA, L_{eq})
R-12	308904	4140523	3,043	55	52	57	53	69	62	22	18
R-13	308860	4140480	3,228	55	51	56	53	68	61	22	18
R-14	308795	4140367	3,547	54	50	56	52	67	60	21	17
R-15	308788	4140342	3,597	54	50	56	52	67	60	21	17
R-16	309425	4139774	3,136	55	51	57	53	68	62	22	18
R-17	309439	4139775	3,112	55	51	57	53	68	62	22	18
R-18	309582	4139628	3,399	54	51	56	52	68	61	21	17
R-19	309576	4139529	3,717	53	50	55	52	67	60	21	17
R-20	309580	4139492	3,835	53	50	55	51	67	60	20	16
R-21	309646	4139504	3,751	53	50	55	52	67	60	21	17
R-22	309672	4139239	4,595	52	48	53	50	65	58	19	15
R-23	309950	4139027	5,242	50	47	52	49	64	57	18	14
R-24	310057	4139072	5,082	51	47	53	49	64	57	18	14
R-25	310181	4138895	5,735	50	46	51	48	63	56	17	13
R-26	310440	4139482	4,042	53	49	54	51	66	59	20	16

NSA ID	UTM Coordinates (meters)		Distance to Project Fence Line (feet)	Site Preparation and Grading		Trenching and Road Construction		Equipment Installation (Includes Pile Driving)		Commissioning	
	Easting	Northing		Peak (dBA, L_{max})	Average (dBA, L_{eq})	Peak (dBA, L_{max})	Average (dBA, L_{eq})	Peak (dBA, L_{max})	Average (dBA, L_{eq})	Peak (dBA, L_{max})	Average (dBA, L_{eq})
R-27	310473	4139536	3,917	53	49	55	51	66	60	20	16
R-28	310511	4139605	3,738	53	50	55	52	67	60	21	17
R-29	310555	4139658	3,626	54	50	55	52	67	60	21	17
R-30	310615	4139813	3,204	55	51	57	53	68	61	22	18
R-31	310676	4139934	2,922	55	52	57	54	69	62	23	19
R-32	310686	4139901	3,072	55	51	57	53	69	62	22	18
R-33	310758	4139940	3,090	55	51	57	53	68	62	22	18
R-34	310806	4139902	3,285	54	51	56	53	68	61	22	18
R-35	311038	4139767	4,030	53	49	55	51	66	59	20	16
R-36	311052	4139792	3,970	53	49	55	51	66	59	20	16
R-37	311136	4139681	3,755	53	50	55	52	67	60	20	17
R-38	311141	4139611	3,789	53	50	55	52	67	60	20	16
R-39	311035	4139495	4,233	52	49	54	51	66	59	19	15
R-40	311083	4139514	4,065	53	49	54	51	66	59	20	16
R-41	311108	4139515	3,984	53	49	55	51	66	59	20	16

NSA ID	UTM Coordinates (meters)		Distance to Project Fence Line (feet)	Site Preparation and Grading		Trenching and Road Construction		Equipment Installation (Includes Pile Driving)		Commissioning	
	Easting	Northing		Peak (dBA, L_{max})	Average (dBA, L_{eq})	Peak (dBA, L_{max})	Average (dBA, L_{eq})	Peak (dBA, L_{max})	Average (dBA, L_{eq})	Peak (dBA, L_{max})	Average (dBA, L_{eq})
R-42	311139	4139498	3,908	53	49	55	51	66	60	20	16
R-43	311148	4139475	3,907	53	49	55	51	66	60	20	16
R-44	311112	4139448	4,050	53	49	54	51	66	59	20	16
R-45	311063	4139413	4,240	52	49	54	51	66	59	19	15
R-46	311127	4139434	4,022	53	49	55	51	66	59	20	16
R-47	311091	4139353	4,236	52	49	54	51	66	59	19	15
R-48	311137	4139358	4,093	53	49	54	51	66	59	20	16
R-49	311143	4139329	4,120	52	49	54	51	66	59	20	16
R-50	311788	4139841	1,557	61	57	63	59	74	68	28	24
R-51	311877	4139756	1,343	62	59	64	61	76	69	29	25
R-52	311849	4139738	1,453	62	58	63	60	75	68	29	25
R-53	311819	4139635	1,688	60	57	62	59	74	67	27	23
R-54	311851	4139601	1,669	60	57	62	59	74	67	28	24
R-55	312100	4139381	1,745	60	56	62	58	73	67	27	23
R-56	312049	4139333	1,966	59	55	61	57	72	66	26	22

NSA ID	UTM Coordinates (meters)		Distance to Project Fence Line (feet)	Site Preparation and Grading		Trenching and Road Construction		Equipment Installation (Includes Pile Driving)		Commissioning	
	Easting	Northing		Peak (dBA, L_{max})	Average (dBA, L_{eq})	Peak (dBA, L_{max})	Average (dBA, L_{eq})	Peak (dBA, L_{max})	Average (dBA, L_{eq})	Peak (dBA, L_{max})	Average (dBA, L_{eq})
CH-57	311267	4139593	3,411	54	51	56	52	68	61	21	17
C-1 (Chestnut Gap Cemetery)	310507	4141920	946	65	62	67	64	79	72	32	28
C-2 (Wyatt Williams Cemetery)	309187	4140416	2,295	58	54	59	56	71	64	25	21
C-3 (Smith Roberts Campbell Cemetery)	315530	4144241	2,048	59	55	60	57	72	65	26	22
C-4 (Richie Combs Cemetery)	310122	4139163	4,838	51	48	53	49	65	58	18	14
Project Boundary				101	98	103	100	115	108	68	64

*Distances from receptor to activity were measured from closest point of receptor to closest point of activity

Table A-2. Detailed Operational Acoustic Modeling Results*

NSA ID	UTM Coordinates (meters)		Distance to Project Boundary (feet)	Distance to Nearest Project Infrastructure (feet)	Received L_{dn} (dBA)	Received L_{eq}/L_{max} (dBA)
	Easting	Northing				
R-1	309319	4141114	69	979	23	16
R-2	309363	4141101	107	884	22	15
R-3	309354	4141021	55	1,059	25	19
R-4	309365	4141000	63	1,114	29	22
R-5	309344	4140866	< 1	1,541	32	25
R-6	309320	4140792	38	1,682	31	24
R-7	309211	4140784	134	2,000	31	25
R-8	309253	4140740	14	1,858	34	28
R-9	309199	4140715	120	2,111	34	27
R-10	309079	4140621	624	2,522	32	25
R-11	308995	4140530	1,018	2,847	31	24
R-12	308904	4140523	1,281	3,128	31	24
R-13	308860	4140480	1,483	3,302	31	24
R-14	308795	4140367	1,866	3,606	30	23
R-15	308788	4140342	1,930	3,651	29	23
R-16	309425	4139774	1,859	3,273	22	15
R-17	309439	4139775	1,806	3,250	21	15
R-18	309582	4139628	1,636	3,549	23	17
R-19	309576	4139529	1,725	3,868	24	17
R-20	309580	4139492	1,747	3,986	24	17
R-21	309646	4139504	1,528	3,904	23	17
R-22	309672	4139239	1,845	4,751	15	9

NSA ID	UTM Coordinates (meters)		Distance to Project Boundary (feet)	Distance to Nearest Project Infrastructure (feet)	Received L_{dn} (dBA)	Received L_{eq}/L_{max} (dBA)
	Easting	Northing				
R-23	309950	4139027	1,867	5,393	26	20
R-24	310057	4139072	1,557	5,225	27	20
R-25	310181	4138895	1,889	5,868	22	15
R-26	310440	4139482	89	4,081	27	20
R-27	310473	4139536	121	3,955	27	20
R-28	310511	4139605	144	3,775	29	22
R-29	310555	4139658	206	3,662	29	22
R-30	310615	4139813	281	3,258	30	24
R-31	310676	4139934	18	2,995	19	13
R-32	310686	4139901	164	3,143	24	18
R-33	310758	4139940	86	3,146	26	19
R-34	310806	4139902	110	3,337	24	17
R-35	311038	4139767	383	4,050	25	18
R-36	311052	4139792	300	3,992	23	17
R-37	311136	4139681	681	3,776	24	17
R-38	311141	4139611	892	3,811	25	18
R-39	311035	4139495	1,304	4,258	31	24
R-40	311083	4139514	1,247	4,090	29	23
R-41	311108	4139515	1,189	4,008	30	23
R-42	311139	4139498	1,302	3,934	31	24
R-43	311148	4139475	1,366	3,933	31	24
R-44	311112	4139448	1,439	4,076	31	24
R-45	311063	4139413	1,554	4,266	31	25
R-46	311127	4139434	1,500	4,048	31	25

NSA ID	UTM Coordinates (meters)		Distance to Project Boundary (feet)	Distance to Nearest Project Infrastructure (feet)	Received L_{dn} (dBA)	Received L_{eq}/L_{max} (dBA)
	Easting	Northing				
R-47	311091	4139353	1,742	4,263	31	25
R-48	311137	4139358	1,779	4,121	31	24
R-49	311143	4139329	1,876	4,148	30	24
R-50	311788	4139841	151	1,576	28	22
R-51	311877	4139756	444	1,370	25	18
R-52	311849	4139738	470	1,479	23	16
R-53	311819	4139635	805	1,719	27	21
R-54	311851	4139601	916	1,701	26	20
R-55	312100	4139381	1,691	1,798	23	16
R-56	312049	4139333	1,913	2,019	26	19
CH-57	311267	4139593	937	3,435	28	21
C-1 (Chestnut Gap Cemetery)	310507	4141920	790	1,000	41	35
C-2 (Wyatt Williams Cemetery)	309187	4140416	713	2,337	25	19
C-3 (Smith Roberts Campbell Cemetery)	315530	4144241	723	2,077	23	16
C-4 (Richie Combs Cemetery)	310122	4139163	1,200	4,974	27	20
Loudest Boundary Location					60	53

*Distance from receptor to project boundary and project infrastructure was measured from closest point to closest point

SAR Attachment 5

Glare Analysis Report for the Starfire Phase II Solar Project

Perry and Knott Counties, Kentucky

August 2026

Prepared for:

STMO Bn, LLC
515 N Flagler Dr. Suite 250,
West Palm Beach, FL, 33401

Prepared by:

Tetra Tech, Inc.
4101 Cox Road, Suite 100
Glen Allen, VA 23060

TETRA TECH

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ATTACHMENTS

Attachment A. Figures
Attachment B. FAA Pre-Screening Tool Report
Attachment C. Glare Modeling Analysis Reports

ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
Federal Aviation Administration	FAA
Solar Glare Hazard Analysis Tool	SGHAT
Observation Point	OP
Wendell H Ford Airport	CPF
Runway	RWY

1.0 INTRODUCTION

At the request STMO Bn, LLC (STMO) Tetra Tech, Inc. (Tetra Tech) conducted a glare analysis for the proposed Starfire Phase II Solar Project (Project) located in a former coal mine spread across Knott and Perry counties, Kentucky. This memorandum summarizes analysis of the glare that may result from operation of the proposed 200-megawatt (MW) photovoltaic solar energy generation facility, which is located on approximately 1,500 acres of a former coal mine site (Project Area). The Project Area sits in an area of topographic relief and is surrounded by rolling, forested hills and scattered rural residences. Included with this memo are figures showing the Project location and glare receptors considered in the analysis (Attachment A), the Federal Aviation Administration (FAA) Notice Pre-Screening Tool Report (Attachment B), and the glare modeling analysis reports (Attachment C).

2.0 GLARE ANALYSIS METHOD

With growing numbers of solar energy systems being proposed and installed throughout the United States, the potential impact of glint (a momentary flash of bright light) and glare (a continuous source of bright light) from solar photovoltaic modules has come under scrutiny by aviation authorities. The FAA issued an Interim Policy (78 FR 63276) on October 23, 2013, describing methods for obtaining FAA review and approval of proposed solar arrays on airport property. These methods involve the use of the Sandia Laboratories Solar Glare Hazard Analysis Tool (SGHAT), a modeling/compliance analysis tool licensed for public use within the ForgeSolar GlareGauge cloud software application. Although not required for a proposed solar installation located offsite of an airport property (and for which notice is filed with FAA pursuant to 14 CFR Part 77.9), analysis of potential glare hazard using SGHAT is generally considered to be an industry best practice for solar facilities.

Sandia Laboratories describes the SGHAT technology as follows:

Sandia developed SGHAT v. 3.0, a web-based tool and methodology to evaluate potential glint/glare associated with solar energy installations. The validated tool provides a quantified assessment of when and where glare will occur, as well as information about potential ocular impacts. The calculations and methods are based on analyses, test data, a database of different photovoltaic module surfaces (e.g., anti-reflective coating, texturing), and models developed over several years at Sandia. The results are presented in a simple easy-to-interpret plot that specifies when glare will occur throughout the year, with color indicating the potential ocular hazard (Sandia Laboratories, 2016).

Tetra Tech, Inc. (Tetra Tech) completed a glare analysis using the SGHAT software, developed by Sandia Laboratories, now hosted by ForgeSolar (as discussed further below). The SGHAT software is considered an industry-best practice and a conservative model that effectively models the potential for glare at defined receptors from defined solar energy generating facilities. The model is conservative in that it does not account for potential screening such as existing or proposed vegetation, topography outside of the defined areas, buildings, walls, or fences, nor does it account for varying weather conditions throughout the year.

Based on the predicted retinal irradiance (intensity) and subtended angle (size/distance) of the glare source to receptor, SGHAT categorizes potential glare where it is predicted to occur by the model in accordance with three tiers of severity (ocular hazards) represented by different colors in the model output:

- “Green” glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
- “Yellow” glare is glare with potential to cause an after-image when observed prior to a typical blink response time.
- “Red” glare is glare with potential to cause permanent eye damage (retinal burn).

These categories of glare are calculated using a typical observer’s blink response time, ocular transmission coefficient (the amount of radiation absorbed in the eye prior to reaching the retina), pupil diameter, and eye focal length (the distance between where rays intersect in the eye and the retina). As a point of comparison, direct viewing of the sun without a filter is considered to be on the border between yellow glare and red glare, while typical camera flashes are considered to be lower tier yellow glare (approximately three orders of magnitude less than direct viewing of the sun). Upon exposure to yellow glare, the observer may experience a temporary spot in their vision temporarily lasting after the exposure. Upon exposure to green glare, the observer may experience a bright reflection but typically no spot lasting after exposure.

Tetra Tech used SGHAT to conduct three separate glare analyses to evaluate the potential for glint and glare from the Project, as follows: (1) 24 observation points (OP) at nearby locations selected to represent

lines of sight from neighboring properties; (2) proximal segments of nearby roads (Buckhorn Road, KY-478, KY-80, and Starfire Hand Road); and 3) the final approach paths for the Wendell H Ford Airport (CPF). Analysis 1 and 2 differ in the heights assumed for the OP and vehicular routes; Analysis 1 represents the point of view from an average first floor residential/commercial structure and typical commuter car, while Analysis 2 represents the point of view from an average second floor residential/commercial structure and typical semi-tractor-trailer truck. Analysis 3 modeled the four two-mile final approach flight paths associated with CPF airport. For all three analyses, the Project Area was defined as 18 separate solar photovoltaic arrays, which are segmented polygons generally representative of the proposed Project layout. The modeled solar photovoltaic arrays are shown in Figure 1, while the OPs, roadway segments and final approach runways are shown in Figure 2 (Attachment A).

The FAA Pre-Screening Tool determines whether a proposed structure is in proximity to a jurisdictional air navigation facility and if formal submission under 14 CFR Part 77.9 (Safe, Efficient Use, and Preservation of the Navigable Airspace) is needed. The Pre-Screening Tool was utilized to determine whether notice must be filed and if there are any airports or federally obligated two-mile final approach paths within the vicinity of the Project. The Pre-Screening Tool identified the CPF airport and based on the results the Project does not exceed notice criteria; therefore, it is not required for the Project to be formally filed with the FAA Obstruction Evaluation Group. Although the Pre-Screening Tool shows that the Project would not need to be filed with FAA, the CPF Airport is within proximity of the Project with flight paths noted on the Pre-Screening Tool Report. Due to this, the 2-mile flight paths were included in the analysis report (Analysis 3). The FAA Pre-Screening Tool Report is included as Attachment B.

The panel orientation, location, and specifications used in the analysis were based on the Project design as provided by STMO. The solar photovoltaic arrays consist of a single-axis tracker system with a maximum tracking angle tilt of ±60 degrees (including backtracking with a resting angle of 5 degrees) and a panel height of 5 feet above ground surface (centroid height) with applicable panel specifications. The panels to be used are smooth glass surface material with an anti-reflection coating (ARC), which is noted in the glare analysis. The input features used in the analyses are summarized in Table 1 and Table 2.

Table 1. Glare Analyses Input Features

Analysis No.	Racking Type	Module Orientation[1]	Tracking Maximum[2] (degrees)	Resting Angle[3] (degrees)	Module Height[4] (feet)	OP Height[5] (feet)	Route Height[6] (feet)	Flight Paths
1	Tracking	East-facing	±60	5	5	6	3.5	-
2	Tracking	East-facing	±60	5	5	16	7.5	-
3	Tracking	East-facing	±60	5	5	-	-	4

1. PV Array Areas modeled as single axis tracking modules from east-facing in the morning hours to west-facing in the evening hours.

2. The module tilt varies through the day as they track the sun, the maximum tracking angle tilt is ±60 degrees east/west.

3. Angle of rotation of panels when sun is outside tracking range. Used to model backtracking. Panels will revert to the position described by this rotation angle at all times when the sun is outside the rotation range defined by the tracking maximum.

4. Average module centroid height above ground surface.

5. Height of observation point receptor: 6 feet represents an average first floor residential/commercial point of view, and 16 feet represents an average second floor residential/commercial point of view.

6. Height of vehicular route receptor: 3.5 feet represents typical commuter car height, and 7.5 feet represents typical semi-tractor-trailer truck views.

Table 2. Analysis 3 Input Features

Flight Path/ ATCT Name	Associated Airport	True Direction (degrees)	Threshold Crossing Height (feet)	Glide Path[1] (degrees)
CPF RWY 06	Wendell H Ford Airport	59	50	3
CPF RWY 14	Wendell H Ford Airport	139	31	3
CPF RWY 24	Wendell H Ford Airport	239	50	3
CPF RWY 32	Wendell H Ford Airport	319	38	4

1. Angle of descent along final approach flight path.

3.0 GLARE ANALYSIS RESULTS

Analyses 1 – 1st Story Receptors

Analysis 1 analyzed 18 PV Array Areas for 24 first-story receptors (OP-1 through OP-24) and six proximal route receptors along segments of Buckhorn Road (1 and 2), Starfire Hand Road, KY-478 (1 and 2), and KY-80 from the height of a driver in a standard commuter vehicle. SGHAT GlareGauge modeled the results for the Project (Attachment C). The simulation predicted that no glare would occur to the modeled receptors.

Analyses 2 – 2nd Story Receptors

Analysis 2 analyzed 18 PV Array Areas for 24 second-story receptors and six proximal route receptors along segments of Buckhorn Road (1 and 2), Starfire Hand Road, KY-478 (1 and 2), and KY-80 from the height of a driver in a typical tractor trailer. SGHAT GlareGauge modeled the results for the Project (Attachment C). The simulation predicted that no glare would occur to the modeled receptors.

Analyses 3 – FAA Receptors

Analysis 3 analyzed 18 PV Array Areas for the four 2-mile final approach paths for the CPF Airport. Specifications for the runways were taken from the FAA's Aeronautical Data resource database. A typical 30-degree maximum downward viewing angle and 50-degree maximum azimuthal viewing angle from the aircraft cockpit were included. SGHAT GlareGauge modeled the results for the Project (Attachment C). The simulation predicted that no glare would occur to the modeled receptors.

4.0 SUMMARY

The proposed solar photovoltaic facility for the Starfire II Project was modeled using SGHAT to evaluate the extent of predicted glint and glare that may be experienced at nearby observation points, vehicle routes, and the CPF airport. Three analyses were performed which represented the point of view from an average first floor residential/commercial structure and typical commuter car (six feet and five feet respectively), an average second floor residential/commercial structure and typical semi-tractor-trailer truck (sixteen feet and nine feet respectively), and the 2-mile final approach paths for the nearby airport. The models predicted that no glare would occur to the modeled receptors.

The GlareGauge model does not account for varying ambient conditions (i.e., cloudy days, precipitation), atmospheric attenuation, screening due to existing topography not located within the defined array layouts, or existing vegetation or structures (including fences or walls) unless defined through the Obstruction tool. As such, the predicted results are considered to be conservative with actual glare from the Project being lower.

Lastly, based on the results of the FAA Notice Criteria Tool, the Project does not exceed notice criteria; therefore, it is not required for the Project to be formally filed with the FAA Obstruction Evaluation Group.

5.0 REFERENCES

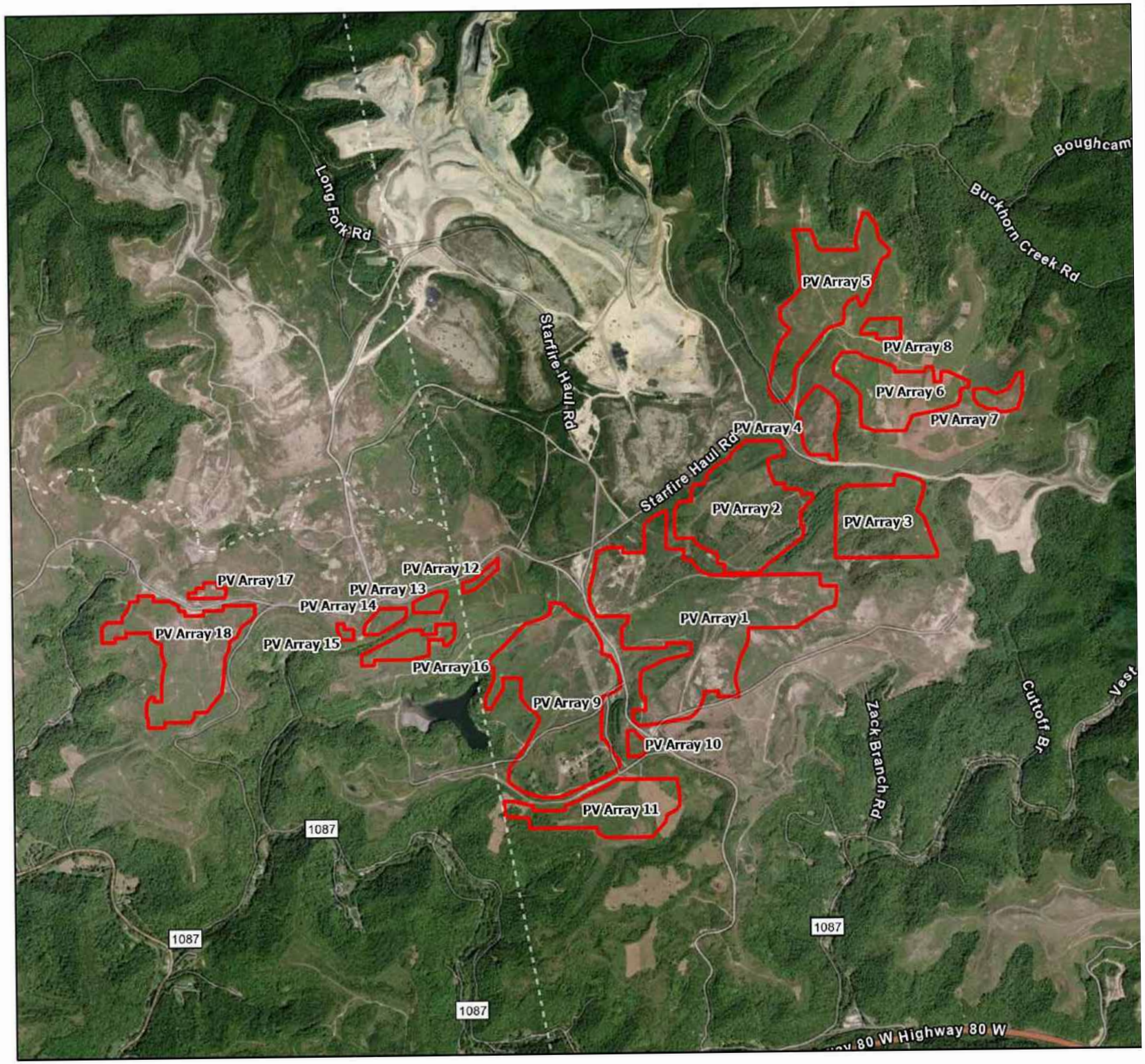
Sandia Solar Glare Hazard Analysis Tool, GlareGauge hosted by ForgeSolar. Accessed online https://www.forgesolar.com/.

Interim Policy, FAA Review of Solar Energy System Projects on Federally Obligated Airports. 78 FR 63276. October 23, 2013.

Federal Aviation Administration. CFR Title 14 Part 77.9 Notice of Proposed Construction or Alteration Requiring Notice. 2010.

Federal Aviation Administration. Technical Guidance for Evaluating Selected Solar Technologies on Airports. 2010.

ATTACHMENT A. FIGURES



Service Layer Credits: World Imagery | Vantor
World Transportation: Esri, HERE, Garmin, (c) OpenStreetMap contributors

Legend

PV Array Areas



Approximate Scale:

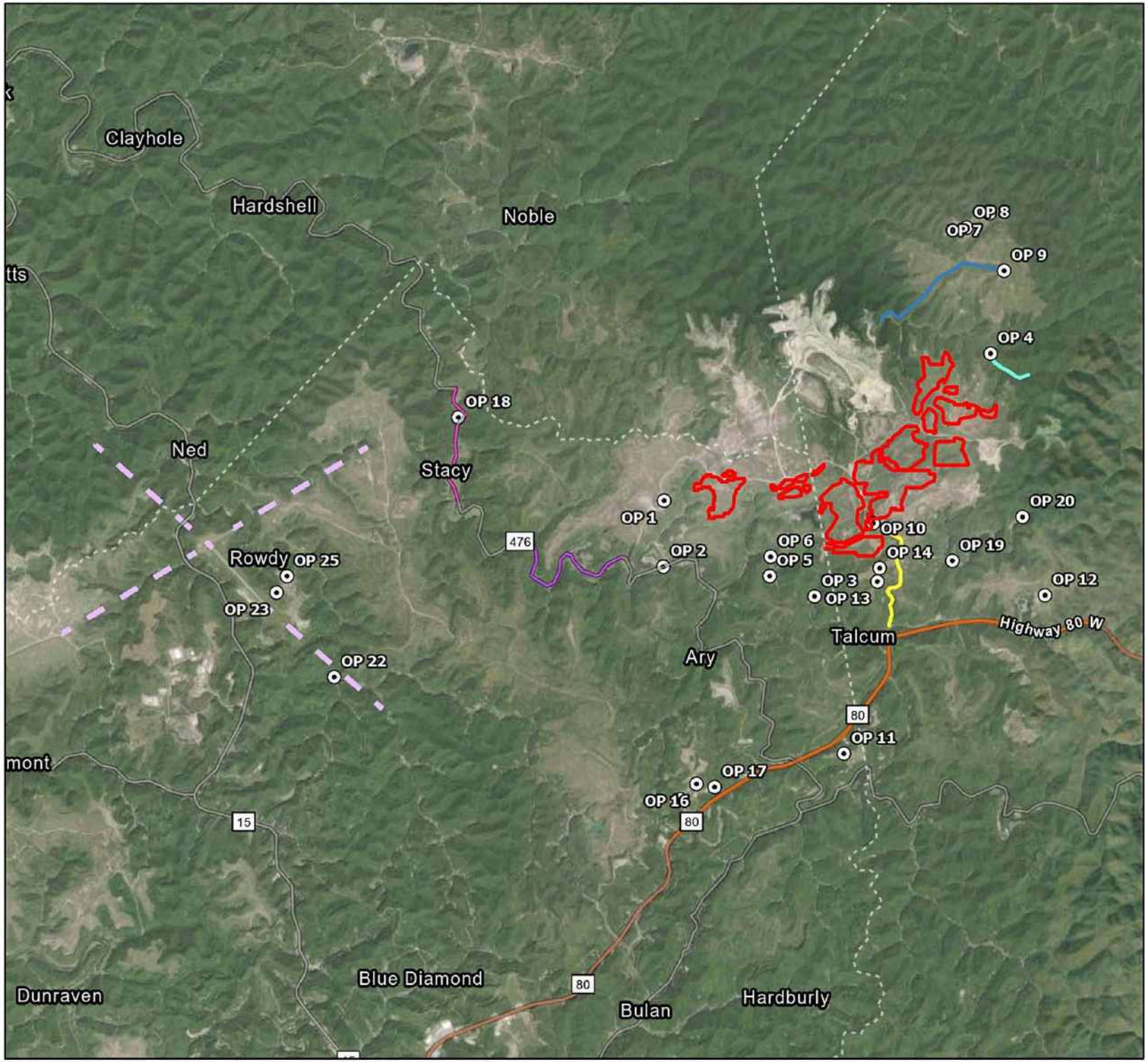
Miles
0 0.17 0.35 0.7

TETRA TECH

Date:
07/23/2026

Figure 1
PV Array Areas

Starfire Phase II Project
Knott and Perry Counties,
Kentucky



Service Layer Credits: World Imagery: Earthstar Geographics
World Transportation: Esri, HERE, Garmin, (c) OpenStreetMap contributors

Legend

- PV Array Areas
- Observation Points (OPs)
- Buckhorn Road -1
- Buckhorn Road -2
- KY-478 -1
- KY-478 -2
- KY-80
- Starfire Hand Road
- Wendell H Ford Airport 2-mile Final Approach Paths



Approximate Scale:

0 0.5 1 2 Miles

TETRA TECH

Date: 07/23/2026

Figure 2
Glare Analysis Receptors

Starfire Phase II Project
Knott and Perry Counties, Kentucky

ATTACHMENT B. FAA PRE-SCREENING TOOL REPORT

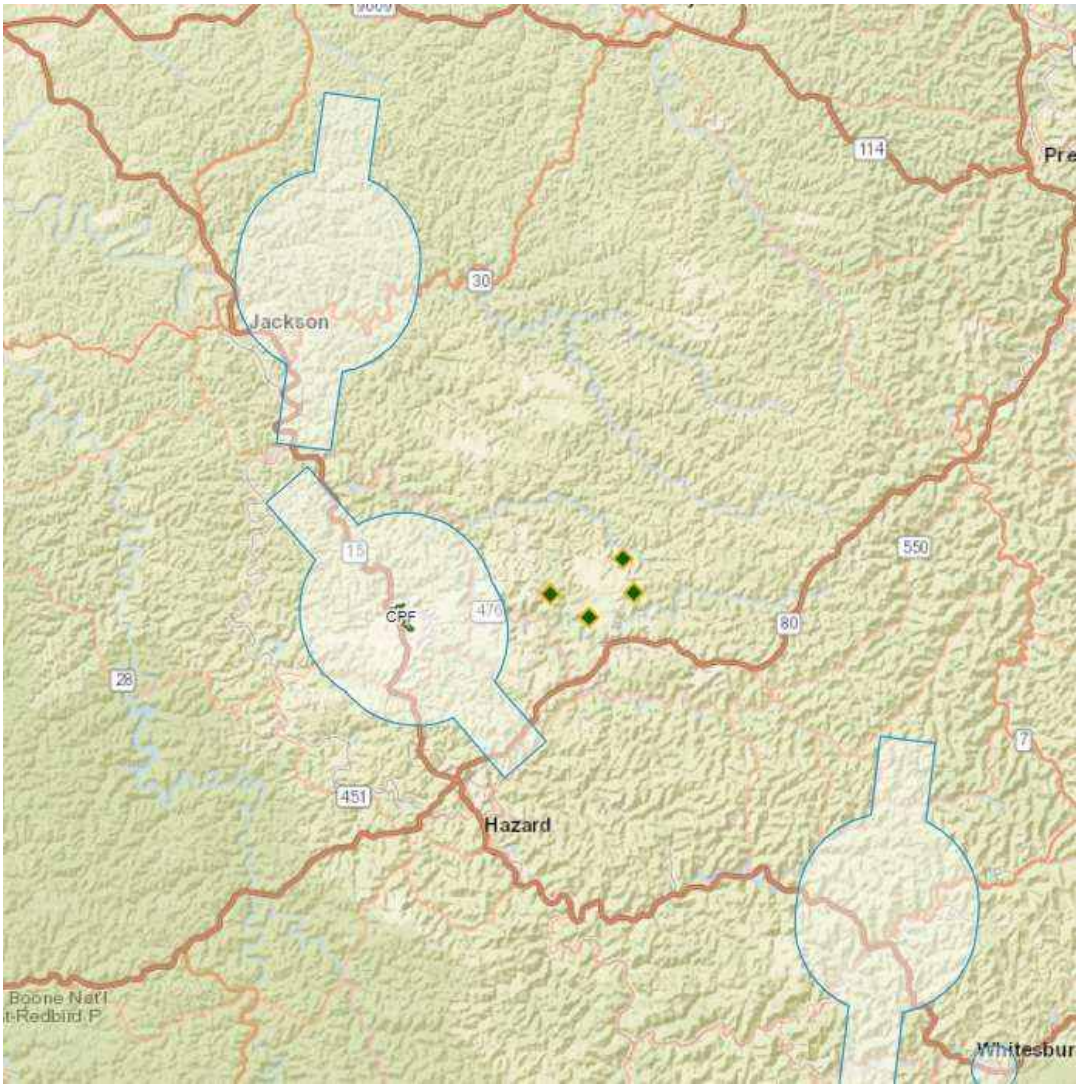
OE/AAA Pre-screening Results

Thu Jul 23 2026 18:05:36 GMT-0400 (Eastern Daylight Time)

Structure: Solar Panel

Latitude	Longitude	Height	Site Elevation	AMSL
37°24'1.98 N	83° 8'58.05 W	10	1243	1253
37°23'9.11" N	83° 7'9.13" W	10	1245	1255
37°24'5.00" N	83° 5'10.08" W	10	1394	1404
37°25'16.13" N	83° 5'38.68" W	10	1216	1226

Based on the information you provided, you are not required to file notice with the FAA.



ATTACHMENT C. GLARE MODELING ANALYSIS REPORTS

FORGESOLAR GLARE ANALYSIS

Project: **Starfire Solar**
Site configuration: **Starfire II Analysis 1- 1st Story Receptors**
Calculated via ForgeSolar Radiometric Physics Engine v3.2.1

Created 23 Jul, 2026
Updated 28 Jul, 2026
Time-step 1 minute
Timezone offset UTC-5
Minimum sun altitude 0.0 deg
DNI peaks at 1,000.0 W/m^2
Category 100 MW to 1 GW
Site ID 184121.21171

Ocular transmission coefficient 0.5
Pupil diameter 0.002 m
Eye focal length 0.017 m
Sun subtended angle 9.3 mrad
Min luminance threshold 0 cd/m^2

Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 10	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 11	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 12	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 13	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 14	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 15	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 16	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 17	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 18	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 2	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 3	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 4	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 5	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 6	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 7	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 8	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 9	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

Component Data

PV Arrays

Name: PV array 1
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.399176	-83.113006	1313.00	5.00	1318.00
2	37.399120	-83.110513	1301.50	5.00	1306.50
3	37.398720	-83.110680	1302.80	5.00	1307.80
4	37.398420	-83.111111	1308.10	5.00	1313.10
5	37.397429	-83.111146	1311.10	5.00	1316.10
6	37.397118	-83.111025	1311.70	5.00	1316.70
7	37.397069	-83.107731	1318.50	5.00	1323.50
8	37.397351	-83.107669	1311.40	5.00	1316.40
9	37.397310	-83.105806	1344.20	5.00	1349.20
10	37.396626	-83.105845	1365.70	5.00	1370.70
11	37.396321	-83.107902	1342.70	5.00	1347.70
12	37.396031	-83.108700	1338.50	5.00	1343.50
13	37.395731	-83.109618	1331.40	5.00	1336.40
14	37.395542	-83.109756	1333.70	5.00	1338.70
15	37.394917	-83.109855	1357.90	5.00	1362.90
16	37.394589	-83.109867	1361.60	5.00	1366.60
17	37.394053	-83.109754	1365.40	5.00	1370.40
18	37.394047	-83.109492	1366.30	5.00	1371.30
19	37.393253	-83.109504	1369.30	5.00	1374.30
20	37.393299	-83.110502	1363.50	5.00	1368.50
21	37.392663	-83.110525	1365.10	5.00	1370.10
22	37.392344	-83.110115	1365.60	5.00	1370.60
23	37.392331	-83.109525	1365.70	5.00	1370.70
24	37.392451	-83.108219	1370.60	5.00	1375.60
25	37.392690	-83.106099	1372.50	5.00	1377.50
26	37.392989	-83.105629	1374.60	5.00	1379.60
27	37.393289	-83.105290	1377.60	5.00	1382.60
28	37.393945	-83.104939	1383.30	5.00	1388.30
29	37.394253	-83.104890	1392.80	5.00	1397.80
30	37.394273	-83.103823	1397.40	5.00	1402.40
31	37.393921	-83.103851	1387.90	5.00	1392.90
32	37.393885	-83.102250	1373.30	5.00	1378.30
33	37.394190	-83.102251	1382.00	5.00	1387.00
34	37.394514	-83.102371	1392.80	5.00	1397.80
35	37.394971	-83.102488	1399.10	5.00	1404.10
36	37.396217	-83.102037	1396.00	5.00	1401.00
37	37.397130	-83.101441	1395.10	5.00	1400.10
38	37.397483	-83.101336	1398.80	5.00	1403.80
39	37.398099	-83.101276	1405.10	5.00	1410.10
40	37.398016	-83.097576	1344.30	5.00	1349.30
41	37.398312	-83.097040	1317.50	5.00	1322.50

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
42	37.398728	-83.096041	1295.40	5.00	1300.40
43	37.399024	-83.095505	1294.60	5.00	1299.60
44	37.399235	-83.094579	1302.00	5.00	1307.00
45	37.399540	-83.094437	1309.10	5.00	1314.10
46	37.399847	-83.094360	1330.10	5.00	1335.10
47	37.400483	-83.094338	1338.50	5.00	1343.50
48	37.400507	-83.095414	1333.40	5.00	1338.40
49	37.400616	-83.095580	1337.10	5.00	1342.10
50	37.401252	-83.095558	1342.40	5.00	1347.40
51	37.401420	-83.103063	1295.30	5.00	1300.30
52	37.401442	-83.104020	1311.30	5.00	1316.30
53	37.401748	-83.104876	1314.80	5.00	1319.80
54	37.402450	-83.105587	1299.10	5.00	1304.10
55	37.402479	-83.106099	1309.10	5.00	1314.10
56	37.403124	-83.106061	1281.90	5.00	1286.90
57	37.403148	-83.107138	1304.90	5.00	1309.90
58	37.403286	-83.107445	1305.00	5.00	1310.00
59	37.404874	-83.107324	1330.40	5.00	1335.40
60	37.405510	-83.107302	1327.30	5.00	1332.30
61	37.405516	-83.107591	1330.40	5.00	1335.40
62	37.405222	-83.108231	1335.60	5.00	1340.60
63	37.404927	-83.108859	1341.20	5.00	1346.20
64	37.404613	-83.109056	1342.30	5.00	1347.30
65	37.403019	-83.109130	1354.90	5.00	1359.90
66	37.403052	-83.110769	1358.10	5.00	1363.10
67	37.403380	-83.110758	1356.90	5.00	1361.90
68	37.403407	-83.111965	1350.00	5.00	1355.00
69	37.403145	-83.112780	1341.60	5.00	1346.60
70	37.401796	-83.113138	1325.30	5.00	1330.30
71	37.400878	-83.113498	1317.80	5.00	1322.80
72	37.400113	-83.113525	1314.30	5.00	1319.30
73	37.399176	-83.113006	1313.00	5.00	1318.00

Name: PV array 10
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.392020	-83.110965	1353.10	5.00	1358.10
2	37.391052	-83.111010	1340.70	5.00	1345.70
3	37.390434	-83.110966	1331.00	5.00	1336.00
4	37.390411	-83.109956	1334.50	5.00	1339.50
5	37.390714	-83.109682	1351.10	5.00	1356.10
6	37.391350	-83.109660	1359.40	5.00	1364.40
7	37.391668	-83.110108	1357.40	5.00	1362.40
8	37.392065	-83.110500	1358.20	5.00	1363.20
9	37.392020	-83.110965	1353.10	5.00	1358.10

Name: PV array 11
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.387246	-83.116043	1288.80	5.00	1293.80
2	37.387319	-83.118519	1266.50	5.00	1271.50
3	37.387603	-83.118498	1263.90	5.00	1268.90
4	37.387947	-83.120061	1270.20	5.00	1275.20
5	37.387962	-83.120744	1269.80	5.00	1274.80
6	37.387634	-83.120755	1271.30	5.00	1276.30
7	37.387015	-83.120646	1277.00	5.00	1282.00
8	37.386866	-83.118879	1269.80	5.00	1274.80
9	37.386228	-83.118836	1268.50	5.00	1273.50
10	37.386165	-83.116016	1283.60	5.00	1288.60
11	37.386112	-83.113628	1292.60	5.00	1297.60
12	37.385802	-83.113600	1283.10	5.00	1288.10
13	37.385481	-83.113020	1283.80	5.00	1288.80
14	37.385400	-83.109387	1280.80	5.00	1285.80
15	37.386302	-83.108305	1284.80	5.00	1289.80
16	37.386737	-83.108158	1287.50	5.00	1292.50
17	37.387029	-83.107426	1284.10	5.00	1289.10
18	37.387332	-83.107153	1281.50	5.00	1286.50
19	37.387967	-83.107131	1279.70	5.00	1284.70
20	37.388944	-83.107293	1304.10	5.00	1309.10
21	37.389047	-83.111911	1318.60	5.00	1323.60

