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ENVIRONMENTAL CONSULTING

Glare Analysis for Proposed Henderson County Solar LLC Project Henderson County, Kentucky



Prepared for:

Henderson County Solar LLC

Marty Marchaterre
Senior Environmental Planner
Copperhead Environmental Consulting, Inc.

8 November 2021

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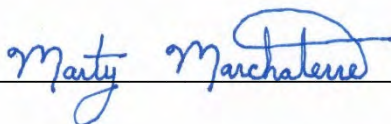
**Glare Analysis for Proposed
Henderson County Solar LLC Project
Henderson County, Kentucky**

Prepared for

Henderson County Solar LLC
C/O Community Energy
PO Box 17236
Chapel Hill, NC 27516

By:

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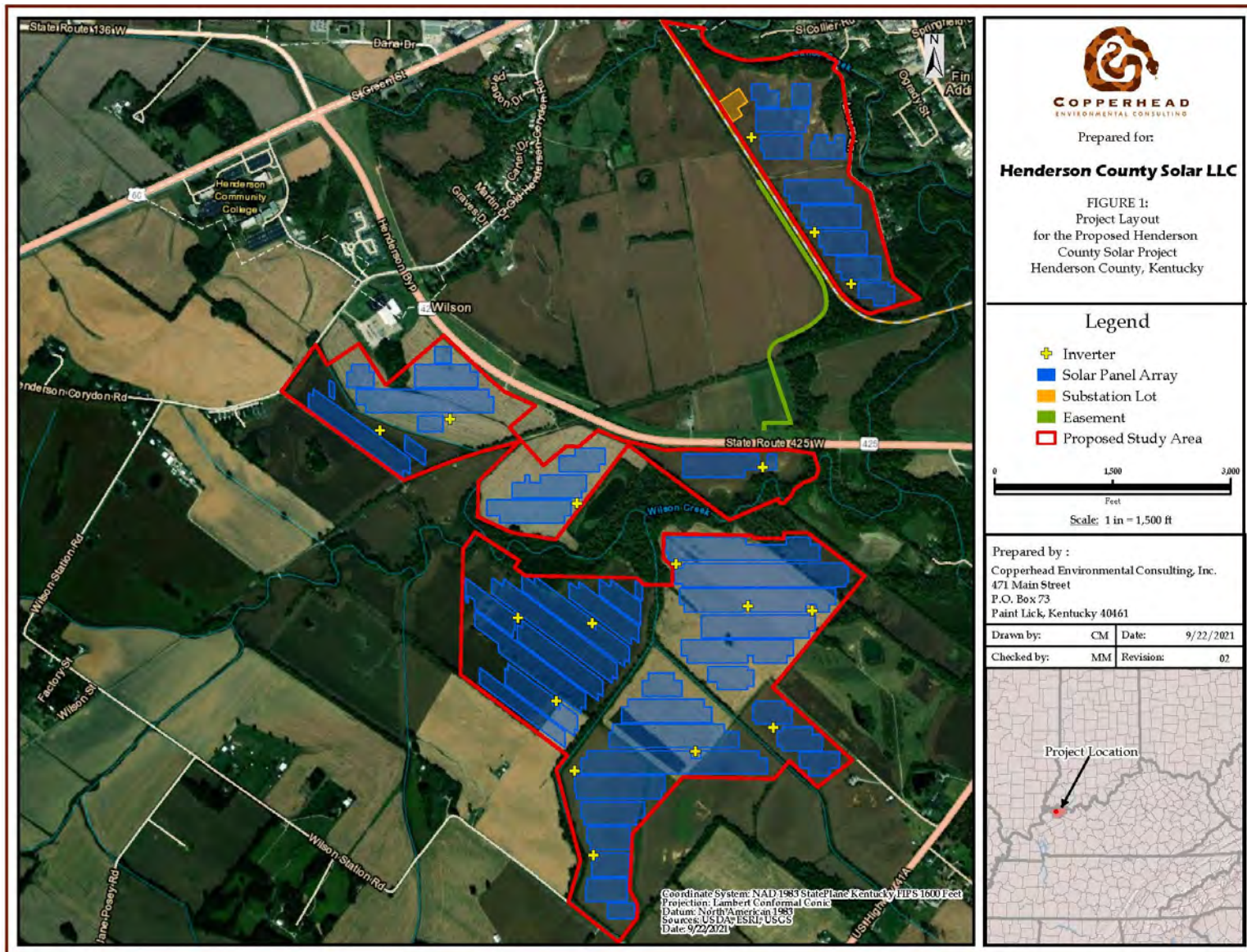
INTRODUCTION

Henderson County Solar LLC contracted Copperhead Environmental Consulting, Inc. (Copperhead) to conduct a glare analysis for the proposed 50-megawatt (MW) Henderson County Solar LLC Project (Henderson County Solar or Project) near the City of Henderson in Henderson County, Kentucky (Figure 1). The Project Area consists of approximately 541 acres, and has reference coordinates of 37.781787° N, 86.632383° W. The Project Area includes two sections of land south of KY 425 (Henderson Bypass) and another section of land west of Lovers Lane. The Project Area is approximately 2 miles southeast of the Henderson City - County Airport.

The Project is a proposed solar farm that would generate electricity through the use of photovoltaic solar panels. It would include a utility interconnection substation, a storage/maintenance container, inverter boxes, transformers, and overhead and underground electrical conveyance lines. The power generated will be sold to Henderson Municipal Power & Light.

The glare analysis was conducted using the latest version of the ForgeSolar GlareGauge solar glare tool, formerly known as the Solar Glare Hazard Analysis Tool (SGHAT) developed by Sandia National Laboratories to analyze potential glare at nearby roadway and residential locations. GlareGauge is used to assess glare impacts at observation locations from solar photovoltaic (PV) projects and is currently the best tool available for analyzing solar glare impacts from PV projects. It has the ability to simulate glare to observers along a continuous roadway segment and/or specific locations. SGHAT employs an interactive Google map where the user can locate a site, draw an outline of the proposed PV array, include project parameters, and specify observer locations or paths (e.g., nearby roadways). In lieu of specific county glare standards, model results were reviewed and compared relative to the Federal Aviation Administration's (FAA) Interim Policy of Solar Projects at Airports¹, specifically standards for pilots on final approach.

¹ 78 Federal Register 63276 (October 23, 2013).



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Prepared for:
Henderson County Solar LLC

FIGURE 1:
Project Layout
for the Proposed Henderson
County Solar Project
Henderson County, Kentucky

Legend

- + Inverter
- Solar Panel Array
- Substation Lot
- Easement
- Proposed Study Area

0 1,500 3,000
Feet
Scale: 1 in = 1,500 ft

Prepared by :
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Drawn by:	CM	Date:	9/22/2021
Checked by:	MM	Revision:	02



Figure 1. Project Area

EXISTING LAND USE AND SITE CONDITIONS

According to the National Land Cover Database (NLCD) for Henderson County, the Project Area currently consists of agricultural fields/cultivated crops, pasture, and forest/wooded land. Historically, the Project Area has been primarily used for agricultural land use. It is within an agricultural and rural-residential area of Henderson County.



The Project Area contains no structures. Land uses on adjacent properties include agricultural lands, scattered wood lots, rural residences, and commercial businesses.

DESIGN PARAMETERS

In deploying the model, we included the footprint of the solar project array and the following parameters in the GlareGauge tool (see Table 1 and Figure 2).

Table 1: Proposed Project Design Parameters

Solar System	System	Orientation	Tilt Angle	Panel Height (Above Ground Level)
Henderson County Solar LLC	Single Axis	180°	60°	15 feet

The Project is proposing a 50 MW single axis tracking system with a tracking orientation north to south and a maximum tracking angle of 60°. The Project will be located on the ground, and a height of up to 15 feet above ground level was assessed for the modules. A smooth panel surface without any anti-reflective coating was modeled to be conservative and to provide maximum flexibility in module selection.