Name: PV array 12
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.401581	-83.123266	1283.20	5.00	1288.20
2	37.400945	-83.123288	1291.80	5.00	1296.80
3	37.401157	-83.122332	1295.40	5.00	1300.40
4	37.402380	-83.120517	1315.10	5.00	1320.10
5	37.403016	-83.120495	1306.20	5.00	1311.20
6	37.401793	-83.122337	1286.50	5.00	1291.50
7	37.401760	-83.122445	1286.40	5.00	1291.40
8	37.401581	-83.123266	1283.20	5.00	1288.20

Name: PV array 13
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.401098	-83.124561	1280.90	5.00	1285.90
2	37.401114	-83.125244	1279.10	5.00	1284.10
3	37.400784	-83.126437	1279.90	5.00	1284.90
4	37.400492	-83.127169	1279.90	5.00	1284.90
5	37.399856	-83.127191	1284.00	5.00	1289.00
6	37.399810	-83.125131	1285.60	5.00	1290.60
7	37.400770	-83.124572	1283.20	5.00	1288.20
8	37.401098	-83.124561	1280.90	5.00	1285.90

Name: PV array 14
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.400196	-83.129784	1291.50	5.00	1296.50
2	37.399248	-83.130933	1284.60	5.00	1289.60
3	37.398943	-83.131075	1284.20	5.00	1289.20
4	37.398615	-83.131087	1284.50	5.00	1289.50
5	37.398590	-83.129945	1283.20	5.00	1288.20
6	37.399517	-83.127877	1281.70	5.00	1286.70
7	37.399822	-83.127736	1277.70	5.00	1282.70
8	37.400150	-83.127724	1279.20	5.00	1284.20
9	37.400196	-83.129784	1291.50	5.00	1296.50

Name: PV array 15
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.399016	-83.133154	1284.70	5.00	1289.70
2	37.398345	-83.132850	1278.10	5.00	1283.10
3	37.398324	-83.131904	1281.90	5.00	1286.90
4	37.398960	-83.131882	1284.80	5.00	1289.80
5	37.399004	-83.132603	1285.70	5.00	1290.70
6	37.399332	-83.132591	1286.70	5.00	1291.70
7	37.399344	-83.133143	1285.90	5.00	1290.90

Name: PV array 16
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.398481	-83.125502	1290.50	5.00	1295.50
2	37.398470	-83.126602	1316.60	5.00	1321.60
3	37.398770	-83.126605	1312.50	5.00	1317.50
4	37.398787	-83.127526	1316.70	5.00	1321.70
5	37.397938	-83.129772	1320.90	5.00	1325.90
6	37.397336	-83.131329	1325.90	5.00	1330.90
7	37.396700	-83.131351	1299.90	5.00	1304.90
8	37.396679	-83.130406	1311.80	5.00	1316.80
9	37.397005	-83.130356	1330.80	5.00	1335.80
10	37.396945	-83.127640	1288.60	5.00	1293.60
11	37.397170	-83.126122	1284.60	5.00	1289.60
12	37.398151	-83.126100	1306.70	5.00	1311.70
13	37.398118	-83.124974	1285.80	5.00	1290.80
14	37.397761	-83.124947	1283.30	5.00	1288.30
15	37.397755	-83.124658	1285.40	5.00	1290.40
16	37.398100	-83.124186	1296.70	5.00	1301.70
17	37.398406	-83.124044	1299.90	5.00	1304.90
18	37.399042	-83.124022	1291.40	5.00	1296.40
19	37.399075	-83.125492	1293.90	5.00	1298.90

Name: PV array 17
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.401892	-83.143360	1250.80	5.00	1255.80
2	37.401916	-83.143961	1260.70	5.00	1265.70
3	37.401609	-83.144011	1241.00	5.00	1246.00
4	37.401621	-83.144562	1234.30	5.00	1239.30
5	37.401293	-83.144574	1233.20	5.00	1238.20
6	37.401232	-83.141792	1261.30	5.00	1266.30
7	37.401537	-83.141650	1256.20	5.00	1261.20
8	37.401865	-83.141639	1249.50	5.00	1254.50
9	37.401879	-83.142295	1247.70	5.00	1252.70
10	37.402190	-83.142350	1262.40	5.00	1267.40
11	37.402212	-83.143360	1273.50	5.00	1278.50

Name: PV array 18
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.400203	-83.144890	1295.10	5.00	1300.10
2	37.400512	-83.144918	1284.50	5.00	1289.50
3	37.400521	-83.145345	1297.70	5.00	1302.70
4	37.400831	-83.145400	1286.90	5.00	1291.90
5	37.401155	-83.146111	1280.10	5.00	1285.10
6	37.401181	-83.147291	1266.50	5.00	1271.50
7	37.401536	-83.147279	1246.30	5.00	1251.30
8	37.401563	-83.148487	1216.00	5.00	1221.00
9	37.401208	-83.148499	1225.30	5.00	1230.30
10	37.401222	-83.149155	1210.60	5.00	1215.60
11	37.400915	-83.149231	1220.70	5.00	1225.70
12	37.400611	-83.149439	1234.00	5.00	1239.00
13	37.400310	-83.149777	1244.20	5.00	1249.20
14	37.399955	-83.149789	1242.80	5.00	1247.80
15	37.399981	-83.150970	1261.40	5.00	1266.40
16	37.399681	-83.151374	1250.60	5.00	1255.60
17	37.398736	-83.151407	1262.30	5.00	1267.30
18	37.398714	-83.150396	1263.40	5.00	1268.40
19	37.399014	-83.150386	1266.70	5.00	1271.70
20	37.399003	-83.149533	1270.90	5.00	1275.90
21	37.399291	-83.149534	1278.50	5.00	1283.50
22	37.399264	-83.147647	1319.60	5.00	1324.60
23	37.398962	-83.147657	1324.80	5.00	1329.80
24	37.398644	-83.147209	1334.90	5.00	1339.90
25	37.398526	-83.146819	1348.40	5.00	1353.40
26	37.397890	-83.146841	1352.20	5.00	1357.20
27	37.397578	-83.146721	1361.20	5.00	1366.20
28	37.397240	-83.146601	1354.70	5.00	1359.70
29	37.396935	-83.146743	1325.00	5.00	1330.00
30	37.396627	-83.146819	1315.80	5.00	1320.80
31	37.395884	-83.146943	1312.60	5.00	1317.60
32	37.394962	-83.146975	1314.80	5.00	1319.80
33	37.394975	-83.147538	1311.40	5.00	1316.40
34	37.395279	-83.147527	1308.80	5.00	1313.80
35	37.395284	-83.147751	1304.20	5.00	1309.20
36	37.394983	-83.148090	1308.10	5.00	1313.10
37	37.394629	-83.148168	1309.80	5.00	1314.80
38	37.393993	-83.148189	1304.30	5.00	1309.30
39	37.393983	-83.148059	1307.00	5.00	1312.00
40	37.393373	-83.148080	1327.30	5.00	1332.30
41	37.393345	-83.146807	1335.30	5.00	1340.30

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
42	37.393649	-83.146796	1327.70	5.00	1332.70
43	37.393609	-83.144763	1269.10	5.00	1274.10
44	37.393912	-83.144490	1273.60	5.00	1278.60
45	37.394219	-83.144440	1276.50	5.00	1281.50
46	37.394198	-83.143495	1280.80	5.00	1285.80
47	37.394546	-83.143155	1284.60	5.00	1289.60
48	37.395360	-83.142273	1291.40	5.00	1296.40
49	37.396195	-83.142113	1284.50	5.00	1289.50
50	37.397473	-83.141938	1272.30	5.00	1277.30
51	37.398082	-83.141588	1285.20	5.00	1290.20
52	37.398519	-83.141508	1295.20	5.00	1300.20
53	37.398791	-83.140943	1300.40	5.00	1305.40
54	37.399423	-83.140557	1311.20	5.00	1316.20
55	37.399763	-83.139824	1288.00	5.00	1293.00
56	37.400064	-83.139485	1279.60	5.00	1284.60
57	37.400700	-83.139463	1292.30	5.00	1297.30
58	37.400754	-83.141917	1274.70	5.00	1279.70

Name: PV array 2
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.401469	-83.100343	1345.00	5.00	1350.00
2	37.401769	-83.099938	1322.70	5.00	1327.70
3	37.402067	-83.099468	1317.70	5.00	1322.70
4	37.402364	-83.098933	1322.00	5.00	1327.00
5	37.403606	-83.096799	1335.80	5.00	1340.80
6	37.403951	-83.096710	1341.50	5.00	1346.50
7	37.404279	-83.096699	1343.70	5.00	1348.70
8	37.404307	-83.096906	1341.30	5.00	1346.30
9	37.405185	-83.096875	1349.40	5.00	1354.40
10	37.405313	-83.096662	1350.60	5.00	1355.60
11	37.405615	-83.096323	1353.90	5.00	1358.90
12	37.405914	-83.095919	1355.80	5.00	1360.80
13	37.406242	-83.095907	1347.30	5.00	1352.30
14	37.406262	-83.096787	1335.90	5.00	1340.90
15	37.406571	-83.096842	1319.80	5.00	1324.80
16	37.406626	-83.098060	1297.70	5.00	1302.70
17	37.406954	-83.098049	1281.70	5.00	1286.70
18	37.406971	-83.098797	1327.20	5.00	1332.20
19	37.407282	-83.098956	1345.70	5.00	1350.70
20	37.407596	-83.099142	1352.40	5.00	1357.40
21	37.407905	-83.099197	1352.80	5.00	1357.80
22	37.408263	-83.099316	1337.90	5.00	1342.90
23	37.408548	-83.099109	1312.70	5.00	1317.70
24	37.408701	-83.097987	1285.30	5.00	1290.30
25	37.409029	-83.097976	1272.50	5.00	1277.50
26	37.409604	-83.098284	1287.30	5.00	1292.30
27	37.409663	-83.100935	1343.70	5.00	1348.70
28	37.409240	-83.101606	1347.30	5.00	1352.30
29	37.408943	-83.102076	1345.80	5.00	1350.80
30	37.408637	-83.102218	1347.40	5.00	1352.40
31	37.408346	-83.103016	1348.60	5.00	1353.60
32	37.408004	-83.103619	1349.60	5.00	1354.60
33	37.407705	-83.104024	1357.50	5.00	1362.50
34	37.407397	-83.104100	1373.70	5.00	1378.70
35	37.407096	-83.104412	1364.50	5.00	1369.50
36	37.407111	-83.105095	1349.50	5.00	1354.50
37	37.406760	-83.105304	1352.60	5.00	1357.60
38	37.406072	-83.105317	1380.20	5.00	1385.20
39	37.406082	-83.106247	1338.10	5.00	1343.10
40	37.405780	-83.106520	1336.40	5.00	1341.40
41	37.405427	-83.106664	1342.30	5.00	1347.30

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
42	37.404174	-83.106708	1308.30	5.00	1313.30
43	37.403816	-83.106589	1307.70	5.00	1312.70
44	37.403785	-83.105212	1303.60	5.00	1308.60
45	37.403476	-83.105157	1296.40	5.00	1301.40
46	37.403152	-83.104512	1307.60	5.00	1312.60
47	37.402828	-83.103801	1322.00	5.00	1327.00
48	37.402793	-83.103474	1318.80	5.00	1323.80
49	37.402157	-83.103496	1307.00	5.00	1312.00
50	37.402096	-83.102960	1313.80	5.00	1318.80
51	37.401529	-83.102993	1288.10	5.00	1293.10

Name: PV array 3
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.406026	-83.094067	1344.10	5.00	1349.10
2	37.404747	-83.094178	1356.50	5.00	1361.50
3	37.403160	-83.094300	1302.70	5.00	1307.70
4	37.402216	-83.094333	1249.50	5.00	1254.50
5	37.402173	-83.092431	1376.70	5.00	1381.70
6	37.402125	-83.090305	1418.60	5.00	1423.60
7	37.402110	-83.089610	1439.30	5.00	1444.30
8	37.402038	-83.086435	1384.20	5.00	1389.20
9	37.402343	-83.086435	1380.70	5.00	1385.70
10	37.403302	-83.086850	1370.10	5.00	1375.10
11	37.403948	-83.087101	1348.40	5.00	1353.40
12	37.404595	-83.087395	1318.30	5.00	1323.30
13	37.404941	-83.087869	1312.50	5.00	1317.50
14	37.405247	-83.087700	1280.30	5.00	1285.30
15	37.406209	-83.087272	1254.00	5.00	1259.00
16	37.406537	-83.087260	1250.50	5.00	1255.50
17	37.406852	-83.087512	1249.40	5.00	1254.40
18	37.407188	-83.088747	1241.70	5.00	1246.70
19	37.407203	-83.089430	1239.60	5.00	1244.60
20	37.406590	-83.089622	1239.60	5.00	1244.60
21	37.406651	-83.093244	1315.40	5.00	1320.40
22	37.406356	-83.093975	1342.50	5.00	1347.50

Name: PV array 4
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.411337	-83.096857	1221.10	5.00	1226.10
2	37.411009	-83.096869	1224.40	5.00	1229.40
3	37.410892	-83.096544	1223.60	5.00	1228.60
4	37.410256	-83.096567	1232.50	5.00	1237.50
5	37.409281	-83.096470	1238.00	5.00	1243.00
6	37.408968	-83.096284	1239.60	5.00	1244.60
7	37.408652	-83.095967	1240.20	5.00	1245.20
8	37.408619	-83.094497	1238.50	5.00	1243.50
9	37.408310	-83.094469	1240.50	5.00	1245.50
10	37.408298	-83.093917	1242.40	5.00	1247.40
11	37.408911	-83.093907	1239.70	5.00	1244.70
12	37.409244	-83.093949	1238.20	5.00	1243.20
13	37.409554	-83.094004	1235.10	5.00	1240.10
14	37.409889	-83.093992	1232.70	5.00	1237.70
15	37.410854	-83.093630	1240.70	5.00	1245.70
16	37.411490	-83.093608	1250.10	5.00	1255.10
17	37.411777	-83.093675	1251.70	5.00	1256.70
18	37.412114	-83.093914	1250.20	5.00	1255.20
19	37.412481	-83.094387	1249.40	5.00	1254.40
20	37.412800	-83.094875	1245.40	5.00	1250.40
21	37.412894	-83.095358	1237.50	5.00	1242.50
22	37.412592	-83.095697	1225.20	5.00	1230.20
23	37.412246	-83.096103	1218.90	5.00	1223.90
24	37.411945	-83.096442	1217.20	5.00	1222.20
25	37.411642	-83.096715	1218.50	5.00	1223.50
26	37.411337	-83.096857	1221.10	5.00	1226.10

Name: PV array 5
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.412026	-83.098510	1247.40	5.00	1252.40
2	37.412009	-83.097762	1214.70	5.00	1219.70
3	37.412310	-83.097423	1207.60	5.00	1212.60
4	37.412659	-83.097109	1208.30	5.00	1213.30
5	37.413297	-83.096942	1210.70	5.00	1215.70
6	37.413908	-83.096907	1215.20	5.00	1220.20
7	37.414238	-83.096633	1220.10	5.00	1225.10
8	37.414542	-83.096425	1217.70	5.00	1222.70
9	37.414841	-83.096020	1236.70	5.00	1241.70
10	37.416092	-83.094663	1339.10	5.00	1344.10
11	37.416437	-83.094191	1342.10	5.00	1347.10
12	37.416720	-83.093065	1334.50	5.00	1339.50
13	37.416979	-83.092925	1332.60	5.00	1337.60
14	37.417615	-83.092902	1329.00	5.00	1334.00
15	37.418045	-83.092559	1317.60	5.00	1322.60
16	37.418338	-83.091826	1319.50	5.00	1324.50
17	37.417715	-83.091613	1321.40	5.00	1326.40
18	37.417713	-83.091520	1322.50	5.00	1327.50
19	37.418014	-83.091181	1333.20	5.00	1338.20
20	37.418342	-83.091050	1344.70	5.00	1349.70
21	37.418624	-83.090831	1354.90	5.00	1359.90
22	37.419281	-83.090545	1372.50	5.00	1377.50
23	37.419607	-83.090348	1380.60	5.00	1385.60
24	37.419891	-83.090196	1387.90	5.00	1392.90
25	37.420547	-83.089844	1393.00	5.00	1398.00
26	37.420842	-83.089243	1387.40	5.00	1392.40
27	37.421170	-83.089231	1402.60	5.00	1407.60
28	37.421487	-83.089614	1397.50	5.00	1402.50
29	37.421851	-83.089995	1392.50	5.00	1397.50
30	37.422757	-83.090171	1369.20	5.00	1374.20
31	37.423145	-83.090540	1363.60	5.00	1368.60
32	37.423459	-83.090792	1363.30	5.00	1368.30
33	37.423467	-83.091147	1355.20	5.00	1360.20
34	37.423162	-83.091289	1348.40	5.00	1353.40
35	37.422809	-83.091433	1343.10	5.00	1348.10
36	37.422198	-83.091690	1343.90	5.00	1348.90
37	37.421868	-83.091783	1343.20	5.00	1348.20
38	37.421564	-83.091805	1347.40	5.00	1352.40
39	37.421225	-83.091659	1351.60	5.00	1356.60
40	37.421290	-83.094573	1218.20	5.00	1223.20
41	37.421605	-83.094863	1236.90	5.00	1241.90

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
42	37.422274	-83.095102	1254.30	5.00	1259.30
43	37.422563	-83.095234	1258.60	5.00	1263.60
44	37.422616	-83.096561	1355.20	5.00	1360.20
45	37.422288	-83.096573	1380.90	5.00	1385.90
46	37.421665	-83.096332	1404.50	5.00	1409.50
47	37.420383	-83.096312	1406.60	5.00	1411.60
48	37.419718	-83.096243	1406.30	5.00	1411.30
49	37.419407	-83.096149	1401.70	5.00	1406.70
50	37.419070	-83.096095	1394.80	5.00	1399.80
51	37.418769	-83.096434	1394.90	5.00	1399.90
52	37.418468	-83.096773	1390.30	5.00	1395.30
53	37.418170	-83.097243	1390.60	5.00	1395.60
54	37.417773	-83.097848	1398.70	5.00	1403.70
55	37.417137	-83.097871	1386.40	5.00	1391.40
56	37.416822	-83.097619	1367.90	5.00	1372.90
57	37.416504	-83.097171	1345.40	5.00	1350.40
58	37.416173	-83.097379	1326.80	5.00	1331.80
59	37.415873	-83.097784	1276.70	5.00	1281.70
60	37.415569	-83.097991	1224.40	5.00	1229.40
61	37.415218	-83.098201	1189.70	5.00	1194.70
62	37.414913	-83.098343	1178.30	5.00	1183.30
63	37.414607	-83.098485	1179.70	5.00	1184.70
64	37.413947	-83.098639	1190.50	5.00	1195.50
65	37.413336	-83.098924	1201.70	5.00	1206.70
66	37.412700	-83.098946	1231.70	5.00	1236.70
67	37.412340	-83.098762	1243.60	5.00	1248.60
68	37.412026	-83.098510	1247.40	5.00	1252.40

Name: PV array 6
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.413314	-83.093366	1411.40	5.00	1416.40
2	37.412991	-83.092721	1420.30	5.00	1425.30
3	37.412673	-83.092312	1422.80	5.00	1427.80
4	37.412218	-83.091895	1432.00	5.00	1437.00
5	37.411273	-83.091928	1431.20	5.00	1436.20
6	37.410300	-83.091897	1436.50	5.00	1441.50
7	37.409967	-83.090793	1425.50	5.00	1430.50
8	37.409915	-83.088470	1357.50	5.00	1362.50
9	37.410220	-83.088328	1359.50	5.00	1364.50
10	37.410827	-83.087912	1371.00	5.00	1376.00
11	37.411131	-83.085604	1412.40	5.00	1417.40
12	37.411413	-83.084412	1403.80	5.00	1408.80
13	37.411717	-83.084204	1395.60	5.00	1400.60
14	37.412024	-83.084128	1387.10	5.00	1392.10
15	37.412352	-83.084116	1381.00	5.00	1386.00
16	37.412474	-83.083455	1368.50	5.00	1373.50
17	37.412802	-83.083444	1363.90	5.00	1368.90
18	37.413128	-83.084220	1379.00	5.00	1384.00
19	37.413456	-83.085062	1378.30	5.00	1383.30
20	37.413467	-83.085548	1374.70	5.00	1379.70
21	37.412851	-83.085608	1396.60	5.00	1401.60
22	37.412863	-83.086133	1385.60	5.00	1390.60
23	37.413481	-83.086177	1372.50	5.00	1377.50
24	37.413790	-83.086232	1362.90	5.00	1367.90
25	37.413801	-83.086718	1353.40	5.00	1358.40
26	37.413497	-83.086899	1355.00	5.00	1360.00
27	37.413569	-83.089142	1345.90	5.00	1350.90
28	37.413855	-83.089118	1347.60	5.00	1352.60
29	37.414233	-83.090090	1431.60	5.00	1436.60
30	37.414572	-83.091457	1413.90	5.00	1418.90
31	37.414894	-83.092036	1393.60	5.00	1398.60
32	37.414919	-83.093178	1397.50	5.00	1402.50
33	37.414316	-83.093791	1402.50	5.00	1407.50
34	37.414047	-83.093917	1411.00	5.00	1416.00
35	37.413634	-83.093880	1406.90	5.00	1411.90

Name: PV array 7
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.412329	-83.083093	1364.20	5.00	1369.20
2	37.411693	-83.083116	1380.60	5.00	1385.60
3	37.411376	-83.082799	1379.00	5.00	1384.00
4	37.411052	-83.082088	1376.30	5.00	1381.30
5	37.411037	-83.081405	1372.60	5.00	1377.60
6	37.410836	-83.081176	1375.10	5.00	1380.10
7	37.410854	-83.080492	1372.90	5.00	1377.90
8	37.411000	-83.079765	1375.90	5.00	1380.90
9	37.411916	-83.079339	1375.30	5.00	1380.30
10	37.413216	-83.079293	1376.60	5.00	1381.60
11	37.413222	-83.079582	1371.70	5.00	1376.70
12	37.412920	-83.079855	1366.50	5.00	1371.50
13	37.412267	-83.080377	1366.10	5.00	1371.10
14	37.412115	-83.080803	1361.40	5.00	1366.40
15	37.411981	-83.081372	1363.40	5.00	1368.40
16	37.412306	-83.082082	1364.30	5.00	1369.30
17	37.412329	-83.083093	1364.20	5.00	1369.20

Name: PV array 8
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.416897	-83.090999	1338.40	5.00	1343.40
2	37.416298	-83.091622	1328.80	5.00	1333.80
3	37.415990	-83.091633	1334.60	5.00	1339.60
4	37.415983	-83.090453	1345.90	5.00	1350.90
5	37.415655	-83.090465	1349.30	5.00	1354.30
6	37.415613	-83.088601	1357.60	5.00	1362.60
7	37.416866	-83.088557	1370.30	5.00	1375.30
8	37.416893	-83.089764	1362.90	5.00	1367.90
9	37.416897	-83.090999	1338.40	5.00	1343.40

Name: PV array 9
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.396911	-83.121275	1208.70	5.00	1213.70
2	37.396608	-83.121483	1208.90	5.00	1213.90
3	37.396280	-83.121494	1199.70	5.00	1204.70
4	37.396281	-83.121150	1210.10	5.00	1215.10
5	37.395540	-83.121180	1198.40	5.00	1203.40
6	37.394362	-83.121889	1186.00	5.00	1191.00
7	37.393726	-83.121911	1179.70	5.00	1184.70
8	37.393717	-83.121491	1182.00	5.00	1187.00
9	37.394976	-83.120463	1194.50	5.00	1199.50
10	37.395601	-83.120452	1202.10	5.00	1207.10
11	37.395539	-83.119091	1270.70	5.00	1275.70
12	37.394329	-83.119134	1290.40	5.00	1295.40
13	37.393652	-83.118566	1282.90	5.00	1287.90
14	37.393330	-83.117987	1289.20	5.00	1294.20
15	37.392883	-83.117757	1283.30	5.00	1288.30
16	37.391645	-83.118642	1221.80	5.00	1226.80
17	37.391342	-83.118876	1201.80	5.00	1206.80
18	37.390390	-83.119828	1210.90	5.00	1215.90
19	37.390090	-83.120167	1220.40	5.00	1225.40
20	37.389784	-83.120309	1230.80	5.00	1235.80
21	37.389148	-83.120331	1237.30	5.00	1242.30
22	37.388779	-83.119753	1240.70	5.00	1245.70
23	37.388457	-83.119108	1241.50	5.00	1246.50
24	37.388119	-83.117807	1248.30	5.00	1253.30
25	37.388086	-83.116338	1278.30	5.00	1283.30
26	37.388663	-83.114545	1297.30	5.00	1302.30
27	37.389286	-83.112686	1315.70	5.00	1320.70
28	37.389580	-83.112019	1318.40	5.00	1323.40
29	37.389881	-83.111681	1318.00	5.00	1323.00
30	37.390209	-83.111669	1317.30	5.00	1322.30
31	37.390573	-83.112050	1317.10	5.00	1322.10
32	37.391514	-83.112739	1319.00	5.00	1324.00
33	37.391569	-83.113011	1319.50	5.00	1324.50
34	37.392492	-83.112967	1310.60	5.00	1315.60
35	37.392910	-83.112953	1302.90	5.00	1307.90
36	37.394209	-83.112788	1298.60	5.00	1303.60
37	37.394475	-83.111848	1302.90	5.00	1307.90
38	37.394773	-83.111378	1307.40	5.00	1312.40
39	37.395101	-83.111366	1309.10	5.00	1314.10
40	37.395769	-83.111540	1308.60	5.00	1313.60
41	37.396080	-83.111660	1310.30	5.00	1315.30

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
42	37.396707	-83.112098	1310.50	5.00	1315.50
43	37.396831	-83.112718	1306.70	5.00	1311.70
44	37.397467	-83.112695	1307.90	5.00	1312.90
45	37.397755	-83.112828	1307.80	5.00	1312.80
46	37.398766	-83.113503	1306.40	5.00	1311.40
47	37.399059	-83.113833	1301.50	5.00	1306.50
48	37.399414	-83.114859	1252.80	5.00	1257.80
49	37.400098	-83.115754	1266.40	5.00	1271.40
50	37.400116	-83.116568	1266.90	5.00	1271.90

Route Receptors

Name: Buckhorn Road -1
Path type: Two-way
Azimuthal view angle: 50.0°
Downward view angle: 0.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.419185	-83.075579	1023.90	3.50	1027.40
2	37.419462	-83.075979	1028.23	3.50	1031.73
3	37.419780	-83.076695	1037.14	3.50	1040.64
4	37.419978	-83.077100	1024.68	3.50	1028.18
5	37.420048	-83.077355	1034.72	3.50	1038.22
6	37.420189	-83.077723	1025.59	3.50	1029.09
7	37.420382	-83.078130	1019.76	3.50	1023.26
8	37.420627	-83.078294	1012.28	3.50	1015.78
9	37.420823	-83.078643	1017.74	3.50	1021.24
10	37.420913	-83.078809	1027.85	3.50	1031.35
11	37.420998	-83.079085	1026.29	3.50	1029.79
12	37.421092	-83.079238	1026.15	3.50	1029.65
13	37.421599	-83.079635	1022.50	3.50	1026.00
14	37.421982	-83.079833	1022.48	3.50	1025.98
15	37.422165	-83.079975	1010.69	3.50	1014.19
16	37.422316	-83.080115	1004.61	3.50	1008.11
17	37.422756	-83.080192	992.04	3.50	995.54
18	37.423063	-83.080272	980.97	3.50	984.47

Name: Buckhorn Road-2
Path type: Two-way
Azimuthal view angle: 50.0°
Downward view angle: 0.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.430459	-83.102422	1046.36	3.50	1049.86
2	37.430284	-83.101934	1045.05	3.50	1048.55
3	37.430375	-83.101537	1055.09	3.50	1058.59
4	37.430766	-83.101028	1088.83	3.50	1092.33
5	37.431282	-83.100341	1115.87	3.50	1119.37
6	37.431635	-83.099649	1126.95	3.50	1130.45
7	37.432094	-83.098860	1139.87	3.50	1143.37
8	37.432529	-83.098260	1161.55	3.50	1165.05
9	37.432827	-83.097686	1177.08	3.50	1180.58
10	37.434322	-83.095556	1236.68	3.50	1240.18
11	37.435184	-83.094773	1243.79	3.50	1247.29
12	37.437477	-83.092293	1254.85	3.50	1258.35
13	37.437824	-83.091752	1257.98	3.50	1261.48
14	37.438163	-83.090893	1261.00	3.50	1264.50
15	37.438355	-83.090258	1263.81	3.50	1267.31
16	37.438841	-83.089375	1261.55	3.50	1265.05
17	37.439276	-83.088101	1262.33	3.50	1265.83
18	37.439864	-83.087270	1267.95	3.50	1271.45
19	37.440187	-83.086594	1268.40	3.50	1271.90
20	37.440213	-83.086111	1269.27	3.50	1272.77
21	37.439720	-83.083160	1268.10	3.50	1271.60
22	37.439396	-83.081330	1275.78	3.50	1279.28
23	37.439294	-83.080075	1285.95	3.50	1289.45
24	37.438987	-83.078455	1295.62	3.50	1299.12

Name: KY-478 -1
Path type: Two-way
Azimuthal view angle: 50.0°
Downward view angle: 0.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.403415	-83.210118	824.25	3.50	827.75
2	37.403816	-83.209657	836.98	3.50	840.48
3	37.404206	-83.208806	853.38	3.50	856.88
4	37.404474	-83.208538	852.47	3.50	855.97
5	37.405160	-83.208190	859.70	3.50	863.20
6	37.406618	-83.207498	865.77	3.50	869.27
7	37.407078	-83.207476	856.81	3.50	860.31
8	37.409098	-83.207675	830.65	3.50	834.15
9	37.409652	-83.207626	829.24	3.50	832.74
10	37.411796	-83.207294	862.51	3.50	866.01
11	37.412350	-83.206941	849.60	3.50	853.10
12	37.413070	-83.206206	831.72	3.50	835.22
13	37.413547	-83.205227	848.68	3.50	852.18
14	37.413833	-83.205001	847.27	3.50	850.77
15	37.414293	-83.205055	808.71	3.50	812.21
16	37.414821	-83.205414	802.98	3.50	806.48
17	37.415337	-83.206305	803.48	3.50	806.98
18	37.415890	-83.207270	803.07	3.50	806.57
19	37.416385	-83.207667	805.89	3.50	809.39
20	37.417098	-83.207921	817.54	3.50	821.04
21	37.417686	-83.207760	821.32	3.50	824.82
22	37.418753	-83.207111	811.90	3.50	815.40
23	37.419183	-83.207218	810.11	3.50	813.61
24	37.419383	-83.207604	808.81	3.50	812.31

Name: KY-478 -2
Path type: Two-way
Azimuthal view angle: 50.0°
Downward view angle: 0.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.384092	-83.190442	850.38	3.50	853.88
2	37.383692	-83.190539	852.98	3.50	856.48
3	37.383257	-83.190356	841.75	3.50	845.25
4	37.382916	-83.189873	869.26	3.50	872.76
5	37.381552	-83.187095	851.53	3.50	855.03
6	37.381484	-83.186397	848.38	3.50	851.88
7	37.381816	-83.185475	838.41	3.50	841.91
8	37.383025	-83.184380	854.91	3.50	858.41
9	37.384432	-83.183747	871.64	3.50	875.14
10	37.386256	-83.183447	853.58	3.50	857.08
11	37.386776	-83.183168	849.74	3.50	853.24
12	37.387330	-83.182191	838.36	3.50	841.86
13	37.387458	-83.181494	829.59	3.50	833.09
14	37.387143	-83.181001	823.43	3.50	826.93
15	37.386137	-83.180453	836.79	3.50	840.29
16	37.385012	-83.179381	848.29	3.50	851.79
17	37.384014	-83.178190	842.42	3.50	845.92
18	37.383629	-83.177514	853.50	3.50	857.00
19	37.383151	-83.175228	842.13	3.50	845.63
20	37.383203	-83.174531	838.71	3.50	842.21
21	37.383757	-83.173919	845.13	3.50	848.63
22	37.385044	-83.172793	842.53	3.50	846.03
23	37.385485	-83.171899	837.57	3.50	841.07
24	37.386465	-83.169110	861.06	3.50	864.56

Name: KY-80
Path type: Two-way
Azimuthal view angle: 50.0°
Downward view angle: 0.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.349553	-83.121551	1055.47	3.50	1058.97
2	37.350433	-83.119748	1091.09	3.50	1094.59
3	37.351781	-83.117602	1135.54	3.50	1139.04
4	37.362034	-83.107457	1140.91	3.50	1144.41
5	37.363154	-83.106698	1108.26	3.50	1111.76
6	37.364450	-83.106301	1083.83	3.50	1087.33
7	37.365380	-83.106301	1067.12	3.50	1070.62
8	37.367623	-83.106623	1051.60	3.50	1055.10
9	37.368622	-83.106344	1063.65	3.50	1067.15
10	37.369756	-83.105293	1070.01	3.50	1073.51
11	37.370336	-83.103748	1061.57	3.50	1065.07
12	37.371694	-83.094811	1024.38	3.50	1027.88
13	37.372481	-83.089610	973.43	3.50	976.93
14	37.372617	-83.086262	997.45	3.50	1000.95
15	37.372532	-83.083132	999.75	3.50	1003.25
16	37.372140	-83.080214	1009.56	3.50	1013.06
17	37.370516	-83.074084	1042.68	3.50	1046.18
18	37.369808	-83.071670	1053.97	3.50	1057.47
19	37.369553	-83.070243	1064.52	3.50	1068.02
20	37.369612	-83.068430	1074.26	3.50	1077.76
21	37.369927	-83.066788	1097.49	3.50	1100.99
22	37.371717	-83.061027	1119.45	3.50	1122.95
23	37.371802	-83.059063	1101.92	3.50	1105.42
24	37.371325	-83.056864	1097.91	3.50	1101.41

Name: Starfire Hand Road
Path type: Two-way
Azimuthal view angle: 50.0°
Downward view angle: 0.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.374674	-83.105554	1086.73	3.50	1090.23
2	37.375727	-83.105801	1136.37	3.50	1139.87
3	37.376218	-83.105704	1167.71	3.50	1171.21
4	37.376853	-83.105184	1208.45	3.50	1211.95
5	37.377144	-83.105157	1217.40	3.50	1220.90
6	37.378521	-83.106327	1268.20	3.50	1271.70
7	37.378845	-83.106338	1274.30	3.50	1277.80
8	37.379165	-83.105758	1298.55	3.50	1302.05
9	37.379301	-83.105222	1312.48	3.50	1315.98
10	37.379353	-83.104465	1329.52	3.50	1333.02
11	37.379570	-83.103763	1354.93	3.50	1358.43
12	37.379864	-83.103339	1366.54	3.50	1370.04
13	37.380225	-83.103280	1368.46	3.50	1371.96
14	37.382434	-83.103130	1378.50	3.50	1382.00
15	37.384020	-83.103832	1388.29	3.50	1391.79
16	37.384617	-83.103940	1388.26	3.50	1391.76
17	37.385569	-83.103607	1381.24	3.50	1384.74
18	37.387458	-83.102749	1375.99	3.50	1379.49
19	37.388199	-83.102690	1377.87	3.50	1381.37
20	37.388651	-83.103119	1380.97	3.50	1384.47
21	37.390375	-83.107341	1366.66	3.50	1370.16
22	37.392374	-83.110495	1362.73	3.50	1366.23
23	37.392937	-83.111026	1358.90	3.50	1362.40
24	37.394267	-83.110865	1316.39	3.50	1319.89

Discrete Observation Point Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	37.396945	-83.158588	1314.30	6.00
OP 2	2	37.384459	-83.159212	838.23	6.00
OP 3	3	37.378051	-83.123629	955.03	6.00
OP 4	4	37.423000	-83.080331	983.85	6.00
OP 5	5	37.382129	-83.134098	940.17	6.00
OP 6	6	37.385780	-83.133747	880.04	6.00
OP 7	7	37.449522	-83.079678	1435.28	6.00
OP 8	8	37.446937	-83.085180	1418.91	6.00
OP 9	9	37.438576	-83.076553	1332.34	6.00
OP 10	10	37.391575	-83.109213	1361.97	6.00
OP 11	11	37.348179	-83.117745	1320.89	6.00
OP 12	12	37.377018	-83.069076	1399.62	6.00
OP 13	13	37.380511	-83.108659	1357.01	6.00
OP 14	14	37.383060	-83.108026	1401.80	6.00
OP 15	15	37.340402	-83.156733	1381.46	6.00
OP 16	16	37.343232	-83.152797	1393.32	6.00
OP 17	17	37.342542	-83.148530	1144.02	6.00
OP 18	18	37.413754	-83.206763	866.49	6.00
OP 19	19	37.384042	-83.090774	945.06	6.00
OP 20	20	37.391949	-83.073849	975.29	6.00
OP 21	21	37.358322	-83.044081	1497.44	6.00
OP 22	22	37.365303	-83.237832	925.00	6.00
OP 23	23	37.381557	-83.250911	1271.44	6.00
OP 24	24	37.384616	-83.248354	1236.98	6.00

Glare Analysis Results

Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 10	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 11	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 12	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 13	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 14	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 15	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 16	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 17	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 18	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 2	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 3	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 4	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 5	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 6	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 7	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 8	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 9	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV: PV array 1 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 1 and Route: Buckhorn Road -1

No glare found

PV array 1 and Route: Buckhorn Road-2

No glare found

PV array 1 and Route: KY-478 -1

No glare found

PV array 1 and Route: KY-478 -2

No glare found

PV array 1 and Route: KY-80

No glare found

PV array 1 and Route: Starfire Hand Road

No glare found

PV array 1 and OP 1

No glare found

PV array 1 and OP 2

No glare found

PV array 1 and OP 3

No glare found

PV array 1 and OP 4

No glare found

PV array 1 and OP 5

No glare found

PV array 1 and OP 6

No glare found

PV array 1 and OP 7

No glare found

PV array 1 and OP 8

No glare found

PV array 1 and OP 9

No glare found

PV array 1 and OP 10

No glare found

PV array 1 and OP 11

No glare found

PV array 1 and OP 12

No glare found

PV array 1 and OP 13

No glare found

PV array 1 and OP 14

No glare found

PV array 1 and OP 15

No glare found

PV array 1 and OP 16

No glare found

PV array 1 and OP 17

No glare found

PV array 1 and OP 18

No glare found

PV array 1 and OP 19

No glare found

PV array 1 and OP 20

No glare found

PV array 1 and OP 21

No glare found

PV array 1 and OP 22

No glare found

PV array 1 and OP 23

No glare found

PV array 1 and OP 24

No glare found

PV: PV array 10 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 10 and Route: Buckhorn Road -1

No glare found

PV array 10 and Route: Buckhorn Road-2

No glare found

PV array 10 and Route: KY-478 -1

No glare found

PV array 10 and Route: KY-478 -2

No glare found

PV array 10 and Route: KY-80

No glare found

PV array 10 and Route: Starfire Hand Road

No glare found

PV array 10 and OP 1

No glare found

PV array 10 and OP 2

No glare found

PV array 10 and OP 3

No glare found

PV array 10 and OP 4

No glare found

PV array 10 and OP 5

No glare found

PV array 10 and OP 6

No glare found

PV array 10 and OP 7

No glare found

PV array 10 and OP 8

No glare found

PV array 10 and OP 9

No glare found

PV array 10 and OP 10

No glare found

PV array 10 and OP 11

No glare found

PV array 10 and OP 12

No glare found

PV array 10 and OP 13

No glare found

PV array 10 and OP 14

No glare found

PV array 10 and OP 15

No glare found

PV array 10 and OP 16

No glare found

PV array 10 and OP 17

No glare found

PV array 10 and OP 18

No glare found

PV array 10 and OP 19

No glare found

PV array 10 and OP 20

No glare found

PV array 10 and OP 21

No glare found

PV array 10 and OP 22

No glare found

PV array 10 and OP 23

No glare found

PV array 10 and OP 24

No glare found

PV: PV array 11 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 11 and Route: Buckhorn Road -1

No glare found

PV array 11 and Route: Buckhorn Road-2

No glare found

PV array 11 and Route: KY-478 -1

No glare found

PV array 11 and Route: KY-478 -2

No glare found

PV array 11 and Route: KY-80

No glare found

PV array 11 and Route: Starfire Hand Road

No glare found

PV array 11 and OP 1

No glare found

PV array 11 and OP 2

No glare found

PV array 11 and OP 3

No glare found

PV array 11 and OP 4

No glare found

PV array 11 and OP 5

No glare found

PV array 11 and OP 6

No glare found

PV array 11 and OP 7

No glare found

PV array 11 and OP 8

No glare found

PV array 11 and OP 9

No glare found

PV array 11 and OP 10

No glare found

PV array 11 and OP 11

No glare found

PV array 11 and OP 12

No glare found

PV array 11 and OP 13

No glare found

PV array 11 and OP 14

No glare found

PV array 11 and OP 15

No glare found

PV array 11 and OP 16

No glare found

PV array 11 and OP 17

No glare found

PV array 11 and OP 18

No glare found

PV array 11 and OP 19

No glare found

PV array 11 and OP 20

No glare found

PV array 11 and OP 21

No glare found

PV array 11 and OP 22

No glare found

PV array 11 and OP 23

No glare found

PV array 11 and OP 24

No glare found

PV: PV array 12 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 12 and Route: Buckhorn Road -1

No glare found

PV array 12 and Route: Buckhorn Road-2

No glare found

PV array 12 and Route: KY-478 -1

No glare found

PV array 12 and Route: KY-478 -2

No glare found

PV array 12 and Route: KY-80

No glare found

PV array 12 and Route: Starfire Hand Road

No glare found

PV array 12 and OP 1

No glare found

PV array 12 and OP 2

No glare found

PV array 12 and OP 3

No glare found

PV array 12 and OP 4

No glare found

PV array 12 and OP 5

No glare found

PV array 12 and OP 6

No glare found

PV array 12 and OP 7

No glare found

PV array 12 and OP 8

No glare found

PV array 12 and OP 9

No glare found

PV array 12 and OP 10

No glare found

PV array 12 and OP 11

No glare found

PV array 12 and OP 12

No glare found

PV array 12 and OP 13

No glare found

PV array 12 and OP 14

No glare found

PV array 12 and OP 15

No glare found

PV array 12 and OP 16

No glare found

PV array 12 and OP 17

No glare found

PV array 12 and OP 18

No glare found

PV array 12 and OP 19

No glare found

PV array 12 and OP 20

No glare found

PV array 12 and OP 21

No glare found

PV array 12 and OP 22

No glare found

PV array 12 and OP 23

No glare found

PV array 12 and OP 24

No glare found

PV: PV array 13 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 13 and Route: Buckhorn Road -1

No glare found

PV array 13 and Route: Buckhorn Road-2

No glare found

PV array 13 and Route: KY-478 -1

No glare found

PV array 13 and Route: KY-478 -2

No glare found

PV array 13 and Route: KY-80

No glare found

PV array 13 and Route: Starfire Hand Road

No glare found

PV array 13 and OP 1

No glare found

PV array 13 and OP 2

No glare found

PV array 13 and OP 3

No glare found

PV array 13 and OP 4

No glare found

PV array 13 and OP 5

No glare found

PV array 13 and OP 6

No glare found

PV array 13 and OP 7

No glare found

PV array 13 and OP 8

No glare found

PV array 13 and OP 9

No glare found

PV array 13 and OP 10

No glare found

PV array 13 and OP 11

No glare found

PV array 13 and OP 12

No glare found

PV array 13 and OP 13

No glare found

PV array 13 and OP 14

No glare found

PV array 13 and OP 15

No glare found

PV array 13 and OP 16

No glare found

PV array 13 and OP 17

No glare found

PV array 13 and OP 18

No glare found

PV array 13 and OP 19

No glare found

PV array 13 and OP 20

No glare found

PV array 13 and OP 21

No glare found

PV array 13 and OP 22

No glare found

PV array 13 and OP 23

No glare found

PV array 13 and OP 24

No glare found

PV: PV array 14 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 14 and Route: Buckhorn Road -1

No glare found

PV array 14 and Route: Buckhorn Road-2

No glare found

PV array 14 and Route: KY-478 -1

No glare found

PV array 14 and Route: KY-478 -2

No glare found

PV array 14 and Route: KY-80

No glare found

PV array 14 and Route: Starfire Hand Road

No glare found

PV array 14 and OP 1

No glare found

PV array 14 and OP 2

No glare found

PV array 14 and OP 3

No glare found

PV array 14 and OP 4

No glare found

PV array 14 and OP 5

No glare found

PV array 14 and OP 6

No glare found

PV array 14 and OP 7

No glare found

PV array 14 and OP 8

No glare found

PV array 14 and OP 9

No glare found

PV array 14 and OP 10

No glare found

PV array 14 and OP 11

No glare found

PV array 14 and OP 12

No glare found

PV array 14 and OP 13

No glare found

PV array 14 and OP 14

No glare found

PV array 14 and OP 15

No glare found

PV array 14 and OP 16

No glare found

PV array 14 and OP 17

No glare found

PV array 14 and OP 18

No glare found

PV array 14 and OP 19

No glare found

PV array 14 and OP 20

No glare found

PV array 14 and OP 21

No glare found

PV array 14 and OP 22

No glare found

PV array 14 and OP 23

No glare found

PV array 14 and OP 24

No glare found

PV: PV array 15 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 15 and Route: Buckhorn Road -1

No glare found

PV array 15 and Route: Buckhorn Road-2

No glare found

PV array 15 and Route: KY-478 -1

No glare found

PV array 15 and Route: KY-478 -2

No glare found

PV array 15 and Route: KY-80

No glare found

PV array 15 and Route: Starfire Hand Road

No glare found

PV array 15 and OP 1

No glare found

PV array 15 and OP 2

No glare found

PV array 15 and OP 3

No glare found

PV array 15 and OP 4

No glare found

PV array 15 and OP 5

No glare found

PV array 15 and OP 6

No glare found

PV array 15 and OP 7

No glare found

PV array 15 and OP 8

No glare found

PV array 15 and OP 9

No glare found

PV array 15 and OP 10

No glare found

PV array 15 and OP 11

No glare found

PV array 15 and OP 12

No glare found

PV array 15 and OP 13

No glare found

PV array 15 and OP 14

No glare found

PV array 15 and OP 15

No glare found

PV array 15 and OP 16

No glare found

PV array 15 and OP 17

No glare found

PV array 15 and OP 18

No glare found

PV array 15 and OP 19

No glare found

PV array 15 and OP 20

No glare found

PV array 15 and OP 21

No glare found

PV array 15 and OP 22

No glare found

PV array 15 and OP 23

No glare found

PV array 15 and OP 24

No glare found

PV: PV array 16 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 16 and Route: Buckhorn Road -1

No glare found

PV array 16 and Route: Buckhorn Road-2

No glare found

PV array 16 and Route: KY-478 -1

No glare found

PV array 16 and Route: KY-478 -2

No glare found

PV array 16 and Route: KY-80

No glare found

PV array 16 and Route: Starfire Hand Road

No glare found

PV array 16 and OP 1

No glare found

PV array 16 and OP 2

No glare found

PV array 16 and OP 3

No glare found

PV array 16 and OP 4

No glare found

PV array 16 and OP 5

No glare found

PV array 16 and OP 6

No glare found

PV array 16 and OP 7

No glare found

PV array 16 and OP 8

No glare found

PV array 16 and OP 9

No glare found

PV array 16 and OP 10

No glare found

PV array 16 and OP 11

No glare found

PV array 16 and OP 12

No glare found

PV array 16 and OP 13

No glare found

PV array 16 and OP 14

No glare found

PV array 16 and OP 15

No glare found

PV array 16 and OP 16

No glare found

PV array 16 and OP 17

No glare found

PV array 16 and OP 18

No glare found

PV array 16 and OP 19

No glare found

PV array 16 and OP 20

No glare found

PV array 16 and OP 21

No glare found

PV array 16 and OP 22

No glare found

PV array 16 and OP 23

No glare found

PV array 16 and OP 24

No glare found

PV: PV array 17 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 17 and Route: Buckhorn Road -1

No glare found

PV array 17 and Route: Buckhorn Road-2

No glare found

PV array 17 and Route: KY-478 -1

No glare found

PV array 17 and Route: KY-478 -2

No glare found

PV array 17 and Route: KY-80

No glare found

PV array 17 and Route: Starfire Hand Road

No glare found

PV array 17 and OP 1

No glare found

PV array 17 and OP 2

No glare found

PV array 17 and OP 3

No glare found

PV array 17 and OP 4

No glare found

PV array 17 and OP 5

No glare found

PV array 17 and OP 6

No glare found

PV array 17 and OP 7

No glare found

PV array 17 and OP 8

No glare found

PV array 17 and OP 9

No glare found

PV array 17 and OP 10

No glare found

PV array 17 and OP 11

No glare found

PV array 17 and OP 12

No glare found

PV array 17 and OP 13

No glare found

PV array 17 and OP 14

No glare found

PV array 17 and OP 15

No glare found

PV array 17 and OP 16

No glare found

PV array 17 and OP 17

No glare found

PV array 17 and OP 18

No glare found

PV array 17 and OP 19

No glare found

PV array 17 and OP 20

No glare found

PV array 17 and OP 21

No glare found

PV array 17 and OP 22

No glare found

PV array 17 and OP 23

No glare found

PV array 17 and OP 24

No glare found

PV: PV array 18 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 18 and Route: Buckhorn Road -1

No glare found

PV array 18 and Route: Buckhorn Road-2

No glare found

PV array 18 and Route: KY-478 -1

No glare found

PV array 18 and Route: KY-478 -2

No glare found

PV array 18 and Route: KY-80

No glare found

PV array 18 and Route: Starfire Hand Road

No glare found

PV array 18 and OP 1

No glare found

PV array 18 and OP 2

No glare found

PV array 18 and OP 3

No glare found

PV array 18 and OP 4

No glare found

PV array 18 and OP 5

No glare found

PV array 18 and OP 6

No glare found

PV array 18 and OP 7

No glare found

PV array 18 and OP 8

No glare found

PV array 18 and OP 9

No glare found

PV array 18 and OP 10

No glare found

PV array 18 and OP 11

No glare found

PV array 18 and OP 12

No glare found

PV array 18 and OP 13

No glare found

PV array 18 and OP 14

No glare found

PV array 18 and OP 15

No glare found

PV array 18 and OP 16

No glare found

PV array 18 and OP 17

No glare found

PV array 18 and OP 18

No glare found

PV array 18 and OP 19

No glare found

PV array 18 and OP 20

No glare found

PV array 18 and OP 21

No glare found

PV array 18 and OP 22

No glare found

PV array 18 and OP 23

No glare found

PV array 18 and OP 24

No glare found

PV: PV array 2 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 2 and Route: Buckhorn Road -1

No glare found

PV array 2 and Route: Buckhorn Road-2

No glare found

PV array 2 and Route: KY-478 -1

No glare found

PV array 2 and Route: KY-478 -2

No glare found

PV array 2 and Route: KY-80

No glare found

PV array 2 and Route: Starfire Hand Road

No glare found

PV array 2 and OP 1

No glare found

PV array 2 and OP 2

No glare found

PV array 2 and OP 3

No glare found

PV array 2 and OP 4

No glare found

PV array 2 and OP 5

No glare found

PV array 2 and OP 6

No glare found

PV array 2 and OP 7

No glare found

PV array 2 and OP 8

No glare found

PV array 2 and OP 9

No glare found

PV array 2 and OP 10

No glare found

PV array 2 and OP 11

No glare found

PV array 2 and OP 12

No glare found

PV array 2 and OP 13

No glare found

PV array 2 and OP 14

No glare found

PV array 2 and OP 15

No glare found

PV array 2 and OP 16

No glare found

PV array 2 and OP 17

No glare found

PV array 2 and OP 18

No glare found

PV array 2 and OP 19

No glare found

PV array 2 and OP 20

No glare found

PV array 2 and OP 21

No glare found

PV array 2 and OP 22

No glare found

PV array 2 and OP 23

No glare found

PV array 2 and OP 24

No glare found

PV: PV array 3 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 3 and Route: Buckhorn Road -1

No glare found

PV array 3 and Route: Buckhorn Road-2

No glare found

PV array 3 and Route: KY-478 -1

No glare found

PV array 3 and Route: KY-478 -2

No glare found

PV array 3 and Route: KY-80

No glare found

PV array 3 and Route: Starfire Hand Road

No glare found

PV array 3 and OP 1

No glare found

PV array 3 and OP 2

No glare found

PV array 3 and OP 3

No glare found

PV array 3 and OP 4

No glare found

PV array 3 and OP 5

No glare found

PV array 3 and OP 6

No glare found

PV array 3 and OP 7

No glare found

PV array 3 and OP 8

No glare found

PV array 3 and OP 9

No glare found

PV array 3 and OP 10

No glare found

PV array 3 and OP 11

No glare found

PV array 3 and OP 12

No glare found

PV array 3 and OP 13

No glare found

PV array 3 and OP 14

No glare found

PV array 3 and OP 15

No glare found

PV array 3 and OP 16

No glare found

PV array 3 and OP 17

No glare found

PV array 3 and OP 18

No glare found

PV array 3 and OP 19

No glare found

PV array 3 and OP 20

No glare found

PV array 3 and OP 21

No glare found

PV array 3 and OP 22

No glare found

PV array 3 and OP 23

No glare found

PV array 3 and OP 24

No glare found

PV: PV array 4 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 4 and Route: Buckhorn Road -1

No glare found

PV array 4 and Route: Buckhorn Road-2

No glare found

PV array 4 and Route: KY-478 -1

No glare found

PV array 4 and Route: KY-478 -2

No glare found

PV array 4 and Route: KY-80

No glare found

PV array 4 and Route: Starfire Hand Road

No glare found

PV array 4 and OP 1

No glare found

PV array 4 and OP 2

No glare found

PV array 4 and OP 3

No glare found

PV array 4 and OP 4

No glare found

PV array 4 and OP 5

No glare found

PV array 4 and OP 6

No glare found

PV array 4 and OP 7

No glare found

PV array 4 and OP 8

No glare found

PV array 4 and OP 9

No glare found

PV array 4 and OP 10

No glare found

PV array 4 and OP 11

No glare found

PV array 4 and OP 12

No glare found

PV array 4 and OP 13

No glare found

PV array 4 and OP 14

No glare found

PV array 4 and OP 15

No glare found

PV array 4 and OP 16

No glare found

PV array 4 and OP 17

No glare found

PV array 4 and OP 18

No glare found

PV array 4 and OP 19

No glare found

PV array 4 and OP 20

No glare found

PV array 4 and OP 21

No glare found

PV array 4 and OP 22

No glare found

PV array 4 and OP 23

No glare found

PV array 4 and OP 24

No glare found

PV: PV array 5 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 5 and Route: Buckhorn Road -1

No glare found

PV array 5 and Route: Buckhorn Road-2

No glare found

PV array 5 and Route: KY-478 -1

No glare found

PV array 5 and Route: KY-478 -2

No glare found

PV array 5 and Route: KY-80

No glare found

PV array 5 and Route: Starfire Hand Road

No glare found

PV array 5 and OP 1

No glare found

PV array 5 and OP 2

No glare found

PV array 5 and OP 3

No glare found

PV array 5 and OP 4

No glare found

PV array 5 and OP 5

No glare found

PV array 5 and OP 6

No glare found

PV array 5 and OP 7

No glare found

PV array 5 and OP 8

No glare found

PV array 5 and OP 9

No glare found

PV array 5 and OP 10

No glare found

PV array 5 and OP 11

No glare found

PV array 5 and OP 12

No glare found

PV array 5 and OP 13

No glare found

PV array 5 and OP 14

No glare found

PV array 5 and OP 15

No glare found

PV array 5 and OP 16

No glare found

PV array 5 and OP 17

No glare found

PV array 5 and OP 18

No glare found

PV array 5 and OP 19

No glare found

PV array 5 and OP 20

No glare found

PV array 5 and OP 21

No glare found

PV array 5 and OP 22

No glare found

PV array 5 and OP 23

No glare found

PV array 5 and OP 24

No glare found

PV: PV array 6 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 6 and Route: Buckhorn Road -1

No glare found

PV array 6 and Route: Buckhorn Road-2

No glare found

PV array 6 and Route: KY-478 -1

No glare found

PV array 6 and Route: KY-478 -2

No glare found

PV array 6 and Route: KY-80

No glare found

PV array 6 and Route: Starfire Hand Road

No glare found

PV array 6 and OP 1

No glare found

PV array 6 and OP 2

No glare found

PV array 6 and OP 3

No glare found

PV array 6 and OP 4

No glare found

PV array 6 and OP 5

No glare found

PV array 6 and OP 6

No glare found

PV array 6 and OP 7

No glare found

PV array 6 and OP 8

No glare found

PV array 6 and OP 9

No glare found

PV array 6 and OP 10

No glare found

PV array 6 and OP 11

No glare found

PV array 6 and OP 12

No glare found

PV array 6 and OP 13

No glare found

PV array 6 and OP 14

No glare found

PV array 6 and OP 15

No glare found

PV array 6 and OP 16

No glare found

PV array 6 and OP 17

No glare found

PV array 6 and OP 18

No glare found

PV array 6 and OP 19

No glare found

PV array 6 and OP 20

No glare found

PV array 6 and OP 21

No glare found

PV array 6 and OP 22

No glare found

PV array 6 and OP 23

No glare found

PV array 6 and OP 24

No glare found

PV: PV array 7 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 7 and Route: Buckhorn Road -1

No glare found

PV array 7 and Route: Buckhorn Road-2

No glare found

PV array 7 and Route: KY-478 -1

No glare found

PV array 7 and Route: KY-478 -2

No glare found

PV array 7 and Route: KY-80

No glare found

PV array 7 and Route: Starfire Hand Road

No glare found

PV array 7 and OP 1

No glare found

PV array 7 and OP 2

No glare found

PV array 7 and OP 3

No glare found

PV array 7 and OP 4

No glare found

PV array 7 and OP 5

No glare found

PV array 7 and OP 6

No glare found

PV array 7 and OP 7

No glare found

PV array 7 and OP 8

No glare found

PV array 7 and OP 9

No glare found

PV array 7 and OP 10

No glare found

PV array 7 and OP 11

No glare found

PV array 7 and OP 12

No glare found

PV array 7 and OP 13

No glare found

PV array 7 and OP 14

No glare found

PV array 7 and OP 15

No glare found

PV array 7 and OP 16

No glare found

PV array 7 and OP 17

No glare found

PV array 7 and OP 18

No glare found

PV array 7 and OP 19

No glare found

PV array 7 and OP 20

No glare found

PV array 7 and OP 21

No glare found

PV array 7 and OP 22

No glare found

PV array 7 and OP 23

No glare found

PV array 7 and OP 24

No glare found

PV: PV array 8 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 8 and Route: Buckhorn Road -1

No glare found

PV array 8 and Route: Buckhorn Road-2

No glare found

PV array 8 and Route: KY-478 -1

No glare found

PV array 8 and Route: KY-478 -2

No glare found

PV array 8 and Route: KY-80

No glare found

PV array 8 and Route: Starfire Hand Road

No glare found

PV array 8 and OP 1

No glare found

PV array 8 and OP 2

No glare found

PV array 8 and OP 3

No glare found

PV array 8 and OP 4

No glare found

PV array 8 and OP 5

No glare found

PV array 8 and OP 6

No glare found

PV array 8 and OP 7

No glare found

PV array 8 and OP 8

No glare found

PV array 8 and OP 9

No glare found

PV array 8 and OP 10

No glare found

PV array 8 and OP 11

No glare found

PV array 8 and OP 12

No glare found

PV array 8 and OP 13

No glare found

PV array 8 and OP 14

No glare found

PV array 8 and OP 15

No glare found

PV array 8 and OP 16

No glare found

PV array 8 and OP 17

No glare found

PV array 8 and OP 18

No glare found

PV array 8 and OP 19

No glare found

PV array 8 and OP 20

No glare found

PV array 8 and OP 21

No glare found

PV array 8 and OP 22

No glare found

PV array 8 and OP 23

No glare found

PV array 8 and OP 24

No glare found

PV: PV array 9 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 9 and Route: Buckhorn Road -1

No glare found

PV array 9 and Route: Buckhorn Road-2

No glare found

PV array 9 and Route: KY-478 -1

No glare found

PV array 9 and Route: KY-478 -2

No glare found

PV array 9 and Route: KY-80

No glare found

PV array 9 and Route: Starfire Hand Road

No glare found

PV array 9 and OP 1

No glare found

PV array 9 and OP 2

No glare found

PV array 9 and OP 3

No glare found

PV array 9 and OP 4

No glare found

PV array 9 and OP 5

No glare found

PV array 9 and OP 6

No glare found

PV array 9 and OP 7

No glare found

PV array 9 and OP 8

No glare found

PV array 9 and OP 9

No glare found

PV array 9 and OP 10

No glare found

PV array 9 and OP 11

No glare found

PV array 9 and OP 12

No glare found

PV array 9 and OP 13

No glare found

PV array 9 and OP 14

No glare found

PV array 9 and OP 15

No glare found

PV array 9 and OP 16

No glare found

PV array 9 and OP 17

No glare found

PV array 9 and OP 18

No glare found

PV array 9 and OP 19

No glare found

PV array 9 and OP 20

No glare found

PV array 9 and OP 21

No glare found

PV array 9 and OP 22

No glare found

PV array 9 and OP 23

No glare found

PV array 9 and OP 24

No glare found

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
The algorithm does not rigorously represent the detailed geometry of a system; detailed features such as gaps between modules, variable height of the PV array, and support structures may impact actual glare results. However, we have validated our models against several systems, including a PV array causing glare to the air-traffic control tower at Manchester-Boston Regional Airport and several sites in Albuquerque, and the tool accurately predicted the occurrence and intensity of glare at different times and days of the year.
Random number computations are utilized by various steps of the annual hazard analysis algorithm. Predicted minutes of glare can vary between runs as a result. This limitation primarily affects analyses of Observation Point receptors, including ATCTs. Note that the SGHAT/ ForgeSolar methodology has always relied on an analytical, qualitative approach to accurately determine the overall hazard (i.e. green vs. yellow) of expected glare on an annual basis.
The analysis does not automatically consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc.
The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
The variable direct normal irradiance (DNI) feature (if selected) scales the user-prescribed peak DNI using a typical clear-day irradiance profile. This profile has a lower DNI in the mornings and evenings and a maximum at solar noon. The scaling uses a clear-day irradiance profile based on a normalized time relative to sunrise, solar noon, and sunset, which are prescribed by a sun-position algorithm and the latitude and longitude obtained from Google maps. The actual DNI on any given day can be affected by cloud cover, atmospheric attenuation, and other environmental factors.
The ocular hazard predicted by the tool depends on a number of environmental, optical, and human factors, which can be uncertain. We provide input fields and typical ranges of values for these factors so that the user can vary these parameters to see if they have an impact on the results. The speed of SGHAT allows expedited sensitivity and parametric analyses.
The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

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This analysis was conducted using the best available radiometric modeling at the time of generation. Future updates to the modeling methodology may yield different results.

FORGESOLAR GLARE ANALYSIS

Project: **Starfire Solar**
Site configuration: **Starfire II Analysis 2- 2nd Story Receptors**
Calculated via ForgeSolar Radiometric Physics Engine v3.2.1

Created 23 Jul, 2026
Updated 28 Jul, 2026
Time-step 1 minute
Timezone offset UTC-5
Minimum sun altitude 0.0 deg
DNI peaks at 1,000.0 W/m^2
Category 100 MW to 1 GW
Site ID 184122.21171

Ocular transmission coefficient 0.5
Pupil diameter 0.002 m
Eye focal length 0.017 m
Sun subtended angle 9.3 mrad
Min luminance threshold 0 cd/m^2

Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 10	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 11	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 12	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 13	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 14	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 15	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 16	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 17	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 18	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 2	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 3	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 4	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 5	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 6	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 7	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 8	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 9	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

Component Data

PV Arrays

Name: PV array 1
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.399176	-83.113006	1313.00	5.00	1318.00
2	37.399120	-83.110513	1301.50	5.00	1306.50
3	37.398720	-83.110680	1302.80	5.00	1307.80
4	37.398420	-83.111111	1308.10	5.00	1313.10
5	37.397429	-83.111146	1311.10	5.00	1316.10
6	37.397118	-83.111025	1311.70	5.00	1316.70
7	37.397069	-83.107731	1318.50	5.00	1323.50
8	37.397351	-83.107669	1311.40	5.00	1316.40
9	37.397310	-83.105806	1344.20	5.00	1349.20
10	37.396626	-83.105845	1365.70	5.00	1370.70
11	37.396321	-83.107902	1342.70	5.00	1347.70
12	37.396031	-83.108700	1338.50	5.00	1343.50
13	37.395731	-83.109618	1331.40	5.00	1336.40
14	37.395542	-83.109756	1333.70	5.00	1338.70
15	37.394917	-83.109855	1357.90	5.00	1362.90
16	37.394589	-83.109867	1361.60	5.00	1366.60
17	37.394053	-83.109754	1365.40	5.00	1370.40
18	37.394047	-83.109492	1366.30	5.00	1371.30
19	37.393253	-83.109504	1369.30	5.00	1374.30
20	37.393299	-83.110502	1363.50	5.00	1368.50
21	37.392663	-83.110525	1365.10	5.00	1370.10
22	37.392344	-83.110115	1365.60	5.00	1370.60
23	37.392331	-83.109525	1365.70	5.00	1370.70
24	37.392451	-83.108219	1370.60	5.00	1375.60
25	37.392690	-83.106099	1372.50	5.00	1377.50
26	37.392989	-83.105629	1374.60	5.00	1379.60
27	37.393289	-83.105290	1377.60	5.00	1382.60
28	37.393945	-83.104939	1383.30	5.00	1388.30
29	37.394253	-83.104890	1392.80	5.00	1397.80
30	37.394273	-83.103823	1397.40	5.00	1402.40
31	37.393921	-83.103851	1387.90	5.00	1392.90
32	37.393885	-83.102250	1373.30	5.00	1378.30
33	37.394190	-83.102251	1382.00	5.00	1387.00
34	37.394514	-83.102371	1392.80	5.00	1397.80
35	37.394971	-83.102488	1399.10	5.00	1404.10
36	37.396217	-83.102037	1396.00	5.00	1401.00
37	37.397130	-83.101441	1395.10	5.00	1400.10
38	37.397483	-83.101336	1398.80	5.00	1403.80
39	37.398099	-83.101276	1405.10	5.00	1410.10
40	37.398016	-83.097576	1344.30	5.00	1349.30
41	37.398312	-83.097040	1317.50	5.00	1322.50

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
42	37.398728	-83.096041	1295.40	5.00	1300.40
43	37.399024	-83.095505	1294.60	5.00	1299.60
44	37.399235	-83.094579	1302.00	5.00	1307.00
45	37.399540	-83.094437	1309.10	5.00	1314.10
46	37.399847	-83.094360	1330.10	5.00	1335.10
47	37.400483	-83.094338	1338.50	5.00	1343.50
48	37.400507	-83.095414	1333.40	5.00	1338.40
49	37.400616	-83.095580	1337.10	5.00	1342.10
50	37.401252	-83.095558	1342.40	5.00	1347.40
51	37.401420	-83.103063	1295.30	5.00	1300.30
52	37.401442	-83.104020	1311.30	5.00	1316.30
53	37.401748	-83.104876	1314.80	5.00	1319.80
54	37.402450	-83.105587	1299.10	5.00	1304.10
55	37.402479	-83.106099	1309.10	5.00	1314.10
56	37.403124	-83.106061	1281.90	5.00	1286.90
57	37.403148	-83.107138	1304.90	5.00	1309.90
58	37.403286	-83.107445	1305.00	5.00	1310.00
59	37.404874	-83.107324	1330.40	5.00	1335.40
60	37.405510	-83.107302	1327.30	5.00	1332.30
61	37.405516	-83.107591	1330.40	5.00	1335.40
62	37.405222	-83.108231	1335.60	5.00	1340.60
63	37.404927	-83.108859	1341.20	5.00	1346.20
64	37.404613	-83.109056	1342.30	5.00	1347.30
65	37.403019	-83.109130	1354.90	5.00	1359.90
66	37.403052	-83.110769	1358.10	5.00	1363.10
67	37.403380	-83.110758	1356.90	5.00	1361.90
68	37.403407	-83.111965	1350.00	5.00	1355.00
69	37.403145	-83.112780	1341.60	5.00	1346.60
70	37.401796	-83.113138	1325.30	5.00	1330.30
71	37.400878	-83.113498	1317.80	5.00	1322.80
72	37.400113	-83.113525	1314.30	5.00	1319.30
73	37.399176	-83.113006	1313.00	5.00	1318.00

Name: PV array 10
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.392020	-83.110965	1353.10	5.00	1358.10
2	37.391052	-83.111010	1340.70	5.00	1345.70
3	37.390434	-83.110966	1331.00	5.00	1336.00
4	37.390411	-83.109956	1334.50	5.00	1339.50
5	37.390714	-83.109682	1351.10	5.00	1356.10
6	37.391350	-83.109660	1359.40	5.00	1364.40
7	37.391668	-83.110108	1357.40	5.00	1362.40
8	37.392065	-83.110500	1358.20	5.00	1363.20
9	37.392020	-83.110965	1353.10	5.00	1358.10

Name: PV array 11
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.387246	-83.116043	1288.80	5.00	1293.80
2	37.387319	-83.118519	1266.50	5.00	1271.50
3	37.387603	-83.118498	1263.90	5.00	1268.90
4	37.387947	-83.120061	1270.20	5.00	1275.20
5	37.387962	-83.120744	1269.80	5.00	1274.80
6	37.387634	-83.120755	1271.30	5.00	1276.30
7	37.387015	-83.120646	1277.00	5.00	1282.00
8	37.386866	-83.118879	1269.80	5.00	1274.80
9	37.386228	-83.118836	1268.50	5.00	1273.50
10	37.386165	-83.116016	1283.60	5.00	1288.60
11	37.386112	-83.113628	1292.60	5.00	1297.60
12	37.385802	-83.113600	1283.10	5.00	1288.10
13	37.385481	-83.113020	1283.80	5.00	1288.80
14	37.385400	-83.109387	1280.80	5.00	1285.80
15	37.386302	-83.108305	1284.80	5.00	1289.80
16	37.386737	-83.108158	1287.50	5.00	1292.50
17	37.387029	-83.107426	1284.10	5.00	1289.10
18	37.387332	-83.107153	1281.50	5.00	1286.50
19	37.387967	-83.107131	1279.70	5.00	1284.70
20	37.388944	-83.107293	1304.10	5.00	1309.10
21	37.389047	-83.111911	1318.60	5.00	1323.60

Name: PV array 12
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.401581	-83.123266	1283.20	5.00	1288.20
2	37.400945	-83.123288	1291.80	5.00	1296.80
3	37.401157	-83.122332	1295.40	5.00	1300.40
4	37.402380	-83.120517	1315.10	5.00	1320.10
5	37.403016	-83.120495	1306.20	5.00	1311.20
6	37.401793	-83.122337	1286.50	5.00	1291.50
7	37.401760	-83.122445	1286.40	5.00	1291.40
8	37.401581	-83.123266	1283.20	5.00	1288.20

Name: PV array 13
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.401098	-83.124561	1280.90	5.00	1285.90
2	37.401114	-83.125244	1279.10	5.00	1284.10
3	37.400784	-83.126437	1279.90	5.00	1284.90
4	37.400492	-83.127169	1279.90	5.00	1284.90
5	37.399856	-83.127191	1284.00	5.00	1289.00
6	37.399810	-83.125131	1285.60	5.00	1290.60
7	37.400770	-83.124572	1283.20	5.00	1288.20
8	37.401098	-83.124561	1280.90	5.00	1285.90

Name: PV array 14
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.400196	-83.129784	1291.50	5.00	1296.50
2	37.399248	-83.130933	1284.60	5.00	1289.60
3	37.398943	-83.131075	1284.20	5.00	1289.20
4	37.398615	-83.131087	1284.50	5.00	1289.50
5	37.398590	-83.129945	1283.20	5.00	1288.20
6	37.399517	-83.127877	1281.70	5.00	1286.70
7	37.399822	-83.127736	1277.70	5.00	1282.70
8	37.400150	-83.127724	1279.20	5.00	1284.20
9	37.400196	-83.129784	1291.50	5.00	1296.50

Name: PV array 15
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.399016	-83.133154	1284.70	5.00	1289.70
2	37.398345	-83.132850	1278.10	5.00	1283.10
3	37.398324	-83.131904	1281.90	5.00	1286.90
4	37.398960	-83.131882	1284.80	5.00	1289.80
5	37.399004	-83.132603	1285.70	5.00	1290.70
6	37.399332	-83.132591	1286.70	5.00	1291.70
7	37.399344	-83.133143	1285.90	5.00	1290.90

Name: PV array 16
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.398481	-83.125502	1290.50	5.00	1295.50
2	37.398470	-83.126602	1316.60	5.00	1321.60
3	37.398770	-83.126605	1312.50	5.00	1317.50
4	37.398787	-83.127526	1316.70	5.00	1321.70
5	37.397938	-83.129772	1320.90	5.00	1325.90
6	37.397336	-83.131329	1325.90	5.00	1330.90
7	37.396700	-83.131351	1299.90	5.00	1304.90
8	37.396679	-83.130406	1311.80	5.00	1316.80
9	37.397005	-83.130356	1330.80	5.00	1335.80
10	37.396945	-83.127640	1288.60	5.00	1293.60
11	37.397170	-83.126122	1284.60	5.00	1289.60
12	37.398151	-83.126100	1306.70	5.00	1311.70
13	37.398118	-83.124974	1285.80	5.00	1290.80
14	37.397761	-83.124947	1283.30	5.00	1288.30
15	37.397755	-83.124658	1285.40	5.00	1290.40
16	37.398100	-83.124186	1296.70	5.00	1301.70
17	37.398406	-83.124044	1299.90	5.00	1304.90
18	37.399042	-83.124022	1291.40	5.00	1296.40
19	37.399075	-83.125492	1293.90	5.00	1298.90

Name: PV array 17
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.401892	-83.143360	1250.80	5.00	1255.80
2	37.401916	-83.143961	1260.70	5.00	1265.70
3	37.401609	-83.144011	1241.00	5.00	1246.00
4	37.401621	-83.144562	1234.30	5.00	1239.30
5	37.401293	-83.144574	1233.20	5.00	1238.20
6	37.401232	-83.141792	1261.30	5.00	1266.30
7	37.401537	-83.141650	1256.20	5.00	1261.20
8	37.401865	-83.141639	1249.50	5.00	1254.50
9	37.401879	-83.142295	1247.70	5.00	1252.70
10	37.402190	-83.142350	1262.40	5.00	1267.40
11	37.402212	-83.143360	1273.50	5.00	1278.50

Name: PV array 18
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.400203	-83.144890	1295.10	5.00	1300.10
2	37.400512	-83.144918	1284.50	5.00	1289.50
3	37.400521	-83.145345	1297.70	5.00	1302.70
4	37.400831	-83.145400	1286.90	5.00	1291.90
5	37.401155	-83.146111	1280.10	5.00	1285.10
6	37.401181	-83.147291	1266.50	5.00	1271.50
7	37.401536	-83.147279	1246.30	5.00	1251.30
8	37.401563	-83.148487	1216.00	5.00	1221.00
9	37.401208	-83.148499	1225.30	5.00	1230.30
10	37.401222	-83.149155	1210.60	5.00	1215.60
11	37.400915	-83.149231	1220.70	5.00	1225.70
12	37.400611	-83.149439	1234.00	5.00	1239.00
13	37.400310	-83.149777	1244.20	5.00	1249.20
14	37.399955	-83.149789	1242.80	5.00	1247.80
15	37.399981	-83.150970	1261.40	5.00	1266.40
16	37.399681	-83.151374	1250.60	5.00	1255.60
17	37.398736	-83.151407	1262.30	5.00	1267.30
18	37.398714	-83.150396	1263.40	5.00	1268.40
19	37.399014	-83.150386	1266.70	5.00	1271.70
20	37.399003	-83.149533	1270.90	5.00	1275.90
21	37.399291	-83.149534	1278.50	5.00	1283.50
22	37.399264	-83.147647	1319.60	5.00	1324.60
23	37.398962	-83.147657	1324.80	5.00	1329.80
24	37.398644	-83.147209	1334.90	5.00	1339.90
25	37.398526	-83.146819	1348.40	5.00	1353.40
26	37.397890	-83.146841	1352.20	5.00	1357.20
27	37.397578	-83.146721	1361.20	5.00	1366.20
28	37.397240	-83.146601	1354.70	5.00	1359.70
29	37.396935	-83.146743	1325.00	5.00	1330.00
30	37.396627	-83.146819	1315.80	5.00	1320.80
31	37.395884	-83.146943	1312.60	5.00	1317.60
32	37.394962	-83.146975	1314.80	5.00	1319.80
33	37.394975	-83.147538	1311.40	5.00	1316.40
34	37.395279	-83.147527	1308.80	5.00	1313.80
35	37.395284	-83.147751	1304.20	5.00	1309.20
36	37.394983	-83.148090	1308.10	5.00	1313.10
37	37.394629	-83.148168	1309.80	5.00	1314.80
38	37.393993	-83.148189	1304.30	5.00	1309.30
39	37.393983	-83.148059	1307.00	5.00	1312.00
40	37.393373	-83.148080	1327.30	5.00	1332.30
41	37.393345	-83.146807	1335.30	5.00	1340.30

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
42	37.393649	-83.146796	1327.70	5.00	1332.70
43	37.393609	-83.144763	1269.10	5.00	1274.10
44	37.393912	-83.144490	1273.60	5.00	1278.60
45	37.394219	-83.144440	1276.50	5.00	1281.50
46	37.394198	-83.143495	1280.80	5.00	1285.80
47	37.394546	-83.143155	1284.60	5.00	1289.60
48	37.395360	-83.142273	1291.40	5.00	1296.40
49	37.396195	-83.142113	1284.50	5.00	1289.50
50	37.397473	-83.141938	1272.30	5.00	1277.30
51	37.398082	-83.141588	1285.20	5.00	1290.20
52	37.398519	-83.141508	1295.20	5.00	1300.20
53	37.398791	-83.140943	1300.40	5.00	1305.40
54	37.399423	-83.140557	1311.20	5.00	1316.20
55	37.399763	-83.139824	1288.00	5.00	1293.00
56	37.400064	-83.139485	1279.60	5.00	1284.60
57	37.400700	-83.139463	1292.30	5.00	1297.30
58	37.400754	-83.141917	1274.70	5.00	1279.70

Name: PV array 2
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.401469	-83.100343	1345.00	5.00	1350.00
2	37.401769	-83.099938	1322.70	5.00	1327.70
3	37.402067	-83.099468	1317.70	5.00	1322.70
4	37.402364	-83.098933	1322.00	5.00	1327.00
5	37.403606	-83.096799	1335.80	5.00	1340.80
6	37.403951	-83.096710	1341.50	5.00	1346.50
7	37.404279	-83.096699	1343.70	5.00	1348.70
8	37.404307	-83.096906	1341.30	5.00	1346.30
9	37.405185	-83.096875	1349.40	5.00	1354.40
10	37.405313	-83.096662	1350.60	5.00	1355.60
11	37.405615	-83.096323	1353.90	5.00	1358.90
12	37.405914	-83.095919	1355.80	5.00	1360.80
13	37.406242	-83.095907	1347.30	5.00	1352.30
14	37.406262	-83.096787	1335.90	5.00	1340.90
15	37.406571	-83.096842	1319.80	5.00	1324.80
16	37.406626	-83.098060	1297.70	5.00	1302.70
17	37.406954	-83.098049	1281.70	5.00	1286.70
18	37.406971	-83.098797	1327.20	5.00	1332.20
19	37.407282	-83.098956	1345.70	5.00	1350.70
20	37.407596	-83.099142	1352.40	5.00	1357.40
21	37.407905	-83.099197	1352.80	5.00	1357.80
22	37.408263	-83.099316	1337.90	5.00	1342.90
23	37.408548	-83.099109	1312.70	5.00	1317.70
24	37.408701	-83.097987	1285.30	5.00	1290.30
25	37.409029	-83.097976	1272.50	5.00	1277.50
26	37.409604	-83.098284	1287.30	5.00	1292.30
27	37.409663	-83.100935	1343.70	5.00	1348.70
28	37.409240	-83.101606	1347.30	5.00	1352.30
29	37.408943	-83.102076	1345.80	5.00	1350.80
30	37.408637	-83.102218	1347.40	5.00	1352.40
31	37.408346	-83.103016	1348.60	5.00	1353.60
32	37.408004	-83.103619	1349.60	5.00	1354.60
33	37.407705	-83.104024	1357.50	5.00	1362.50
34	37.407397	-83.104100	1373.70	5.00	1378.70
35	37.407096	-83.104412	1364.50	5.00	1369.50
36	37.407111	-83.105095	1349.50	5.00	1354.50
37	37.406760	-83.105304	1352.60	5.00	1357.60
38	37.406072	-83.105317	1380.20	5.00	1385.20
39	37.406082	-83.106247	1338.10	5.00	1343.10
40	37.405780	-83.106520	1336.40	5.00	1341.40
41	37.405427	-83.106664	1342.30	5.00	1347.30

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
42	37.404174	-83.106708	1308.30	5.00	1313.30
43	37.403816	-83.106589	1307.70	5.00	1312.70
44	37.403785	-83.105212	1303.60	5.00	1308.60
45	37.403476	-83.105157	1296.40	5.00	1301.40
46	37.403152	-83.104512	1307.60	5.00	1312.60
47	37.402828	-83.103801	1322.00	5.00	1327.00
48	37.402793	-83.103474	1318.80	5.00	1323.80
49	37.402157	-83.103496	1307.00	5.00	1312.00
50	37.402096	-83.102960	1313.80	5.00	1318.80
51	37.401529	-83.102993	1288.10	5.00	1293.10

Name: PV array 3
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.406026	-83.094067	1344.10	5.00	1349.10
2	37.404747	-83.094178	1356.50	5.00	1361.50
3	37.403160	-83.094300	1302.70	5.00	1307.70
4	37.402216	-83.094333	1249.50	5.00	1254.50
5	37.402173	-83.092431	1376.70	5.00	1381.70
6	37.402125	-83.090305	1418.60	5.00	1423.60
7	37.402110	-83.089610	1439.30	5.00	1444.30
8	37.402038	-83.086435	1384.20	5.00	1389.20
9	37.402343	-83.086435	1380.70	5.00	1385.70
10	37.403302	-83.086850	1370.10	5.00	1375.10
11	37.403948	-83.087101	1348.40	5.00	1353.40
12	37.404595	-83.087395	1318.30	5.00	1323.30
13	37.404941	-83.087869	1312.50	5.00	1317.50
14	37.405247	-83.087700	1280.30	5.00	1285.30
15	37.406209	-83.087272	1254.00	5.00	1259.00
16	37.406537	-83.087260	1250.50	5.00	1255.50
17	37.406852	-83.087512	1249.40	5.00	1254.40
18	37.407188	-83.088747	1241.70	5.00	1246.70
19	37.407203	-83.089430	1239.60	5.00	1244.60
20	37.406590	-83.089622	1239.60	5.00	1244.60
21	37.406651	-83.093244	1315.40	5.00	1320.40
22	37.406356	-83.093975	1342.50	5.00	1347.50