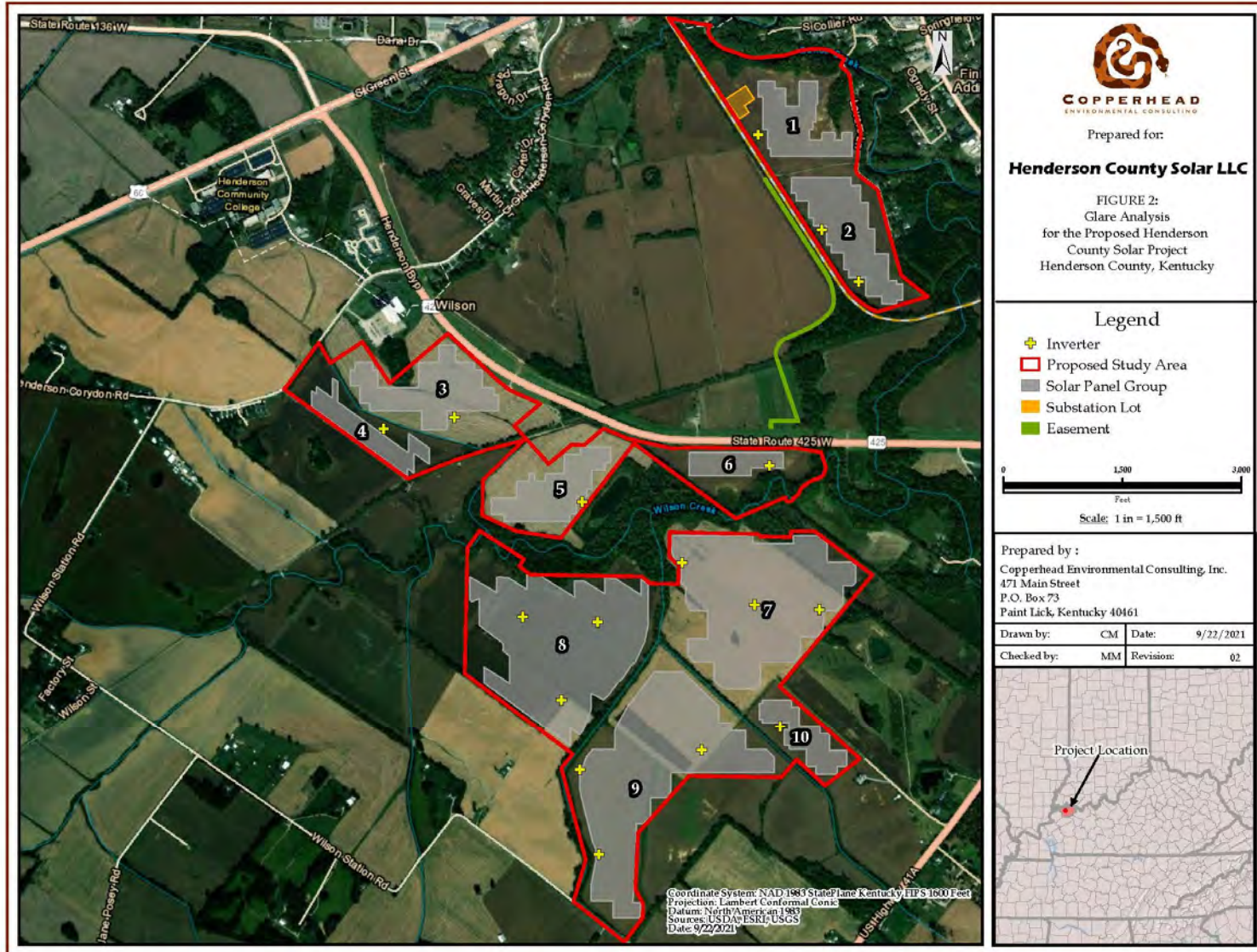


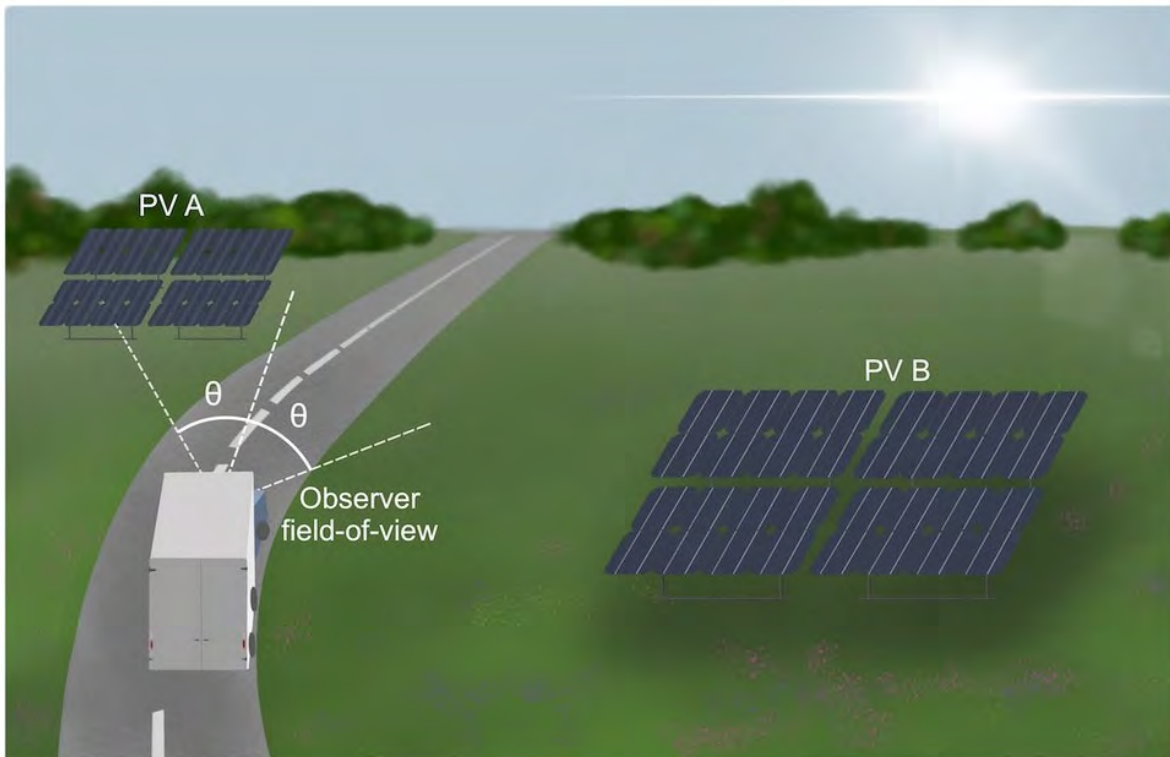
Figure 2. Glare Analysis

SUMMARY OF RESULTS FOR NEARBY ROADWAY OBSERVATION LOCATIONS

For the roadway analysis, Copperhead analyzed the closest nearby main roadway of KY 425 which runs essentially east-west and US 60 and US 41A which runs southwest - northeast as they traverse near the project boundaries. Additionally, observation points were identified along Lovers Lane, Old Corydon Road, and Wilson Station Road. **Figure 2** shows the Project arrays selected for analysis.

Copperhead input the specifications of the project array design parameters as described above in Table 1. A smooth panel surface without any anti-reflective coating was assumed to provide maximum flexibility in module selection as well as provide a conservative analysis.

The model was run for a full calendar year to calculate information for every sun position scenario over a typical year and the model assessed potential for glare at one-minute intervals. A viewing height of 6 feet above ground level was chosen as the height of the roadway observer as well as assuming two-way viewing meaning the observers travel along the route in both directions. A viewer default angle of 50° was chosen as the field of view where the observer can see 50 degrees to the left and right for a total field of view of 100° . Figure 3 shows a depiction of the route field of view in GlareGauge.



*Route receptor field-of-view is defined by view angle (theta) to left and right. Default FOV is 100° (i.e. $2 * 50^\circ$ view angle).*

Figure 3: Depiction of Route Field of View in GlareGauge

A summary of the model output results is presented in **Table 2** for the KY 425, US 41A, US 60, Lovers Lane, Old Corydon Road, and Wilson Station Road observer segments. The modeling result output sheets for the roadway observation locations are provided as **Attachment A**. As shown in **Table 2**, no glare was detected by the model from any of the PV locations to the nearby roadway observer locations.

Table 2: GlareGauge Results (in minutes per year) for the Henderson County Solar Project for Portions of Nearby Roadways

KY 425	US 41A	US 60	Lovers Lane	Old Corydon Road	Wilson Station Road	Comply with FAA Thresholds for Pilots
0	0	0	0	0	0	Yes

Any potential solar glare to the vehicles traveling along the nearby roadways is very similar or representative to aircraft along final approach in the FAA standards. Therefore in lieu of county specific standards, the standards of acceptable ocular impact as contained in the FAA policy for aircraft on final approach were applied to the vehicles traveling along sections of nearby roadways. It should be noted that the GlareGauge model does not consider potential screening or obstacles associated with the landscape such as trees, buildings or hills which could screen a direct view of the solar panels to the nearby observer locations.

Based on the design and layout of the Henderson County Solar Project, the GlareGauge modeling showed no glare detected at KY 425, US 41A, US 60, Lovers Lane, Old Corydon Road, and Wilson Station Road Route 416 and Rout 283 observation points. Accordingly, the proposed design for these arrays meets the FAA Standard for aircraft at each modeled observer location.

In conclusion, there is no evidence based upon our modeling that glare from the Project will cause an adverse impact for drivers along analyzed portions of KY 425, US 41A, US 60, Lovers Lane, Old Corydon Road, and Wilson Station Road.

AIRPORT SENSITIVE RECEPTORS AND PILOT ANALYSIS

To assess airport sensitive receptors at the Henderson City - County Airport located approximately 2 miles northwest of the Project, the FAA requires an evaluation of potential glare for pilots on final approach and at the air traffic control tower (ATCT). The FAA published an Interim Policy for Solar Projects at Airports on October 23, 2013. The policy clarifies the FAA's jurisdiction in reviewing solar projects and the standards it uses to determine if a project will result in a negative glare impact to airspace safety. **Table 3** presents the airport sensitive receptors that are evaluated, the potential results presented by the Glaregauge model and whether the result complies with the FAA ocular hazard standard presented in the Policy.

Table 3. Levels of Glare and Compliance with FAA Policy

Airport Sensitive Receptor	Level of Glare	Color Result	Compliance with FAA Policy
ATCT	No glare	None	Yes
	Low Potential for After-Image	Green	No
	Potential for After-Image	Yellow	No
	Potential for Permanent Eye Damage	Red	No
Aircraft along final approach path	No glare	None	Yes
	Low Potential for After-Image	Green	Yes
	Potential for After-Image	Yellow	No
	Potential for Permanent Eye Damage	Red	No

As discussed above, measurement of No or Low Potential for After-Image or Green is acceptable for aircraft on final approach but greater levels (indicated in yellow and red) are not allowed.