Name: PV array 4
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.411337	-83.096857	1221.10	5.00	1226.10
2	37.411009	-83.096869	1224.40	5.00	1229.40
3	37.410892	-83.096544	1223.60	5.00	1228.60
4	37.410256	-83.096567	1232.50	5.00	1237.50
5	37.409281	-83.096470	1238.00	5.00	1243.00
6	37.408968	-83.096284	1239.60	5.00	1244.60
7	37.408652	-83.095967	1240.20	5.00	1245.20
8	37.408619	-83.094497	1238.50	5.00	1243.50
9	37.408310	-83.094469	1240.50	5.00	1245.50
10	37.408298	-83.093917	1242.40	5.00	1247.40
11	37.408911	-83.093907	1239.70	5.00	1244.70
12	37.409244	-83.093949	1238.20	5.00	1243.20
13	37.409554	-83.094004	1235.10	5.00	1240.10
14	37.409889	-83.093992	1232.70	5.00	1237.70
15	37.410854	-83.093630	1240.70	5.00	1245.70
16	37.411490	-83.093608	1250.10	5.00	1255.10
17	37.411777	-83.093675	1251.70	5.00	1256.70
18	37.412114	-83.093914	1250.20	5.00	1255.20
19	37.412481	-83.094387	1249.40	5.00	1254.40
20	37.412800	-83.094875	1245.40	5.00	1250.40
21	37.412894	-83.095358	1237.50	5.00	1242.50
22	37.412592	-83.095697	1225.20	5.00	1230.20
23	37.412246	-83.096103	1218.90	5.00	1223.90
24	37.411945	-83.096442	1217.20	5.00	1222.20
25	37.411642	-83.096715	1218.50	5.00	1223.50
26	37.411337	-83.096857	1221.10	5.00	1226.10

Name: PV array 5
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.412026	-83.098510	1247.40	5.00	1252.40
2	37.412009	-83.097762	1214.70	5.00	1219.70
3	37.412310	-83.097423	1207.60	5.00	1212.60
4	37.412659	-83.097109	1208.30	5.00	1213.30
5	37.413297	-83.096942	1210.70	5.00	1215.70
6	37.413908	-83.096907	1215.20	5.00	1220.20
7	37.414238	-83.096633	1220.10	5.00	1225.10
8	37.414542	-83.096425	1217.70	5.00	1222.70
9	37.414841	-83.096020	1236.70	5.00	1241.70
10	37.416092	-83.094663	1339.10	5.00	1344.10
11	37.416437	-83.094191	1342.10	5.00	1347.10
12	37.416720	-83.093065	1334.50	5.00	1339.50
13	37.416979	-83.092925	1332.60	5.00	1337.60
14	37.417615	-83.092902	1329.00	5.00	1334.00
15	37.418045	-83.092559	1317.60	5.00	1322.60
16	37.418338	-83.091826	1319.50	5.00	1324.50
17	37.417715	-83.091613	1321.40	5.00	1326.40
18	37.417713	-83.091520	1322.50	5.00	1327.50
19	37.418014	-83.091181	1333.20	5.00	1338.20
20	37.418342	-83.091050	1344.70	5.00	1349.70
21	37.418624	-83.090831	1354.90	5.00	1359.90
22	37.419281	-83.090545	1372.50	5.00	1377.50
23	37.419607	-83.090348	1380.60	5.00	1385.60
24	37.419891	-83.090196	1387.90	5.00	1392.90
25	37.420547	-83.089844	1393.00	5.00	1398.00
26	37.420842	-83.089243	1387.40	5.00	1392.40
27	37.421170	-83.089231	1402.60	5.00	1407.60
28	37.421487	-83.089614	1397.50	5.00	1402.50
29	37.421851	-83.089995	1392.50	5.00	1397.50
30	37.422757	-83.090171	1369.20	5.00	1374.20
31	37.423145	-83.090540	1363.60	5.00	1368.60
32	37.423459	-83.090792	1363.30	5.00	1368.30
33	37.423467	-83.091147	1355.20	5.00	1360.20
34	37.423162	-83.091289	1348.40	5.00	1353.40
35	37.422809	-83.091433	1343.10	5.00	1348.10
36	37.422198	-83.091690	1343.90	5.00	1348.90
37	37.421868	-83.091783	1343.20	5.00	1348.20
38	37.421564	-83.091805	1347.40	5.00	1352.40
39	37.421225	-83.091659	1351.60	5.00	1356.60
40	37.421290	-83.094573	1218.20	5.00	1223.20
41	37.421605	-83.094863	1236.90	5.00	1241.90

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
42	37.422274	-83.095102	1254.30	5.00	1259.30
43	37.422563	-83.095234	1258.60	5.00	1263.60
44	37.422616	-83.096561	1355.20	5.00	1360.20
45	37.422288	-83.096573	1380.90	5.00	1385.90
46	37.421665	-83.096332	1404.50	5.00	1409.50
47	37.420383	-83.096312	1406.60	5.00	1411.60
48	37.419718	-83.096243	1406.30	5.00	1411.30
49	37.419407	-83.096149	1401.70	5.00	1406.70
50	37.419070	-83.096095	1394.80	5.00	1399.80
51	37.418769	-83.096434	1394.90	5.00	1399.90
52	37.418468	-83.096773	1390.30	5.00	1395.30
53	37.418170	-83.097243	1390.60	5.00	1395.60
54	37.417773	-83.097848	1398.70	5.00	1403.70
55	37.417137	-83.097871	1386.40	5.00	1391.40
56	37.416822	-83.097619	1367.90	5.00	1372.90
57	37.416504	-83.097171	1345.40	5.00	1350.40
58	37.416173	-83.097379	1326.80	5.00	1331.80
59	37.415873	-83.097784	1276.70	5.00	1281.70
60	37.415569	-83.097991	1224.40	5.00	1229.40
61	37.415218	-83.098201	1189.70	5.00	1194.70
62	37.414913	-83.098343	1178.30	5.00	1183.30
63	37.414607	-83.098485	1179.70	5.00	1184.70
64	37.413947	-83.098639	1190.50	5.00	1195.50
65	37.413336	-83.098924	1201.70	5.00	1206.70
66	37.412700	-83.098946	1231.70	5.00	1236.70
67	37.412340	-83.098762	1243.60	5.00	1248.60
68	37.412026	-83.098510	1247.40	5.00	1252.40

Name: PV array 6
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.413314	-83.093366	1411.40	5.00	1416.40
2	37.412991	-83.092721	1420.30	5.00	1425.30
3	37.412673	-83.092312	1422.80	5.00	1427.80
4	37.412218	-83.091895	1432.00	5.00	1437.00
5	37.411273	-83.091928	1431.20	5.00	1436.20
6	37.410300	-83.091897	1436.50	5.00	1441.50
7	37.409967	-83.090793	1425.50	5.00	1430.50
8	37.409915	-83.088470	1357.50	5.00	1362.50
9	37.410220	-83.088328	1359.50	5.00	1364.50
10	37.410827	-83.087912	1371.00	5.00	1376.00
11	37.411131	-83.085604	1412.40	5.00	1417.40
12	37.411413	-83.084412	1403.80	5.00	1408.80
13	37.411717	-83.084204	1395.60	5.00	1400.60
14	37.412024	-83.084128	1387.10	5.00	1392.10
15	37.412352	-83.084116	1381.00	5.00	1386.00
16	37.412474	-83.083455	1368.50	5.00	1373.50
17	37.412802	-83.083444	1363.90	5.00	1368.90
18	37.413128	-83.084220	1379.00	5.00	1384.00
19	37.413456	-83.085062	1378.30	5.00	1383.30
20	37.413467	-83.085548	1374.70	5.00	1379.70
21	37.412851	-83.085608	1396.60	5.00	1401.60
22	37.412863	-83.086133	1385.60	5.00	1390.60
23	37.413481	-83.086177	1372.50	5.00	1377.50
24	37.413790	-83.086232	1362.90	5.00	1367.90
25	37.413801	-83.086718	1353.40	5.00	1358.40
26	37.413497	-83.086899	1355.00	5.00	1360.00
27	37.413569	-83.089142	1345.90	5.00	1350.90
28	37.413855	-83.089118	1347.60	5.00	1352.60
29	37.414233	-83.090090	1431.60	5.00	1436.60
30	37.414572	-83.091457	1413.90	5.00	1418.90
31	37.414894	-83.092036	1393.60	5.00	1398.60
32	37.414919	-83.093178	1397.50	5.00	1402.50
33	37.414316	-83.093791	1402.50	5.00	1407.50
34	37.414047	-83.093917	1411.00	5.00	1416.00
35	37.413634	-83.093880	1406.90	5.00	1411.90

Name: PV array 7
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.412329	-83.083093	1364.20	5.00	1369.20
2	37.411693	-83.083116	1380.60	5.00	1385.60
3	37.411376	-83.082799	1379.00	5.00	1384.00
4	37.411052	-83.082088	1376.30	5.00	1381.30
5	37.411037	-83.081405	1372.60	5.00	1377.60
6	37.410836	-83.081176	1375.10	5.00	1380.10
7	37.410854	-83.080492	1372.90	5.00	1377.90
8	37.411000	-83.079765	1375.90	5.00	1380.90
9	37.411916	-83.079339	1375.30	5.00	1380.30
10	37.413216	-83.079293	1376.60	5.00	1381.60
11	37.413222	-83.079582	1371.70	5.00	1376.70
12	37.412920	-83.079855	1366.50	5.00	1371.50
13	37.412267	-83.080377	1366.10	5.00	1371.10
14	37.412115	-83.080803	1361.40	5.00	1366.40
15	37.411981	-83.081372	1363.40	5.00	1368.40
16	37.412306	-83.082082	1364.30	5.00	1369.30
17	37.412329	-83.083093	1364.20	5.00	1369.20

Name: PV array 8
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.416897	-83.090999	1338.40	5.00	1343.40
2	37.416298	-83.091622	1328.80	5.00	1333.80
3	37.415990	-83.091633	1334.60	5.00	1339.60
4	37.415983	-83.090453	1345.90	5.00	1350.90
5	37.415655	-83.090465	1349.30	5.00	1354.30
6	37.415613	-83.088601	1357.60	5.00	1362.60
7	37.416866	-83.088557	1370.30	5.00	1375.30
8	37.416893	-83.089764	1362.90	5.00	1367.90
9	37.416897	-83.090999	1338.40	5.00	1343.40

Name: PV array 9
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.396911	-83.121275	1208.70	5.00	1213.70
2	37.396608	-83.121483	1208.90	5.00	1213.90
3	37.396280	-83.121494	1199.70	5.00	1204.70
4	37.396281	-83.121150	1210.10	5.00	1215.10
5	37.395540	-83.121180	1198.40	5.00	1203.40
6	37.394362	-83.121889	1186.00	5.00	1191.00
7	37.393726	-83.121911	1179.70	5.00	1184.70
8	37.393717	-83.121491	1182.00	5.00	1187.00
9	37.394976	-83.120463	1194.50	5.00	1199.50
10	37.395601	-83.120452	1202.10	5.00	1207.10
11	37.395539	-83.119091	1270.70	5.00	1275.70
12	37.394329	-83.119134	1290.40	5.00	1295.40
13	37.393652	-83.118566	1282.90	5.00	1287.90
14	37.393330	-83.117987	1289.20	5.00	1294.20
15	37.392883	-83.117757	1283.30	5.00	1288.30
16	37.391645	-83.118642	1221.80	5.00	1226.80
17	37.391342	-83.118876	1201.80	5.00	1206.80
18	37.390390	-83.119828	1210.90	5.00	1215.90
19	37.390090	-83.120167	1220.40	5.00	1225.40
20	37.389784	-83.120309	1230.80	5.00	1235.80
21	37.389148	-83.120331	1237.30	5.00	1242.30
22	37.388779	-83.119753	1240.70	5.00	1245.70
23	37.388457	-83.119108	1241.50	5.00	1246.50
24	37.388119	-83.117807	1248.30	5.00	1253.30
25	37.388086	-83.116338	1278.30	5.00	1283.30
26	37.388663	-83.114545	1297.30	5.00	1302.30
27	37.389286	-83.112686	1315.70	5.00	1320.70
28	37.389580	-83.112019	1318.40	5.00	1323.40
29	37.389881	-83.111681	1318.00	5.00	1323.00
30	37.390209	-83.111669	1317.30	5.00	1322.30
31	37.390573	-83.112050	1317.10	5.00	1322.10
32	37.391514	-83.112739	1319.00	5.00	1324.00
33	37.391569	-83.113011	1319.50	5.00	1324.50
34	37.392492	-83.112967	1310.60	5.00	1315.60
35	37.392910	-83.112953	1302.90	5.00	1307.90
36	37.394209	-83.112788	1298.60	5.00	1303.60
37	37.394475	-83.111848	1302.90	5.00	1307.90
38	37.394773	-83.111378	1307.40	5.00	1312.40
39	37.395101	-83.111366	1309.10	5.00	1314.10
40	37.395769	-83.111540	1308.60	5.00	1313.60
41	37.396080	-83.111660	1310.30	5.00	1315.30

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
42	37.396707	-83.112098	1310.50	5.00	1315.50
43	37.396831	-83.112718	1306.70	5.00	1311.70
44	37.397467	-83.112695	1307.90	5.00	1312.90
45	37.397755	-83.112828	1307.80	5.00	1312.80
46	37.398766	-83.113503	1306.40	5.00	1311.40
47	37.399059	-83.113833	1301.50	5.00	1306.50
48	37.399414	-83.114859	1252.80	5.00	1257.80
49	37.400098	-83.115754	1266.40	5.00	1271.40
50	37.400116	-83.116568	1266.90	5.00	1271.90

Route Receptors

Name: Buckhorn Road -1
Path type: Two-way
Azimuthal view angle: 50.0°
Downward view angle: 0.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.419185	-83.075579	1023.90	7.50	1031.40
2	37.419462	-83.075979	1028.23	7.50	1035.73
3	37.419780	-83.076695	1037.14	7.50	1044.64
4	37.419978	-83.077100	1024.68	7.50	1032.18
5	37.420048	-83.077355	1034.72	7.50	1042.22
6	37.420189	-83.077723	1025.59	7.50	1033.09
7	37.420382	-83.078130	1019.76	7.50	1027.26
8	37.420627	-83.078294	1012.28	7.50	1019.78
9	37.420823	-83.078643	1017.74	7.50	1025.24
10	37.420913	-83.078809	1027.85	7.50	1035.35
11	37.420998	-83.079085	1026.29	7.50	1033.79
12	37.421092	-83.079238	1026.15	7.50	1033.65
13	37.421599	-83.079635	1022.50	7.50	1030.00
14	37.421982	-83.079833	1022.48	7.50	1029.98
15	37.422165	-83.079975	1010.69	7.50	1018.19
16	37.422316	-83.080115	1004.61	7.50	1012.11
17	37.422756	-83.080192	992.04	7.50	999.54
18	37.423063	-83.080272	980.97	7.50	988.47

Name: Buckhorn Road-2
Path type: Two-way
Azimuthal view angle: 50.0°
Downward view angle: 0.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.430459	-83.102422	1046.36	7.50	1053.86
2	37.430284	-83.101934	1045.05	7.50	1052.55
3	37.430375	-83.101537	1055.09	7.50	1062.59
4	37.430766	-83.101028	1088.83	7.50	1096.33
5	37.431282	-83.100341	1115.87	7.50	1123.37
6	37.431635	-83.099649	1126.95	7.50	1134.45
7	37.432094	-83.098860	1139.87	7.50	1147.37
8	37.432529	-83.098260	1161.55	7.50	1169.05
9	37.432827	-83.097686	1177.08	7.50	1184.58
10	37.434322	-83.095556	1236.68	7.50	1244.18
11	37.435184	-83.094773	1243.79	7.50	1251.29
12	37.437477	-83.092293	1254.85	7.50	1262.35
13	37.437824	-83.091752	1257.98	7.50	1265.48
14	37.438163	-83.090893	1261.00	7.50	1268.50
15	37.438355	-83.090258	1263.81	7.50	1271.31
16	37.438841	-83.089375	1261.55	7.50	1269.05
17	37.439276	-83.088101	1262.33	7.50	1269.83
18	37.439864	-83.087270	1267.95	7.50	1275.45
19	37.440187	-83.086594	1268.40	7.50	1275.90
20	37.440213	-83.086111	1269.27	7.50	1276.77
21	37.439720	-83.083160	1268.10	7.50	1275.60
22	37.439396	-83.081330	1275.78	7.50	1283.28
23	37.439294	-83.080075	1285.95	7.50	1293.45
24	37.438987	-83.078455	1295.62	7.50	1303.12

Name: KY-478 -1
Path type: Two-way
Azimuthal view angle: 50.0°
Downward view angle: 0.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.403415	-83.210118	824.25	7.50	831.75
2	37.403816	-83.209657	836.98	7.50	844.48
3	37.404206	-83.208806	853.38	7.50	860.88
4	37.404474	-83.208538	852.47	7.50	859.97
5	37.405160	-83.208190	859.70	7.50	867.20
6	37.406618	-83.207498	865.77	7.50	873.27
7	37.407078	-83.207476	856.81	7.50	864.31
8	37.409098	-83.207675	830.65	7.50	838.15
9	37.409652	-83.207626	829.24	7.50	836.74
10	37.411796	-83.207294	862.51	7.50	870.01
11	37.412350	-83.206941	849.60	7.50	857.10
12	37.413070	-83.206206	831.72	7.50	839.22
13	37.413547	-83.205227	848.68	7.50	856.18
14	37.413833	-83.205001	847.27	7.50	854.77
15	37.414293	-83.205055	808.71	7.50	816.21
16	37.414821	-83.205414	802.98	7.50	810.48
17	37.415337	-83.206305	803.48	7.50	810.98
18	37.415890	-83.207270	803.07	7.50	810.57
19	37.416385	-83.207667	805.89	7.50	813.39
20	37.417098	-83.207921	817.54	7.50	825.04
21	37.417686	-83.207760	821.32	7.50	828.82
22	37.418753	-83.207111	811.90	7.50	819.40
23	37.419183	-83.207218	810.11	7.50	817.61
24	37.419383	-83.207604	808.81	7.50	816.31

Name: KY-478 -2
Path type: Two-way
Azimuthal view angle: 50.0°
Downward view angle: 0.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.384092	-83.190442	850.38	7.50	857.88
2	37.383692	-83.190539	852.98	7.50	860.48
3	37.383257	-83.190356	841.75	7.50	849.25
4	37.382916	-83.189873	869.26	7.50	876.76
5	37.381552	-83.187095	851.53	7.50	859.03
6	37.381484	-83.186397	848.38	7.50	855.88
7	37.381816	-83.185475	838.41	7.50	845.91
8	37.383025	-83.184380	854.91	7.50	862.41
9	37.384432	-83.183747	871.64	7.50	879.14
10	37.386256	-83.183447	853.58	7.50	861.08
11	37.386776	-83.183168	849.74	7.50	857.24
12	37.387330	-83.182191	838.36	7.50	845.86
13	37.387458	-83.181494	829.59	7.50	837.09
14	37.387143	-83.181001	823.43	7.50	830.93
15	37.386137	-83.180453	836.79	7.50	844.29
16	37.385012	-83.179381	848.29	7.50	855.79
17	37.384014	-83.178190	842.42	7.50	849.92
18	37.383629	-83.177514	853.50	7.50	861.00
19	37.383151	-83.175228	842.13	7.50	849.63
20	37.383203	-83.174531	838.71	7.50	846.21
21	37.383757	-83.173919	845.13	7.50	852.63
22	37.385044	-83.172793	842.53	7.50	850.03
23	37.385485	-83.171899	837.57	7.50	845.07
24	37.386465	-83.169110	861.06	7.50	868.56

Name: KY-80
Path type: Two-way
Azimuthal view angle: 50.0°
Downward view angle: 0.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.349553	-83.121551	1055.47	7.50	1062.97
2	37.350433	-83.119748	1091.09	7.50	1098.59
3	37.351781	-83.117602	1135.54	7.50	1143.04
4	37.362034	-83.107457	1140.91	7.50	1148.41
5	37.363154	-83.106698	1108.26	7.50	1115.76
6	37.364450	-83.106301	1083.83	7.50	1091.33
7	37.365380	-83.106301	1067.12	7.50	1074.62
8	37.367623	-83.106623	1051.60	7.50	1059.10
9	37.368622	-83.106344	1063.65	7.50	1071.15
10	37.369756	-83.105293	1070.01	7.50	1077.51
11	37.370336	-83.103748	1061.57	7.50	1069.07
12	37.371694	-83.094811	1024.38	7.50	1031.88
13	37.372481	-83.089610	973.43	7.50	980.93
14	37.372617	-83.086262	997.45	7.50	1004.95
15	37.372532	-83.083132	999.75	7.50	1007.25
16	37.372140	-83.080214	1009.56	7.50	1017.06
17	37.370516	-83.074084	1042.68	7.50	1050.18
18	37.369808	-83.071670	1053.97	7.50	1061.47
19	37.369553	-83.070243	1064.52	7.50	1072.02
20	37.369612	-83.068430	1074.26	7.50	1081.76
21	37.369927	-83.066788	1097.49	7.50	1104.99
22	37.371717	-83.061027	1119.45	7.50	1126.95
23	37.371802	-83.059063	1101.92	7.50	1109.42
24	37.371325	-83.056864	1097.91	7.50	1105.41

Name: Starfire Hand Road
Path type: Two-way
Azimuthal view angle: 50.0°
Downward view angle: 0.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.374674	-83.105554	1086.73	7.50	1094.23
2	37.375727	-83.105801	1136.37	7.50	1143.87
3	37.376218	-83.105704	1167.71	7.50	1175.21
4	37.376853	-83.105184	1208.45	7.50	1215.95
5	37.377144	-83.105157	1217.40	7.50	1224.90
6	37.378521	-83.106327	1268.20	7.50	1275.70
7	37.378845	-83.106338	1274.30	7.50	1281.80
8	37.379165	-83.105758	1298.55	7.50	1306.05
9	37.379301	-83.105222	1312.48	7.50	1319.98
10	37.379353	-83.104465	1329.52	7.50	1337.02
11	37.379570	-83.103763	1354.93	7.50	1362.43
12	37.379864	-83.103339	1366.54	7.50	1374.04
13	37.380225	-83.103280	1368.46	7.50	1375.96
14	37.382434	-83.103130	1378.50	7.50	1386.00
15	37.384020	-83.103832	1388.29	7.50	1395.79
16	37.384617	-83.103940	1388.26	7.50	1395.76
17	37.385569	-83.103607	1381.24	7.50	1388.74
18	37.387458	-83.102749	1375.99	7.50	1383.49
19	37.388199	-83.102690	1377.87	7.50	1385.37
20	37.388651	-83.103119	1380.97	7.50	1388.47
21	37.390375	-83.107341	1366.66	7.50	1374.16
22	37.392374	-83.110495	1362.73	7.50	1370.23
23	37.392937	-83.111026	1358.90	7.50	1366.40
24	37.394267	-83.110865	1316.39	7.50	1323.89

Discrete Observation Point Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	37.396945	-83.158588	1314.30	16.00
OP 2	2	37.384459	-83.159212	838.23	16.00
OP 3	3	37.378051	-83.123629	955.03	16.00
OP 4	4	37.423000	-83.080331	983.85	16.00
OP 5	5	37.382129	-83.134098	940.17	16.00
OP 6	6	37.385780	-83.133747	880.04	16.00
OP 7	7	37.449522	-83.079678	1435.28	16.00
OP 8	8	37.446937	-83.085180	1418.91	16.00
OP 9	9	37.438576	-83.076553	1332.34	16.00
OP 10	10	37.391575	-83.109213	1361.97	16.00
OP 11	11	37.348179	-83.117745	1320.89	16.00
OP 12	12	37.377018	-83.069076	1399.62	16.00
OP 13	13	37.380511	-83.108659	1357.01	16.00
OP 14	14	37.383060	-83.108026	1401.80	16.00
OP 15	15	37.340402	-83.156733	1381.46	16.00
OP 16	16	37.343232	-83.152797	1393.32	16.00
OP 17	17	37.342542	-83.148530	1144.02	16.00
OP 18	18	37.413754	-83.206763	866.49	16.00
OP 19	19	37.384042	-83.090774	945.06	16.00
OP 20	20	37.391949	-83.073849	975.29	16.00
OP 21	21	37.358322	-83.044081	1497.44	16.00
OP 22	22	37.365303	-83.237832	925.00	16.00
OP 23	23	37.381557	-83.250911	1271.44	16.00
OP 24	24	37.384616	-83.248354	1236.98	16.00

Glare Analysis Results

Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 10	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 11	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 12	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 13	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 14	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 15	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 16	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 17	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 18	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 2	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 3	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 4	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 5	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 6	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 7	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 8	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 9	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV: PV array 1 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 1 and Route: Buckhorn Road -1

No glare found

PV array 1 and Route: Buckhorn Road-2

No glare found

PV array 1 and Route: KY-478 -1

No glare found

PV array 1 and Route: KY-478 -2

No glare found

PV array 1 and Route: KY-80

No glare found

PV array 1 and Route: Starfire Hand Road

No glare found

PV array 1 and OP 1

No glare found

PV array 1 and OP 2

No glare found

PV array 1 and OP 3

No glare found

PV array 1 and OP 4

No glare found

PV array 1 and OP 5

No glare found

PV array 1 and OP 6

No glare found

PV array 1 and OP 7

No glare found

PV array 1 and OP 8

No glare found

PV array 1 and OP 9

No glare found

PV array 1 and OP 10

No glare found

PV array 1 and OP 11

No glare found

PV array 1 and OP 12

No glare found

PV array 1 and OP 13

No glare found

PV array 1 and OP 14

No glare found

PV array 1 and OP 15

No glare found

PV array 1 and OP 16

No glare found

PV array 1 and OP 17

No glare found

PV array 1 and OP 18

No glare found

PV array 1 and OP 19

No glare found

PV array 1 and OP 20

No glare found

PV array 1 and OP 21

No glare found

PV array 1 and OP 22

No glare found

PV array 1 and OP 23

No glare found

PV array 1 and OP 24

No glare found

PV: PV array 10 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 10 and Route: Buckhorn Road -1

No glare found

PV array 10 and Route: Buckhorn Road-2

No glare found

PV array 10 and Route: KY-478 -1

No glare found

PV array 10 and Route: KY-478 -2

No glare found

PV array 10 and Route: KY-80

No glare found

PV array 10 and Route: Starfire Hand Road

No glare found

PV array 10 and OP 1

No glare found

PV array 10 and OP 2

No glare found

PV array 10 and OP 3

No glare found

PV array 10 and OP 4

No glare found

PV array 10 and OP 5

No glare found

PV array 10 and OP 6

No glare found

PV array 10 and OP 7

No glare found

PV array 10 and OP 8

No glare found

PV array 10 and OP 9

No glare found

PV array 10 and OP 10

No glare found

PV array 10 and OP 11

No glare found

PV array 10 and OP 12

No glare found

PV array 10 and OP 13

No glare found

PV array 10 and OP 14

No glare found

PV array 10 and OP 15

No glare found

PV array 10 and OP 16

No glare found

PV array 10 and OP 17

No glare found

PV array 10 and OP 18

No glare found

PV array 10 and OP 19

No glare found

PV array 10 and OP 20

No glare found

PV array 10 and OP 21

No glare found

PV array 10 and OP 22

No glare found

PV array 10 and OP 23

No glare found

PV array 10 and OP 24

No glare found

PV: PV array 11 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 11 and Route: Buckhorn Road -1

No glare found

PV array 11 and Route: Buckhorn Road-2

No glare found

PV array 11 and Route: KY-478 -1

No glare found

PV array 11 and Route: KY-478 -2

No glare found

PV array 11 and Route: KY-80

No glare found

PV array 11 and Route: Starfire Hand Road

No glare found

PV array 11 and OP 1

No glare found

PV array 11 and OP 2

No glare found

PV array 11 and OP 3

No glare found

PV array 11 and OP 4

No glare found

PV array 11 and OP 5

No glare found

PV array 11 and OP 6

No glare found

PV array 11 and OP 7

No glare found

PV array 11 and OP 8

No glare found

PV array 11 and OP 9

No glare found

PV array 11 and OP 10

No glare found

PV array 11 and OP 11

No glare found

PV array 11 and OP 12

No glare found

PV array 11 and OP 13

No glare found

PV array 11 and OP 14

No glare found

PV array 11 and OP 15

No glare found

PV array 11 and OP 16

No glare found

PV array 11 and OP 17

No glare found

PV array 11 and OP 18

No glare found

PV array 11 and OP 19

No glare found

PV array 11 and OP 20

No glare found

PV array 11 and OP 21

No glare found

PV array 11 and OP 22

No glare found

PV array 11 and OP 23

No glare found

PV array 11 and OP 24

No glare found

PV: PV array 12 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 12 and Route: Buckhorn Road -1

No glare found

PV array 12 and Route: Buckhorn Road-2

No glare found

PV array 12 and Route: KY-478 -1

No glare found

PV array 12 and Route: KY-478 -2

No glare found

PV array 12 and Route: KY-80

No glare found

PV array 12 and Route: Starfire Hand Road

No glare found

PV array 12 and OP 1

No glare found

PV array 12 and OP 2

No glare found

PV array 12 and OP 3

No glare found

PV array 12 and OP 4

No glare found

PV array 12 and OP 5

No glare found

PV array 12 and OP 6

No glare found

PV array 12 and OP 7

No glare found

PV array 12 and OP 8

No glare found

PV array 12 and OP 9

No glare found

PV array 12 and OP 10

No glare found

PV array 12 and OP 11

No glare found

PV array 12 and OP 12

No glare found

PV array 12 and OP 13

No glare found

PV array 12 and OP 14

No glare found

PV array 12 and OP 15

No glare found

PV array 12 and OP 16

No glare found

PV array 12 and OP 17

No glare found

PV array 12 and OP 18

No glare found

PV array 12 and OP 19

No glare found

PV array 12 and OP 20

No glare found

PV array 12 and OP 21

No glare found

PV array 12 and OP 22

No glare found

PV array 12 and OP 23

No glare found

PV array 12 and OP 24

No glare found

PV: PV array 13 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 13 and Route: Buckhorn Road -1

No glare found

PV array 13 and Route: Buckhorn Road-2

No glare found

PV array 13 and Route: KY-478 -1

No glare found

PV array 13 and Route: KY-478 -2

No glare found

PV array 13 and Route: KY-80

No glare found

PV array 13 and Route: Starfire Hand Road

No glare found

PV array 13 and OP 1

No glare found

PV array 13 and OP 2

No glare found

PV array 13 and OP 3

No glare found

PV array 13 and OP 4

No glare found

PV array 13 and OP 5

No glare found

PV array 13 and OP 6

No glare found

PV array 13 and OP 7

No glare found

PV array 13 and OP 8

No glare found

PV array 13 and OP 9

No glare found

PV array 13 and OP 10

No glare found

PV array 13 and OP 11

No glare found

PV array 13 and OP 12

No glare found

PV array 13 and OP 13

No glare found

PV array 13 and OP 14

No glare found

PV array 13 and OP 15

No glare found

PV array 13 and OP 16

No glare found

PV array 13 and OP 17

No glare found

PV array 13 and OP 18

No glare found

PV array 13 and OP 19

No glare found

PV array 13 and OP 20

No glare found

PV array 13 and OP 21

No glare found

PV array 13 and OP 22

No glare found

PV array 13 and OP 23

No glare found

PV array 13 and OP 24

No glare found

PV: PV array 14 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 14 and Route: Buckhorn Road -1

No glare found

PV array 14 and Route: Buckhorn Road-2

No glare found

PV array 14 and Route: KY-478 -1

No glare found

PV array 14 and Route: KY-478 -2

No glare found

PV array 14 and Route: KY-80

No glare found

PV array 14 and Route: Starfire Hand Road

No glare found

PV array 14 and OP 1

No glare found

PV array 14 and OP 2

No glare found

PV array 14 and OP 3

No glare found

PV array 14 and OP 4

No glare found

PV array 14 and OP 5

No glare found

PV array 14 and OP 6

No glare found

PV array 14 and OP 7

No glare found

PV array 14 and OP 8

No glare found

PV array 14 and OP 9

No glare found

PV array 14 and OP 10

No glare found

PV array 14 and OP 11

No glare found

PV array 14 and OP 12

No glare found

PV array 14 and OP 13

No glare found

PV array 14 and OP 14

No glare found

PV array 14 and OP 15

No glare found

PV array 14 and OP 16

No glare found

PV array 14 and OP 17

No glare found

PV array 14 and OP 18

No glare found

PV array 14 and OP 19

No glare found

PV array 14 and OP 20

No glare found

PV array 14 and OP 21

No glare found

PV array 14 and OP 22

No glare found

PV array 14 and OP 23

No glare found

PV array 14 and OP 24

No glare found

PV: PV array 15 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 15 and Route: Buckhorn Road -1

No glare found

PV array 15 and Route: Buckhorn Road-2

No glare found

PV array 15 and Route: KY-478 -1

No glare found

PV array 15 and Route: KY-478 -2

No glare found

PV array 15 and Route: KY-80

No glare found

PV array 15 and Route: Starfire Hand Road

No glare found

PV array 15 and OP 1

No glare found

PV array 15 and OP 2

No glare found

PV array 15 and OP 3

No glare found

PV array 15 and OP 4

No glare found

PV array 15 and OP 5

No glare found

PV array 15 and OP 6

No glare found

PV array 15 and OP 7

No glare found

PV array 15 and OP 8

No glare found

PV array 15 and OP 9

No glare found

PV array 15 and OP 10

No glare found

PV array 15 and OP 11

No glare found

PV array 15 and OP 12

No glare found

PV array 15 and OP 13

No glare found

PV array 15 and OP 14

No glare found

PV array 15 and OP 15

No glare found

PV array 15 and OP 16

No glare found

PV array 15 and OP 17

No glare found

PV array 15 and OP 18

No glare found

PV array 15 and OP 19

No glare found

PV array 15 and OP 20

No glare found

PV array 15 and OP 21

No glare found

PV array 15 and OP 22

No glare found

PV array 15 and OP 23

No glare found

PV array 15 and OP 24

No glare found

PV: PV array 16 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 16 and Route: Buckhorn Road -1

No glare found

PV array 16 and Route: Buckhorn Road-2

No glare found

PV array 16 and Route: KY-478 -1

No glare found

PV array 16 and Route: KY-478 -2

No glare found

PV array 16 and Route: KY-80

No glare found

PV array 16 and Route: Starfire Hand Road

No glare found

PV array 16 and OP 1

No glare found

PV array 16 and OP 2

No glare found

PV array 16 and OP 3

No glare found

PV array 16 and OP 4

No glare found

PV array 16 and OP 5

No glare found

PV array 16 and OP 6

No glare found

PV array 16 and OP 7

No glare found

PV array 16 and OP 8

No glare found

PV array 16 and OP 9

No glare found

PV array 16 and OP 10

No glare found

PV array 16 and OP 11

No glare found

PV array 16 and OP 12

No glare found

PV array 16 and OP 13

No glare found

PV array 16 and OP 14

No glare found

PV array 16 and OP 15

No glare found

PV array 16 and OP 16

No glare found

PV array 16 and OP 17

No glare found

PV array 16 and OP 18

No glare found

PV array 16 and OP 19

No glare found

PV array 16 and OP 20

No glare found

PV array 16 and OP 21

No glare found

PV array 16 and OP 22

No glare found

PV array 16 and OP 23

No glare found

PV array 16 and OP 24

No glare found

PV: PV array 17 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 17 and Route: Buckhorn Road -1

No glare found

PV array 17 and Route: Buckhorn Road-2

No glare found

PV array 17 and Route: KY-478 -1

No glare found

PV array 17 and Route: KY-478 -2

No glare found

PV array 17 and Route: KY-80

No glare found

PV array 17 and Route: Starfire Hand Road

No glare found

PV array 17 and OP 1

No glare found

PV array 17 and OP 2

No glare found

PV array 17 and OP 3

No glare found

PV array 17 and OP 4

No glare found

PV array 17 and OP 5

No glare found

PV array 17 and OP 6

No glare found

PV array 17 and OP 7

No glare found

PV array 17 and OP 8

No glare found

PV array 17 and OP 9

No glare found

PV array 17 and OP 10

No glare found

PV array 17 and OP 11

No glare found

PV array 17 and OP 12

No glare found

PV array 17 and OP 13

No glare found

PV array 17 and OP 14

No glare found

PV array 17 and OP 15

No glare found

PV array 17 and OP 16

No glare found

PV array 17 and OP 17

No glare found

PV array 17 and OP 18

No glare found

PV array 17 and OP 19

No glare found

PV array 17 and OP 20

No glare found

PV array 17 and OP 21

No glare found

PV array 17 and OP 22

No glare found

PV array 17 and OP 23

No glare found

PV array 17 and OP 24

No glare found

PV: PV array 18 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 18 and Route: Buckhorn Road -1

No glare found

PV array 18 and Route: Buckhorn Road-2

No glare found

PV array 18 and Route: KY-478 -1

No glare found

PV array 18 and Route: KY-478 -2

No glare found

PV array 18 and Route: KY-80

No glare found

PV array 18 and Route: Starfire Hand Road

No glare found

PV array 18 and OP 1

No glare found

PV array 18 and OP 2

No glare found

PV array 18 and OP 3

No glare found

PV array 18 and OP 4

No glare found

PV array 18 and OP 5

No glare found

PV array 18 and OP 6

No glare found

PV array 18 and OP 7

No glare found

PV array 18 and OP 8

No glare found

PV array 18 and OP 9

No glare found

PV array 18 and OP 10

No glare found

PV array 18 and OP 11

No glare found

PV array 18 and OP 12

No glare found

PV array 18 and OP 13

No glare found

PV array 18 and OP 14

No glare found

PV array 18 and OP 15

No glare found

PV array 18 and OP 16

No glare found

PV array 18 and OP 17

No glare found

PV array 18 and OP 18

No glare found

PV array 18 and OP 19

No glare found

PV array 18 and OP 20

No glare found

PV array 18 and OP 21

No glare found

PV array 18 and OP 22

No glare found

PV array 18 and OP 23

No glare found

PV array 18 and OP 24

No glare found

PV: PV array 2 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 2 and Route: Buckhorn Road -1

No glare found

PV array 2 and Route: Buckhorn Road-2

No glare found

PV array 2 and Route: KY-478 -1

No glare found

PV array 2 and Route: KY-478 -2

No glare found

PV array 2 and Route: KY-80

No glare found

PV array 2 and Route: Starfire Hand Road

No glare found

PV array 2 and OP 1

No glare found

PV array 2 and OP 2

No glare found

PV array 2 and OP 3

No glare found

PV array 2 and OP 4

No glare found

PV array 2 and OP 5

No glare found

PV array 2 and OP 6

No glare found

PV array 2 and OP 7

No glare found

PV array 2 and OP 8

No glare found

PV array 2 and OP 9

No glare found

PV array 2 and OP 10

No glare found

PV array 2 and OP 11

No glare found

PV array 2 and OP 12

No glare found

PV array 2 and OP 13

No glare found

PV array 2 and OP 14

No glare found

PV array 2 and OP 15

No glare found

PV array 2 and OP 16

No glare found

PV array 2 and OP 17

No glare found

PV array 2 and OP 18

No glare found

PV array 2 and OP 19

No glare found

PV array 2 and OP 20

No glare found

PV array 2 and OP 21

No glare found

PV array 2 and OP 22

No glare found

PV array 2 and OP 23

No glare found

PV array 2 and OP 24

No glare found

PV: PV array 3 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 3 and Route: Buckhorn Road -1

No glare found

PV array 3 and Route: Buckhorn Road-2

No glare found

PV array 3 and Route: KY-478 -1

No glare found

PV array 3 and Route: KY-478 -2

No glare found

PV array 3 and Route: KY-80

No glare found

PV array 3 and Route: Starfire Hand Road

No glare found

PV array 3 and OP 1

No glare found

PV array 3 and OP 2

No glare found

PV array 3 and OP 3

No glare found

PV array 3 and OP 4

No glare found

PV array 3 and OP 5

No glare found

PV array 3 and OP 6

No glare found

PV array 3 and OP 7

No glare found

PV array 3 and OP 8

No glare found

PV array 3 and OP 9

No glare found

PV array 3 and OP 10

No glare found

PV array 3 and OP 11

No glare found

PV array 3 and OP 12

No glare found

PV array 3 and OP 13

No glare found

PV array 3 and OP 14

No glare found

PV array 3 and OP 15

No glare found

PV array 3 and OP 16

No glare found

PV array 3 and OP 17

No glare found

PV array 3 and OP 18

No glare found

PV array 3 and OP 19

No glare found

PV array 3 and OP 20

No glare found

PV array 3 and OP 21

No glare found

PV array 3 and OP 22

No glare found

PV array 3 and OP 23

No glare found

PV array 3 and OP 24

No glare found

PV: PV array 4 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 4 and Route: Buckhorn Road -1

No glare found

PV array 4 and Route: Buckhorn Road-2

No glare found

PV array 4 and Route: KY-478 -1

No glare found

PV array 4 and Route: KY-478 -2

No glare found

PV array 4 and Route: KY-80

No glare found

PV array 4 and Route: Starfire Hand Road

No glare found

PV array 4 and OP 1

No glare found

PV array 4 and OP 2

No glare found

PV array 4 and OP 3

No glare found

PV array 4 and OP 4

No glare found

PV array 4 and OP 5

No glare found

PV array 4 and OP 6

No glare found

PV array 4 and OP 7

No glare found

PV array 4 and OP 8

No glare found

PV array 4 and OP 9

No glare found

PV array 4 and OP 10

No glare found

PV array 4 and OP 11

No glare found

PV array 4 and OP 12

No glare found

PV array 4 and OP 13

No glare found

PV array 4 and OP 14

No glare found

PV array 4 and OP 15

No glare found

PV array 4 and OP 16

No glare found

PV array 4 and OP 17

No glare found

PV array 4 and OP 18

No glare found

PV array 4 and OP 19

No glare found

PV array 4 and OP 20

No glare found

PV array 4 and OP 21

No glare found

PV array 4 and OP 22

No glare found

PV array 4 and OP 23

No glare found

PV array 4 and OP 24

No glare found

PV: PV array 5 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 5 and Route: Buckhorn Road -1

No glare found

PV array 5 and Route: Buckhorn Road-2

No glare found

PV array 5 and Route: KY-478 -1

No glare found

PV array 5 and Route: KY-478 -2

No glare found

PV array 5 and Route: KY-80

No glare found

PV array 5 and Route: Starfire Hand Road

No glare found

PV array 5 and OP 1

No glare found

PV array 5 and OP 2

No glare found

PV array 5 and OP 3

No glare found

PV array 5 and OP 4

No glare found

PV array 5 and OP 5

No glare found

PV array 5 and OP 6

No glare found

PV array 5 and OP 7

No glare found

PV array 5 and OP 8

No glare found

PV array 5 and OP 9

No glare found

PV array 5 and OP 10

No glare found

PV array 5 and OP 11

No glare found

PV array 5 and OP 12

No glare found

PV array 5 and OP 13

No glare found

PV array 5 and OP 14

No glare found

PV array 5 and OP 15

No glare found

PV array 5 and OP 16

No glare found

PV array 5 and OP 17

No glare found

PV array 5 and OP 18

No glare found

PV array 5 and OP 19

No glare found

PV array 5 and OP 20

No glare found

PV array 5 and OP 21

No glare found

PV array 5 and OP 22

No glare found

PV array 5 and OP 23

No glare found

PV array 5 and OP 24

No glare found

PV: PV array 6 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 6 and Route: Buckhorn Road -1

No glare found

PV array 6 and Route: Buckhorn Road-2

No glare found

PV array 6 and Route: KY-478 -1

No glare found

PV array 6 and Route: KY-478 -2

No glare found

PV array 6 and Route: KY-80

No glare found

PV array 6 and Route: Starfire Hand Road

No glare found

PV array 6 and OP 1

No glare found

PV array 6 and OP 2

No glare found

PV array 6 and OP 3

No glare found

PV array 6 and OP 4

No glare found

PV array 6 and OP 5

No glare found

PV array 6 and OP 6

No glare found

PV array 6 and OP 7

No glare found

PV array 6 and OP 8

No glare found

PV array 6 and OP 9

No glare found

PV array 6 and OP 10

No glare found

PV array 6 and OP 11

No glare found

PV array 6 and OP 12

No glare found

PV array 6 and OP 13

No glare found

PV array 6 and OP 14

No glare found

PV array 6 and OP 15

No glare found

PV array 6 and OP 16

No glare found

PV array 6 and OP 17

No glare found

PV array 6 and OP 18

No glare found

PV array 6 and OP 19

No glare found

PV array 6 and OP 20

No glare found

PV array 6 and OP 21

No glare found

PV array 6 and OP 22

No glare found

PV array 6 and OP 23

No glare found

PV array 6 and OP 24

No glare found

PV: PV array 7 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 7 and Route: Buckhorn Road -1

No glare found

PV array 7 and Route: Buckhorn Road-2

No glare found

PV array 7 and Route: KY-478 -1

No glare found

PV array 7 and Route: KY-478 -2

No glare found

PV array 7 and Route: KY-80

No glare found

PV array 7 and Route: Starfire Hand Road

No glare found

PV array 7 and OP 1

No glare found

PV array 7 and OP 2

No glare found

PV array 7 and OP 3

No glare found

PV array 7 and OP 4

No glare found

PV array 7 and OP 5

No glare found

PV array 7 and OP 6

No glare found

PV array 7 and OP 7

No glare found

PV array 7 and OP 8

No glare found

PV array 7 and OP 9

No glare found

PV array 7 and OP 10

No glare found

PV array 7 and OP 11

No glare found

PV array 7 and OP 12

No glare found

PV array 7 and OP 13

No glare found

PV array 7 and OP 14

No glare found

PV array 7 and OP 15

No glare found

PV array 7 and OP 16

No glare found

PV array 7 and OP 17

No glare found

PV array 7 and OP 18

No glare found

PV array 7 and OP 19

No glare found

PV array 7 and OP 20

No glare found

PV array 7 and OP 21

No glare found

PV array 7 and OP 22

No glare found

PV array 7 and OP 23

No glare found

PV array 7 and OP 24

No glare found

PV: PV array 8 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 8 and Route: Buckhorn Road -1

No glare found

PV array 8 and Route: Buckhorn Road-2

No glare found

PV array 8 and Route: KY-478 -1

No glare found

PV array 8 and Route: KY-478 -2

No glare found

PV array 8 and Route: KY-80

No glare found

PV array 8 and Route: Starfire Hand Road

No glare found

PV array 8 and OP 1

No glare found

PV array 8 and OP 2

No glare found

PV array 8 and OP 3

No glare found

PV array 8 and OP 4

No glare found

PV array 8 and OP 5

No glare found

PV array 8 and OP 6

No glare found

PV array 8 and OP 7

No glare found

PV array 8 and OP 8

No glare found

PV array 8 and OP 9

No glare found

PV array 8 and OP 10

No glare found

PV array 8 and OP 11

No glare found

PV array 8 and OP 12

No glare found

PV array 8 and OP 13

No glare found

PV array 8 and OP 14

No glare found

PV array 8 and OP 15

No glare found

PV array 8 and OP 16

No glare found

PV array 8 and OP 17

No glare found

PV array 8 and OP 18

No glare found

PV array 8 and OP 19

No glare found

PV array 8 and OP 20

No glare found

PV array 8 and OP 21

No glare found

PV array 8 and OP 22

No glare found

PV array 8 and OP 23

No glare found

PV array 8 and OP 24

No glare found

PV: PV array 9 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Buckhorn Road -1	0	0.0	0	0.0
Buckhorn Road-2	0	0.0	0	0.0
KY-478 -1	0	0.0	0	0.0
KY-478 -2	0	0.0	0	0.0
KY-80	0	0.0	0	0.0
Starfire Hand Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0

PV array 9 and Route: Buckhorn Road -1

No glare found

PV array 9 and Route: Buckhorn Road-2

No glare found

PV array 9 and Route: KY-478 -1

No glare found

PV array 9 and Route: KY-478 -2

No glare found

PV array 9 and Route: KY-80

No glare found

PV array 9 and Route: Starfire Hand Road

No glare found

PV array 9 and OP 1

No glare found

PV array 9 and OP 2

No glare found

PV array 9 and OP 3

No glare found

PV array 9 and OP 4

No glare found

PV array 9 and OP 5

No glare found

PV array 9 and OP 6

No glare found

PV array 9 and OP 7

No glare found

PV array 9 and OP 8

No glare found

PV array 9 and OP 9

No glare found

PV array 9 and OP 10

No glare found

PV array 9 and OP 11

No glare found

PV array 9 and OP 12

No glare found

PV array 9 and OP 13

No glare found

PV array 9 and OP 14

No glare found

PV array 9 and OP 15

No glare found

PV array 9 and OP 16

No glare found

PV array 9 and OP 17

No glare found

PV array 9 and OP 18

No glare found

PV array 9 and OP 19

No glare found

PV array 9 and OP 20

No glare found

PV array 9 and OP 21

No glare found

PV array 9 and OP 22

No glare found

PV array 9 and OP 23

No glare found

PV array 9 and OP 24

No glare found

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
The algorithm does not rigorously represent the detailed geometry of a system; detailed features such as gaps between modules, variable height of the PV array, and support structures may impact actual glare results. However, we have validated our models against several systems, including a PV array causing glare to the air-traffic control tower at Manchester-Boston Regional Airport and several sites in Albuquerque, and the tool accurately predicted the occurrence and intensity of glare at different times and days of the year.
Random number computations are utilized by various steps of the annual hazard analysis algorithm. Predicted minutes of glare can vary between runs as a result. This limitation primarily affects analyses of Observation Point receptors, including ATCTs. Note that the SGHAT/ ForgeSolar methodology has always relied on an analytical, qualitative approach to accurately determine the overall hazard (i.e. green vs. yellow) of expected glare on an annual basis.
The analysis does not automatically consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc.
The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
The variable direct normal irradiance (DNI) feature (if selected) scales the user-prescribed peak DNI using a typical clear-day irradiance profile. This profile has a lower DNI in the mornings and evenings and a maximum at solar noon. The scaling uses a clear-day irradiance profile based on a normalized time relative to sunrise, solar noon, and sunset, which are prescribed by a sun-position algorithm and the latitude and longitude obtained from Google maps. The actual DNI on any given day can be affected by cloud cover, atmospheric attenuation, and other environmental factors.
The ocular hazard predicted by the tool depends on a number of environmental, optical, and human factors, which can be uncertain. We provide input fields and typical ranges of values for these factors so that the user can vary these parameters to see if they have an impact on the results. The speed of SGHAT allows expedited sensitivity and parametric analyses.
The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

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This analysis was conducted using the best available radiometric modeling at the time of generation. Future updates to the modeling methodology may yield different results.

FORGESOLAR GLARE ANALYSIS

Project: **Starfire Solar**
Site configuration: **Starfire II Analysis 3- FAA Receptors**
Calculated via ForgeSolar Radiometric Physics Engine v3.2.1

Created 23 Jul, 2026
Updated 23 Jul, 2026
Time-step 1 minute
Timezone offset UTC-5
Minimum sun altitude 0.0 deg
DNI peaks at 1,000.0 W/m^2
Category 100 MW to 1 GW
Site ID 184117.21171

Ocular transmission coefficient 0.5
Pupil diameter 0.002 m
Eye focal length 0.017 m
Sun subtended angle 9.3 mrad
Min luminance threshold 0 cd/m^2

Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 10	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 11	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 12	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 13	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 14	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 15	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 16	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 17	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 18	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 2	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 3	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 4	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 5	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 6	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 7	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 8	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 9	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CPF RWY 06	0	0.0	0	0.0
CPF RWY 14	0	0.0	0	0.0
CPF RWY 24	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CPF RWY 32	0	0.0	0	0.0

Component Data

PV Arrays

Name: PV array 1
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.399176	-83.113006	1313.00	5.00	1318.00
2	37.399120	-83.110513	1301.50	5.00	1306.50
3	37.398720	-83.110680	1302.80	5.00	1307.80
4	37.398420	-83.111111	1308.10	5.00	1313.10
5	37.397429	-83.111146	1311.10	5.00	1316.10
6	37.397118	-83.111025	1311.70	5.00	1316.70
7	37.397069	-83.107731	1318.50	5.00	1323.50
8	37.397351	-83.107669	1311.40	5.00	1316.40
9	37.397310	-83.105806	1344.20	5.00	1349.20
10	37.396626	-83.105845	1365.70	5.00	1370.70
11	37.396321	-83.107902	1342.70	5.00	1347.70
12	37.396031	-83.108700	1338.50	5.00	1343.50
13	37.395731	-83.109618	1331.40	5.00	1336.40
14	37.395542	-83.109756	1333.70	5.00	1338.70
15	37.394917	-83.109855	1357.90	5.00	1362.90
16	37.394589	-83.109867	1361.60	5.00	1366.60
17	37.394053	-83.109754	1365.40	5.00	1370.40
18	37.394047	-83.109492	1366.30	5.00	1371.30
19	37.393253	-83.109504	1369.30	5.00	1374.30
20	37.393299	-83.110502	1363.50	5.00	1368.50
21	37.392663	-83.110525	1365.10	5.00	1370.10
22	37.392344	-83.110115	1365.60	5.00	1370.60
23	37.392331	-83.109525	1365.70	5.00	1370.70
24	37.392451	-83.108219	1370.60	5.00	1375.60
25	37.392690	-83.106099	1372.50	5.00	1377.50
26	37.392989	-83.105629	1374.60	5.00	1379.60
27	37.393289	-83.105290	1377.60	5.00	1382.60
28	37.393945	-83.104939	1383.30	5.00	1388.30
29	37.394253	-83.104890	1392.80	5.00	1397.80
30	37.394273	-83.103823	1397.40	5.00	1402.40
31	37.393921	-83.103851	1387.90	5.00	1392.90
32	37.393885	-83.102250	1373.30	5.00	1378.30
33	37.394190	-83.102251	1382.00	5.00	1387.00
34	37.394514	-83.102371	1392.80	5.00	1397.80
35	37.394971	-83.102488	1399.10	5.00	1404.10
36	37.396217	-83.102037	1396.00	5.00	1401.00
37	37.397130	-83.101441	1395.10	5.00	1400.10
38	37.397483	-83.101336	1398.80	5.00	1403.80
39	37.398099	-83.101276	1405.10	5.00	1410.10
40	37.398016	-83.097576	1344.30	5.00	1349.30
41	37.398312	-83.097040	1317.50	5.00	1322.50

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
42	37.398728	-83.096041	1295.40	5.00	1300.40
43	37.399024	-83.095505	1294.60	5.00	1299.60
44	37.399235	-83.094579	1302.00	5.00	1307.00
45	37.399540	-83.094437	1309.10	5.00	1314.10
46	37.399847	-83.094360	1330.10	5.00	1335.10
47	37.400483	-83.094338	1338.50	5.00	1343.50
48	37.400507	-83.095414	1333.40	5.00	1338.40
49	37.400616	-83.095580	1337.10	5.00	1342.10
50	37.401252	-83.095558	1342.40	5.00	1347.40
51	37.401420	-83.103063	1295.30	5.00	1300.30
52	37.401442	-83.104020	1311.30	5.00	1316.30
53	37.401748	-83.104876	1314.80	5.00	1319.80
54	37.402450	-83.105587	1299.10	5.00	1304.10
55	37.402479	-83.106099	1309.10	5.00	1314.10
56	37.403124	-83.106061	1281.90	5.00	1286.90
57	37.403148	-83.107138	1304.90	5.00	1309.90
58	37.403286	-83.107445	1305.00	5.00	1310.00
59	37.404874	-83.107324	1330.40	5.00	1335.40
60	37.405510	-83.107302	1327.30	5.00	1332.30
61	37.405516	-83.107591	1330.40	5.00	1335.40
62	37.405222	-83.108231	1335.60	5.00	1340.60
63	37.404927	-83.108859	1341.20	5.00	1346.20
64	37.404613	-83.109056	1342.30	5.00	1347.30
65	37.403019	-83.109130	1354.90	5.00	1359.90
66	37.403052	-83.110769	1358.10	5.00	1363.10
67	37.403380	-83.110758	1356.90	5.00	1361.90
68	37.403407	-83.111965	1350.00	5.00	1355.00
69	37.403145	-83.112780	1341.60	5.00	1346.60
70	37.401796	-83.113138	1325.30	5.00	1330.30
71	37.400878	-83.113498	1317.80	5.00	1322.80
72	37.400113	-83.113525	1314.30	5.00	1319.30
73	37.399176	-83.113006	1313.00	5.00	1318.00

Name: PV array 10
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.392020	-83.110965	1353.10	5.00	1358.10
2	37.391052	-83.111010	1340.70	5.00	1345.70
3	37.390434	-83.110966	1331.00	5.00	1336.00
4	37.390411	-83.109956	1334.50	5.00	1339.50
5	37.390714	-83.109682	1351.10	5.00	1356.10
6	37.391350	-83.109660	1359.40	5.00	1364.40
7	37.391668	-83.110108	1357.40	5.00	1362.40
8	37.392065	-83.110500	1358.20	5.00	1363.20
9	37.392020	-83.110965	1353.10	5.00	1358.10

Name: PV array 11
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.387246	-83.116043	1288.80	5.00	1293.80
2	37.387319	-83.118519	1266.50	5.00	1271.50
3	37.387603	-83.118498	1263.90	5.00	1268.90
4	37.387947	-83.120061	1270.20	5.00	1275.20
5	37.387962	-83.120744	1269.80	5.00	1274.80
6	37.387634	-83.120755	1271.30	5.00	1276.30
7	37.387015	-83.120646	1277.00	5.00	1282.00
8	37.386866	-83.118879	1269.80	5.00	1274.80
9	37.386228	-83.118836	1268.50	5.00	1273.50
10	37.386165	-83.116016	1283.60	5.00	1288.60
11	37.386112	-83.113628	1292.60	5.00	1297.60
12	37.385802	-83.113600	1283.10	5.00	1288.10
13	37.385481	-83.113020	1283.80	5.00	1288.80
14	37.385400	-83.109387	1280.80	5.00	1285.80
15	37.386302	-83.108305	1284.80	5.00	1289.80
16	37.386737	-83.108158	1287.50	5.00	1292.50
17	37.387029	-83.107426	1284.10	5.00	1289.10
18	37.387332	-83.107153	1281.50	5.00	1286.50
19	37.387967	-83.107131	1279.70	5.00	1284.70
20	37.388944	-83.107293	1304.10	5.00	1309.10
21	37.389047	-83.111911	1318.60	5.00	1323.60

Name: PV array 12
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.401581	-83.123266	1283.20	5.00	1288.20
2	37.400945	-83.123288	1291.80	5.00	1296.80
3	37.401157	-83.122332	1295.40	5.00	1300.40
4	37.402380	-83.120517	1315.10	5.00	1320.10
5	37.403016	-83.120495	1306.20	5.00	1311.20
6	37.401793	-83.122337	1286.50	5.00	1291.50
7	37.401760	-83.122445	1286.40	5.00	1291.40
8	37.401581	-83.123266	1283.20	5.00	1288.20

Name: PV array 13
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.401098	-83.124561	1280.90	5.00	1285.90
2	37.401114	-83.125244	1279.10	5.00	1284.10
3	37.400784	-83.126437	1279.90	5.00	1284.90
4	37.400492	-83.127169	1279.90	5.00	1284.90
5	37.399856	-83.127191	1284.00	5.00	1289.00
6	37.399810	-83.125131	1285.60	5.00	1290.60
7	37.400770	-83.124572	1283.20	5.00	1288.20
8	37.401098	-83.124561	1280.90	5.00	1285.90

Name: PV array 14
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.400196	-83.129784	1291.50	5.00	1296.50
2	37.399248	-83.130933	1284.60	5.00	1289.60
3	37.398943	-83.131075	1284.20	5.00	1289.20
4	37.398615	-83.131087	1284.50	5.00	1289.50
5	37.398590	-83.129945	1283.20	5.00	1288.20
6	37.399517	-83.127877	1281.70	5.00	1286.70
7	37.399822	-83.127736	1277.70	5.00	1282.70
8	37.400150	-83.127724	1279.20	5.00	1284.20
9	37.400196	-83.129784	1291.50	5.00	1296.50

Name: PV array 15
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.399016	-83.133154	1284.70	5.00	1289.70
2	37.398345	-83.132850	1278.10	5.00	1283.10
3	37.398324	-83.131904	1281.90	5.00	1286.90
4	37.398960	-83.131882	1284.80	5.00	1289.80
5	37.399004	-83.132603	1285.70	5.00	1290.70
6	37.399332	-83.132591	1286.70	5.00	1291.70
7	37.399344	-83.133143	1285.90	5.00	1290.90

Name: PV array 16
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.398481	-83.125502	1290.50	5.00	1295.50
2	37.398470	-83.126602	1316.60	5.00	1321.60
3	37.398770	-83.126605	1312.50	5.00	1317.50
4	37.398787	-83.127526	1316.70	5.00	1321.70
5	37.397938	-83.129772	1320.90	5.00	1325.90
6	37.397336	-83.131329	1325.90	5.00	1330.90
7	37.396700	-83.131351	1299.90	5.00	1304.90
8	37.396679	-83.130406	1311.80	5.00	1316.80
9	37.397005	-83.130356	1330.80	5.00	1335.80
10	37.396945	-83.127640	1288.60	5.00	1293.60
11	37.397170	-83.126122	1284.60	5.00	1289.60
12	37.398151	-83.126100	1306.70	5.00	1311.70
13	37.398118	-83.124974	1285.80	5.00	1290.80
14	37.397761	-83.124947	1283.30	5.00	1288.30
15	37.397755	-83.124658	1285.40	5.00	1290.40
16	37.398100	-83.124186	1296.70	5.00	1301.70
17	37.398406	-83.124044	1299.90	5.00	1304.90
18	37.399042	-83.124022	1291.40	5.00	1296.40
19	37.399075	-83.125492	1293.90	5.00	1298.90

Name: PV array 17
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.401892	-83.143360	1250.80	5.00	1255.80
2	37.401916	-83.143961	1260.70	5.00	1265.70
3	37.401609	-83.144011	1241.00	5.00	1246.00
4	37.401621	-83.144562	1234.30	5.00	1239.30
5	37.401293	-83.144574	1233.20	5.00	1238.20
6	37.401232	-83.141792	1261.30	5.00	1266.30
7	37.401537	-83.141650	1256.20	5.00	1261.20
8	37.401865	-83.141639	1249.50	5.00	1254.50
9	37.401879	-83.142295	1247.70	5.00	1252.70
10	37.402190	-83.142350	1262.40	5.00	1267.40
11	37.402212	-83.143360	1273.50	5.00	1278.50

Name: PV array 18
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.400203	-83.144890	1295.10	5.00	1300.10
2	37.400512	-83.144918	1284.50	5.00	1289.50
3	37.400521	-83.145345	1297.70	5.00	1302.70
4	37.400831	-83.145400	1286.90	5.00	1291.90
5	37.401155	-83.146111	1280.10	5.00	1285.10
6	37.401181	-83.147291	1266.50	5.00	1271.50
7	37.401536	-83.147279	1246.30	5.00	1251.30
8	37.401563	-83.148487	1216.00	5.00	1221.00
9	37.401208	-83.148499	1225.30	5.00	1230.30
10	37.401222	-83.149155	1210.60	5.00	1215.60
11	37.400915	-83.149231	1220.70	5.00	1225.70
12	37.400611	-83.149439	1234.00	5.00	1239.00
13	37.400310	-83.149777	1244.20	5.00	1249.20
14	37.399955	-83.149789	1242.80	5.00	1247.80
15	37.399981	-83.150970	1261.40	5.00	1266.40
16	37.399681	-83.151374	1250.60	5.00	1255.60
17	37.398736	-83.151407	1262.30	5.00	1267.30
18	37.398714	-83.150396	1263.40	5.00	1268.40
19	37.399014	-83.150386	1266.70	5.00	1271.70
20	37.399003	-83.149533	1270.90	5.00	1275.90
21	37.399291	-83.149534	1278.50	5.00	1283.50
22	37.399264	-83.147647	1319.60	5.00	1324.60
23	37.398962	-83.147657	1324.80	5.00	1329.80
24	37.398644	-83.147209	1334.90	5.00	1339.90
25	37.398526	-83.146819	1348.40	5.00	1353.40
26	37.397890	-83.146841	1352.20	5.00	1357.20
27	37.397578	-83.146721	1361.20	5.00	1366.20
28	37.397240	-83.146601	1354.70	5.00	1359.70
29	37.396935	-83.146743	1325.00	5.00	1330.00
30	37.396627	-83.146819	1315.80	5.00	1320.80
31	37.395884	-83.146943	1312.60	5.00	1317.60
32	37.394962	-83.146975	1314.80	5.00	1319.80
33	37.394975	-83.147538	1311.40	5.00	1316.40
34	37.395279	-83.147527	1308.80	5.00	1313.80
35	37.395284	-83.147751	1304.20	5.00	1309.20
36	37.394983	-83.148090	1308.10	5.00	1313.10
37	37.394629	-83.148168	1309.80	5.00	1314.80
38	37.393993	-83.148189	1304.30	5.00	1309.30
39	37.393983	-83.148059	1307.00	5.00	1312.00
40	37.393373	-83.148080	1327.30	5.00	1332.30
41	37.393345	-83.146807	1335.30	5.00	1340.30

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
42	37.393649	-83.146796	1327.70	5.00	1332.70
43	37.393609	-83.144763	1269.10	5.00	1274.10
44	37.393912	-83.144490	1273.60	5.00	1278.60
45	37.394219	-83.144440	1276.50	5.00	1281.50
46	37.394198	-83.143495	1280.80	5.00	1285.80
47	37.394546	-83.143155	1284.60	5.00	1289.60
48	37.395360	-83.142273	1291.40	5.00	1296.40
49	37.396195	-83.142113	1284.50	5.00	1289.50
50	37.397473	-83.141938	1272.30	5.00	1277.30
51	37.398082	-83.141588	1285.20	5.00	1290.20
52	37.398519	-83.141508	1295.20	5.00	1300.20
53	37.398791	-83.140943	1300.40	5.00	1305.40
54	37.399423	-83.140557	1311.20	5.00	1316.20
55	37.399763	-83.139824	1288.00	5.00	1293.00
56	37.400064	-83.139485	1279.60	5.00	1284.60
57	37.400700	-83.139463	1292.30	5.00	1297.30
58	37.400754	-83.141917	1274.70	5.00	1279.70

Name: PV array 2
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.401469	-83.100343	1345.00	5.00	1350.00
2	37.401769	-83.099938	1322.70	5.00	1327.70
3	37.402067	-83.099468	1317.70	5.00	1322.70
4	37.402364	-83.098933	1322.00	5.00	1327.00
5	37.403606	-83.096799	1335.80	5.00	1340.80
6	37.403951	-83.096710	1341.50	5.00	1346.50
7	37.404279	-83.096699	1343.70	5.00	1348.70
8	37.404307	-83.096906	1341.30	5.00	1346.30
9	37.405185	-83.096875	1349.40	5.00	1354.40
10	37.405313	-83.096662	1350.60	5.00	1355.60
11	37.405615	-83.096323	1353.90	5.00	1358.90
12	37.405914	-83.095919	1355.80	5.00	1360.80
13	37.406242	-83.095907	1347.30	5.00	1352.30
14	37.406262	-83.096787	1335.90	5.00	1340.90
15	37.406571	-83.096842	1319.80	5.00	1324.80
16	37.406626	-83.098060	1297.70	5.00	1302.70
17	37.406954	-83.098049	1281.70	5.00	1286.70
18	37.406971	-83.098797	1327.20	5.00	1332.20
19	37.407282	-83.098956	1345.70	5.00	1350.70
20	37.407596	-83.099142	1352.40	5.00	1357.40
21	37.407905	-83.099197	1352.80	5.00	1357.80
22	37.408263	-83.099316	1337.90	5.00	1342.90
23	37.408548	-83.099109	1312.70	5.00	1317.70
24	37.408701	-83.097987	1285.30	5.00	1290.30
25	37.409029	-83.097976	1272.50	5.00	1277.50
26	37.409604	-83.098284	1287.30	5.00	1292.30
27	37.409663	-83.100935	1343.70	5.00	1348.70
28	37.409240	-83.101606	1347.30	5.00	1352.30
29	37.408943	-83.102076	1345.80	5.00	1350.80
30	37.408637	-83.102218	1347.40	5.00	1352.40
31	37.408346	-83.103016	1348.60	5.00	1353.60
32	37.408004	-83.103619	1349.60	5.00	1354.60
33	37.407705	-83.104024	1357.50	5.00	1362.50
34	37.407397	-83.104100	1373.70	5.00	1378.70
35	37.407096	-83.104412	1364.50	5.00	1369.50
36	37.407111	-83.105095	1349.50	5.00	1354.50
37	37.406760	-83.105304	1352.60	5.00	1357.60
38	37.406072	-83.105317	1380.20	5.00	1385.20
39	37.406082	-83.106247	1338.10	5.00	1343.10
40	37.405780	-83.106520	1336.40	5.00	1341.40
41	37.405427	-83.106664	1342.30	5.00	1347.30

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
42	37.404174	-83.106708	1308.30	5.00	1313.30
43	37.403816	-83.106589	1307.70	5.00	1312.70
44	37.403785	-83.105212	1303.60	5.00	1308.60
45	37.403476	-83.105157	1296.40	5.00	1301.40
46	37.403152	-83.104512	1307.60	5.00	1312.60
47	37.402828	-83.103801	1322.00	5.00	1327.00
48	37.402793	-83.103474	1318.80	5.00	1323.80
49	37.402157	-83.103496	1307.00	5.00	1312.00
50	37.402096	-83.102960	1313.80	5.00	1318.80
51	37.401529	-83.102993	1288.10	5.00	1293.10

Name: PV array 3
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.406026	-83.094067	1344.10	5.00	1349.10
2	37.404747	-83.094178	1356.50	5.00	1361.50
3	37.403160	-83.094300	1302.70	5.00	1307.70
4	37.402216	-83.094333	1249.50	5.00	1254.50
5	37.402173	-83.092431	1376.70	5.00	1381.70
6	37.402125	-83.090305	1418.60	5.00	1423.60
7	37.402110	-83.089610	1439.30	5.00	1444.30
8	37.402038	-83.086435	1384.20	5.00	1389.20
9	37.402343	-83.086435	1380.70	5.00	1385.70
10	37.403302	-83.086850	1370.10	5.00	1375.10
11	37.403948	-83.087101	1348.40	5.00	1353.40
12	37.404595	-83.087395	1318.30	5.00	1323.30
13	37.404941	-83.087869	1312.50	5.00	1317.50
14	37.405247	-83.087700	1280.30	5.00	1285.30
15	37.406209	-83.087272	1254.00	5.00	1259.00
16	37.406537	-83.087260	1250.50	5.00	1255.50
17	37.406852	-83.087512	1249.40	5.00	1254.40
18	37.407188	-83.088747	1241.70	5.00	1246.70
19	37.407203	-83.089430	1239.60	5.00	1244.60
20	37.406590	-83.089622	1239.60	5.00	1244.60
21	37.406651	-83.093244	1315.40	5.00	1320.40
22	37.406356	-83.093975	1342.50	5.00	1347.50

Name: PV array 4
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.411337	-83.096857	1221.10	5.00	1226.10
2	37.411009	-83.096869	1224.40	5.00	1229.40
3	37.410892	-83.096544	1223.60	5.00	1228.60
4	37.410256	-83.096567	1232.50	5.00	1237.50
5	37.409281	-83.096470	1238.00	5.00	1243.00
6	37.408968	-83.096284	1239.60	5.00	1244.60
7	37.408652	-83.095967	1240.20	5.00	1245.20
8	37.408619	-83.094497	1238.50	5.00	1243.50
9	37.408310	-83.094469	1240.50	5.00	1245.50
10	37.408298	-83.093917	1242.40	5.00	1247.40
11	37.408911	-83.093907	1239.70	5.00	1244.70
12	37.409244	-83.093949	1238.20	5.00	1243.20
13	37.409554	-83.094004	1235.10	5.00	1240.10
14	37.409889	-83.093992	1232.70	5.00	1237.70
15	37.410854	-83.093630	1240.70	5.00	1245.70
16	37.411490	-83.093608	1250.10	5.00	1255.10
17	37.411777	-83.093675	1251.70	5.00	1256.70
18	37.412114	-83.093914	1250.20	5.00	1255.20
19	37.412481	-83.094387	1249.40	5.00	1254.40
20	37.412800	-83.094875	1245.40	5.00	1250.40
21	37.412894	-83.095358	1237.50	5.00	1242.50
22	37.412592	-83.095697	1225.20	5.00	1230.20
23	37.412246	-83.096103	1218.90	5.00	1223.90
24	37.411945	-83.096442	1217.20	5.00	1222.20
25	37.411642	-83.096715	1218.50	5.00	1223.50
26	37.411337	-83.096857	1221.10	5.00	1226.10

Name: PV array 5
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.412026	-83.098510	1247.40	5.00	1252.40
2	37.412009	-83.097762	1214.70	5.00	1219.70
3	37.412310	-83.097423	1207.60	5.00	1212.60
4	37.412659	-83.097109	1208.30	5.00	1213.30
5	37.413297	-83.096942	1210.70	5.00	1215.70
6	37.413908	-83.096907	1215.20	5.00	1220.20
7	37.414238	-83.096633	1220.10	5.00	1225.10
8	37.414542	-83.096425	1217.70	5.00	1222.70
9	37.414841	-83.096020	1236.70	5.00	1241.70
10	37.416092	-83.094663	1339.10	5.00	1344.10
11	37.416437	-83.094191	1342.10	5.00	1347.10
12	37.416720	-83.093065	1334.50	5.00	1339.50
13	37.416979	-83.092925	1332.60	5.00	1337.60
14	37.417615	-83.092902	1329.00	5.00	1334.00
15	37.418045	-83.092559	1317.60	5.00	1322.60
16	37.418338	-83.091826	1319.50	5.00	1324.50
17	37.417715	-83.091613	1321.40	5.00	1326.40
18	37.417713	-83.091520	1322.50	5.00	1327.50
19	37.418014	-83.091181	1333.20	5.00	1338.20
20	37.418342	-83.091050	1344.70	5.00	1349.70
21	37.418624	-83.090831	1354.90	5.00	1359.90
22	37.419281	-83.090545	1372.50	5.00	1377.50
23	37.419607	-83.090348	1380.60	5.00	1385.60
24	37.419891	-83.090196	1387.90	5.00	1392.90
25	37.420547	-83.089844	1393.00	5.00	1398.00
26	37.420842	-83.089243	1387.40	5.00	1392.40
27	37.421170	-83.089231	1402.60	5.00	1407.60
28	37.421487	-83.089614	1397.50	5.00	1402.50
29	37.421851	-83.089995	1392.50	5.00	1397.50
30	37.422757	-83.090171	1369.20	5.00	1374.20
31	37.423145	-83.090540	1363.60	5.00	1368.60
32	37.423459	-83.090792	1363.30	5.00	1368.30
33	37.423467	-83.091147	1355.20	5.00	1360.20
34	37.423162	-83.091289	1348.40	5.00	1353.40
35	37.422809	-83.091433	1343.10	5.00	1348.10
36	37.422198	-83.091690	1343.90	5.00	1348.90
37	37.421868	-83.091783	1343.20	5.00	1348.20
38	37.421564	-83.091805	1347.40	5.00	1352.40
39	37.421225	-83.091659	1351.60	5.00	1356.60
40	37.421290	-83.094573	1218.20	5.00	1223.20
41	37.421605	-83.094863	1236.90	5.00	1241.90

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
42	37.422274	-83.095102	1254.30	5.00	1259.30
43	37.422563	-83.095234	1258.60	5.00	1263.60
44	37.422616	-83.096561	1355.20	5.00	1360.20
45	37.422288	-83.096573	1380.90	5.00	1385.90
46	37.421665	-83.096332	1404.50	5.00	1409.50
47	37.420383	-83.096312	1406.60	5.00	1411.60
48	37.419718	-83.096243	1406.30	5.00	1411.30
49	37.419407	-83.096149	1401.70	5.00	1406.70
50	37.419070	-83.096095	1394.80	5.00	1399.80
51	37.418769	-83.096434	1394.90	5.00	1399.90
52	37.418468	-83.096773	1390.30	5.00	1395.30
53	37.418170	-83.097243	1390.60	5.00	1395.60
54	37.417773	-83.097848	1398.70	5.00	1403.70
55	37.417137	-83.097871	1386.40	5.00	1391.40
56	37.416822	-83.097619	1367.90	5.00	1372.90
57	37.416504	-83.097171	1345.40	5.00	1350.40
58	37.416173	-83.097379	1326.80	5.00	1331.80
59	37.415873	-83.097784	1276.70	5.00	1281.70
60	37.415569	-83.097991	1224.40	5.00	1229.40
61	37.415218	-83.098201	1189.70	5.00	1194.70
62	37.414913	-83.098343	1178.30	5.00	1183.30
63	37.414607	-83.098485	1179.70	5.00	1184.70
64	37.413947	-83.098639	1190.50	5.00	1195.50
65	37.413336	-83.098924	1201.70	5.00	1206.70
66	37.412700	-83.098946	1231.70	5.00	1236.70
67	37.412340	-83.098762	1243.60	5.00	1248.60
68	37.412026	-83.098510	1247.40	5.00	1252.40

Name: PV array 6
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.413314	-83.093366	1411.40	5.00	1416.40
2	37.412991	-83.092721	1420.30	5.00	1425.30
3	37.412673	-83.092312	1422.80	5.00	1427.80
4	37.412218	-83.091895	1432.00	5.00	1437.00
5	37.411273	-83.091928	1431.20	5.00	1436.20
6	37.410300	-83.091897	1436.50	5.00	1441.50
7	37.409967	-83.090793	1425.50	5.00	1430.50
8	37.409915	-83.088470	1357.50	5.00	1362.50
9	37.410220	-83.088328	1359.50	5.00	1364.50
10	37.410827	-83.087912	1371.00	5.00	1376.00
11	37.411131	-83.085604	1412.40	5.00	1417.40
12	37.411413	-83.084412	1403.80	5.00	1408.80
13	37.411717	-83.084204	1395.60	5.00	1400.60
14	37.412024	-83.084128	1387.10	5.00	1392.10
15	37.412352	-83.084116	1381.00	5.00	1386.00
16	37.412474	-83.083455	1368.50	5.00	1373.50
17	37.412802	-83.083444	1363.90	5.00	1368.90
18	37.413128	-83.084220	1379.00	5.00	1384.00
19	37.413456	-83.085062	1378.30	5.00	1383.30
20	37.413467	-83.085548	1374.70	5.00	1379.70
21	37.412851	-83.085608	1396.60	5.00	1401.60
22	37.412863	-83.086133	1385.60	5.00	1390.60
23	37.413481	-83.086177	1372.50	5.00	1377.50
24	37.413790	-83.086232	1362.90	5.00	1367.90
25	37.413801	-83.086718	1353.40	5.00	1358.40
26	37.413497	-83.086899	1355.00	5.00	1360.00
27	37.413569	-83.089142	1345.90	5.00	1350.90
28	37.413855	-83.089118	1347.60	5.00	1352.60
29	37.414233	-83.090090	1431.60	5.00	1436.60
30	37.414572	-83.091457	1413.90	5.00	1418.90
31	37.414894	-83.092036	1393.60	5.00	1398.60
32	37.414919	-83.093178	1397.50	5.00	1402.50
33	37.414316	-83.093791	1402.50	5.00	1407.50
34	37.414047	-83.093917	1411.00	5.00	1416.00
35	37.413634	-83.093880	1406.90	5.00	1411.90

Name: PV array 7
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.412329	-83.083093	1364.20	5.00	1369.20
2	37.411693	-83.083116	1380.60	5.00	1385.60
3	37.411376	-83.082799	1379.00	5.00	1384.00
4	37.411052	-83.082088	1376.30	5.00	1381.30
5	37.411037	-83.081405	1372.60	5.00	1377.60
6	37.410836	-83.081176	1375.10	5.00	1380.10
7	37.410854	-83.080492	1372.90	5.00	1377.90
8	37.411000	-83.079765	1375.90	5.00	1380.90
9	37.411916	-83.079339	1375.30	5.00	1380.30
10	37.413216	-83.079293	1376.60	5.00	1381.60
11	37.413222	-83.079582	1371.70	5.00	1376.70
12	37.412920	-83.079855	1366.50	5.00	1371.50
13	37.412267	-83.080377	1366.10	5.00	1371.10
14	37.412115	-83.080803	1361.40	5.00	1366.40
15	37.411981	-83.081372	1363.40	5.00	1368.40
16	37.412306	-83.082082	1364.30	5.00	1369.30
17	37.412329	-83.083093	1364.20	5.00	1369.20

Name: PV array 8
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.416897	-83.090999	1338.40	5.00	1343.40
2	37.416298	-83.091622	1328.80	5.00	1333.80
3	37.415990	-83.091633	1334.60	5.00	1339.60
4	37.415983	-83.090453	1345.90	5.00	1350.90
5	37.415655	-83.090465	1349.30	5.00	1354.30
6	37.415613	-83.088601	1357.60	5.00	1362.60
7	37.416866	-83.088557	1370.30	5.00	1375.30
8	37.416893	-83.089764	1362.90	5.00	1367.90
9	37.416897	-83.090999	1338.40	5.00	1343.40

Name: PV array 9
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.396911	-83.121275	1208.70	5.00	1213.70
2	37.396608	-83.121483	1208.90	5.00	1213.90
3	37.396280	-83.121494	1199.70	5.00	1204.70
4	37.396281	-83.121150	1210.10	5.00	1215.10
5	37.395540	-83.121180	1198.40	5.00	1203.40
6	37.394362	-83.121889	1186.00	5.00	1191.00
7	37.393726	-83.121911	1179.70	5.00	1184.70
8	37.393717	-83.121491	1182.00	5.00	1187.00
9	37.394976	-83.120463	1194.50	5.00	1199.50
10	37.395601	-83.120452	1202.10	5.00	1207.10
11	37.395539	-83.119091	1270.70	5.00	1275.70
12	37.394329	-83.119134	1290.40	5.00	1295.40
13	37.393652	-83.118566	1282.90	5.00	1287.90
14	37.393330	-83.117987	1289.20	5.00	1294.20
15	37.392883	-83.117757	1283.30	5.00	1288.30
16	37.391645	-83.118642	1221.80	5.00	1226.80
17	37.391342	-83.118876	1201.80	5.00	1206.80
18	37.390390	-83.119828	1210.90	5.00	1215.90
19	37.390090	-83.120167	1220.40	5.00	1225.40
20	37.389784	-83.120309	1230.80	5.00	1235.80
21	37.389148	-83.120331	1237.30	5.00	1242.30
22	37.388779	-83.119753	1240.70	5.00	1245.70
23	37.388457	-83.119108	1241.50	5.00	1246.50
24	37.388119	-83.117807	1248.30	5.00	1253.30
25	37.388086	-83.116338	1278.30	5.00	1283.30
26	37.388663	-83.114545	1297.30	5.00	1302.30
27	37.389286	-83.112686	1315.70	5.00	1320.70
28	37.389580	-83.112019	1318.40	5.00	1323.40
29	37.389881	-83.111681	1318.00	5.00	1323.00
30	37.390209	-83.111669	1317.30	5.00	1322.30
31	37.390573	-83.112050	1317.10	5.00	1322.10
32	37.391514	-83.112739	1319.00	5.00	1324.00
33	37.391569	-83.113011	1319.50	5.00	1324.50
34	37.392492	-83.112967	1310.60	5.00	1315.60
35	37.392910	-83.112953	1302.90	5.00	1307.90
36	37.394209	-83.112788	1298.60	5.00	1303.60
37	37.394475	-83.111848	1302.90	5.00	1307.90
38	37.394773	-83.111378	1307.40	5.00	1312.40
39	37.395101	-83.111366	1309.10	5.00	1314.10
40	37.395769	-83.111540	1308.60	5.00	1313.60
41	37.396080	-83.111660	1310.30	5.00	1315.30