To obtain FAA approval and a “no objection” to a Notice of Proposed Construction Form 7460-1, the sponsor will be required to demonstrate that the proposed solar energy system meets the following standards: (1) no potential for glint or glare in the existing or planned Air Traffic Control Tower cab, and (2) no potential for glare or “low potential for after-image” (shown in green) along the final approach path.

Any glare recorded on the ATCT is not compliant with FAA policy and will not receive a “no objection” determination from the FAA. Measurement of *low potential for after-image* or “Green” is acceptable for aircraft on final approach but greater levels (indicated in yellow and red) are not allowed.

Based on the design and layout of the Henderson County Solar Project, the GlareGauge modeling showed no glare detected at the ATCT and for pilots on final approach (see Attachment A).

CONCLUSIONS

The GlareGauge model developed by the Department of Energy’s Sandia National Laboratories was utilized to evaluate potential glare from a proposed Henderson County Solar Project located near the City of Henderson. The analysis evaluated potential glare from the proposed project on sensitive roadway observer locations on SR 425, US 41A, US 60, Lovers Lane, Old Corydon Road, Wilson Station Road, as well as the Henderson City - County Airport.

GlareGauge is used to assess potential glare impacts at roadway and airport observation locations from solar projects for comparison to FAA Solar Glare Standards. It is currently the best tool available for analyzing solar glare impacts from PV projects and has the ability to simulate glare to observers along a continuous roadway segment. In lieu of county standards, GlareGauge model results were compared to the FAA's ocular hazard standard for pilots to determine adverse impacts. **Attachment A** show the Glaregauge modeling results for nearby roadway segments and the Henderson City - County Airport.



Based on the proposed design and layout of the Henderson County Solar LLC, the GlareGauge modeling showed no glare detected at SR 425, US 41A, US 60, Lovers Lane, Old Corydon Road, Wilson Station Road or the Henderson City - County Airport. Accordingly, the proposed design for these arrays meets the FAA glare standards. *Therefore, there is no evidence based upon our modeling that glare from the Project will cause an adverse impact for drivers along analyzed portions of nearby roadways or at the airport.*

ATTACHMENT A
GLAREGUAGE MODELING RESULTS

Henderson Solar LLC

C1_15ft

Client: Community Energy

Created Sept. 12, 2021

Updated Sept. 12, 2021

Time-step 1 minute

Timezone offset UTC-6

Site ID 58554.10436

Project type Advanced

Project status: active

Category 10 MW to 100 MW

Misc. Analysis Settings

DNI: **varies (1,000.0 W/m² peak)**
 Ocular transmission coefficient: **0.5**
 Pupil diameter: **0.002 m**
 Eye focal length: **0.017 m**
 Sun subtended angle: **9.3 mrad**

Analysis Methodologies:

- Observation point: **Version 2**
- 2-Mile Flight Path: **Version 2**
- Route: **Version 2**

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
G-01	SA tracking	SA tracking	0	0	-
G-02	SA tracking	SA tracking	0	0	-
G-03	SA tracking	SA tracking	0	0	-
G-04	SA tracking	SA tracking	0	0	-
G-05	SA tracking	SA tracking	0	0	-
G-06	SA tracking	SA tracking	0	0	-
G-07	SA tracking	SA tracking	0	0	-
G-08	SA tracking	SA tracking	0	0	-
G-09	SA tracking	SA tracking	0	0	-
G-10	SA tracking	SA tracking	0	0	-

Component Data

PV Array(s)

Total PV footprint area: 308.9 acres

Name: G-01
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 60.0 deg
Footprint area: 15.0 acres
Rated power: -
Panel material: Smooth glass without AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 6.55 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.801302	-87.628635	388.02	15.00	403.02
2	37.801314	-87.627918	382.02	15.00	397.02
3	37.801050	-87.627911	385.02	15.00	400.02
4	37.801057	-87.627427	379.02	15.00	394.02
5	37.800457	-87.627412	382.02	15.00	397.02
6	37.800466	-87.626814	385.02	15.00	400.02
7	37.801331	-87.626836	378.02	15.00	393.02
8	37.801343	-87.626050	380.02	15.00	395.02
9	37.800533	-87.626029	383.02	15.00	398.02
10	37.800532	-87.626098	383.02	15.00	398.02
11	37.799932	-87.626083	373.02	15.00	388.02
12	37.799930	-87.626222	374.02	15.00	389.02
13	37.799665	-87.626215	377.02	15.00	392.02
14	37.799663	-87.626354	377.02	15.00	392.02
15	37.799296	-87.626344	376.02	15.00	391.02
16	37.799297	-87.625815	375.02	15.00	390.02
17	37.799562	-87.625822	375.02	15.00	390.02
18	37.799571	-87.625244	373.02	15.00	388.02
19	37.799308	-87.625237	377.02	15.00	392.02
20	37.799311	-87.624916	374.02	15.00	389.02
21	37.799576	-87.624922	374.02	15.00	389.02
22	37.799583	-87.624482	378.02	15.00	393.02
23	37.798773	-87.624462	379.02	15.00	394.02
24	37.798717	-87.628016	382.02	15.00	397.02
25	37.798981	-87.628023	382.02	15.00	397.02
26	37.798979	-87.628161	383.02	15.00	398.02
27	37.799635	-87.628178	385.02	15.00	400.02
28	37.799631	-87.628385	387.02	15.00	402.02
29	37.800759	-87.628414	388.02	15.00	403.02
30	37.800757	-87.628621	389.02	15.00	404.02

Name: G-02

Axis tracking: Single-axis rotation

Tracking axis orientation: 180.0 deg

Tracking axis tilt: 0.0 deg

Tracking axis panel offset: 0.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 60.0 deg

Footprint area: 21.8 acres

Rated power: -

Panel material: Smooth glass without AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 6.55 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.797985	-87.627097	381.02	15.00	396.02
2	37.798026	-87.624512	382.02	15.00	397.02
3	37.797763	-87.624505	382.02	15.00	397.02
4	37.797768	-87.624090	381.02	15.00	396.02
5	37.797168	-87.624075	381.02	15.00	396.02
6	37.797173	-87.623729	381.02	15.00	396.02
7	37.796254	-87.623706	381.02	15.00	396.02
8	37.796258	-87.623429	382.02	15.00	397.02
9	37.795394	-87.623408	382.02	15.00	397.02
10	37.795403	-87.622785	382.02	15.00	397.02
11	37.794484	-87.622762	383.02	15.00	398.02
12	37.794489	-87.622416	382.02	15.00	397.02
13	37.794358	-87.622412	382.02	15.00	397.02
14	37.794362	-87.622136	382.02	15.00	397.02
15	37.793816	-87.622122	382.02	15.00	397.02
16	37.793812	-87.622399	382.02	15.00	397.02
17	37.793680	-87.622396	382.02	15.00	397.02
18	37.793669	-87.623043	382.02	15.00	397.02
19	37.793933	-87.623050	382.02	15.00	397.02
20	37.793923	-87.623742	382.02	15.00	397.02
21	37.794578	-87.623758	382.02	15.00	397.02
22	37.794566	-87.624519	382.02	15.00	397.02
23	37.794829	-87.624526	382.02	15.00	397.02
24	37.794827	-87.624734	382.02	15.00	397.02
25	37.795427	-87.624749	382.02	15.00	397.02
26	37.795419	-87.625302	383.02	15.00	398.02
27	37.795682	-87.625309	382.02	15.00	397.02
28	37.795679	-87.625516	382.02	15.00	397.02
29	37.796335	-87.625533	382.02	15.00	397.02
30	37.796326	-87.626086	381.02	15.00	396.02
31	37.796590	-87.626093	381.02	15.00	396.02
32	37.796587	-87.626301	381.02	15.00	396.02
33	37.797188	-87.626316	382.02	15.00	397.02
34	37.797179	-87.626869	382.02	15.00	397.02
35	37.797442	-87.626876	381.02	15.00	396.02
36	37.797440	-87.627083	381.02	15.00	396.02

Name: G-03

Axis tracking: Single-axis rotation

Tracking axis orientation: 180.0 deg

Tracking axis tilt: 0.0 deg

Tracking axis panel offset: 0.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 60.0 deg

Footprint area: 21.7 acres

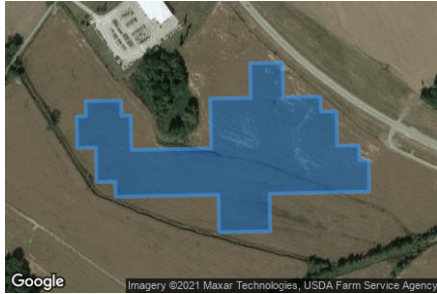
Rated power: -

Panel material: Smooth glass without AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 6.55 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.791011	-87.646188	392.02	15.00	407.02
2	37.791013	-87.645981	395.02	15.00	410.02
3	37.791278	-87.645987	397.02	15.00	412.02
4	37.791291	-87.645201	408.02	15.00	423.02
5	37.791027	-87.645195	402.02	15.00	417.02
6	37.791030	-87.644987	401.02	15.00	416.02
7	37.790429	-87.644972	391.02	15.00	406.02
8	37.790458	-87.643198	390.02	15.00	405.02
9	37.791322	-87.643219	403.02	15.00	418.02
10	37.791337	-87.642320	391.02	15.00	406.02
11	37.791937	-87.642335	395.02	15.00	410.02
12	37.791949	-87.641618	395.02	15.00	410.02
13	37.791348	-87.641603	390.02	15.00	405.02
14	37.791361	-87.640773	397.02	15.00	412.02
15	37.791098	-87.640766	396.02	15.00	411.02
16	37.791103	-87.640420	397.02	15.00	412.02
17	37.790502	-87.640405	393.02	15.00	408.02
18	37.790510	-87.639921	389.02	15.00	404.02
19	37.790246	-87.639914	385.02	15.00	400.02
20	37.790249	-87.639706	384.02	15.00	399.02
21	37.789703	-87.639693	379.02	15.00	394.02
22	37.789668	-87.641907	381.02	15.00	396.02
23	37.789013	-87.641890	378.02	15.00	393.02
24	37.788995	-87.643022	379.02	15.00	394.02
25	37.789650	-87.643039	381.02	15.00	396.02
26	37.789614	-87.645322	383.02	15.00	398.02
27	37.789877	-87.645329	385.02	15.00	400.02
28	37.789871	-87.645744	385.02	15.00	400.02
29	37.790472	-87.645759	387.02	15.00	402.02
30	37.790465	-87.646174	385.02	15.00	400.02

Name: G-04

Axis tracking: Single-axis rotation

Tracking axis orientation: 180.0 deg

Tracking axis tilt: 0.0 deg

Tracking axis panel offset: 0.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 60.0 deg

Footprint area: 10.2 acres

Rated power: -

Panel material: Smooth glass without AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

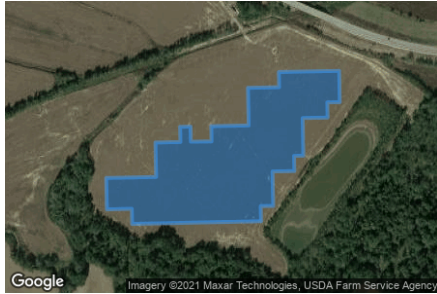
Slope error: 6.55 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.790180	-87.647645	386.02	15.00	401.02
2	37.790180	-87.647690	387.02	15.00	402.02
3	37.790257	-87.647830	387.02	15.00	402.02
4	37.790257	-87.647855	387.02	15.00	402.02
5	37.789711	-87.647841	388.02	15.00	403.02
6	37.787397	-87.643629	381.02	15.00	396.02
7	37.787397	-87.643604	380.02	15.00	395.02
8	37.787622	-87.643610	381.02	15.00	396.02
9	37.787622	-87.643566	381.02	15.00	396.02
10	37.787507	-87.643355	381.02	15.00	396.02
11	37.787507	-87.643330	381.02	15.00	396.02
12	37.788163	-87.643344	381.02	15.00	396.02
13	37.788163	-87.643302	381.02	15.00	396.02
14	37.787816	-87.642671	381.02	15.00	396.02
15	37.787816	-87.642645	381.02	15.00	396.02
16	37.788362	-87.642660	379.02	15.00	394.02
17	37.788864	-87.643572	381.02	15.00	396.02
18	37.788863	-87.643597	381.02	15.00	396.02
19	37.788207	-87.643583	381.02	15.00	396.02
20	37.788207	-87.643625	381.02	15.00	396.02
21	37.789904	-87.646713	385.02	15.00	400.02
22	37.790599	-87.646731	386.02	15.00	401.02
23	37.790715	-87.646942	387.02	15.00	402.02
24	37.790715	-87.646967	386.02	15.00	401.02
25	37.790058	-87.646953	385.02	15.00	400.02
26	37.790058	-87.646994	385.02	15.00	400.02
27	37.790405	-87.647626	387.02	15.00	402.02
28	37.790405	-87.647651	387.02	15.00	402.02

Name: G-05

Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 60.0 deg
Footprint area: 16.3 acres
Rated power: -
Panel material: Smooth glass without AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 6.55 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.786668	-87.639908	377.02	15.00	392.02
2	37.786686	-87.638801	377.02	15.00	392.02
3	37.787287	-87.638816	377.02	15.00	392.02
4	37.787295	-87.638262	378.02	15.00	393.02
5	37.787559	-87.638269	377.02	15.00	392.02
6	37.787563	-87.638037	377.02	15.00	392.02
7	37.787300	-87.638030	378.02	15.00	393.02
8	37.787306	-87.637570	377.02	15.00	392.02
9	37.787570	-87.637577	377.02	15.00	392.02
10	37.787584	-87.636747	377.02	15.00	392.02
11	37.788239	-87.636763	377.02	15.00	392.02
12	37.788249	-87.636071	378.02	15.00	393.02
13	37.788514	-87.636078	378.02	15.00	393.02
14	37.788535	-87.634738	377.02	15.00	392.02
15	37.787990	-87.634725	380.02	15.00	395.02
16	37.787986	-87.635002	380.02	15.00	395.02
17	37.787721	-87.634995	379.02	15.00	394.02
18	37.787712	-87.635548	378.02	15.00	393.02
19	37.787057	-87.635532	379.02	15.00	394.02
20	37.787054	-87.635740	380.02	15.00	395.02
21	37.786790	-87.635733	380.02	15.00	395.02
22	37.786782	-87.636217	377.02	15.00	392.02
23	37.786183	-87.636202	378.02	15.00	393.02
24	37.786179	-87.636479	379.02	15.00	394.02
25	37.785914	-87.636472	379.02	15.00	394.02
26	37.785867	-87.639334	377.02	15.00	392.02
27	37.786131	-87.639341	378.02	15.00	393.02
28	37.786123	-87.639895	375.02	15.00	390.02

Name: G-06

Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 0.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 60.0 deg
Footprint area: 7.1 acres
Rated power: -
Panel material: Smooth glass without AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 6.55 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.788393	-87.631330	381.02	15.00	396.02
2	37.788458	-87.627223	382.02	15.00	397.02
3	37.787912	-87.627209	375.02	15.00	390.02
4	37.787891	-87.628593	382.02	15.00	397.02
5	37.787626	-87.628587	376.02	15.00	391.02
6	37.787583	-87.631310	380.02	15.00	395.02

Name: G-07

Axis tracking: Single-axis rotation

Tracking axis orientation: 180.0 deg

Tracking axis tilt: 0.0 deg

Tracking axis panel offset: 0.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 60.0 deg

Footprint area: 68.0 acres

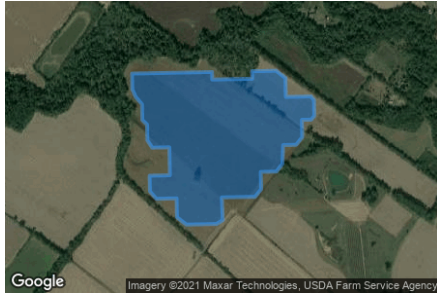
Rated power: -

Panel material: Smooth glass without AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 6.55 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.784955	-87.632007	389.02	15.00	404.02
2	37.784693	-87.631862	383.02	15.00	398.02
3	37.784432	-87.631579	384.02	15.00	399.02
4	37.783887	-87.631565	383.02	15.00	398.02
5	37.783726	-87.631354	382.02	15.00	397.02
6	37.783181	-87.631340	382.02	15.00	397.02
7	37.782920	-87.631126	381.02	15.00	396.02
8	37.782932	-87.630365	382.02	15.00	397.02
9	37.781958	-87.630340	383.02	15.00	398.02
10	37.781943	-87.631240	383.02	15.00	398.02
11	37.781398	-87.631226	384.02	15.00	399.02
12	37.781138	-87.630943	383.02	15.00	398.02
13	37.781152	-87.630043	385.02	15.00	400.02
14	37.780497	-87.630027	383.02	15.00	398.02
15	37.780239	-87.629605	381.02	15.00	396.02
16	37.780260	-87.628266	381.02	15.00	396.02
17	37.780397	-87.627992	381.02	15.00	396.02
18	37.781184	-87.628037	379.02	15.00	394.02
19	37.781207	-87.626559	379.02	15.00	394.02
20	37.781476	-87.626289	379.02	15.00	394.02
21	37.782076	-87.626304	379.02	15.00	394.02
22	37.782087	-87.625612	380.02	15.00	395.02
23	37.782356	-87.625342	379.02	15.00	394.02
24	37.783012	-87.625314	379.02	15.00	394.02
25	37.783021	-87.624735	379.02	15.00	394.02
26	37.783289	-87.624465	380.02	15.00	395.02
27	37.783890	-87.624480	380.02	15.00	395.02
28	37.783896	-87.624065	379.02	15.00	394.02
29	37.784031	-87.623930	381.02	15.00	396.02
30	37.784576	-87.623944	380.02	15.00	395.02
31	37.784706	-87.624085	381.02	15.00	396.02
32	37.784689	-87.625192	382.02	15.00	397.02
33	37.785344	-87.625209	384.02	15.00	399.02
34	37.785602	-87.625631	385.02	15.00	400.02
35	37.785585	-87.626693	384.02	15.00	399.02
36	37.785320	-87.626687	386.02	15.00	401.02
37	37.785293	-87.628461	387.02	15.00	402.02
38	37.785557	-87.628468	383.02	15.00	398.02
39	37.785501	-87.632021	388.02	15.00	403.02

Name: G-08

Axis tracking: Single-axis rotation

Tracking axis orientation: 180.0 deg

Tracking axis tilt: 0.0 deg

Tracking axis panel offset: 0.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 60.0 deg