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
42	37.396707	-83.112098	1310.50	5.00	1315.50
43	37.396831	-83.112718	1306.70	5.00	1311.70
44	37.397467	-83.112695	1307.90	5.00	1312.90
45	37.397755	-83.112828	1307.80	5.00	1312.80
46	37.398766	-83.113503	1306.40	5.00	1311.40
47	37.399059	-83.113833	1301.50	5.00	1306.50
48	37.399414	-83.114859	1252.80	5.00	1257.80
49	37.400098	-83.115754	1266.40	5.00	1271.40
50	37.400116	-83.116568	1266.90	5.00	1271.90

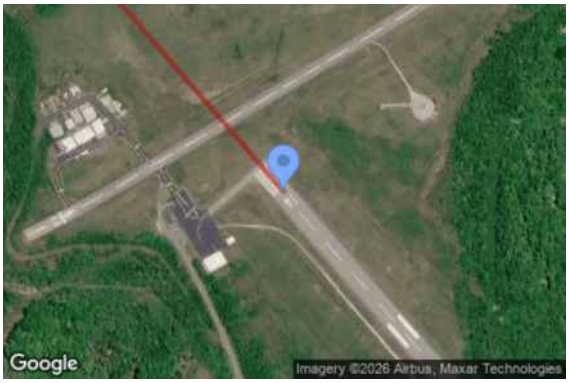
Flight Path Receptors

Name: CPF RWY 06
Description:
Threshold height: 50 ft
Direction: 59.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.389764	-83.269137	1244.52	50.00	1294.52
Two-mile	37.374873	-83.300366	1312.58	535.37	1847.95

Name: CPF RWY 14
Description:
Threshold height: 31 ft
Direction: 139.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°



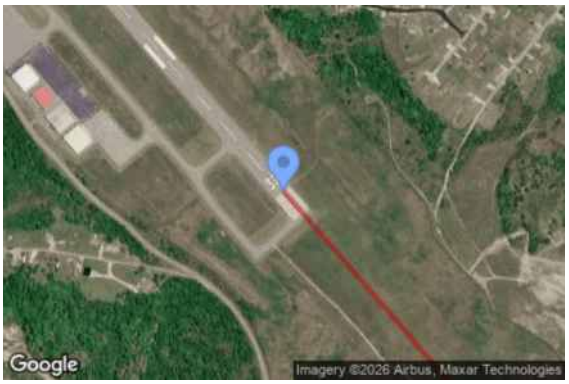
Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.390141	-83.265409	1243.15	31.00	1274.15
Two-mile	37.411962	-83.289311	886.83	940.75	1827.58

Name: CPF RWY 24
Description:
Threshold height: 50 ft
Direction: 239.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.393624	-83.260982	1240.65	50.00	1290.65
Two-mile	37.408515	-83.229752	1139.90	704.18	1844.08

Name: CPF RWY 32
Description:
Threshold height: 38 ft
Direction: 319.0°
Glide slope: 4.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.379487	-83.253748	1250.82	38.00	1288.82
Two-mile	37.357666	-83.229849	1359.30	667.95	2027.25

Glare Analysis Results

Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 10	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 11	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 12	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 13	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 14	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 15	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 16	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 17	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 18	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 2	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 3	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 4	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 5	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 6	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 7	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 8	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 9	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CPF RWY 06	0	0.0	0	0.0
CPF RWY 14	0	0.0	0	0.0
CPF RWY 24	0	0.0	0	0.0
CPF RWY 32	0	0.0	0	0.0

PV: PV array 1 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CPF RWY 06	0	0.0	0	0.0
CPF RWY 14	0	0.0	0	0.0
CPF RWY 24	0	0.0	0	0.0
CPF RWY 32	0	0.0	0	0.0

PV array 1 and FP: CPF RWY 06

No glare found

PV array 1 and FP: CPF RWY 14

No glare found

PV array 1 and FP: CPF RWY 24

No glare found

PV array 1 and FP: CPF RWY 32

No glare found

PV: PV array 10 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CPF RWY 06	0	0.0	0	0.0
CPF RWY 14	0	0.0	0	0.0
CPF RWY 24	0	0.0	0	0.0
CPF RWY 32	0	0.0	0	0.0

PV array 10 and FP: CPF RWY 06

No glare found

PV array 10 and FP: CPF RWY 14

No glare found

PV array 10 and FP: CPF RWY 24

No glare found

PV array 10 and FP: CPF RWY 32

No glare found

PV: PV array 11 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CPF RWY 06	0	0.0	0	0.0
CPF RWY 14	0	0.0	0	0.0
CPF RWY 24	0	0.0	0	0.0
CPF RWY 32	0	0.0	0	0.0

PV array 11 and FP: CPF RWY 06

No glare found

PV array 11 and FP: CPF RWY 14

No glare found

PV array 11 and FP: CPF RWY 24

No glare found

PV array 11 and FP: CPF RWY 32

No glare found

PV: PV array 12 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CPF RWY 06	0	0.0	0	0.0
CPF RWY 14	0	0.0	0	0.0
CPF RWY 24	0	0.0	0	0.0
CPF RWY 32	0	0.0	0	0.0

PV array 12 and FP: CPF RWY 06

No glare found

PV array 12 and FP: CPF RWY 14

No glare found

PV array 12 and FP: CPF RWY 24

No glare found

PV array 12 and FP: CPF RWY 32

No glare found

PV: PV array 13 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CPF RWY 06	0	0.0	0	0.0
CPF RWY 14	0	0.0	0	0.0
CPF RWY 24	0	0.0	0	0.0
CPF RWY 32	0	0.0	0	0.0

PV array 13 and FP: CPF RWY 06

No glare found

PV array 13 and FP: CPF RWY 14

No glare found

PV array 13 and FP: CPF RWY 24

No glare found

PV array 13 and FP: CPF RWY 32

No glare found

PV: PV array 14 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CPF RWY 06	0	0.0	0	0.0
CPF RWY 14	0	0.0	0	0.0
CPF RWY 24	0	0.0	0	0.0
CPF RWY 32	0	0.0	0	0.0

PV array 14 and FP: CPF RWY 06

No glare found

PV array 14 and FP: CPF RWY 14

No glare found

PV array 14 and FP: CPF RWY 24

No glare found

PV array 14 and FP: CPF RWY 32

No glare found

PV: PV array 15 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CPF RWY 06	0	0.0	0	0.0
CPF RWY 14	0	0.0	0	0.0
CPF RWY 24	0	0.0	0	0.0
CPF RWY 32	0	0.0	0	0.0

PV array 15 and FP: CPF RWY 06

No glare found

PV array 15 and FP: CPF RWY 14

No glare found

PV array 15 and FP: CPF RWY 24

No glare found

PV array 15 and FP: CPF RWY 32

No glare found

PV: PV array 16 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CPF RWY 06	0	0.0	0	0.0
CPF RWY 14	0	0.0	0	0.0
CPF RWY 24	0	0.0	0	0.0
CPF RWY 32	0	0.0	0	0.0

PV array 16 and FP: CPF RWY 06

No glare found

PV array 16 and FP: CPF RWY 14

No glare found

PV array 16 and FP: CPF RWY 24

No glare found

PV array 16 and FP: CPF RWY 32

No glare found

PV: PV array 17 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CPF RWY 06	0	0.0	0	0.0
CPF RWY 14	0	0.0	0	0.0
CPF RWY 24	0	0.0	0	0.0
CPF RWY 32	0	0.0	0	0.0

PV array 17 and FP: CPF RWY 06

No glare found

PV array 17 and FP: CPF RWY 14

No glare found

PV array 17 and FP: CPF RWY 24

No glare found

PV array 17 and FP: CPF RWY 32

No glare found

PV: PV array 18 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CPF RWY 06	0	0.0	0	0.0
CPF RWY 14	0	0.0	0	0.0
CPF RWY 24	0	0.0	0	0.0
CPF RWY 32	0	0.0	0	0.0

PV array 18 and FP: CPF RWY 06

No glare found

PV array 18 and FP: CPF RWY 14

No glare found

PV array 18 and FP: CPF RWY 24

No glare found

PV array 18 and FP: CPF RWY 32

No glare found

PV: PV array 2 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CPF RWY 06	0	0.0	0	0.0
CPF RWY 14	0	0.0	0	0.0
CPF RWY 24	0	0.0	0	0.0
CPF RWY 32	0	0.0	0	0.0

PV array 2 and FP: CPF RWY 06

No glare found

PV array 2 and FP: CPF RWY 14

No glare found

PV array 2 and FP: CPF RWY 24

No glare found

PV array 2 and FP: CPF RWY 32

No glare found

PV: PV array 3 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CPF RWY 06	0	0.0	0	0.0
CPF RWY 14	0	0.0	0	0.0
CPF RWY 24	0	0.0	0	0.0
CPF RWY 32	0	0.0	0	0.0

PV array 3 and FP: CPF RWY 06

No glare found

PV array 3 and FP: CPF RWY 14

No glare found

PV array 3 and FP: CPF RWY 24

No glare found

PV array 3 and FP: CPF RWY 32

No glare found

PV: PV array 4 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CPF RWY 06	0	0.0	0	0.0
CPF RWY 14	0	0.0	0	0.0
CPF RWY 24	0	0.0	0	0.0
CPF RWY 32	0	0.0	0	0.0

PV array 4 and FP: CPF RWY 06

No glare found

PV array 4 and FP: CPF RWY 14

No glare found

PV array 4 and FP: CPF RWY 24

No glare found

PV array 4 and FP: CPF RWY 32

No glare found

PV: PV array 5 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CPF RWY 06	0	0.0	0	0.0
CPF RWY 14	0	0.0	0	0.0
CPF RWY 24	0	0.0	0	0.0
CPF RWY 32	0	0.0	0	0.0

PV array 5 and FP: CPF RWY 06

No glare found

PV array 5 and FP: CPF RWY 14

No glare found

PV array 5 and FP: CPF RWY 24

No glare found

PV array 5 and FP: CPF RWY 32

No glare found

PV: PV array 6 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CPF RWY 06	0	0.0	0	0.0
CPF RWY 14	0	0.0	0	0.0
CPF RWY 24	0	0.0	0	0.0
CPF RWY 32	0	0.0	0	0.0

PV array 6 and FP: CPF RWY 06

No glare found

PV array 6 and FP: CPF RWY 14

No glare found

PV array 6 and FP: CPF RWY 24

No glare found

PV array 6 and FP: CPF RWY 32

No glare found

PV: PV array 7 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CPF RWY 06	0	0.0	0	0.0
CPF RWY 14	0	0.0	0	0.0
CPF RWY 24	0	0.0	0	0.0
CPF RWY 32	0	0.0	0	0.0

PV array 7 and FP: CPF RWY 06

No glare found

PV array 7 and FP: CPF RWY 14

No glare found

PV array 7 and FP: CPF RWY 24

No glare found

PV array 7 and FP: CPF RWY 32

No glare found

PV: PV array 8 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CPF RWY 06	0	0.0	0	0.0
CPF RWY 14	0	0.0	0	0.0
CPF RWY 24	0	0.0	0	0.0
CPF RWY 32	0	0.0	0	0.0

PV array 8 and FP: CPF RWY 06

No glare found

PV array 8 and FP: CPF RWY 14

No glare found

PV array 8 and FP: CPF RWY 24

No glare found

PV array 8 and FP: CPF RWY 32

No glare found

PV: PV array 9 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CPF RWY 06	0	0.0	0	0.0
CPF RWY 14	0	0.0	0	0.0
CPF RWY 24	0	0.0	0	0.0
CPF RWY 32	0	0.0	0	0.0

PV array 9 and FP: CPF RWY 06

No glare found

PV array 9 and FP: CPF RWY 14

No glare found

PV array 9 and FP: CPF RWY 24

No glare found

PV array 9 and FP: CPF RWY 32

No glare found

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
The algorithm does not rigorously represent the detailed geometry of a system; detailed features such as gaps between modules, variable height of the PV array, and support structures may impact actual glare results. However, we have validated our models against several systems, including a PV array causing glare to the air-traffic control tower at Manchester-Boston Regional Airport and several sites in Albuquerque, and the tool accurately predicted the occurrence and intensity of glare at different times and days of the year.
Random number computations are utilized by various steps of the annual hazard analysis algorithm. Predicted minutes of glare can vary between runs as a result. This limitation primarily affects analyses of Observation Point receptors, including ATCTs. Note that the SGHAT/ ForgeSolar methodology has always relied on an analytical, qualitative approach to accurately determine the overall hazard (i.e. green vs. yellow) of expected glare on an annual basis.
The analysis does not automatically consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc.
The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
The variable direct normal irradiance (DNI) feature (if selected) scales the user-prescribed peak DNI using a typical clear-day irradiance profile. This profile has a lower DNI in the mornings and evenings and a maximum at solar noon. The scaling uses a clear-day irradiance profile based on a normalized time relative to sunrise, solar noon, and sunset, which are prescribed by a sun-position algorithm and the latitude and longitude obtained from Google maps. The actual DNI on any given day can be affected by cloud cover, atmospheric attenuation, and other environmental factors.
The ocular hazard predicted by the tool depends on a number of environmental, optical, and human factors, which can be uncertain. We provide input fields and typical ranges of values for these factors so that the user can vary these parameters to see if they have an impact on the results. The speed of SGHAT allows expedited sensitivity and parametric analyses.
The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

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This analysis was conducted using the best available radiometric modeling at the time of generation. Future updates to the modeling methodology may yield different results.

SAR Attachment 6

Transportation Assessment Report for the Starfire Phase II Solar Project

Perry and Knott Counties, Kentucky

August 2026

Prepared for:

STMO Bn, LLC
515 N Flagler Dr. Suite 250,
West Palm Beach, FL, 33401

Prepared by:

Tetra Tech, Inc.
4101 Cox Road, Suite 100
Glen Allen, VA 23060

TETRA TECH

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Figure 1. Site Locus

APPENDICES

Appendix A. KYTC Traffic Volume Data
Appendix B. Trip Generation Calculations
Appendix C. Public Transportation Information
Appendix D. HCS Worksheets

ACRONYMS AND ABBREVIATIONS

	Definition
ADT	Average Daily Traffic
HCM	Highway Capacity Manual, 7th Edition
HCS2024	Highway Capacity Software version 2026
KYTC	Kentucky Transportation Cabinet
MW	Megawatts
O&M	Operations and Maintenance
Project site	The 1,500± acres of privately-owned land where the proposed Project is located
Project	Starfire Phase II Solar Project
vpd	vehicles per day
vph	vehicles per hour

1.0 INTRODUCTION

STMO Bn, LLC proposes to construct and operate the Starfire Phase II Solar Project (Project), a solar photovoltaic power generation facility which will consist of up to 200-megawatt (MW) ground-mounted solar photovoltaic system, a substation and related interconnection to the energy grid located in Knott and Perry Counties, Kentucky.

Tetra Tech, Inc. (Tetra Tech) has prepared the following transportation assessment for the Project. The Project site is comprised of approximately 1,500± acres of land at the site of the former Starfire coal mine. Access to the site is provided by several existing gravel access roads on Routes 476 and 1087. As part of the Project, it is anticipated that one of the Project site's existing gravel driveways as shown on Figure 1 will be used to provide temporary construction access and permanent Operations and Maintenance (O&M) access to the site. Regionally, it is anticipated that the construction workforce will primarily use Route 80 to access the site.

As part of this assessment, Tetra Tech developed vehicle trip generation estimates associated with the Project's anticipated peak construction workforce levels and reviewed them against existing traffic volumes and public transportation in the vicinity of the Project. An evaluation of roadway capacity was conducted for the primary roadways serving the site (Routes 80, 476, 1087, and 3209).

During the peak of construction, the Project is anticipated to generate approximately 566 vehicle trips on a typical weekday day with 242 vehicle trips occurring during the weekday morning peak hour, 82 vehicle trips occur during the off-peak hours and 242 vehicle trips occurring during the weekday evening peak hour. These estimates conservatively assume that all construction workers would arrive within the same hour in the morning and depart within the same hour in the evening.

Peak construction activities are currently anticipated to occur for a period of approximately seven to nine months. The construction workforce levels will be less during the remaining six to eight months of construction. The adjacent roadways are anticipated to have ample capacity to accommodate the temporary increase in daily and peak hour traffic during the peak construction activities and, by extension, the duration of construction of the Project. The Project will use vehicle cleaning stations, water trucks, and dust screens to control dust and ensure that sediment is not tracked from the Project site onto the road network. Additionally, routine post-construction O&M activities at the site are not anticipated to result in a noticeable increase in vehicle traffic and, therefore, are not anticipated to impact the public roadway system. Furthermore, no impacts to the regional railway system are anticipated.

2.0 TRAFFIC DATA

2.1 EXISTING TRAFFIC VOLUMES

Tetra Tech reviewed available Kentucky Transportation Cabinet (KYTC) traffic volume data[1] to establish historical daily traffic volumes in the vicinity of the Project. The principal roadways serving the site are State-maintained and include Route 80, Route 476, Route 1087, and Route 3209. Route 80 is classified by KYTC as a rural Other Principal Arterial roadway, Route 476 is classified as a rural Major Collector roadway and Route 1087 and Route 3209 are classified as rural Minor Collector roadways.

Based on the most recent publicly available data from the KYTC Traffic Reporting System, the estimated Annual Average Daily Traffic (AADT) volume on the roadways serving the site expressed in vehicles per day (vpd) are listed below. Traffic volume data that was used to support this assessment is provided in Appendix A.

- Route 80 near the Project Site – 5,305 vpd (2020)
- Route 476 west of main access road/guard shack– 180 vpd (2025)
- Route 476 north of Route 80 – 935 vpd (2024)
- Route 1087 off of Route 80 – 235 vpd (2025)
- Route 3209 off of Route 80 – 373 vpd (2025)

2.2 VEHICLE TRIP GENERATION

The Project will consist of three phases: construction, O&M, and decommissioning. The highest volume of site-related trips will occur during the peak construction phase of the Project. Therefore, the trip generation for the peak construction workforce levels were estimated for this assessment, along with an assessment of post-construction conditions. The Project is not anticipated to use rail for delivery transport; therefore, the trip generation estimates include roadway vehicles only.

Vehicle trip generation estimates were developed based on anticipated construction operations for the Project. Construction of the proposed solar facility is expected to include site grading, equipment deliveries, panel installation and inspections. It is anticipated that, at peak operations, the site could experience construction workforce levels of up to 250 construction workers at one time. Peak construction activities are currently anticipated to occur for a period of approximately seven to nine months. Construction hours of operation are assumed to generally be between 6:00 AM and 7:00 PM Monday through Friday.

The peak hours of the existing adjacent street traffic are expected to occur during the typical weekday commuting peak periods (7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM). It is expected that the majority of construction workers would arrive and depart the site outside of the typical weekday morning and weekday evening commuter peak hours of the adjacent street. However, to present a conservative assessment of potential traffic increases associated with the Project, it is assumed that all construction workers would arrive during the weekday morning peak hour and depart during the weekday evening peak hour. The supporting trip generation calculations and assumptions for the proposed Project's peak construction workforce levels are provided in Appendix B.

[1] Kentucky Transportation Cabinet Traffic Count Database, https://maps.kytc.ky.gov/trafficcounts/ (June 2026)

While on demand public transportation service is currently provided in Knott and Perry Counties by LKLP Community Action Council, fixed route services are not provided. Therefore, use of public transportation services by the Project's construction workforce is not anticipated. Public transportation information is provided in Appendix C. It is anticipated, however, that some construction workers would arrive and depart the site together (carpooling). For purposes of this assessment, it was assumed that 10 percent of the construction workers will carpool to travel to/from the site with two workers per vehicle. Table 1 presents a summary of the trip generation estimates for the proposed Project's peak construction workforce activities.

Table 1. Trip Generation Summary – Peak Construction Period

Time Period/ Direction	Project Trips			
	Workforce Trips[1]	Non-Heavy Vehicle Deliveries[2]	Heavy Vehicles[3]	Total
Weekday AM Peak Hour				
Enter	238	1	1	240
Exit	0	1	1	2
Total	**238**	**2**	**2**	**242**
Weekday Off-Peak Hours				
Enter	25	8	8	41
Exit	25	8	8	41
Total	**50**	**16**	**16**	**82**
Weekday PM Peak Hour				
Enter	0	1	1	2
Exit	238	1	1	240
Total	**238**	**2**	**2**	**242**
Weekday Daily				
Enter	263	10	10	283
Exit	263	10	10	283
Total	**526**	**20**	**20**	**566**

1/ Assumed 250 construction workers per day. Conservatively assumed construction workforce commuter trips overlap with adjacent street peaks.
2/ Assumed 10 deliveries per day distributed evenly throughout day.
3/ Assumed 10 deliveries per day distributed evenly throughout day.

As shown in Table 1, the peak construction activity for the proposed solar facility is expected to generate 566 new vehicle trips (283 entering and 283 exiting) on a typical weekday, with approximately 242 new vehicle trips (240 entering and 2 exiting) during the weekday morning peak hour and 242 new vehicle trips (2 entering and 240 exiting) during the weekday evening peak hour. Trip generation during peak construction off-peak hours is estimated at 82 vehicle trips (41 entering and 41 exiting). The adjacent roadways are anticipated to have ample capacity to accommodate the temporary increase in daily and peak hour traffic. Additionally, there are multiple routes connecting the site to the regional roadway system thereby reducing potential traffic increases on any single roadway segment or intersection. Furthermore, no impacts to the regional railway system are anticipated.

Post-Construction Conditions. Routine post-construction O&M activities at the site are not anticipated to result in a noticeable increase in vehicle traffic on the surrounding area roadways. The number of maintenance workers

traveling to the site is anticipated to be low and impacts to local traffic is not expected. The proposed solar facility will be unmanned during normal operations and would only be inspected periodically. Therefore, the site is not expected to result in a noticeable increase to existing traffic under typical conditions. Impacts resulting from decommissioning of the Project are expected to be similar to or less than those experienced during construction.

3.0 ROADWAY CAPACITY

Tetra Tech conducted a capacity analysis of the primary roadways serving the site (Routes 80, 476, 1087, and 3209). The analysis was conducted using Highway Capacity Software (HCS2026) for two lane highways which is based on the Highway Capacity Manual (HCM) 7th Edition methodology. The peak hour analyses provide a level of service (LOS) designation based on the calculated follower density (followers/mile/lane) for the roadway segment analyzed. LOS results are given in letter grade designations from LOS A through LOS F. An LOS of D or better is typically considered acceptable. LOS E and LOS F indicate that a roadway segment may experience significant delays and congestion.

Based on KYTC traffic volume data, the critical roadways serving the area of the Project experience weekday peak hour flows ranging from 16 to 289 vehicles per hour (vph) in the dominant travel directions. Traffic volumes in the vicinity of site have generally experienced negligible growth over the most recent 10 years of data available. Therefore, it was assumed that Routes 80, 476, 1087, and 3209 would experience negligible growth from existing conditions through the Project's construction period. The Applicant will coordinate with KYTC on any overlapping roadway improvements planned for the area of the Project.

While the Project site can be accessed by multiple roadways, each study roadway was assumed to experience all peak hour traffic volumes to present a conservative analysis. Only the peak construction period was analyzed as it is the Project phase that is anticipated to have the highest trip generation activity. However, the peak construction phase is only anticipated to occur over a seven-to-nine-month period, with the remaining construction activity anticipated to experience fewer vehicle trips.

Two analysis conditions were evaluated during the critical weekday morning and weekday evening peak commuter hours: the 2026 Existing (Without Project) and the 2026 Build (With Peak Project Construction) conditions. The HCS two-lane highway analysis results show that the four critical roadways are expected to operate with minimal delay at LOS B or better operations during the critical weekday peak hours with Project peak construction traffic. This indicates that Routes 80, 476, 1087, and 3209 in the site vicinity have ample capacity to support the peak construction activity associated with the proposed Project (typically, LOS D or better operations are considered acceptable). Additionally, given that the construction vehicles will likely be dispersed among numerous travel routes (rather than being concentrated on a single travel route), it is expected that actual roadway operations will be better than those reported in this assessment. The HCS analysis worksheets are provided in Appendix D.

Throughout Project construction, the applicant and its general contractor will coordinate with representatives from the counties and KYTC to respond to traffic concerns that arise during construction and to determine the appropriate traffic management measures such as signage and potential time-of-day restrictions.

Minor improvements to local county roads may be needed prior to construction to prepare the road surface for a greater number of heavy truck trips. The applicant or its general contractor will coordinate with Knott and Perry Counties to prepare road surfaces as needed and to contribute to road repairs at the completion of construction if any road surface damage is attributable to construction traffic. The applicant or its general contractor will plan delivery routes to avoid bridges or road surfaces insufficient to sustain truck loads.

4.0 FUGITIVE DUST

Activities that disturb land during the construction of the Project may temporarily add airborne materials. To reduce the contribution of airborne materials, application of water and covering of spoils may occur. The use of water for dust control as required for the Project is authorized under the Kentucky Pollutant Discharge Elimination System as a non-stormwater discharge activity. The Project will use vehicle cleaning stations, water trucks, and dust screens to control dust and ensure that sediment is not tracked from the Project site onto the road network.

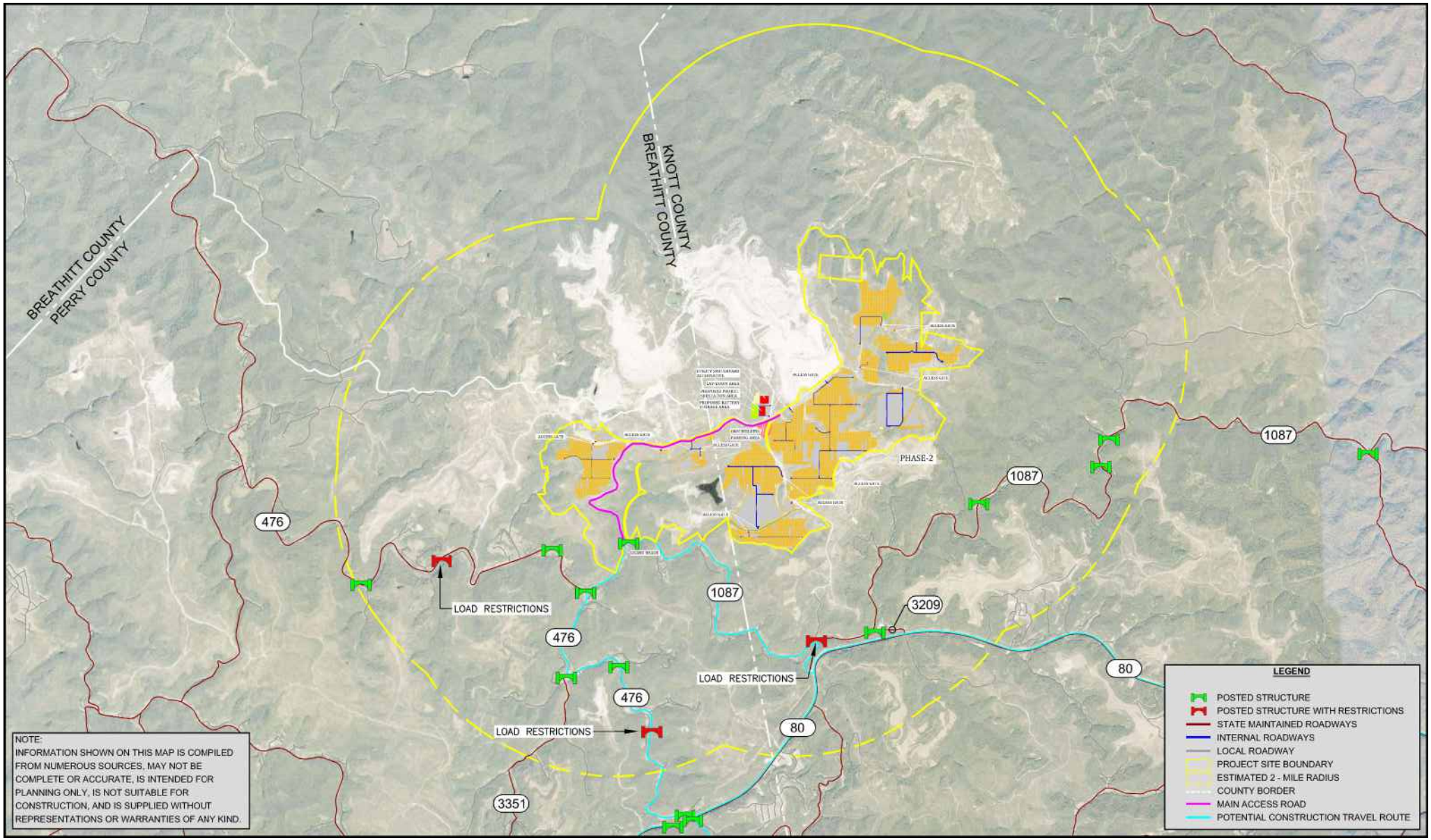
5.0 CONCLUSIONS

The peak construction workforce levels for the proposed 200 MWac solar photovoltaic power generation facility are expected to generate approximately 242 trips during the weekday morning peak hour, 82 vehicle trips during off-peak hours and 242 trips during the weekday evening peak hour during peak construction. Peak construction activities are currently anticipated to occur for a period of approximately seven to nine months. The remainder of the construction period is anticipated to generate fewer vehicle trips. These trip generation estimates are conservative as the majority of peak hour trips are likely to occur outside of the typical weekday commuter peak hours of the adjacent street traffic. Capacity analyses of the critical roadways serving the site (Routes 80, 476, 1087, and 3209) indicate ample capacity to support the Project's temporary peak construction operations. The Project will use vehicle cleaning stations, water trucks, and dust screens to control dust and ensure that sediment is not tracked from the Project site onto the road network. Furthermore, the Project will generate even less traffic post construction with only occasional routine inspection and maintenance of the solar panels and supporting equipment. Additionally, no impacts to the regional railway system are anticipated.

6.0 REFERENCES

KYTC. 2026. Kentucky Transportation Cabinet Traffic Count Database. Available at: https://maps.kytc.ky.gov/trafficcounts/

FIGURES



TETRA TECH

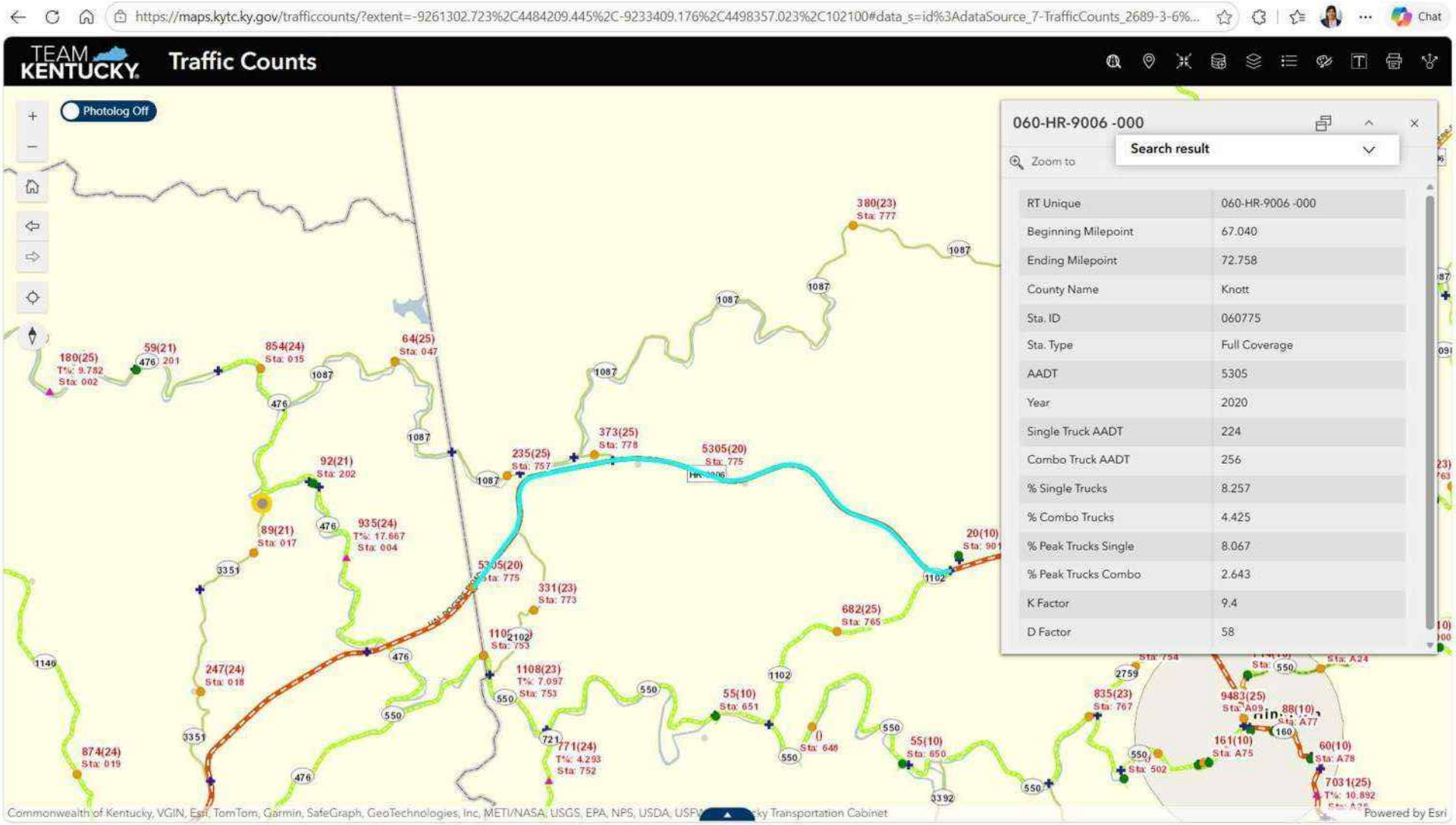
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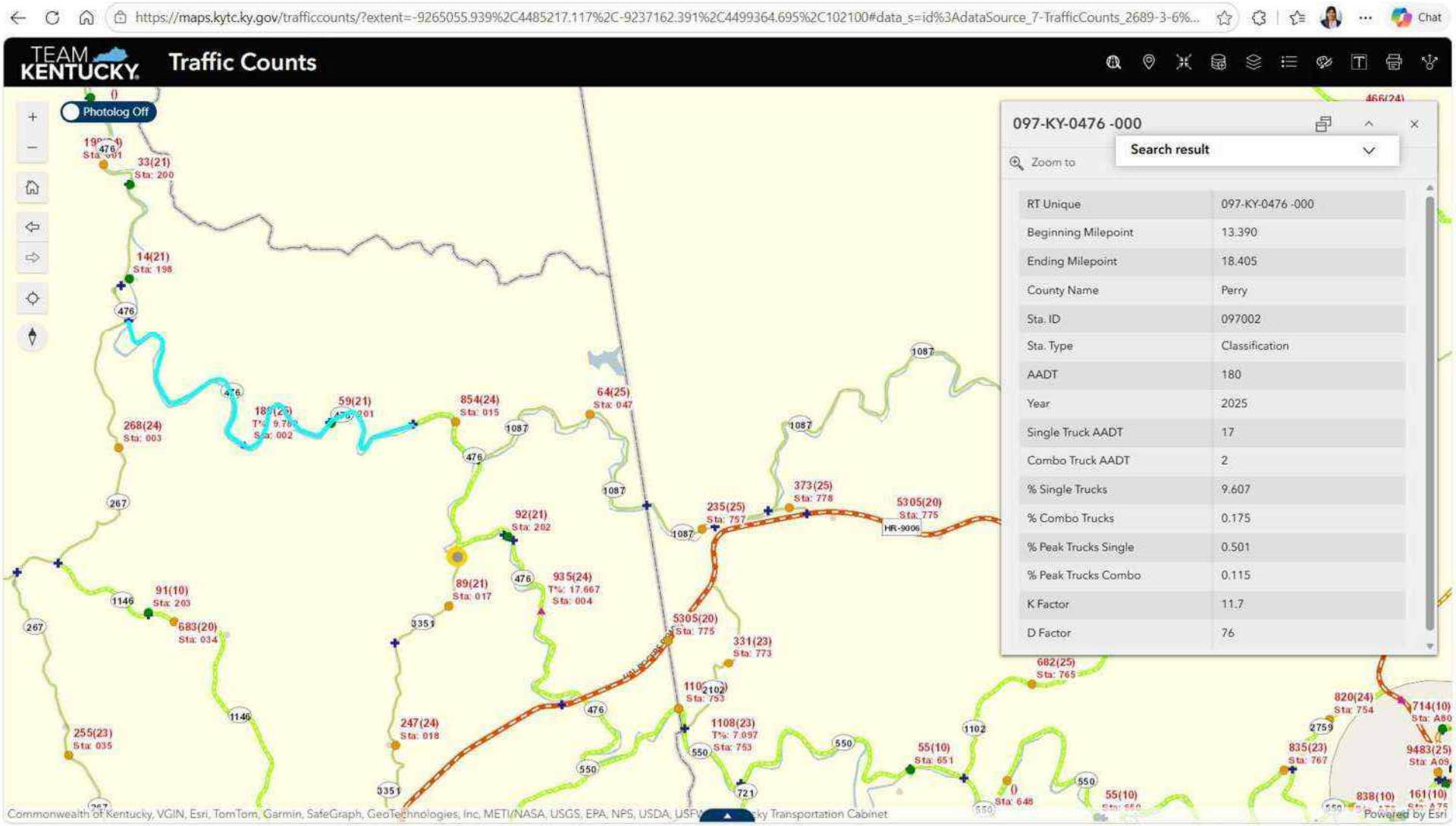
Starfire Phase II Solar Project
Knott County and Perry County, KY