Footprint area: 69.7 acres

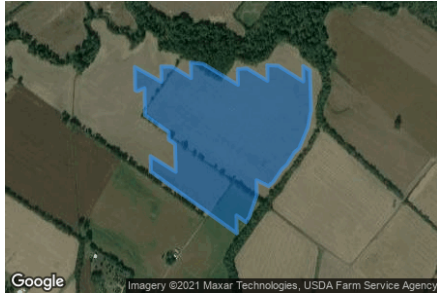
Rated power: -

Panel material: Smooth glass without AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 6.55 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.783127	-87.640765	379.02	15.00	394.02
2	37.783088	-87.640670	379.02	15.00	394.02
3	37.783193	-87.640351	380.02	15.00	395.02
4	37.782258	-87.640327	379.02	15.00	394.02
5	37.781658	-87.639274	379.02	15.00	394.02
6	37.781401	-87.639276	379.02	15.00	394.02
7	37.781240	-87.638996	379.02	15.00	394.02
8	37.780277	-87.638962	380.02	15.00	395.02
9	37.780831	-87.640084	378.02	15.00	393.02
10	37.780285	-87.640070	386.02	15.00	401.02
11	37.778135	-87.636253	384.02	15.00	399.02
12	37.778764	-87.636269	381.02	15.00	396.02
13	37.778525	-87.635848	382.02	15.00	397.02
14	37.778705	-87.635704	382.02	15.00	397.02
15	37.779460	-87.635366	381.02	15.00	396.02
16	37.779987	-87.635378	380.02	15.00	395.02
17	37.779781	-87.634841	380.02	15.00	395.02
18	37.779926	-87.634637	380.02	15.00	395.02
19	37.780384	-87.634234	380.02	15.00	395.02
20	37.780529	-87.634030	380.02	15.00	395.02
21	37.780958	-87.633694	379.02	15.00	394.02
22	37.781098	-87.633487	379.02	15.00	394.02
23	37.781824	-87.633093	379.02	15.00	394.02
24	37.782433	-87.632950	379.02	15.00	394.02
25	37.783813	-87.633005	379.02	15.00	394.02
26	37.783972	-87.633310	379.02	15.00	394.02
27	37.783426	-87.633297	379.02	15.00	394.02
28	37.783980	-87.634418	378.02	15.00	393.02
29	37.783995	-87.634903	379.02	15.00	394.02
30	37.783449	-87.634889	380.02	15.00	395.02
31	37.783884	-87.635800	380.02	15.00	395.02
32	37.783859	-87.636215	380.02	15.00	395.02
33	37.783313	-87.636201	380.02	15.00	395.02
34	37.784038	-87.637742	383.02	15.00	398.02
35	37.784093	-87.638297	384.02	15.00	399.02
36	37.783547	-87.638283	380.02	15.00	395.02
37	37.783942	-87.639124	379.02	15.00	394.02
38	37.783957	-87.639609	379.02	15.00	394.02
39	37.783411	-87.639595	381.02	15.00	396.02
40	37.783937	-87.640785	379.02	15.00	394.02

Name: G-09

Axis tracking: Single-axis rotation

Tracking axis orientation: 180.0 deg

Tracking axis tilt: 0.0 deg

Tracking axis panel offset: 0.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 60.0 deg

Footprint area: 69.3 acres

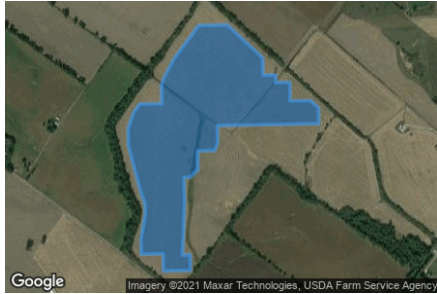
Rated power: -

Panel material: Smooth glass without AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 6.55 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.779572	-87.633791	382.02	15.00	397.02
2	37.778965	-87.634191	382.02	15.00	397.02
3	37.778698	-87.634323	383.02	15.00	398.02
4	37.778046	-87.634307	383.02	15.00	398.02
5	37.778031	-87.635275	383.02	15.00	398.02
6	37.777762	-87.635545	383.02	15.00	398.02
7	37.777158	-87.635807	384.02	15.00	399.02
8	37.776612	-87.635793	385.02	15.00	400.02
9	37.776349	-87.635717	386.02	15.00	401.02
10	37.774841	-87.635195	387.02	15.00	402.02
11	37.774579	-87.635054	388.02	15.00	403.02
12	37.774202	-87.635037	390.02	15.00	405.02
13	37.773342	-87.635227	391.02	15.00	406.02
14	37.772796	-87.635213	394.02	15.00	409.02
15	37.772812	-87.634244	394.02	15.00	409.02
16	37.772211	-87.634229	390.02	15.00	405.02
17	37.772230	-87.633028	394.02	15.00	409.02
18	37.772776	-87.633042	393.02	15.00	408.02
19	37.772770	-87.633388	393.02	15.00	408.02
20	37.773697	-87.633333	393.02	15.00	408.02
21	37.774610	-87.633289	393.02	15.00	408.02
22	37.775472	-87.633317	391.02	15.00	406.02
23	37.775476	-87.633041	395.02	15.00	410.02
24	37.775739	-87.632701	398.02	15.00	413.02
25	37.776396	-87.632708	399.02	15.00	414.02
26	37.776408	-87.631957	414.02	15.00	429.02
27	37.776670	-87.631825	411.02	15.00	426.02
28	37.777275	-87.631832	403.02	15.00	418.02
29	37.777346	-87.627334	393.02	15.00	408.02
30	37.777892	-87.627348	391.02	15.00	406.02
31	37.778151	-87.627700	389.02	15.00	404.02
32	37.778136	-87.628604	388.02	15.00	403.02
33	37.778789	-87.628621	385.02	15.00	400.02
34	37.778779	-87.629248	386.02	15.00	401.02
35	37.779043	-87.629254	385.02	15.00	400.02
36	37.779034	-87.629808	386.02	15.00	401.02
37	37.779634	-87.629823	385.02	15.00	400.02
38	37.780790	-87.631401	381.02	15.00	396.02
39	37.780769	-87.632675	380.02	15.00	395.02

Name: G-10

Axis tracking: Single-axis rotation

Tracking axis orientation: 180.0 deg

Tracking axis tilt: 0.0 deg

Tracking axis panel offset: 0.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 60.0 deg

Footprint area: 9.7 acres

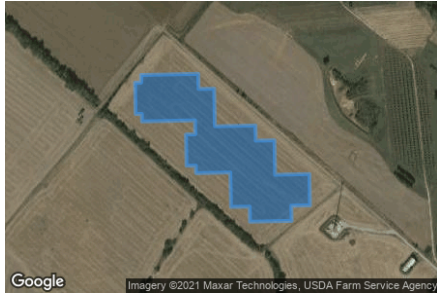
Rated power: -

Panel material: Smooth glass without AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 6.55 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.779747	-87.628048	386.02	15.00	401.02
2	37.779749	-87.627909	386.02	15.00	401.02
3	37.779882	-87.627913	386.02	15.00	401.02
4	37.779902	-87.626643	388.02	15.00	403.02
5	37.779638	-87.626636	387.02	15.00	402.02
6	37.779643	-87.626290	389.02	15.00	404.02
7	37.778988	-87.626274	389.02	15.00	404.02
8	37.779002	-87.625374	391.02	15.00	406.02
9	37.778738	-87.625368	392.02	15.00	407.02
10	37.778744	-87.624952	393.02	15.00	408.02
11	37.778144	-87.624937	391.02	15.00	406.02
12	37.778156	-87.624176	396.02	15.00	411.02
13	37.777610	-87.624163	398.02	15.00	413.02
14	37.777604	-87.624578	394.02	15.00	409.02
15	37.777339	-87.624571	394.02	15.00	409.02
16	37.777325	-87.625496	392.02	15.00	407.02
17	37.777588	-87.625502	392.02	15.00	407.02
18	37.777582	-87.625917	392.02	15.00	407.02
19	37.778183	-87.625932	390.02	15.00	405.02
20	37.778171	-87.626693	390.02	15.00	405.02
21	37.778302	-87.626697	390.02	15.00	405.02
22	37.778300	-87.626904	390.02	15.00	405.02
23	37.778845	-87.626918	390.02	15.00	405.02
24	37.778848	-87.626710	388.02	15.00	403.02
25	37.779091	-87.626716	388.02	15.00	403.02
26	37.779072	-87.627892	387.02	15.00	402.02
27	37.779203	-87.627896	388.02	15.00	403.02
28	37.779202	-87.628034	386.02	15.00	401.02

2-Mile Flight Path Receptor(s)

Name: KEHR RW27
Description: None
Threshold height : 50 ft
Direction: 268.7 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg



Point	Latitude deg	Longitude deg	Ground elevation ft	Height above ground ft	Total elevation ft
Threshold	37.808052	-87.676767	383.82	50.00	433.82
2-mile point	37.808713	-87.640139	389.32	598.03	987.35

Name: KEHR RW9
Description: None
Threshold height : 50 ft
Direction: 88.4 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg



Point	Latitude deg	Longitude deg	Ground elevation ft	Height above ground ft	Total elevation ft
Threshold	37.807642	-87.694630	383.72	50.00	433.72
2-mile point	37.806840	-87.731254	376.92	610.33	987.25

Route Receptor(s)

Name: Lovers Ln
Route type: Two-way
View angle: 50.0 deg



Vertex	Latitude deg	Longitude deg	Ground elevation ft	Height above ground ft	Total elevation ft
1	37.803487	-87.624624	383.72	6.00	389.72
2	37.802970	-87.624490	383.32	6.00	389.32
3	37.802715	-87.624436	379.82	6.00	385.82
4	37.802597	-87.624457	377.42	6.00	383.42
5	37.801980	-87.624962	368.12	6.00	374.12
6	37.801885	-87.624994	370.32	6.00	376.32
7	37.801746	-87.624814	370.52	6.00	376.52
8	37.801312	-87.624639	369.82	6.00	375.82
9	37.800481	-87.624395	373.82	6.00	379.82
10	37.799943	-87.624203	382.82	6.00	388.82
11	37.799599	-87.624091	384.32	6.00	390.32
12	37.799184	-87.624162	381.92	6.00	387.92
13	37.798841	-87.624189	379.02	6.00	385.02
14	37.798506	-87.624221	381.62	6.00	387.62
15	37.798357	-87.624248	380.52	6.00	386.52
16	37.798196	-87.624221	378.82	6.00	384.82
17	37.798035	-87.623974	378.52	6.00	384.52
18	37.797692	-87.623363	383.52	6.00	389.52
19	37.797640	-87.623302	384.02	6.00	390.02
20	37.797378	-87.623197	384.32	6.00	390.32
21	37.795505	-87.622531	382.92	6.00	388.92
22	37.795386	-87.622480	383.82	6.00	389.82
23	37.795267	-87.622276	385.22	6.00	391.22

Name: Old Corydon Rd

Route type Two-way

View angle: 50.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.803812	-87.637515	385.52	6.00	391.52
2	37.803354	-87.637300	383.72	6.00	389.72
3	37.802981	-87.637343	380.52	6.00	386.52
4	37.802599	-87.637687	380.92	6.00	386.92
5	37.802180	-87.638051	379.12	6.00	385.12
6	37.801468	-87.638153	379.02	6.00	385.02
7	37.800959	-87.637923	372.52	6.00	378.52
8	37.800565	-87.637767	369.62	6.00	375.62
9	37.800330	-87.637794	368.92	6.00	374.92
10	37.799872	-87.637971	374.12	6.00	380.12
11	37.799614	-87.638057	375.02	6.00	381.02
12	37.798918	-87.637955	381.12	6.00	387.12
13	37.798535	-87.637925	387.72	6.00	393.72
14	37.798107	-87.637954	392.92	6.00	398.92
15	37.797800	-87.638053	396.22	6.00	402.22
16	37.797480	-87.638386	396.92	6.00	402.92
17	37.796802	-87.639314	390.62	6.00	396.62
18	37.795732	-87.640740	390.22	6.00	396.22
19	37.794999	-87.641835	390.52	6.00	396.52
20	37.794850	-87.642114	391.82	6.00	397.82
21	37.794732	-87.642655	392.92	6.00	398.92
22	37.794575	-87.643787	394.72	6.00	400.72
23	37.794404	-87.645039	403.32	6.00	409.32
24	37.794170	-87.645543	407.62	6.00	413.62
25	37.793513	-87.646187	405.92	6.00	411.92
26	37.792203	-87.647388	392.82	6.00	398.82
27	37.790448	-87.648958	392.82	6.00	398.82
28	37.790249	-87.649204	394.62	6.00	400.62
29	37.790033	-87.649880	397.92	6.00	403.92
30	37.789761	-87.651023	411.12	6.00	417.12
31	37.789622	-87.651717	412.02	6.00	418.02
32	37.789601	-87.652162	410.72	6.00	416.72
33	37.789827	-87.653885	404.82	6.00	410.82
34	37.789878	-87.654336	406.82	6.00	412.82

Name: RR

Route type Two-way

View angle: 50.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.796156	-87.615039	384.52	6.00	390.52
2	37.794783	-87.616820	385.02	6.00	391.02
3	37.794346	-87.617582	383.62	6.00	389.62
4	37.793850	-87.618762	383.52	6.00	389.52
5	37.793482	-87.620146	379.02	6.00	385.02
6	37.793148	-87.621509	382.42	6.00	388.42
7	37.793101	-87.622399	382.72	6.00	388.72
8	37.793322	-87.623585	384.62	6.00	390.62
9	37.793814	-87.624438	383.92	6.00	389.92
10	37.794572	-87.625124	383.52	6.00	389.52
11	37.798346	-87.628330	388.32	6.00	394.32
12	37.804711	-87.633788	384.42	6.00	390.42

Name: SR 425
Route type Two-way
View angle: 50.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.787479	-87.592732	386.52	6.00	392.52
2	37.786326	-87.599899	388.22	6.00	394.22
3	37.786054	-87.601873	391.22	6.00	397.22
4	37.785952	-87.603482	394.82	6.00	400.82
5	37.786071	-87.605349	404.52	6.00	410.52
6	37.786410	-87.607151	411.32	6.00	417.32
7	37.787309	-87.610241	405.92	6.00	411.92
8	37.788191	-87.613631	393.22	6.00	399.22
9	37.788394	-87.614554	391.52	6.00	397.52
10	37.788717	-87.616206	386.52	6.00	392.52
11	37.788852	-87.618073	384.62	6.00	390.62
12	37.788903	-87.621270	389.02	6.00	395.02
13	37.788818	-87.631882	388.22	6.00	394.22
14	37.789013	-87.633470	399.02	6.00	405.02
15	37.789293	-87.634542	405.82	6.00	411.82
16	37.790073	-87.636849	401.42	6.00	407.42
17	37.790739	-87.638788	389.12	6.00	395.12
18	37.791451	-87.640333	396.02	6.00	402.02
19	37.792316	-87.641653	402.52	6.00	408.52
20	37.793452	-87.642908	401.12	6.00	407.12
21	37.794639	-87.643852	394.02	6.00	400.02
22	37.796869	-87.645122	383.72	6.00	389.72
23	37.798026	-87.645830	382.62	6.00	388.62
24	37.798581	-87.646297	388.92	6.00	394.92
25	37.799923	-87.647721	382.62	6.00	388.62

Name: US 41A
Route type Two-way
View angle: 50.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.810939	-87.622619	385.32	6.00	391.32
2	37.810532	-87.622372	385.52	6.00	391.52
3	37.809363	-87.622361	384.72	6.00	390.72
4	37.808447	-87.622372	385.22	6.00	391.22
5	37.805023	-87.621932	384.52	6.00	390.52
6	37.804492	-87.621836	382.82	6.00	388.82
7	37.803289	-87.621450	384.52	6.00	390.52
8	37.801983	-87.620806	384.62	6.00	390.62
9	37.800856	-87.620045	381.02	6.00	387.02
10	37.799321	-87.618543	370.72	6.00	376.72
11	37.796168	-87.615024	384.52	6.00	390.52
12	37.793917	-87.612498	394.12	6.00	400.12
13	37.793282	-87.611844	404.52	6.00	410.52
14	37.792391	-87.611168	401.32	6.00	407.32
15	37.791628	-87.610696	396.82	6.00	402.82
16	37.790263	-87.610159	415.42	6.00	421.42
17	37.788682	-87.610020	414.12	6.00	420.12
18	37.786851	-87.610254	401.92	6.00	407.92
19	37.785596	-87.610791	405.02	6.00	411.02
20	37.784456	-87.611607	396.42	6.00	402.42
21	37.781989	-87.613876	382.32	6.00	388.32
22	37.774932	-87.620281	438.52	6.00	444.52
23	37.772888	-87.622266	416.82	6.00	422.82
24	37.765005	-87.629446	416.02	6.00	422.02
25	37.760714	-87.633324	417.02	6.00	423.02
26	37.760685	-87.633346	417.12	6.00	423.12

Name: US 60
Route type: Two-way
View angle: 50.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.811100	-87.622695	385.42	6.00	391.42
2	37.807641	-87.628167	380.72	6.00	386.72
3	37.807116	-87.629154	386.12	6.00	392.12
4	37.805624	-87.632802	384.52	6.00	390.52
5	37.802894	-87.639969	385.72	6.00	391.72
6	37.799927	-87.647800	382.62	6.00	388.62
7	37.797146	-87.654752	422.22	6.00	428.22
8	37.793941	-87.663485	413.52	6.00	419.52
9	37.791933	-87.668666	429.32	6.00	435.32
10	37.791132	-87.670706	433.12	6.00	439.12
11	37.790593	-87.671827	430.72	6.00	436.72
12	37.790420	-87.672112	430.62	6.00	436.62

Name: Wilson Station Rd
Route type: Two-way
View angle: 50.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.767556	-87.627130	425.42	6.00	431.42
2	37.769990	-87.631191	395.02	6.00	401.02
3	37.771546	-87.633991	387.42	6.00	393.42
4	37.773984	-87.638092	417.22	6.00	423.22
5	37.775464	-87.640650	409.12	6.00	415.12
6	37.775616	-87.640913	410.02	6.00	416.02
7	37.775659	-87.641138	407.72	6.00	413.72
8	37.775583	-87.641363	400.82	6.00	406.82
9	37.774412	-87.642409	390.92	6.00	396.92
10	37.774039	-87.642812	390.82	6.00	396.82
11	37.773102	-87.643552	397.42	6.00	403.42
12	37.773013	-87.643724	401.72	6.00	407.72
13	37.772996	-87.643938	405.82	6.00	411.82
14	37.773174	-87.644298	412.02	6.00	418.02
15	37.775332	-87.648360	419.22	6.00	425.22
16	37.776875	-87.651321	397.12	6.00	403.12
17	37.779748	-87.656652	385.02	6.00	391.02
18	37.781445	-87.659850	399.82	6.00	405.82
19	37.781568	-87.660065	399.92	6.00	405.92
20	37.781763	-87.660150	401.02	6.00	407.02
21	37.782040	-87.660062	394.32	6.00	400.32
22	37.782761	-87.659512	385.52	6.00	391.52
23	37.787502	-87.656027	414.62	6.00	420.62
24	37.789862	-87.654303	406.82	6.00	412.82