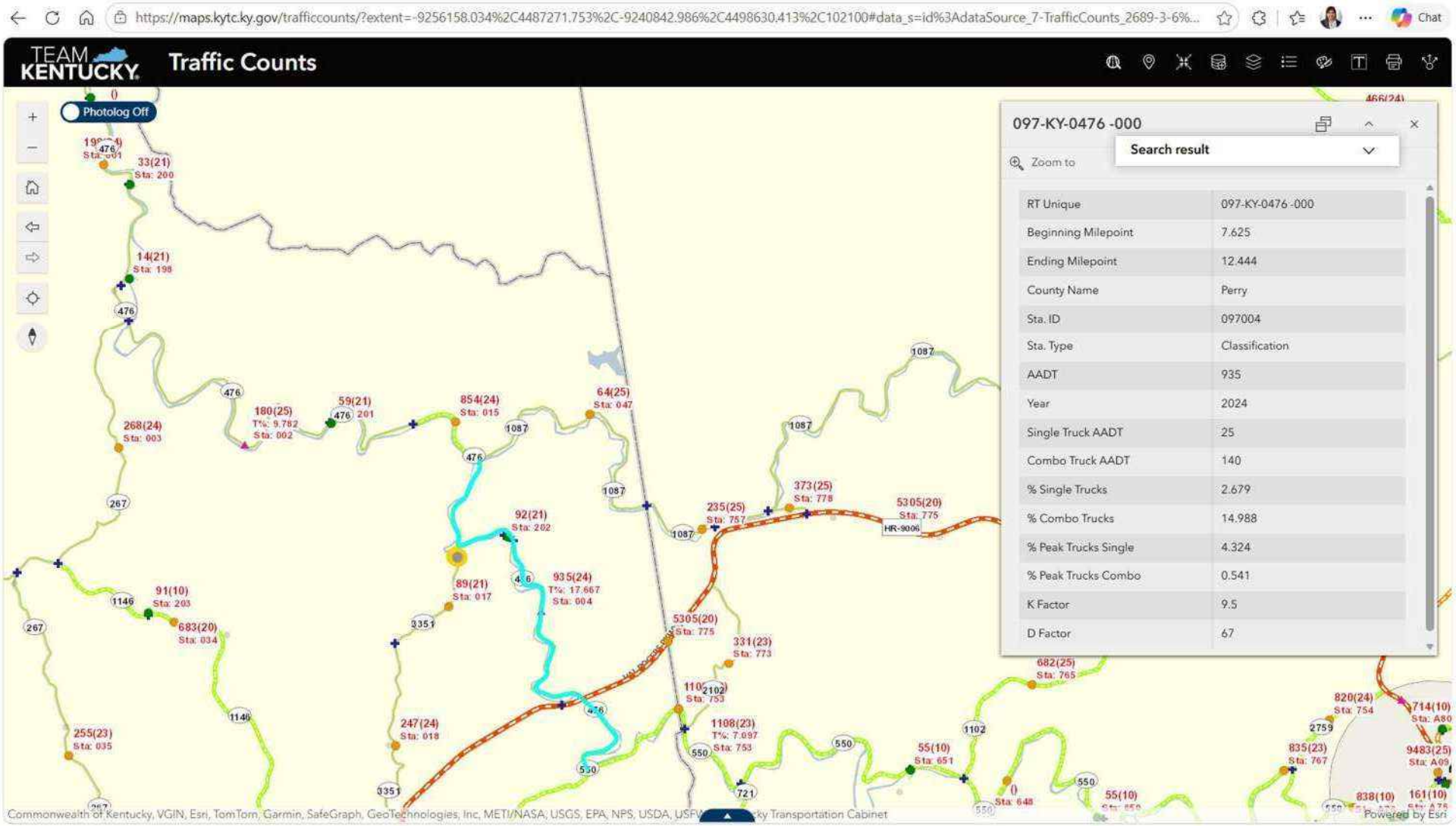
SITE LOCUS MAP

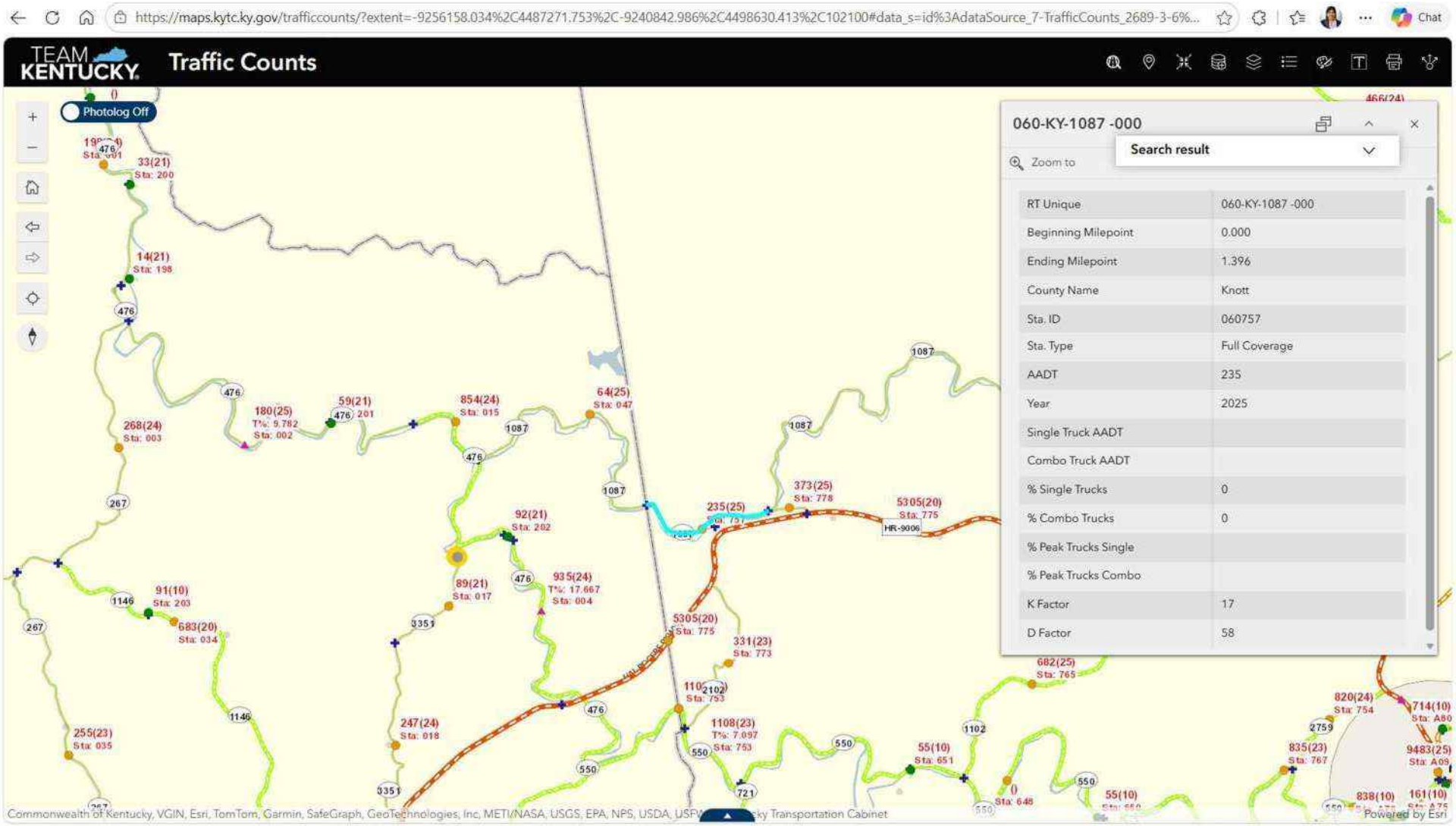
FIGURE
1

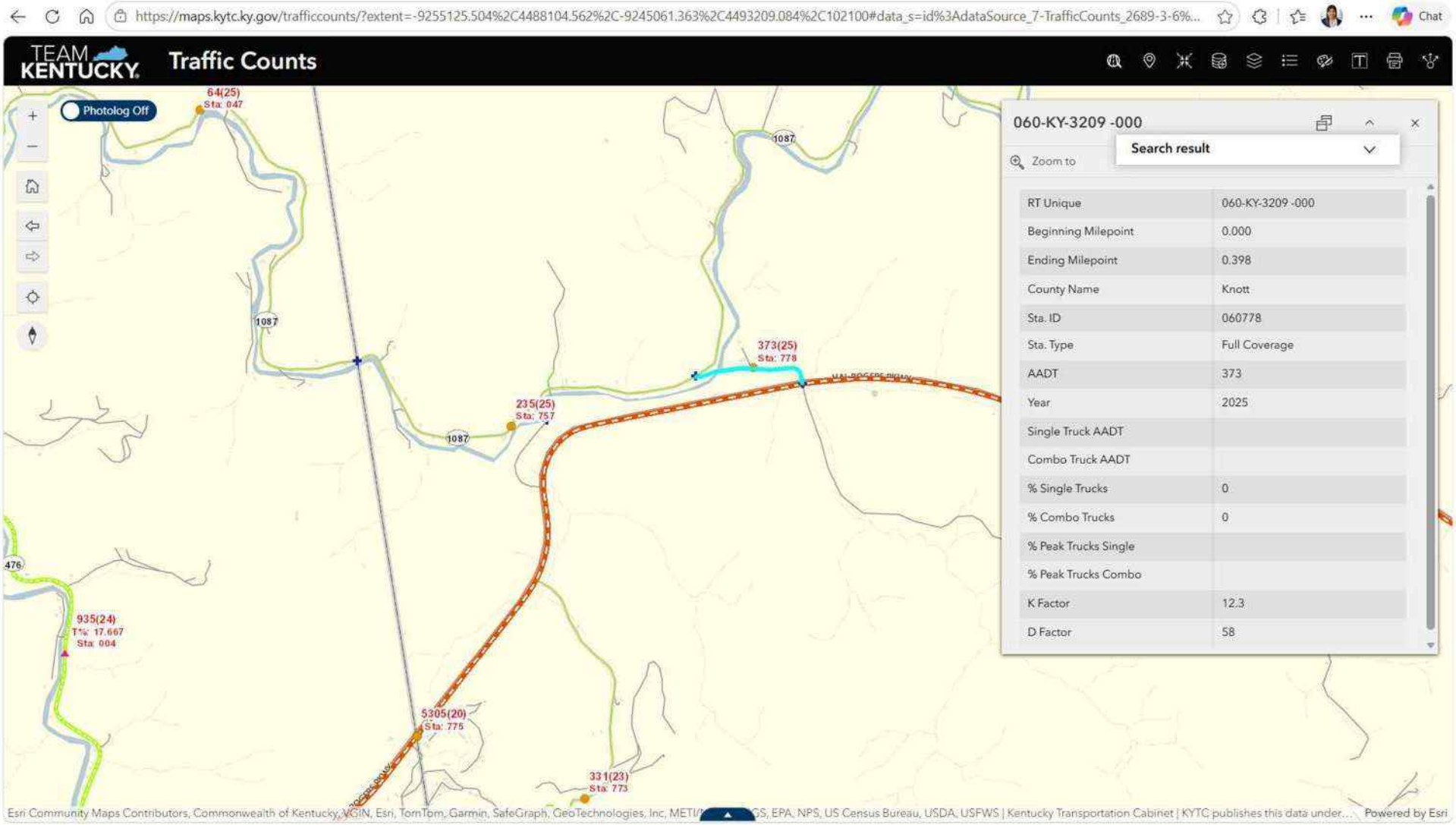
APPENDIX A. KYTC TRAFFIC VOLUME DATA


https://maps.kytc.ky.gov/trafficcounts/?extent=-9261302.723%2C4484209.445%2C-9233409.176%2C4498357.023%2C102100#data_s=id%3AdataSource_7-TrafficCounts_2689-3-6%...
Chat
TEAM KENTUCKY
Traffic Counts
Photolog Off
060-HR-9006 -000
Search result
Zoom to
RT Unique 060-HR-9006 -000
Beginning Milepoint 67.040
Ending Milepoint 72.758
County Name Knott
Sta. ID 060775
Sta. Type Full Coverage
AADT 5305
Year 2020
Single Truck AADT 224
Combo Truck AADT 256
% Single Trucks 8.257
% Combo Trucks 4.425
% Peak Trucks Single 8.067
% Peak Trucks Combo 2.643
K Factor 9.4
D Factor 58
180(25) T%: 9.782 Sta: 002
59(21) Sta: 201
854(24) Sta: 015
64(25) Sta: 047
380(23) Sta: 777
373(25) Sta: 778
235(25) Sta: 757
5305(20) Sta: 775
92(21) Sta: 202
89(21) Sta: 017
935(24) T%: 17.667 Sta: 004
331(23) Sta: 773
682(25) Sta: 765
247(24) Sta: 018
1108(23) T%: 7.097 Sta: 753
55(10) Sta: 651
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9483(25) Sta: A09
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161(10) Sta: A75
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7031(25) T%: 10.892
874(24) Sta: 019
771(24) T%: 4.293 Sta: 752
55(10) Sta: 650
Sta: 502
Sta: 648
Commonwealth of Kentucky, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFW
Transportation Cabinet
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Chat
TEAM KENTUCKY
Traffic Counts
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Search result
Zoom to
RT Unique 097-KY-0476 -000
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County Name Perry
Sta. ID 097002
Sta. Type Classification
AADT 180
Year 2025
Single Truck AADT 17
Combo Truck AADT 2
% Single Trucks 9.607
% Combo Trucks 0.175
% Peak Trucks Single 0.501
% Peak Trucks Combo 0.115
K Factor 11.7
D Factor 76
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14(21) Sta: 198
268(24) Sta: 003
59(21)
854(24) Sta: 015
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683(20) Sta: 034
255(23) Sta: 035
247(24) Sta: 018
235(25) Sta: 757
373(25) Sta: 778
5305(20) Sta: 775
HR-9006
331(23) Sta: 773
1108(23) T%: 7.097 Sta: 753
682(25) Sta: 765
55(10) Sta: 651
820(24) Sta: 754
714(10)
835(23) Sta: 767
9483(25)
838(10)
161(10)
Commonwealth of Kentucky, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFS
Transportation Cabinet
Powered by Esri


https://maps.kytc.ky.gov/trafficcounts/?extent=-9256158.034%2C4487271.753%2C-9240842.986%2C4498630.413%2C102100#data_s=id%3AdataSource_7-TrafficCounts_2689-3-6%...
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Ending Milepoint 12.444
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Sta. ID 097004
Sta. Type Classification
AADT 935
Year 2024
Single Truck AADT 25
Combo Truck AADT 140
% Single Trucks 2.679
% Combo Trucks 14.988
% Peak Trucks Single 4.324
% Peak Trucks Combo 0.541
K Factor 9.5
D Factor 67
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268(24) Sta: 003
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Commonwealth of Kentucky, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFW
Transportation Cabinet
Powered by Esri


https://maps.kytc.ky.gov/trafficcounts/?extent=-9256158.034%2C4487271.753%2C-9240842.986%2C4498630.413%2C102100#data_s=id%3AdataSource_7-TrafficCounts_2689-3-6%...
Chat
TEAM KENTUCKY
Traffic Counts
Photolog Off
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Search result
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RT Unique 060-KY-1087 -000
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Ending Milepoint 1.396
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Sta. Type Full Coverage
AADT 235
Year 2025
Single Truck AADT
Combo Truck AADT
% Single Trucks 0
% Combo Trucks 0
% Peak Trucks Single
% Peak Trucks Combo
K Factor 17
D Factor 58
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1108(23) T%: 7.097 Sta: 753
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Commonwealth of Kentucky, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS
Transportation Cabinet
Powered by Esri


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Chat
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Traffic Counts
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Sta. Type Full Coverage
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Single Truck AADT
Combo Truck AADT
% Single Trucks 0
% Combo Trucks 0
% Peak Trucks Single
% Peak Trucks Combo
K Factor 12.3
D Factor 58
Esri Community Maps Contributors, Commonwealth of Kentucky, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/
GS, EPA, NPS, US Census Bureau, USDA, USFWS | Kentucky Transportation Cabinet | KYTC publishes this data under...
Powered by Esri

APPENDIX B. TRIP GENERATION CALCULATIONS

Peak Construction Workforce Trip Generation Calculations and Assumptions

Proposed Starfire Solar (Phase II) Facility - Breathitt/Knott/Perry Counties, KY

Construction Site Driveway Trips					
	Workforce Trips	Mid-Size Vehicle Deliveries	Semi Tractor Trailer Deliveries	Total	CALCULATIONS
AM Peak Hour:					
Enter	238	1	1	240	(250 workers x 100% arrive x (100% - 10% carpool x 1 vehicle/2 carpool workers)) + (2 Delivery Vehicles arrive) = 240
Exit	0	1	1	2	(250 workers x 0% depart) + (2 Delivery Vehicles depart) = 2
Total	238	2	2	242	
PM Peak Hour:					
Enter	0	1	1	2	(250 workers x 0% arrive) + (2 Delivery Vehicles arrive) = 2
Exit	238	1	1	240	(250 workers x 100% depart x (100% - 10% carpool x 1 vehicle/2 carpool workers)) + (2 Delivery Vehicles depart) = 240
Total	238	2	2	242	
Weekday Daily:					
Enter	263	10	10	283	(250 workers x 100% arrive in AM x (100% - 10% carpool x 1 vehicle/2 carpool workers)) + (250 workers x 10% return from lunch/errands midday) + (20 Delivery Vehicles arrive) = 283
Exit	263	10	10	283	(250 workers x 100% depart in PM x (100% - 10% carpool x 1 vehicle/2 carpool workers)) + (250 workers x 10% leave for lunch/errands midday) + (20 Delivery Vehicles depart) = 283
Total	526	20	20	566	

Construction Assumption	AM Peak Hour	PM Peak Hour	Off-Peak Hours	Notes
# of Peak Workers On-Site at One Time:	250	250	250	Assume 250 workers
% Workers Arriving:	100%	0%	10%	Assumed hours of operation generally between 6am-7pm. Peak Hours of adjacent street traffic assumed to occur between is 7am-9am and 4pm-6pm. Therefore, the majority of construction worker traffic is likely to occur outside of the peak commuting hours of the adjacent street. However, as a conservative measure, assumed 100 percent of workers arrive and depart during the peak hours of the adjacent street traffic. As a conservative measure, assumed half of workforce depart and return once during off-peak times. Assumed none of the workers get picked up/dropped off.
% Workers Departing:	0%	100%	10%	Assumed hours of operation generally between 6am-7pm. Peak Hours of adjacent street traffic assumed to occur between is 7am-9am and 4pm-6pm. Therefore, the majority of construction worker traffic is likely to occur outside of the peak commuting hours of the adjacent street. However, as a conservative measure, assumed 100 percent of workers arrive and depart during the peak hours of the adjacent street traffic. As a conservative measure, assumed half of workforce depart and return once during off-peak times. Assumed none of the workers get picked up/dropped off.
% Carpool[1]:	10.0%	10.0%	0.0%	Assumed 10% carpooling during commuting
Carpool VOR[2]:	2.00	2.00	1.00	Assumed two workers per car during commuting
# Shuttle Trips:	0	0	0	Assumed all workers and deliveries will occur via the construction driveway; no laydown site is proposed
# Semi Truck Deliveries:	1	1	8	Assumed worker hours of operation between 6am and 7pm and assumed 10 deliveries per day and distributed evenly throughout the day.
# Mid-Size Truck Deliveries:	1	1	8	Assumed worker hours of operation between 6am and 7pm and assumed 10 deliveries per day and distributed evenly throughout the day.

[1]Enter % per population - formulas above account for VOR

[2]VOR for carpoolers only

NOTE: Assumed a 200 MW AC facility with fifteen months of construction and 3 to 4 months of ramp-up/ramp-down construction activity. Peak construction activity assumed to occur over an 7 to 9 month period.

Source: Tetra Tech

APPENDIX C. PUBLIC TRANSPORTATION INFORMATION

Public Transportation

Ride With Us

Residents with transportation needs originating in Leslie, Knott, Letcher or Perry County may schedule a trip through our dispatch center. Public Transportation is based on available seating and requires extra time to prepare driver schedules. Therefore, reservations can be made up to 72 hours in advance, but no later than 3 p.m. the day prior to the trip. Public Transportation services are available to anyone that does not have a Medicaid card, or those that have a Medicaid card, but do not meet eligibility requirements for our Non-Emergency Medical Transportation service.

To Schedule Public Transportation: Call Toll Free 1-866-813-0072 Monday-Friday between 8 am – 4:30 pm

How to Schedule a Trip

When calling our toll-free number 1-866-813-0072, please be prepared to provide our reservationist with the following information:

Date of travel

Address of your pick-up and destination locations. Be specific, including suite and/or building numbers, doctor's name, etc.

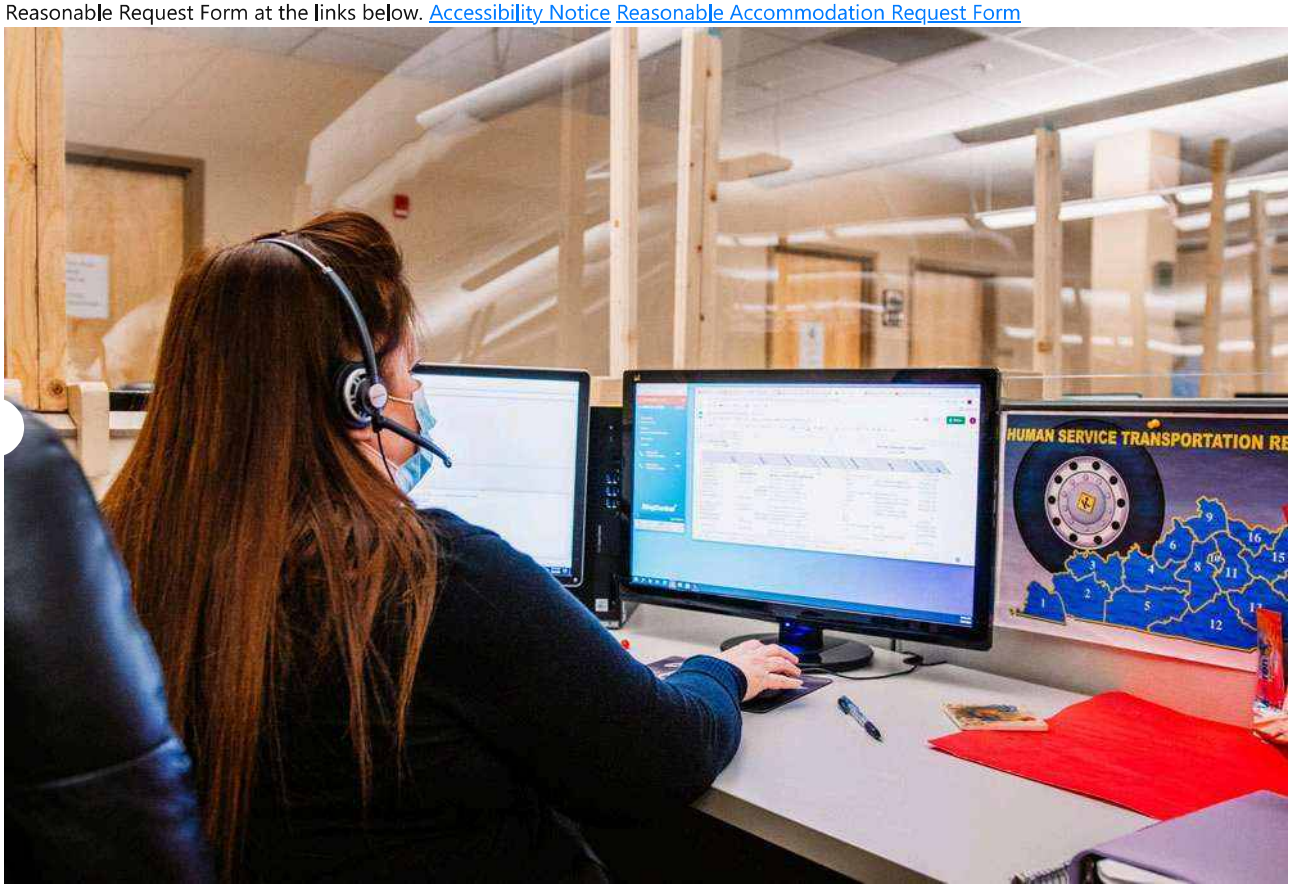
Desired arrival time

Return time to your place of origin or arrival time to your next appointment/or destination

If needed, reserve a seat for a Personal Care Attendant (PCA), child or guest accompanying you

If needed, specific details of specialized transportation needed, such as a lift van, etc.

Companions, such as a friend or family member with the same ride origin and destination, are allowed to ride with you. However, a reservation must be made for your companion to ensure space is available. Without advance notice, the companion may not be allowed to go due to the lack of available space. Your companion must have the same origin and destination and cannot have a separate appointment. LKLP is committed to serving persons with disabilities. We back that commitment by providing services that make public transportation both easy and pleasant for those that may need reasonable modifications. Please find our Accessibility Notice and Reasonable Request Form at the links below. Accessibility Notice Reasonable Accommodation Request Form





Affordability

LKLP Transportation offers affordable fares for both in-county and out-of-county trips. All rates are calculated from the origin of the pickup to the drop off destination. Transportation must originate in Leslie, Knott, Letcher or Perry County. We're also proud to offer special rates for Veterans and their families. Please call 1-866-813-0072 to see if you are eligible.

Fares

In-County Trips (Up to 5 miles, round trip)	**$5**
In-County Trips (6 miles or more, round trip)	**$10**
Out-of-County Trips	**$0.80** per mile, per round trip

**In-county trips originate and end in the same county. Out-of-county trips originate in one county and end in another.*

Let Us Take You to Work

Having access to reliable and affordable transportation is a vital component to obtaining and maintaining employment. Through our JOBS program, LKLP can be your trusted go-to transportation provider. Schedule your work commute in or between Leslie, Knott, Letcher and Perry counties and be assured you'll get to and from work on time.

JOBS In-County Fare	**$5** per round trip

Hours of Operation

Monday – Friday 8 am – 4:30 pm The office and transit service are closed on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

Policies and Compliance

Non-Discrimination Policy

LKLP ensures that no person in the United States shall on the grounds of race, color, creed, national origin, sex, age, or disability be excluded from participating in, denied the benefits of, or be subject to discrimination under any LKLP public transportation project, program, or activity. LKLP seeks to provide Limited English Proficient (LEP) persons with meaningful access to programs and activities conducted by LKLP at no additional charge. The agency's Language Assistance Notice, Title VI Notice of Protections Against Discrimination and the Title VI Complaint form and procedures can be found at the following links:

Language Assistance Notice
Title VI Notice to Beneficiaries

- Title VI Complaint Form
- Title VI Complaint Procedure

Passenger Code of Conduct

Please see the link below for a copy of our Passenger Conduct Responsibilities and Violation of Conduct Consequences. LKLP will deny transportation for the following reasons (but not limited to):

- behavior that interferes with other passengers or the driver
- refusal to pay for service
- repeated failure to provide adequate notice of cancellation or no-shows
- refusal to follow rules for riding the bus
- carrying weapons
- abusive language

Passenger Code of Conduct

Disadvantaged Business Enterprise

LKLP CAC, Inc. has established a Disadvantaged Business Enterprise (DBE) policy in accordance with regulations of the U.S. Department of Transportation (DOT), 49 CFR Part 26. LKLP has received Federal financial assistance from the Department of Transportation, and as a condition of receiving this assistance, LKLP has signed an assurance that it will comply with 49 CFR Part 26. It is the policy of LKLP to ensure that DBEs, as



Transportation

Public Transportation & Intercity Bus Service

Residents with transportation needs originating in Breathitt County may schedule a trip through our dispatch office. **Public Transportation** is based on available seating and requires extra time to prepare driver schedules. Therefore, reservations can be made up to 72 hours in advance, but no later than 3 p.m. the day prior to the trip. Public Transportation services are available to anyone that does not have a Medicaid card, or those that have a Medicaid card, but do not meet eligibility requirements for our Non-Emergency Medical Transportation service.

Intercity Bus Service is available to the general public in Breathitt County. This service meets the intercity travel needs of residents and makes a connection between non-urbanized and larger regional public transportation operations.

To Schedule Public Transportation or Intercity Bus Service Trip:
Call (606) 666-7204
Monday-Friday between 8:00 a.m. -- 4:30 pm
Public Transportation or Intercity Bus Service Fares: $1.00 per mile

What is needed to Schedule a Trip?

Please provide Middle Kentucky Transit with the following information:

- Your name
- Date of travel
- Address of your pick-up and destination locations. Be specific, including suite and/or building numbers, etc.
- Desired arrival time

Return time to your place of origin or arrival time to your destination

If needed, Reserve a seat for a Personal Care Attendant (PCA), child or guest traveling with you

If specialized transportation is needed such as a lift van, please specify

Middle Kentucky Transit is committed to serving persons with disabilities. We are committed to make public transportation both easy and pleasant for those that may need reasonable modifications.

Non-Emergency Medical Transportation

Middle Kentucky is proud to be a provider of non-emergency medical transportation in Breathitt county. Eligible citizens can schedule their Non-Emergency Medical Transportation needs with LKLP.

To Schedule Non-Emergency Medical Call LKLP Transportation:
Call Toll Free 1-800-245-2826 Monday-Friday between 8 am – 4:30 pm Saturday 8 am – 1 pm local time

Who is Eligible?
Medicaid, Department for The Blind and Vocational Rehabilitation recipients/participants residing in Breathitt County.

How to Schedule
Please call LKLP at their toll-free number **1-800-245-2826**, please be prepared to provide their reservationist with the following information:

Name as it appears on your Social Security card (no nicknames), or if you are a Medicaid recipient, the name that is on your medical card

Date of travel

Address of your pick-up and destination locations. Be specific, including suite and/or building numbers, doctor's name, etc.

Desired arrival time • Return time to your place of origin or arrival time to your next appointment/or destination

If needed, reserve a seat for a Personal Care Attendant (PCA), child or guest accompanying you

If needed, specific details of specialized transportation needed, such as a lift van, etc.

Language Assistance Provided At No Cost:

For translated languages, Middle Kentucky uses "Google Translate". This is free and available on our web page at the bottom of each page.

APPENDIX D. HCS WORKSHEETS

HCS Multilane Highway Report

Project Information			
Analyst	BSO	Date	06/29/26
Agency	Tetra Tech	Analysis Year	2026
Jurisdiction	KYTC	Time Analyzed	
Project Description	Route 80 - Existing Conditions	Units	U.S. Customary

Direction 1 Geometric Data			
Direction 1			
Number of Lanes (N), ln	2	Terrain Type	Specific Grade
Measured or Base Free-Flow Speed	Base	Percent Grade, %	5.00
Base Free-Flow Speed (BFFS), mi/h	60.0	Grade Length, mi	0.50
Lane Width, ft	12.0	Access Point Density, pts/mi	2.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	59.5	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors			
Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity			
Volume (V) veh/h	289	Heavy Vehicle Adjustment Factor (f_{HV})	0.822
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	191
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2190
Single-Unit Trucks (SUT), %	30	Adjusted Capacity (c_{adj}), pc/h/ln	2190
Tractor-Trailers (TT), %	70	Volume-to-Capacity Ratio (v/c)	0.09

Direction 1 Speed and Density			
Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.5
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.5		

Direction 2 Geometric Data			
Direction 2			
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Measured	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	-	Grade Length, mi	-
Lane Width, ft	-	Access Point Density, pts/mi	-
Median Type	-	Left-Side Lateral Clearance (LC_R), ft	-
Free-Flow Speed (FFS), mi/h	60.0	Total Lateral Clearance (TLC), ft	-
Direction 2 Adjustment Factors			
Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		
Direction 2 Demand and Capacity			
Volume (V) veh/h	0	Heavy Vehicle Adjustment Factor (f_{HV})	1.000
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	0
Total Trucks, %	0.00	Capacity (c), pc/h/ln	2200
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2200
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.00
Direction 2 Speed and Density			
Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.0
Total Lateral Clearance Adj. (f_{LLC})	-	Density (D), pc/mi/ln	0.0
Median Type Adjustment (f_M)	-	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	-		
Direction 2 Bicycle LOS			
Flow Rate in Outside Lane (v_{OL}), veh/h	0	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	36	Bicyle LOS Score (BLOS)	0.00
Average Effective Width (W_e), ft	42	Bicycle Level of Service (LOS)	A

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HCS Two-Lane Highway Report

Project Information			
Analyst	BSO	Date	6/29/26
Agency	Tetra Tech	Analysis Year	2026
Jurisdiction	KYTC	Time Analyzed	
Project Description	Route 476 (west of main access road/guard shack) - Existing Conditions	Units	U.S. Customary

Segment 1

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	10	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	17	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	9.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	57.2
Speed Slope Coefficient (m)	3.65934	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.31928	PF Power Coefficient (p)	0.75437
In Passing Lane Effective Length?	No	Follower Density, followers/mi/ln	0.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	57.2

Vehicle Results			
Average Speed, mi/h	57.2	Percent Followers, %	6.0
Segment Travel Time, minutes	1.05	Adj. Follower Density, followers/mi/ln	0.0
Vehicle LOS	A		

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HCS Two-Lane Highway Report

Project Information			
Analyst	BSO	Date	6/29/26
Agency	Tetra Tech	Analysis Year	2026
Jurisdiction	KYTC	Time Analyzed	
Project Description	Route 476 (north of Route 80)- Existing Conditions	Units	U.S. Customary

Segment 1

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	10	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	65	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	19.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.04

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	56.9
Speed Slope Coefficient (m)	3.64238	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.32055	PF Power Coefficient (p)	0.75489
In Passing Lane Effective Length?	No	Follower Density, followers/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	56.9

Vehicle Results			
Average Speed, mi/h	56.9	Percent Followers, %	15.5
Segment Travel Time, minutes	1.06	Adj. Follower Density, followers/mi/ln	0.2
Vehicle LOS	A		

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HCS Two-Lane Highway Report

Project Information			
Analyst	BSO	Date	6/29/26
Agency	Tetra Tech	Analysis Year	2026
Jurisdiction	KYTC	Time Analyzed	
Project Description	Route 1087 (off of Route 80) - Existing Conditions	Units	U.S. Customary

Segment 1

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	10	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	10.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	25	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	0.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	54.8
Speed Slope Coefficient (m)	3.53033	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33796	PF Power Coefficient (p)	0.74648
In Passing Lane Effective Length?	No	Follower Density, followers/mi/ln	0.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	54.8

Vehicle Results			
Average Speed, mi/h	54.8	Percent Followers, %	8.2
Segment Travel Time, minutes	1.09	Adj. Follower Density, followers/mi/ln	0.0
Vehicle LOS	A		

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HCS Two-Lane Highway Report

Project Information			
Analyst	BSO	Date	6/29/26
Agency	Tetra Tech	Analysis Year	2026
Jurisdiction	KYTC	Time Analyzed	
Project Description	Route 3209 (off of Route 80)- Existing Conditions	Units	U. S. Customary

Segment 1

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	10	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	10. 0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	29	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	0.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.02

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	54. 8
Speed Slope Coefficient (m)	3.53033	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.337 96	PF Power Coefficient (p)	0.7 4648
In Passing Lane Effective Length?	No	Follower Density, followers/mi/ln	0.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	54. 8

Vehicle Results			
Average Speed, mi/h	54.8	Percent Followers, %	9.2
Segment Travel Time, minutes	1.09	Adj. Follower Density, followers/mi/ln	0.0
Vehicle LOS	A		

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HCS Multilane Highway Report

Project Information			
Analyst	BSO	Date	7/11/2024
Agency	Tetra Tech	Analysis Year	2026
Jurisdiction	KYTC	Time Analyzed	
Project Description	Route 80 - Build Conditions	Units	U.S. Customary

Direction 1 Geometric Data			
Direction 1			
Number of Lanes (N), ln	2	Terrain Type	Specific Grade
Measured or Base Free-Flow Speed	Base	Percent Grade, %	5.00
Base Free-Flow Speed (BFFS), mi/h	60.0	Grade Length, mi	0.50
Lane Width, ft	12.0	Access Point Density, pts/mi	2.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	59.5	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors			
Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity			
Volume (V) veh/h	529	Heavy Vehicle Adjustment Factor (f_{HV})	0.822
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	350
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2190
Single-Unit Trucks (SUT), %	30	Adjusted Capacity (c_{adj}), pc/h/ln	2190
Tractor-Trailers (TT), %	70	Volume-to-Capacity Ratio (v/c)	0.16

Direction 1 Speed and Density			
Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.5
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	5.9
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.5		

Direction 2 Geometric Data			
Direction 2			
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Measured	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	-	Grade Length, mi	-
Lane Width, ft	-	Access Point Density, pts/mi	-
Median Type	-	Left-Side Lateral Clearance (LC_R), ft	-
Free-Flow Speed (FFS), mi/h	60.0	Total Lateral Clearance (TLC), ft	-
Direction 2 Adjustment Factors			
Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		
Direction 2 Demand and Capacity			
Volume (V) veh/h	0	Heavy Vehicle Adjustment Factor (f_{HV})	1.000
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	0
Total Trucks, %	0.00	Capacity (c), pc/h/ln	2200
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2200
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.00
Direction 2 Speed and Density			
Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.0
Total Lateral Clearance Adj. (f_{LLC})	-	Density (D), pc/mi/ln	0.0
Median Type Adjustment (f_M)	-	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	-		
Direction 2 Bicycle LOS			
Flow Rate in Outside Lane (v_{OL}), veh/h	0	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	36	Bicyle LOS Score (BLOS)	0.00
Average Effective Width (W_e), ft	42	Bicycle Level of Service (LOS)	A

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HCS Two-Lane Highway Report

Project Information			
Analyst	BSO	Date	6/29/26
Agency	Tetra Tech	Analysis Year	2026
Jurisdiction	KYTC	Time Analyzed	
Project Description	Route 476 (west of main access road/guard shack) - Build Conditions	Units	U.S. Customary

Segment 1

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	10	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	278	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	9.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	57.2
Speed Slope Coefficient (m)	3.65934	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.31928	PF Power Coefficient (p)	0.75437
In Passing Lane Effective Length?	No	Follower Density, followers/mi/ln	2.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.4

Vehicle Results			
Average Speed, mi/h	55.4	Percent Followers, %	39.5
Segment Travel Time, minutes	1.08	Adj. Follower Density, followers/mi/ln	2.0
Vehicle LOS	A		

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HCS Two-Lane Highway Report

Project Information			
Analyst	BSO	Date	6/29/26
Agency	Tetra Tech	Analysis Year	2026
Jurisdiction	KYTC	Time Analyzed	
Project Description	Route 476 (north of Route 80)- Build	Units	U.S. Customary

Segment 1

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	10	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	326	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	19.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.19

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	56.9
Speed Slope Coefficient (m)	3.64238	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.32055	PF Power Coefficient (p)	0.75489
In Passing Lane Effective Length?	No	Follower Density, followers/mi/ln	2.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	54.9

Vehicle Results			
Average Speed, mi/h	54.9	Percent Followers, %	43.3
Segment Travel Time, minutes	1.09	Adj. Follower Density, followers/mi/ln	2.6
Vehicle LOS	B		

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HCS Two-Lane Highway Report

Project Information			
Analyst	BSO	Date	6/29/26
Agency	Tetra Tech	Analysis Year	2026
Jurisdiction	KYTC	Time Analyzed	
Project Description	Route 1087 (off of Route 80) - Build	Units	U.S. Customary

Segment 1

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	10	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	10.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	0.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	54.8
Speed Slope Coefficient (m)	3.53033	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33796	PF Power Coefficient (p)	0.74648
In Passing Lane Effective Length?	No	Follower Density, followers/mi/ln	2.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	53.0

Vehicle Results			
Average Speed, mi/h	53.0	Percent Followers, %	40.9
Segment Travel Time, minutes	1.13	Adj. Follower Density, followers/mi/ln	2.2
Vehicle LOS	B		

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HCS Two-Lane Highway Report

Project Information			
Analyst	BSO	Date	6/29/26
Agency	Tetra Tech	Analysis Year	2026
Jurisdiction	KYTC	Time Analyzed	
Project Description	Route 3209 (off of Route 80)- Build	Units	U S. Customary

Segment 1

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	10	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	10. 0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	290	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.92	Total Trucks, %	0.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results			
Segment Vertical Class	1	F ree-F low Speed, mi/h	54. 8
Speed Slope Coefficient (m)	3.53033	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.337 96	PF Power Coefficient (p)	0.7 4648
In Passing Lane Effective Length?	No	F ollower Density, followers/mi/ln	2.3
%Improvement to Percent F ollowers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	53. 0

Vehicle Results			
Average Speed, mi/h	53.0	Percent Followers, %	41. 2
Segment Travel Time, minutes	1.13	Adj. F ollower Density, followers/mi/ln	2.3
Vehicle LOS	B		

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Exhibit K

Decommissioning Plan and Reclamation Cost Estimate for the Starfire Phase II Solar Project

Perry and Knott Counties, Kentucky

August 2026

Prepared for:

STMO Bn, LLC
515 N Flagler Drive, Suite 250
West Palm Beach, FL 33401

Prepared by:

Tetra Tech, Inc.
4101 Cox Road, Suite 100
Glen Allen, VA 23060

TETRA TECH

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Appendix A. Reclamation Cost Estimate Summary
Appendix B. Detailed Reclamation Cost Estimate

1.0 INTRODUCTION

Tetra Tech was retained by STMO Bn, LLC (STMO) to prepare a decommissioning plan and cost analysis (Study) as part of an application to the Kentucky State Board on Electric Generation and Transmission Siting (Siting Board) for the proposed Starfire Phase II Solar Project (Project). The scope of this Study is to review the Project details and develop a decommissioning plan and associated cost estimate for retiring the Project facilities at the end of its useful life. STMO may upgrade components on the Project to extend the operational life of the Project which would require that this Study also be updated.

This Plan complies with Kentucky Revised Statutes (KRS) 278.706(2)(m). Pursuant to KRS 278.706(2)(m)(7), the Project's lease agreements shall be amended to incorporate the requirements of KRS 278.706(2)(m)(1)-(6). To the extent applicable laws and regulations in the future conflict with this Study, such laws and regulations may apply in lieu of the applicable portion of this Study.

Project decommissioning may be triggered by events such as the end of a power purchase agreement or when the Project reaches the end of its operational life. KRS 224.10-285 requires that decommissioning activities be completed within 18 months of the Project ceasing to produce electricity for sale unless the deadline has been extended by the Secretary. Monitoring and site restoration may extend beyond this period to ensure successful revegetation and rehabilitation.

2.0 PROJECT DESCRIPTION

The Project is anticipated to generate 200 megawatts alternating current (MWac) of solar energy. The Project will be located on approximately 1,273 acres in Perry and Knott Counties about two (2) miles northwest of Talcum, Kentucky. The Project coordinates are approximately 37.403061˚ N latitude and 83.109253˚ W longitude. The construction of the Project will include the installation of bifacial photovoltaic (PV) solar panels, mounted on a single axis tracking system, collection cables, inverters and transformers, foundations, circuit breakers and disconnect switches, a substation, and other supporting facilities. The perimeter of the solar facility will be secured using wildlife-friendly fencing. The perimeter of the substation will be secured using chain linked fencing with barbed wire. On-site access will be controlled via locked access gates. The Project facilities are described in more detail below.

2.1 PHOTOVOLTAIC SOLAR PANELS

The preliminary design provided by STMO assumes the Project will use 620-watt bifacial solar panel modules; however, the exact model and quantity of PV solar panel modules will be finalized during the detailed engineering phase.

PV solar panels will be arranged in arrays that run from east to west and are grouped in blocks. The panels are clustered into modules, installed on tracker tables, and fixed to the ground on a racking system which includes pile foundations. A motor is affixed to a central pile that provides mechanical torque to multiple tracker tables for the panels to track the movement of the sun.

2.2 INVERTERS AND TRANSFORMERS

The preliminary design provided by STMO assumes the Project will use approximately 55 inverters and transformers; however, the exact model and quantity of inverter and transformer pads will be finalized during the detailed engineering phase.

Each inverter and transformer pad will be a part of a manufactured skid foundation located adjacent to the solar array blocks. The skid foundations will have a footprint that measures approximately 37 feet by 10.5 feet and will not exceed 12 feet in height. Each skid foundation will be mounted on W-section steel piles.

2.3 COLLECTION SYSTEM AND PROJECT SUBSTATION

Direct current (DC) collection cables from the solar array will lead underground to connect to the inverters. Underground DC collection equipment may include homerun trunk cables and bare copper for the grounding system. Aboveground DC collection equipment may include small gauge wire jumpers and harnesses for PV module stringing, PV junction boxes, CAB hangers, messenger wires, and DC disconnects or combiner boxes. The DC collection system will be finalized during the detailed engineering phase of the Project.

Alternating current (AC) collection cables from the inverters will converge at the corners of each of the solar array blocks and lead underground to the proposed Project substation. Feeder cables will enter the substation via conduit and route to the feeder breakers. The substation will require power transformers, overhead buses, feeder breakers with revenue-grade meters, and miscellaneous supporting equipment. High accuracy metering will be installed in overhead medium voltage buses upstream of all breakers.

Metering and control equipment will be installed in the substation control house, and underground fiber optic communication cables will run between the control house and the solar inverters.

2.4 OPERATIONS AND MAINTENANCE BUILDING

The on-site Operations and Maintenance (O&M) building dimensions will be finalized during the detailed engineering phase. If recycling or reuse is not feasible, items will be disposed at an off-site disposal facility.

2.5 ANTICIPATED LIFE OF PROJECT

The Project is developed in such a way that components may be upgraded—up to and including full repowering—with minor service interruptions. However, at this phase of the Project the anticipated life is to be 40 years.

3.0 DECOMMISSIONING PROCESS DESCRIPTION

All decommissioning and restoration activities will adhere to the requirements of appropriate governing authorities and will be performed in accordance with all applicable federal, state, and local permits. The decommissioning and restoration process includes removal of all aboveground structures and; removal of below-ground structures in their entirety, unless otherwise requested by the current landowner at the time of decommissioning; and re-grading and re-seeding disturbed areas and otherwise returning the land to a substantially similar state as it was prior to the commencement of construction.

It is assumed that the Project would incur costs for removal and disposal of the PV arrays and other Project facilities as well as costs for the restoration of the Project area. Above-grade steel, aluminum, and copper materials typical have significant scrap value to a salvage contractor. All recyclable materials will be recycled to the extent possible, while all other non-recyclable waste materials will be disposed of in accordance with state and federal law.