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 1	37.800723	-87.624239	376.12	6.00	382.12
OP 2	37.801204	-87.624212	375.42	6.00	381.42
OP 3	37.800086	-87.622039	378.32	6.00	384.32
OP 4	37.799704	-87.621685	375.32	6.00	381.32
OP 5	37.799208	-87.621385	372.52	6.00	378.52
OP 6	37.801205	-87.621841	389.22	6.00	395.22
OP 7	37.796057	-87.622441	387.42	6.00	393.42
OP 8	37.796918	-87.622678	388.02	6.00	394.02
OP 9	37.797829	-87.623080	388.42	6.00	394.42
OP 10	37.802687	-87.624603	383.32	6.00	389.32
OP 11	37.803120	-87.625143	387.32	6.00	393.32
OP 12	37.802986	-87.626883	377.22	6.00	383.22
OP 13	37.799736	-87.638292	380.02	6.00	386.02
OP 14	37.798812	-87.638211	387.02	6.00	393.02
OP 15	37.797188	-87.639213	393.52	6.00	399.52
OP 16	37.796154	-87.639760	397.12	6.00	403.12
OP 17	37.795332	-87.639519	434.72	6.00	440.72
OP 18	37.787549	-87.624001	386.52	6.00	392.52
OP 19	37.790016	-87.616128	386.62	6.00	392.62
OP 20	37.787880	-87.614969	381.82	6.00	387.82
OP 21	37.793102	-87.644537	419.12	6.00	425.12
OP 22	37.789713	-87.649910	404.12	6.00	410.12
OP 23	37.789351	-87.651565	413.72	6.00	419.72
OP 24	37.788457	-87.654688	433.52	6.00	439.52
OP 25	37.803078	-87.625948	381.52	6.00	387.52
OP 26	37.802654	-87.623802	386.32	6.00	392.32
OP 27	37.776406	-87.641586	419.32	6.00	425.32
OP 28	37.769828	-87.638093	439.62	6.00	445.62
OP 29	37.775765	-87.646373	420.72	6.00	426.72
OP 30	37.766649	-87.631939	440.12	6.00	446.12
OP 31	37.769113	-87.629045	411.52	6.00	417.52
OP 32	37.771657	-87.624491	448.72	6.00	454.72
OP 33	37.776657	-87.620003	441.42	6.00	447.42
OP 34	37.779845	-87.616677	386.92	6.00	392.92
OP 35	37.785118	-87.620074	386.12	6.00	392.12
OP 36	37.783981	-87.618320	382.62	6.00	388.62
OP 37	37.803452	-87.634231	388.12	6.00	394.12
OP 38	37.794484	-87.641816	411.82	6.00	417.82
OP 39	37.789605	-87.631051	381.82	6.00	387.82
OP 40	37.777328	-87.638950	424.32	6.00	430.32

Summary of PV Glare Analysis

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
G-01	SA tracking	SA tracking	0	0	-	
G-02	SA tracking	SA tracking	0	0	-	
G-03	SA tracking	SA tracking	0	0	-	
G-04	SA tracking	SA tracking	0	0	-	
G-05	SA tracking	SA tracking	0	0	-	
G-06	SA tracking	SA tracking	0	0	-	
G-07	SA tracking	SA tracking	0	0	-	
G-08	SA tracking	SA tracking	0	0	-	
G-09	SA tracking	SA tracking	0	0	-	
G-10	SA tracking	SA tracking	0	0	-	

PV & Receptor Analysis Results

Results for each PV array and receptor

G-01 no glare found

Component	Green glare (min)	Yellow glare (min)
FP: KEHR RW27	0	0
FP: KEHR RW9	0	0
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
Route: Lovers Ln	0	0
Route: Old Corydon Rd	0	0
Route: RR	0	0
Route: SR 425	0	0
Route: US 41A	0	0
Route: US 60	0	0
Route: Wilson Station Rd	0	0

No glare found

G-02 no glare found

Component	Green glare (min)	Yellow glare (min)
FP: KEHR RW27	0	0
FP: KEHR RW9	0	0
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
Route: Lovers Ln	0	0
Route: Old Corydon Rd	0	0
Route: RR	0	0
Route: SR 425	0	0
Route: US 41A	0	0
Route: US 60	0	0
Route: Wilson Station Rd	0	0

No glare found

G-03 no glare found

Component	Green glare (min)	Yellow glare (min)
FP: KEHR RW27	0	0
FP: KEHR RW9	0	0
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
Route: Lovers Ln	0	0
Route: Old Corydon Rd	0	0
Route: RR	0	0
Route: SR 425	0	0
Route: US 41A	0	0
Route: US 60	0	0
Route: Wilson Station Rd	0	0

No glare found

G-04 no glare found

Component	Green glare (min)	Yellow glare (min)
FP: KEHR RW27	0	0
FP: KEHR RW9	0	0
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
Route: Lovers Ln	0	0
Route: Old Corydon Rd	0	0
Route: RR	0	0
Route: SR 425	0	0
Route: US 41A	0	0
Route: US 60	0	0
Route: Wilson Station Rd	0	0

No glare found

G-05 no glare found

Component	Green glare (min)	Yellow glare (min)
FP: KEHR RW27	0	0
FP: KEHR RW9	0	0
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
Route: Lovers Ln	0	0
Route: Old Corydon Rd	0	0
Route: RR	0	0
Route: SR 425	0	0
Route: US 41A	0	0
Route: US 60	0	0
Route: Wilson Station Rd	0	0

No glare found

G-06 no glare found

Component	Green glare (min)	Yellow glare (min)
FP: KEHR RW27	0	0
FP: KEHR RW9	0	0
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
Route: Lovers Ln	0	0
Route: Old Corydon Rd	0	0
Route: RR	0	0
Route: SR 425	0	0
Route: US 41A	0	0
Route: US 60	0	0
Route: Wilson Station Rd	0	0

No glare found

G-07 no glare found

Component	Green glare (min)	Yellow glare (min)
FP: KEHR RW27	0	0
FP: KEHR RW9	0	0
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
Route: Lovers Ln	0	0
Route: Old Corydon Rd	0	0
Route: RR	0	0
Route: SR 425	0	0
Route: US 41A	0	0
Route: US 60	0	0
Route: Wilson Station Rd	0	0

No glare found

G-08 no glare found

Component	Green glare (min)	Yellow glare (min)
FP: KEHR RW27	0	0
FP: KEHR RW9	0	0
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
Route: Lovers Ln	0	0
Route: Old Corydon Rd	0	0
Route: RR	0	0
Route: SR 425	0	0
Route: US 41A	0	0
Route: US 60	0	0
Route: Wilson Station Rd	0	0

No glare found

G-09 no glare found

Component	Green glare (min)	Yellow glare (min)
FP: KEHR RW27	0	0
FP: KEHR RW9	0	0
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
Route: Lovers Ln	0	0
Route: Old Corydon Rd	0	0
Route: RR	0	0
Route: SR 425	0	0
Route: US 41A	0	0
Route: US 60	0	0
Route: Wilson Station Rd	0	0

No glare found

G-10 no glare found

Component	Green glare (min)	Yellow glare (min)
FP: KEHR RW27	0	0
FP: KEHR RW9	0	0
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	0
OP: OP 16	0	0
OP: OP 17	0	0
OP: OP 18	0	0
OP: OP 19	0	0
OP: OP 20	0	0
OP: OP 21	0	0
OP: OP 22	0	0
OP: OP 23	0	0
OP: OP 24	0	0
OP: OP 25	0	0
OP: OP 26	0	0
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	0
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
Route: Lovers Ln	0	0
Route: Old Corydon Rd	0	0
Route: RR	0	0
Route: SR 425	0	0
Route: US 41A	0	0
Route: US 60	0	0
Route: Wilson Station Rd	0	0

Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- 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.
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- 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.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.



FORGESOLAR GLARE ANALYSIS

Project: **Henderson Solar LLC**

Site configuration: **C1_15ft**

Analysis conducted by Andrew Taylor (ataylor@copperheadconsulting.com) at 03:39 on 13 Sep, 2021.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
2-mile flight path(s)	PASS	Flight path receptor(s) do not receive yellow glare
ATCT(s)	N/A	No ATCT receptors designated

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

FAA Policy 78 FR 63276 can be read at <https://www.federalregister.gov/d/2013-24729>

SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m²
Time interval: 1 min
Ocular transmission
coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3
mrad
Site Config ID: 58554.10436

PV Array(s)