The process of removing structures involves evaluating and categorizing all components and materials into categories of recondition and reuse, salvage, recycle, or disposal. In the interest of increasing efficiency and reducing transportation costs/duration, components and material may be stored on-site in a pre-approved location until the bulk of similar components or materials are ready for transport. The components and material will be transported to the appropriate facilities for reconditioning (if possible), salvage, recycling, or disposal.

STMO will communicate with each affected landowner at the end of the Project's useful life so that any requests of the landowner that are in addition to the lease requirements and the requirements of this decommissioning plan may, in the sole discretion of the Project or its successor or assign, be accommodated. STMO will incorporate the requirements of this decommissioning plan into its Project lease agreements with landowners.

3.1 PV ARRAY REMOVALS

Approximately 574,345 solar modules and the associated tracking racking system and buried underground conductors will be removed via manual labor. The demolition debris and removed components will be mechanically dismantled into pieces that can be safely lifted or carried with the on-site equipment being used. It is assumed that glass and steel will be processed for transportation and delivered to an off-site recycling center. All above-grade steel, aluminum, silicon, and copper will be sent to an approved salvage contractor. PV panels will be disposed of in an approved landfill near the Project at the end of their useful life. The preliminary design assumes that all underground cables associated with the PV array will be removed in their entirety at the end of their useful life.

3.2 RACKING AND FENCING

The tracker racking system consists of approximately 6,359 total trackers: 769 one-string trackers, 1,059 two-string trackers, 1,206 three-string trackers, and 3,325 four-string trackers. The perimeter of the solar facility will be secured using approximately 138,648 linear feet of 7-foot wildlife fencing. All racking and fencing material will be removed with excavators or broken down into manageable units, loaded into trucks, transferred from the Project area, and sent to an approved recycler or salvage contractor. This includes any rack-mounted cables located aboveground. All racking piles and fencing driven into the ground will be disassembled and removed in their entirety.

3.3 PROJECT SUBSTATION

The Project will include a substation, which will remain in place for future use unless otherwise requested by the landowner in accordance with KRS 278.706(2)(m)(4). To be conservative in this assessment, the decommissioning costs have accounted for a potential future decommissioning of the substation, should it be requested at a later date by the landowner. If decommissioned, the substation may be sold for re-use or salvage. Components that cannot be salvaged will be transported off-site for recycling or disposal at an approved waste management facility. The prefabricated control enclosure and electronic components of the substation equipment will be electrically disconnected and made safe for removal. The control enclosure will then be disassembled and removed from the site. The transformers, breakers, bus work, and metal dead-end structures will also be disassembled and removed. The main power transformer's insulating oil will be drained and transferred to a licensed disposal facility.

Concrete foundations and containment curbs for the transformers may be removed in their entirety if more cost effective and broken into pieces. Disposal of structures, materials, waste, and/or foundations (both hazardous and non-hazardous materials) shall meet the provisions of all local, state, and federal ordinances. The area will be thoroughly cleaned, and all debris removed.

3.4 ACCESS ROADS

Access and on-site roads will remain in place during decommissioning and will be one of the last Project components to be removed. Approximately 65,000 linear feet of access roads will be removed during decommissioning. The processed stone access roads will be stripped exposing the geotextile beneath (if applicable). The geotextile will then be removed and disposed of to reveal the original soil surface. Asphalt portions of access routes will be removed and disposed of. The compacted soil beneath the road fill may require ripping with a subsoiler plow to loosen it before it can be revegetated. Former roads and other disturbed areas will be regraded and re-seeded with native vegetation. It is assumed all 16-foot-wide access roads will be removed for the purposes of decommissioning and site restoration unless otherwise notified by the Counties prior to commencement of decommissioning activities.

4.0 SITE RESTORATION PROCESS DESCRIPTION

Once any Project owner's personal property and the Project's existing structures and ancillary facilities have been removed, site restoration activities will take place in compliance with the regulatory framework outlined at the time of decommissioning. The goal of site restoration is to restore the topography, vegetative cover, and hydrologic function of the site to a substantially similar condition as it was prior to commencing construction of the Project.

4.1 SITE RECONTOURING

Grading activities will be limited to the disturbed areas that require re-contouring and positive drainage. Fills will be compacted by wheel or track rolling to avoid over-compaction of the soils. Best management practices (BMPs) will be implemented to provide erosion and sediment control until revegetation efforts have sufficiently stabilized the soil.

4.2 DRAINAGE RESTORATION

The preliminary design assumes approximately 30,000 cubic yards of detention ponds will be decommissioned as part of the restoration effort; however, the exact drainage and BMP methods will be finalized during the detailed engineering phase. Water quality permits, construction stormwater permits, and a Stormwater Prevention Plan (SWPPP) will be obtained as part of the final design. The disposal of any concrete or steel associated with the risers and outfall pipes may be factored into future cost estimates. Removal of the detention ponds along with regrading and recontouring will ensure that pre-construction drainage patterns and release rates can be maintained.

4.3 REVEGETATION

Disturbed soil surfaces of the Project area will be revegetated with a native seed mix agreed upon with landowners and/or applicable local, state, or federal agencies such as the U.S. Department of Agriculture at the time of decommissioning. In these areas, restoration will include back-filling piles and foundations, decompacting subsoils, leveling, and other necessary steps to prevent soil erosion.

5.0 PROJECT DECOMMISSIONING COSTS AND BONDING

At the end of the Project's useful life, assumed to be approximately 40 years, the decommissioning of the Project shall take place in accordance with KRS 278.706(2)(m) and any applicable administrative regulations. In an abundance of caution, this estimate includes the decommissioning of the project substation, which will remain in place in accordance with KRS 278.706(2)(m)(4) unless otherwise requested by the current landowner at the time of decommissioning. The above-grade steel structures, electrical wiring, and other components are typically assumed to have significant scrap value which would offset a portion of the cost to remove these items; however, at this phase of the project, scrap value is not included in the cost estimate. The Project owner will incur costs for removal and disposal of the PV panels, foundations, and other non-recyclable Project facilities, and these activities will impact the cost of the restoration of the site.

The decommissioning cost estimate provided herein includes the costs to return the site to a substantially similar state as it was prior to commencing construction of the Project. Included in the estimate are the costs to decommission the power generating equipment and retire the Project facilities, including removing all equipment and structures. The estimated revenue credit that would be received for scrap value of steel, aluminum, and copper materials as well as the resale of the Project facilities for reuse are not considered. Credit for recycling of the PV modules has not been included, given that the market value of recycled PV modules is currently unknown and subject to fluctuation over the useful life of the Project.

The estimated decommissioning costs for the Project were prepared using information from a variety of credible industry sources. As summarized in Appendix A, the estimated cost of decommissioning the Project in 2026 US dollars is $16,122,178.29. As noted, this cost estimate excludes scrap, resale, and recycling credit.

5.1 FINANCIAL ASSURANCE

STMO is required to issue a performance bond or similar security in compliance with the requirements of KRS 278.706(2)(m)(5). The performance bond shall consist of cash, a letter of credit, surety bond, or other financial sureties as may be approved by the Siting Board and the Energy and Environment Cabinet. The estimate will be reviewed and updated every five (5) years. Should the five-year review indicate an increase is warranted, the bond amount may be increased proportionate to the rise in these costs.

The bond can be used to satisfy any STMO obligation under the lease agreements, including but not limited to, payments owed under the lease agreement, the removal of all Starfire Phase II Solar Project improvements, and reclamation as required by decommissioning. STMO will secure a decommissioning bond or similar security to assure financial performance of its decommissioning obligations. The amount of the proposed bond shall be the net present value of the total estimated cost of completing the decommissioning plan. For lands leased by the Applicant, the bond or similar security will name the landowner and Energy and Environment Cabinet ("Cabinet") as co-beneficiaries, with Perry and Knott Counties named as secondary beneficiaries with the counties' consent. For land owned by the Applicant, the bond or similar security will name the Cabinet as the primary beneficiary. The bond or similar security will be provided by an insurance company or surety that shall maintain at all times at least an "Excellent" rating as measured by the AM Best rating agency or an investment grade credit rating by any national credit rating agency, and, if available, shall be non-cancelable by the provider or customer until the completion of the decommissioning plan or until a replacement bond is secured.

The bond or other similar security shall provide that at least thirty (30) days prior to its cancellation or lapse, the surety shall notify the applicant, its successor or assign, each landowner, the Cabinet, and the county or city in which the facility is located of the impending cancellation or lapse. The notice shall specify the

reason for the cancellation or lapse and provide any of the parties, either jointly or separately, the opportunity to cure the cancellation or lapse prior to it becoming effective. The applicant, its successor, or its assign, shall be responsible for all costs incurred by all parties to cure the cancellation or lapse of the bond. Each landowner, or the Energy and Environment Cabinet with the prior approval of each landowner, may make a demand on the bond and initiate and complete the decommissioning plan.

5.2 RECLAMATION COST ESTIMATE ASSUMPTIONS

Decommissioning of the Project was broken into individual tasks that were each estimated separately. Each task includes labor requirements, equipment needs, and duration. Production rates were established using professional experience and published standards included on InEight software. Labor rates prevalent to the geographic area of the Project were obtained by referencing U.S. Department of Labor wage determinations. Typical average markups that are industry standard were applied for contingency, overhead, and fee. Detailed cost estimates are provided in Appendix B.

Estimating methods and assumptions specific to this cost estimate are as follows:

- Labor costs are developed by reviewing U.S. Department of Labor wage determinations and rates published by InEight. An average rate is developed that includes base wage, fringe, and payroll tax liability. The final rate used in the estimate is an average of 40 hours standard time and 10 hours overtime per week, assuming a 50-hour work week for the duration of decommissioning.
- Equipment (commonly referred to as yellow iron) rates used in the estimate are developed by reviewing rates published by InEight and historical vendor quotes. Rates include fuel, maintenance, and wear and tear of ground engaging components. Rates assume the use of rented equipment.
- Mobilization and demobilization costs are estimated to be approximately 2% of the overall contractor's costs. These reflect the actual costs to mobilize equipment, facilities, and crew to the Project site. This amount does not include the front loading of cost from other tasks.
- Work was estimated on a unit cost basis and priced by task, following the progression of work from start to finish. Unit costs were developed by including the labor, equipment, and production rate required for each individual task. InEight and estimator's experience were used to establish the crew, equipment, and production for each individual task.
- Roads will be restored to become a part of the natural surroundings to a substantially similar state as it was prior to commencing construction. Road gravel will be used to backfill foundation locations to within six (6) inches of final grade. It is expected that the remaining road gravel will be accepted by local receivers with no additional disposal cost. Roads that existed on private land prior to installation of the Project, if any, will be restored at the request of the current landowner.
- Tracker racks and piles will be removed in their entirety. It is estimated that tracker racks and piles will be removed as an assembly of material for every 28 modules.
- All concrete foundations will be removed in their entirety unless the current landowner and applicant otherwise agree to a different depth during decommissioning. Gravel from road removal will be used as backfill to bring the top of grade to within six (6) inches of final grade and then completed with an additional six inches of topsoil.
- Concrete foundation removal will be accomplished using excavators with concrete breakers.
- Processed concrete will be transported off site under the same assumptions as road gravel.
- Any interconnection or other facilities will be left in place unless otherwise requested by the landowner. In an abundance of caution, this estimate includes the decommissioning of the project substation.
- All underground electrical collection system cabling will be removed in their entirety.

- Oil from the substation transformer will be drained prior to removal, and the oil disposed of following state and federal regulations. Oil disposal cost was assumed to be $4 per gallon.
- It is assumed that 35% of the total area disturbed required for restoration is available on site as a result of the original installation.
- The costs for temporary facilities were included in the restoration cost. These include one (1) office trailer, one (1) Conex storage unit, four (4) portable toilets, first aid supplies, and all necessary utilities.
- Field management during construction activities was added to the estimate. These costs include one (1) superintendent and one (1) field engineering technician. These positions are critical to the safe and successful execution of work.
- The contractor's home office, project management, overhead, and fee can vary widely by contractor. As such, averages were developed for the estimate and added as a percentage of total cost. These include 5% for home office and project management and 13% for overhead and fee.
- Contractor contingency costs are not included.
- Other miscellaneous costs were approximated, including permits, engineering, signage, fencing, traffic control, utility disconnects, etc. In the context of the overall estimate, these are incidental costs that are covered in the estimate markups.

6.0 SIGNATURE OF ENGINEERING PROFESSIONAL

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Jessica Harre, P.E.
Project Engineer



APPENDIX A. RECLAMATION COST ESTIMATE SUMMARY

CBS Position Code	Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)
1	**BRIGHT NIGHT STARFIRE II SOLAR RETIREMENT**	**1.00**	**Lump Sum**	**$16,122,178.29**	**$16,122,178.29**
1.1	**Equipment & Facilities Mob / Demob**	**1.00**	**Lump Sum**	**$135,868.00**	**$135,868.00**
1.1.1	Equipment Mob	1.00	Lump Sum	$61,200.00	$61,200.00
1.1.2	Site Facilities	1.00	Lump Sum	$2,200.00	$2,200.00
1.1.3	Crew Mob & Site Setup	3.00	Day	$14,493.60	$43,480.80
1.1.4	Crew Demob & Site Cleanup	2.00	Day	$14,493.60	$28,987.20
1.2	**Project Site Support**	**10.00**	**Month**	**$80,396.59**	**$803,965.92**
1.2.1	Site Facilities	10.00	Month	$1,605.00	$16,050.00
1.2.2	Field Management	10.00	Month	$78,791.59	$787,915.92
1.3	**Substation Retirement**	**1.00**	**Lump Sum**	**$273,329.72**	**$273,329.72**
1.3.1	Fence Removal	1.00	Day	$1,359.20	$1,359.20
1.3.2	Transformer Removal	2.00	Each	$89,220.40	$178,440.80
1.3.3	Remove Control Building & Switchgear	1.00	Each	$5,303.60	$5,303.60
1.3.4	UG Utility & Ground Removal	2.00	Day	$1,359.20	$2,718.40
1.3.5	Remove Foundations To Subgrade	600.00	Cubic Yard	$28.45	$17,067.51
1.3.6	Misc. Material Disposal	1.00	Lump Sum	$2,200.00	$2,200.00
1.3.7	Restore Yard	1.00	Lump Sum	$66,240.21	$66,240.21
1.4	**O&M Building Removal**	**1.00**	**Lump Sum**	**$27,989.32**	**$27,989.32**
1.4.1	Structure Demo	60.00	Ton	$260.84	$15,650.40
1.4.2	Remove Foundations To Subgrade	100.00	Cubic Yard	$36.39	$3,638.92
1.4.3	Trucking - Per Load	3.00	Each	$1,500.00	$4,500.00
1.4.4	Disposal Cost	60.00	Ton	$70.00	$4,200.00
1.5	**Inverter / Transformer Removal**	**55.00**	**Each**	**$330.22**	**$18,162.10**
1.5.1	Disconnect Electrical	55.00	Each	$112.53	$6,189.15
1.5.2	Loadout Inverter & Transformer	55.00	Each	$217.69	$11,972.95
1.6	**Inverter / Transformer Support Pile Removal**	**55.00**	**Each**	**$230.36**	**$12,669.80**
1.6.1	Excavate / Remove Piles	55.00	Each	$230.36	$12,669.80
1.7	**Solar Array Retirement**	**1.00**	**Lump Sum**	**$11,556,475.62**	**$11,556,475.62**
1.7.1	Fence Removal	138,648.00	Linear Feet	$1.07	$148,438.96
1.7.2	Solar Panel Removal & Disposal / Recycling	574,345.00	Each	$8.50	$4,881,821.74
1.7.3	Solar Rack (Trackers) & Post Removal	20,512.00	Each	$318.17	$6,526,214.92
1.8	**Remove Underground Cable**	**1.00**	**Lump Sum**	**$36,818.00**	**$36,818.00**
1.8.1	Remove Cable	5.00	Day	$7,335.60	$36,678.00
1.8.2	Disposal Cost (Misc Conduit)	2.00	Ton	$70.00	$140.00
1.9	**Site Restoration - Partial Site Seeding**	**1.00**	**Lump Sum**	**$722,735.29**	**$722,735.29**
1.9.1	Strip & Decompact Roads	65,000.00	Linear Feet	$1.45	$94,239.60
1.9.2	Spot Grade Disturbed Areas	446.00	Acre	$286.25	$127,667.50
1.9.3	Re-Seed With Native Vegetation - Roads & Areas Disturbed By Construction	446.00	Acre	$1,000.00	$446,000.00
1.9.4	Restore Stormwater Basins	30,000.00	Cubic Yard	$1.83	$54,828.19
1.10	**Contractor Markups**	**1.00**	**Lump Sum**	**$2,534,164.52**	**$2,534,164.52**
1.10.1	Home Office, Project Management (5% Of Cost)	1.00	Lump Sum	$679,400.70	$679,400.70
1.10.2	Contractor OH & Fee (13% Of Cost)	1.00	Lump Sum	$1,854,763.82	$1,854,763.82

APPENDIX B. DETAILED RECLAMATION COST ESTIMATE

Estimate Summary
TETRA TECH, INC.
Job Code: Bright Night Starfire II Solar
Description: Decommissioning Estimate

CBS Position Code	Quantity	UM	Cost Item Description	UM/Day	Cost Source	Currency	Unit Cost	Total Cost
1	1.00	Lump Sum	BRIGHT NIGHT STARFIRE II SOLAR RETIREMENT	0.00	Detail	U.S. Dollar	16,122,178.29	16,122,178.29
1.1	1.00	Lump Sum	Equipment & Facilities Mob / Demob	0.20	Detail	U.S. Dollar	135,868.00	135,868.00
1.1.1	1.00	Lump Sum	Equipment Mob	0.00	Detail	U.S. Dollar	61,200.00	61,200.00

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
UERNTRLG	Rental Equip Transp-Large		6.00	Each	U.S. Dollar	10,000.00	60,000.00
UERNTRSM	Rental Equip Transp-Small		8.00	Each	U.S. Dollar	150.00	1,200.00

1.1.2	1.00	Lump Sum	Site Facilities	0.00	Detail	U.S. Dollar	2,200.00	2,200.00

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
UOCONMOB	Connex Box Mob		2.00	Each	U.S. Dollar	300.00	600.00
UOTRLTRN	Trailer Trnsp/Setup/Trdwn		2.00	Each	U.S. Dollar	800.00	1,600.00

1.1.3	3.00	Day	Crew Mob & Site Setup	1.00	Detail	U.S. Dollar	14,493.60	43,480.80

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L060100	GENERAL LABORER	720.00	24.00	Each (hourly)	U.S. Dollar	46.97	33,818.40
L010101	OPERATOR	180.00	6.00	Each (hourly)	U.S. Dollar	53.68	9,662.40

1.1.4	2.00	Day	Crew Demob & Site Cleanup	1.00	Detail	U.S. Dollar	14,493.60	28,987.20

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L060100	GENERAL LABORER	480.00	24.00	Each (hourly)	U.S. Dollar	46.97	22,545.60
L010101	OPERATOR	120.00	6.00	Each (hourly)	U.S. Dollar	53.68	6,441.60

1.2	10.00	Month	Project Site Support	0.05	Detail	U.S. Dollar	80,396.59	803,965.92
1.2.1	10.00	Month	Site Facilities	0.00	Detail	U.S. Dollar	1,605.00	16,050.00

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
URCONNEX	Connex Box		10.00	Month	U.S. Dollar	150.00	1,500.00
UROFFTRL	Office Trailer -12x60		10.00	Month	U.S. Dollar	500.00	5,000.00
UO1STAID	1st Aid Supplies		10.00	Month	U.S. Dollar	300.00	3,000.00
UOOFFSUP	Office Supplies($/prs/mo)		10.00	Month	U.S. Dollar	55.00	550.00
URPRTAJH	Port-a-John Unit(s) (4)		20.00	Month	U.S. Dollar	300.00	6,000.00

1.2.2	10.00	Month	Field Management	0.05	Detail	U.S. Dollar	78,791.59	787,915.92

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L90FXX02	Field - Proj Superintendent	2,200.00	1.00	Each (hourly)	U.S. Dollar	125.40	275,880.00
RPUTRK05	F-250 4X4 3/4 TON PICKUP	6,600.00	3.00	Each (hourly)	U.S. Dollar	11.88	78,408.00
L90FEL00	Field - Engr. Tech	4,400.00	2.00	Each (hourly)	U.S. Dollar	98.55	433,627.92

1.3	1.00	Lump Sum	Substation Retirement	0.03	Detail	U.S. Dollar	273,329.72	273,329.72
1.3.1	1.00	Day	Fence Removal	1.00	Detail	U.S. Dollar	1,359.20	1,359.20

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L010101	OPERATOR	10.00	1.00	Each (hourly)	U.S. Dollar	53.68	536.80
L060100	GENERAL LABORER	10.00	1.00	Each (hourly)	U.S. Dollar	46.97	469.70
RBACKH09	Deere 710J BACKHOE, 1.62CY	10.00	1.00	Each (hourly)	U.S. Dollar	35.27	352.70

1.3.2	2.00	Each	Transformer Removal	0.17	Detail	U.S. Dollar	89,220.40	178,440.80
1.3.2.1	2.00	Each	Oil Removal & Disposal	1.00	Detail	U.S. Dollar	58,439.40	116,878.80

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CBS Position Code	Quantity	UM	Description	UM/Day	Cost Source	Currency	Unit Cost	Total Cost
			Cost Item					
1.3.2.1.1	2.00	Each	Oil Removal	1.00	Detail	U.S. Dollar	939.40	1,878.80

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L060100	GENERAL LABORER	40.00	2.00	Each (hourly)	U.S. Dollar	46.97	1,878.80

1.3.2.1.2	28,000.00	Gallon	Oil Disposal	0.00	Detail	U.S. Dollar	4.00	112,000.00

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
USDISPOSAL	Disposal Fee's		112,000.00	Each	U.S. Dollar	1.00	112,000.00

1.3.2.1.3	2.00	Each	Trucking - Per Load	0.00	Detail	U.S. Dollar	1,500.00	3,000.00

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
USTRUCKING	Trucking Sub		3,000.00	Each	U.S. Dollar	1.00	3,000.00

1.3.2.2	2.00	Each	Dismantle & Loadout Transformer	0.20	Detail	U.S. Dollar	30,781.00	61,562.00

1.3.2.2.1	2.00	Each	Dismantle, Cut & Size	0.20	Detail	U.S. Dollar	30,781.00	61,562.00

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L060100	GENERAL LABORER	400.00	4.00	Each (hourly)	U.S. Dollar	46.97	18,788.00
L010101	OPERATOR	200.00	2.00	Each (hourly)	U.S. Dollar	53.68	10,736.00
*REXCAV06A	Excav 100K w/ Bucket & Grapple	100.00	1.00	Each (hourly)	U.S. Dollar	129.71	12,971.00
*REXCAV06E	Excav 100K w/ Shear	100.00	1.00	Each (hourly)	U.S. Dollar	190.67	19,067.00

1.3.3	1.00	Each	Remove Control Building & Switchgear	1.00	Detail	U.S. Dollar	5,303.60	5,303.60

1.3.3.1	1.00	Each	Demo	1.00	Detail	U.S. Dollar	2,303.60	2,303.60

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L060100	GENERAL LABORER	10.00	1.00	Each (hourly)	U.S. Dollar	46.97	469.70
L010101	OPERATOR	10.00	1.00	Each (hourly)	U.S. Dollar	53.68	536.80
*REXCAV06A	Excav 100K w/ Bucket & Grapple	10.00	1.00	Each (hourly)	U.S. Dollar	129.71	1,297.10

1.3.3.2	2.00	Each	Trucking - Per Load	0.00	Detail	U.S. Dollar	1,500.00	3,000.00

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
USTRUCKING	Trucking Sub		3,000.00	Each	U.S. Dollar	1.00	3,000.00

1.3.4	2.00	Day	UG Utility & Ground Removal	1.00	Detail	U.S. Dollar	1,359.20	2,718.40

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L010101	OPERATOR	20.00	1.00	Each (hourly)	U.S. Dollar	53.68	1,073.60
L060100	GENERAL LABORER	20.00	1.00	Each (hourly)	U.S. Dollar	46.97	939.40
RBACKH09	Deere 710J BACKHOE, 1.62CY	20.00	1.00	Each (hourly)	U.S. Dollar	35.27	705.40

1.3.5	600.00	Cubic Yard	Remove Foundations To Subgrade	73.68	Detail	U.S. Dollar	28.45	17,067.51

1.3.5.1	600.00	Cubic Yard	Excavate / Remove Foundation - Various Depth	280.00	Detail	U.S. Dollar	16.08	9,646.71

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L060100	GENERAL LABORER	21.43	1.00	Each (hourly)	U.S. Dollar	46.97	1,006.50
L010101	OPERATOR	42.86	2.00	Each (hourly)	U.S. Dollar	53.68	2,300.57
*REXCAV06C	Excav 100K w/ Hammer	21.43	1.00	Each (hourly)	U.S. Dollar	166.14	3,560.14
*REXCAV06A	Excav 100K w/ Bucket & Grapple	21.43	1.00	Each (hourly)	U.S. Dollar	129.71	2,779.50

1.3.5.2	600.00	Cubic Yard	Concrete Transport Offsite	100.00	Detail	U.S. Dollar	12.37	7,420.80

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
RDUTRK06	CAT D350D, 18CY-24CY	60.00	1.00	Each (hourly)	U.S. Dollar	76.71	4,602.60

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CBS Position Code	Quantity	UM	Description	Hours	Cost Item UM/Day	Cost Source	Currency	Unit Cost	Total Cost
L080940	TEAMSTER			60.00	1.00 Each (hourly)	U.S. Dollar		46.97	2,818.20
1.3.6	1.00	Lump Sum	Misc. Material Disposal		0.00	Detail	U.S. Dollar	2,200.00	2,200.00
1.3.6.1	1.00	Each	Trucking - Per Load		0.00	Detail	U.S. Dollar	1,500.00	1,500.00
Resource Code	**Description**			**Hours**	**Quantity UM**	**Currency**		**Unit Cost**	**Total Cost**
USTRUCKING	Trucking Sub				1,500.00 Each	U.S. Dollar		1.00	1,500.00
1.3.6.2	10.00	Ton	Disposal Cost		0.00	Detail	U.S. Dollar	70.00	700.00
Resource Code	**Description**			**Hours**	**Quantity UM**	**Currency**		**Unit Cost**	**Total Cost**
USDISPOSAL	Disposal Fee's				700.00 Each	U.S. Dollar		1.00	700.00
1.3.7	1.00	Lump Sum	Restore Yard		0.12	Detail	U.S. Dollar	66,240.21	66,240.21
1.3.7.1	4.00	Acre	Backfill / Regrade		2.00	Detail	U.S. Dollar	1,708.72	6,834.87
Resource Code	**Description**			**Hours**	**Quantity UM**	**Currency**		**Unit Cost**	**Total Cost**
L060100	GENERAL LABORER			40.00	2.00 Each (hourly)	U.S. Dollar		46.97	1,878.80
L010101	OPERATOR			40.00	2.00 Each (hourly)	U.S. Dollar		53.68	2,147.20
REXCAV06B	Gradall - Excavator			20.00	1.00 Each (hourly)	U.S. Dollar		79.62	1,592.47
*RDOZER08	CAT D6 LGP Dozer			20.00	1.00 Each (hourly)	U.S. Dollar		60.82	1,216.40
1.3.7.2	2,000.00	Cubic Yard	Vegetative Cover		300.00	Detail	U.S. Dollar	27.70	55,405.33
1.3.7.2.1	2,000.00	Cubic Yard	Topsoil, Delivered		0.00	Detail	U.S. Dollar	20.00	40,000.00
Resource Code	**Description**			**Hours**	**Quantity UM**	**Currency**		**Unit Cost**	**Total Cost**
IMSOIL	Topsoil				2,000.00 Cubic Yard	U.S. Dollar		20.00	40,000.00
1.3.7.2.2	2,000.00	Cubic Yard	Placement		300.00	Detail	U.S. Dollar	7.70	15,405.33
Resource Code	**Description**			**Hours**	**Quantity UM**	**Currency**		**Unit Cost**	**Total Cost**
L010101	OPERATOR			133.33	2.00 Each (hourly)	U.S. Dollar		53.68	7,157.33
RDOZER08	CAT D6N XL			133.33	2.00 Each (hourly)	U.S. Dollar		61.86	8,248.00
1.3.7.3	4.00	Acre	Re-Seed With Native Vegetation		0.00	Detail	U.S. Dollar	1,000.00	4,000.00
Resource Code	**Description**			**Hours**	**Quantity UM**	**Currency**		**Unit Cost**	**Total Cost**
USLANDSCAPE	Landscape Sub				4.00 Acre	U.S. Dollar		1,000.00	4,000.00
1.4	1.00	Lump Sum	O&M Building Removal		0.23	Detail	U.S. Dollar	27,989.32	27,989.32
1.4.1	60.00	Ton	Structure Demo		20.00	Detail	U.S. Dollar	260.84	15,650.40
Resource Code	**Description**			**Hours**	**Quantity UM**	**Currency**		**Unit Cost**	**Total Cost**
*REXCAV06A	Excav 100K w/ Bucket & Grapple			30.00	1.00 Each (hourly)	U.S. Dollar		129.71	3,891.30
*REXCAV06E	Excav 100K w/ Shear			30.00	1.00 Each (hourly)	U.S. Dollar		190.67	5,720.10
L010101	OPERATOR			60.00	2.00 Each (hourly)	U.S. Dollar		53.68	3,220.80
L060100	GENERAL LABORER			60.00	2.00 Each (hourly)	U.S. Dollar		46.97	2,818.20
1.4.2	100.00	Cubic Yard	Remove Foundations To Subgrade		71.43	Detail	U.S. Dollar	36.39	3,638.92
1.4.2.1	100.00	Cubic Yard	Excavate / Remove Foundation - Various Depth		250.00	Detail	U.S. Dollar	18.01	1,800.72
Resource Code	**Description**			**Hours**	**Quantity UM**	**Currency**		**Unit Cost**	**Total Cost**
L060100	GENERAL LABORER			4.00	1.00 Each (hourly)	U.S. Dollar		46.97	187.88
L010101	OPERATOR			8.00	2.00 Each (hourly)	U.S. Dollar		53.68	429.44
*REXCAV06C	Excav 100K w/ Hammer			4.00	1.00 Each (hourly)	U.S. Dollar		166.14	664.56
*REXCAV06A	Excav 100K w/ Bucket & Grapple			4.00	1.00 Each (hourly)	U.S. Dollar		129.71	518.84
1.4.2.2	100.00	Cubic Yard	Concrete Transport Offsite		100.00	Detail	U.S. Dollar	18.38	1,838.20

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CBS Position Code	Quantity	UM	Description	Cost Item UM/Day	Cost Source	Currency	Unit Cost	Total Cost

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
RDUTRK06	CAT D350D, 18CY-24CY	10.00	1.00	Each (hourly)	U.S. Dollar	76.71	767.10
L080940	TEAMSTER	10.00	1.00	Each (hourly)	U.S. Dollar	46.97	469.70
L010101	OPERATOR	5.00	0.50	Each (hourly)	U.S. Dollar	53.68	268.40
RFELWH09	CAT 966F LOADER, 4.25CY	5.00	0.50	Each (hourly)	U.S. Dollar	66.60	333.00

1.4.3	3.00 Each	Trucking - Per Load	0.00	Detail	U.S. Dollar	1,500.00	4,500.00

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
USTRUCKING	Trucking Sub		4,500.00	Each	U.S. Dollar	1.00	4,500.00

Notes: **********
Assumption: 45,000 lbs per load
****

1.4.4	60.00 Ton	Disposal Cost	0.00	Detail	U.S. Dollar	70.00	4,200.00

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
USDISPOSAL	Disposal Fee's		4,200.00	Each	U.S. Dollar	1.00	4,200.00

1.5	55.00 Each	Inverter / Transformer Removal	5.00	Detail	U.S. Dollar	330.22	18,162.10
1.5.1	55.00 Each	Disconnect Electrical	10.00	Detail	U.S. Dollar	112.53	6,189.15

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L010110	ELECTRCIAN	55.00	1.00	Each (hourly)	U.S. Dollar	53.68	2,952.40
L060100	GENERAL LABORER	55.00	1.00	Each (hourly)	U.S. Dollar	46.97	2,583.35
RPUTRK05	F-250 4X4 3/4 TON PICKUP	55.00	1.00	Each (hourly)	U.S. Dollar	11.88	653.40

1.5.2	55.00 Each	Loadout Inverter & Transformer	10.00	Detail	U.S. Dollar	217.69	11,972.95

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L060100	GENERAL LABORER	110.00	2.00	Each (hourly)	U.S. Dollar	46.97	5,166.70
L010101	OPERATOR	55.00	1.00	Each (hourly)	U.S. Dollar	53.68	2,952.40
RHYDCR06	GROVE RT880 73 TON	55.00	1.00	Each (hourly)	U.S. Dollar	70.07	3,853.85

1.6	55.00 Each	Inverter / Transformer Support Pile Removal	10.00	Detail	U.S. Dollar	230.36	12,669.80
1.6.1	55.00 Each	Excavate / Remove Piles	10.00	Detail	U.S. Dollar	230.36	12,669.80

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L060100	GENERAL LABORER	55.00	1.00	Each (hourly)	U.S. Dollar	46.97	2,583.35
L010101	OPERATOR	55.00	1.00	Each (hourly)	U.S. Dollar	53.68	2,952.40
*REXCAV06A	Excav 100K w/ Bucket & Grapple	55.00	1.00	Each (hourly)	U.S. Dollar	129.71	7,134.05

1.7	1.00 Lump Sum	Solar Array Retirement	0.00	Detail	U.S. Dollar	11,556,475.62	11,556,475.62
1.7.1	138,648.00 Linear Feet	Fence Removal	5,124.80	Detail	U.S. Dollar	1.07	148,438.96
1.7.1.1	138,648.00 Linear Feet	Fence Removal	5,124.80	Detail	U.S. Dollar	1.07	148,438.96

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L010101	OPERATOR	811.63	3.00	Each (hourly)	U.S. Dollar	53.68	43,568.28
L060100	GENERAL LABORER	1,623.26	6.00	Each (hourly)	U.S. Dollar	46.97	76,244.50
RBACKH09	Deere 710J BACKHOE, 1.62CY	811.63	3.00	Each (hourly)	U.S. Dollar	35.27	28,626.18

1.7.2	574,345.00 Each	Solar Panel Removal & Disposal / Recycling	4,800.00	Detail	U.S. Dollar	8.50	4,881,821.74
1.7.2.1	574,345.00 Each	Solar Panel Removal	4,800.00	Detail	U.S. Dollar	3.31	1,899,071.74

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
RLIFTS05	JCB 508C, 8,000lbs FRKLFT	7,179.31	6.00	Each (hourly)	U.S. Dollar	22.96	164,837.02
L010101	OPERATOR	7,179.31	6.00	Each (hourly)	U.S. Dollar	53.68	385,385.50

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Cost Item								
CBS Position Code	Quantity UM	Description		UM/Day	Cost Source	Currency	Unit Cost	Total Cost
L060100	GENERAL LABORER		28,717.25	24.00 Each (hourly)	U.S. Dollar		46.97	1,348,849.23

Notes: **********
Assumed production: 20 panels per laborer per hour,
Includes packaging and preparing for shipment offsite.
****

1.7.2.2	970.00 Each	Trucking - Per Load	0.00	Detail	U.S. Dollar	1,500.00	1,455,000.00

Resource Code	Description	Hours	Quantity UM	Currency	Unit Cost	Total Cost
USTRUCKING	Trucking Sub		1,455,000.00 Each	U.S. Dollar	1.00	1,455,000.00

Notes: **********
Assumption: 45,000 lbs per load
****

1.7.2.3	21,825.00 Ton	Disposal / Recycling Cost	0.00	Detail	U.S. Dollar	70.00	1,527,750.00

Resource Code	Description	Hours	Quantity UM	Currency	Unit Cost	Total Cost
USDISPOSAL	Disposal Fee's		1,527,750.00 Each	U.S. Dollar	1.00	1,527,750.00

Notes: **********
Assumption: 574,345 modules x 76 lbs each (estimated)
****

1.7.3	20,512.00 Each	Solar Rack (Trackers) & Post Removal	119.36	Detail	U.S. Dollar	318.17	6,526,214.92
1.7.3.1	20,512.00 Each	Solar Rack (Trackers) & Post Removal	119.36	Detail	U.S. Dollar	318.17	6,526,214.92

Resource Code	Description	Hours	Quantity UM	Currency	Unit Cost	Total Cost
L010101	OPERATOR	27,495.59	16.00 Each (hourly)	U.S. Dollar	53.68	1,475,963.08
L060100	GENERAL LABORER	13,747.79	8.00 Each (hourly)	U.S. Dollar	46.97	645,733.85
*REXCAV06A	Excav 100K w/ Bucket & Grapple	13,747.79	8.00 Each (hourly)	U.S. Dollar	129.71	1,783,226.26
*REXCAV06E	Excav 100K w/ Shear	13,747.79	8.00 Each (hourly)	U.S. Dollar	190.67	2,621,291.73

Notes: **********
Crew to include
1 excavator w/shear, 1 excavator w/grapple, 2 operators and 2
laborers. Includes post removal and sizing of steel for sale as scrap,
and loadout to haul trucks.
****

1.8	1.00 Lump Sum	Remove Underground Cable	0.20	Detail	U.S. Dollar	36,818.00	36,818.00
1.8.1	5.00 Day	Remove Cable	1.00	Detail	U.S. Dollar	7,335.60	36,678.00

Resource Code	Description	Hours	Quantity UM	Currency	Unit Cost	Total Cost
*REXCAV06A	Excav 100K w/ Bucket & Grapple	200.00	4.00 Each (hourly)	U.S. Dollar	129.71	25,942.00
L010101	OPERATOR	200.00	4.00 Each (hourly)	U.S. Dollar	53.68	10,736.00

1.8.2	2.00 Ton	Disposal Cost (Misc Conduit)	0.00	Detail	U.S. Dollar	70.00	140.00

Resource Code	Description	Hours	Quantity UM	Currency	Unit Cost	Total Cost
USDISPOSAL	Disposal Fee's		140.00 Each	U.S. Dollar	1.00	140.00

1.9	1.00 Lump Sum	Site Restoration - Partial Site Seeding	0.01	Detail	U.S. Dollar	722,735.29	722,735.29
1.9.1	65,000.00 Linear Feet	Strip & Decompact Roads	2,500.00	Detail	U.S. Dollar	1.45	94,239.60

Resource Code	Description	Hours	Quantity UM	Currency	Unit Cost	Total Cost
*RDOZER08	CAT D6 LGP Dozer	520.00	2.00 Each (hourly)	U.S. Dollar	60.82	31,626.40
L010101	OPERATOR	780.00	3.00 Each (hourly)	U.S. Dollar	53.68	41,870.40
*RFELWH08C	CAT 980 LOADER	260.00	1.00 Each (hourly)	U.S. Dollar	79.78	20,742.80

Notes: **********
Decompaction to include discing and regrading
Assume removed road base transported offsite at no charge
****

1.9.2	446.00 Acre	Spot Grade Disturbed Areas	8.00	Detail	U.S. Dollar	286.25	127,667.50

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Cost Item							
CBS Position Code	Quantity UM	Description	UM/Day	Cost Source	Currency	Unit Cost	Total Cost

Resource Code	Description	Hours	Quantity UM	Currency	Unit Cost	Total Cost
*RDOZER08	CAT D6 LGP Dozer	1,115.00	2.00 Each (hourly)	U.S. Dollar	60.82	67,814.30
L010101	OPERATOR	1,115.00	2.00 Each (hourly)	U.S. Dollar	53.68	59,853.20

Notes: **********
Assumtion: 1273 acres total property area.
Assume that 35% of the area distrubed by construction will be regraded.
****

1.9.3	446.00 Acre	Re-Seed With Native Vegetation - Roads & Areas Disturbed By Construction	0.00	Detail	U.S. Dollar	1,000.00	446,000.00

Resource Code	Description	Hours	Quantity UM	Currency	Unit Cost	Total Cost
USLANDSCAPE	Landscape Sub		446.00 Acre	U.S. Dollar	1,000.00	446,000.00

Notes: **********
Assumtion: 1273 acres total property area.
Assume that 35% of the area distrubed by construction will be re-seeded.
****

1.9.4	30,000.00 Cubic Yard	Restore Stormwater Basins	1,983.25	Detail	U.S. Dollar	1.83	54,828.19

Resource Code	Description	Hours	Quantity UM	Currency	Unit Cost	Total Cost
*RDOZER08	CAT D6 LGP Dozer	302.53	2.00 Each (hourly)	U.S. Dollar	60.82	18,400.10
L010101	OPERATOR	453.80	3.00 Each (hourly)	U.S. Dollar	53.68	24,360.02
*RFELWH08C	CAT 980 LOADER	151.27	1.00 Each (hourly)	U.S. Dollar	79.78	12,068.07

1.10	1.00 Lump Sum	Contractor Markups	0.00	Detail	U.S. Dollar	2,534,164.52	2,534,164.52
1.10.1	1.00 Lump Sum	Home Office, Project Management (5% Of Cost)	0.00	Detail	U.S. Dollar	679,400.70	679,400.70

Resource Code	Description	Hours	Quantity UM	Currency	Unit Cost	Total Cost
USMARKUP5	5% Markup		13,588,014.00 Each	U.S. Dollar	0.05	679,400.70

1.10.2	1.00 Lump Sum	Contractor OH & Fee (13% Of Cost)	0.00	Detail	U.S. Dollar	1,854,763.82	1,854,763.82

Resource Code	Description	Hours	Quantity UM	Currency	Unit Cost	Total Cost
USMARKUP	13% Markup		14,267,414.00 Each	U.S. Dollar	0.13	1,854,763.82

Report Total:	16,122,178.29

Category	Total
Labor	4,973,862.40
Rented Equipment	4,945,411.38
Supplies	3,550.00
Materials	40,000.00
Subcontract	6,157,154.52
ODCs	2,200.00

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