Name: G-01

Axis tracking: Single-axis rotation

Tracking axis orientation: 180.0°

Tracking axis tilt: 0.0°

Tracking axis panel offset: 0.0°

Max tracking angle: 60.0°

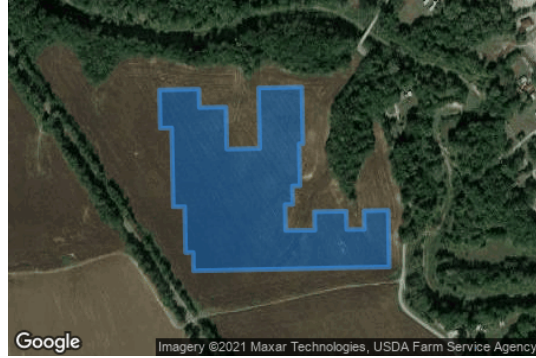
Resting angle: 60.0°

Rated power: -

Panel material: Smooth glass without AR coating

Reflectivity: Vary with sun

Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.801302	-87.628635	388.02	15.00	403.02
2	37.801314	-87.627918	382.02	15.00	397.02
3	37.801050	-87.627911	385.02	15.00	400.02
4	37.801057	-87.627427	379.02	15.00	394.02
5	37.800457	-87.627412	382.02	15.00	397.02
6	37.800466	-87.626814	385.02	15.00	400.02
7	37.801331	-87.626836	378.02	15.00	393.02
8	37.801343	-87.626050	380.02	15.00	395.02
9	37.800533	-87.626029	383.02	15.00	398.02
10	37.800532	-87.626098	383.02	15.00	398.02
11	37.799932	-87.626083	373.02	15.00	388.02
12	37.799930	-87.626222	374.02	15.00	389.02
13	37.799665	-87.626215	377.02	15.00	392.02
14	37.799663	-87.626354	377.02	15.00	392.02
15	37.799296	-87.626344	376.02	15.00	391.02
16	37.799297	-87.625815	375.02	15.00	390.02
17	37.799562	-87.625822	375.02	15.00	390.02
18	37.799571	-87.625244	373.02	15.00	388.02
19	37.799308	-87.625237	377.02	15.00	392.02
20	37.799311	-87.624916	374.02	15.00	389.02
21	37.799576	-87.624922	374.02	15.00	389.02
22	37.799583	-87.624482	378.02	15.00	393.02
23	37.798773	-87.624462	379.02	15.00	394.02
24	37.798717	-87.628016	382.02	15.00	397.02
25	37.798981	-87.628023	382.02	15.00	397.02
26	37.798979	-87.628161	383.02	15.00	398.02
27	37.799635	-87.628178	385.02	15.00	400.02
28	37.799631	-87.628385	387.02	15.00	402.02
29	37.800759	-87.628414	388.02	15.00	403.02
30	37.800757	-87.628621	389.02	15.00	404.02

Name: G-02

Axis tracking: Single-axis rotation

Tracking axis orientation: 180.0°

Tracking axis tilt: 0.0°

Tracking axis panel offset: 0.0°

Max tracking angle: 60.0°

Resting angle: 60.0°

Rated power: -

Panel material: Smooth glass without AR coating

Reflectivity: Vary with sun

Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.797985	-87.627097	381.02	15.00	396.02
2	37.798026	-87.624512	382.02	15.00	397.02
3	37.797763	-87.624505	382.02	15.00	397.02
4	37.797768	-87.624090	381.02	15.00	396.02
5	37.797168	-87.624075	381.02	15.00	396.02
6	37.797173	-87.623729	381.02	15.00	396.02
7	37.796254	-87.623706	381.02	15.00	396.02
8	37.796258	-87.623429	382.02	15.00	397.02
9	37.795394	-87.623408	382.02	15.00	397.02
10	37.795403	-87.622785	382.02	15.00	397.02
11	37.794484	-87.622762	383.02	15.00	398.02
12	37.794489	-87.622416	382.02	15.00	397.02
13	37.794358	-87.622412	382.02	15.00	397.02
14	37.794362	-87.622136	382.02	15.00	397.02
15	37.793816	-87.622122	382.02	15.00	397.02
16	37.793812	-87.622399	382.02	15.00	397.02
17	37.793680	-87.622396	382.02	15.00	397.02
18	37.793669	-87.623043	382.02	15.00	397.02
19	37.793933	-87.623050	382.02	15.00	397.02
20	37.793923	-87.623742	382.02	15.00	397.02
21	37.794578	-87.623758	382.02	15.00	397.02
22	37.794566	-87.624519	382.02	15.00	397.02
23	37.794829	-87.624526	382.02	15.00	397.02
24	37.794827	-87.624734	382.02	15.00	397.02
25	37.795427	-87.624749	382.02	15.00	397.02
26	37.795419	-87.625302	383.02	15.00	398.02
27	37.795682	-87.625309	382.02	15.00	397.02
28	37.795679	-87.625516	382.02	15.00	397.02
29	37.796335	-87.625533	382.02	15.00	397.02
30	37.796326	-87.626086	381.02	15.00	396.02
31	37.796590	-87.626093	381.02	15.00	396.02
32	37.796587	-87.626301	381.02	15.00	396.02
33	37.797188	-87.626316	382.02	15.00	397.02
34	37.797179	-87.626869	382.02	15.00	397.02
35	37.797442	-87.626876	381.02	15.00	396.02
36	37.797440	-87.627083	381.02	15.00	396.02

Name: G-03

Axis tracking: Single-axis rotation

Tracking axis orientation: 180.0°

Tracking axis tilt: 0.0°

Tracking axis panel offset: 0.0°

Max tracking angle: 60.0°

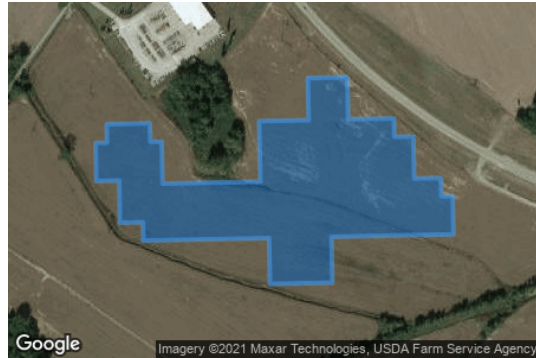
Resting angle: 60.0°

Rated power: -

Panel material: Smooth glass without AR coating

Reflectivity: Vary with sun

Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.791011	-87.646188	392.02	15.00	407.02
2	37.791013	-87.645981	395.02	15.00	410.02
3	37.791278	-87.645987	397.02	15.00	412.02
4	37.791291	-87.645201	408.02	15.00	423.02
5	37.791027	-87.645195	402.02	15.00	417.02
6	37.791030	-87.644987	401.02	15.00	416.02
7	37.790429	-87.644972	391.02	15.00	406.02
8	37.790458	-87.643198	390.02	15.00	405.02
9	37.791322	-87.643219	403.02	15.00	418.02
10	37.791337	-87.642320	391.02	15.00	406.02
11	37.791937	-87.642335	395.02	15.00	410.02
12	37.791949	-87.641618	395.02	15.00	410.02
13	37.791348	-87.641603	390.02	15.00	405.02
14	37.791361	-87.640773	397.02	15.00	412.02
15	37.791098	-87.640766	396.02	15.00	411.02
16	37.791103	-87.640420	397.02	15.00	412.02
17	37.790502	-87.640405	393.02	15.00	408.02
18	37.790510	-87.639921	389.02	15.00	404.02
19	37.790246	-87.639914	385.02	15.00	400.02
20	37.790249	-87.639706	384.02	15.00	399.02
21	37.789703	-87.639693	379.02	15.00	394.02
22	37.789668	-87.641907	381.02	15.00	396.02
23	37.789013	-87.641890	378.02	15.00	393.02
24	37.788995	-87.643022	379.02	15.00	394.02
25	37.789650	-87.643039	381.02	15.00	396.02
26	37.789614	-87.645322	383.02	15.00	398.02
27	37.789877	-87.645329	385.02	15.00	400.02
28	37.789871	-87.645744	385.02	15.00	400.02
29	37.790472	-87.645759	387.02	15.00	402.02
30	37.790465	-87.646174	385.02	15.00	400.02

Name: G-04

Axis tracking: Single-axis rotation

Tracking axis orientation: 180.0°

Tracking axis tilt: 0.0°

Tracking axis panel offset: 0.0°

Max tracking angle: 60.0°

Resting angle: 60.0°

Rated power: -

Panel material: Smooth glass without AR coating

Reflectivity: Vary with sun

Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.790180	-87.647645	386.02	15.00	401.02
2	37.790180	-87.647690	387.02	15.00	402.02
3	37.790257	-87.647830	387.02	15.00	402.02
4	37.790257	-87.647855	387.02	15.00	402.02
5	37.789711	-87.647841	388.02	15.00	403.02
6	37.787397	-87.643629	381.02	15.00	396.02
7	37.787397	-87.643604	380.02	15.00	395.02
8	37.787622	-87.643610	381.02	15.00	396.02
9	37.787622	-87.643566	381.02	15.00	396.02
10	37.787507	-87.643355	381.02	15.00	396.02
11	37.787507	-87.643330	381.02	15.00	396.02
12	37.788163	-87.643344	381.02	15.00	396.02
13	37.788163	-87.643302	381.02	15.00	396.02
14	37.787816	-87.642671	381.02	15.00	396.02
15	37.787816	-87.642645	381.02	15.00	396.02
16	37.788362	-87.642660	379.02	15.00	394.02
17	37.788864	-87.643572	381.02	15.00	396.02
18	37.788863	-87.643597	381.02	15.00	396.02
19	37.788207	-87.643583	381.02	15.00	396.02
20	37.788207	-87.643625	381.02	15.00	396.02
21	37.789904	-87.646713	385.02	15.00	400.02
22	37.790599	-87.646731	386.02	15.00	401.02
23	37.790715	-87.646942	387.02	15.00	402.02
24	37.790715	-87.646967	386.02	15.00	401.02
25	37.790058	-87.646953	385.02	15.00	400.02
26	37.790058	-87.646994	385.02	15.00	400.02
27	37.790405	-87.647626	387.02	15.00	402.02
28	37.790405	-87.647651	387.02	15.00	402.02

Name: G-05

Axis tracking: Single-axis rotation

Tracking axis orientation: 180.0°

Tracking axis tilt: 0.0°

Tracking axis panel offset: 0.0°

Max tracking angle: 60.0°

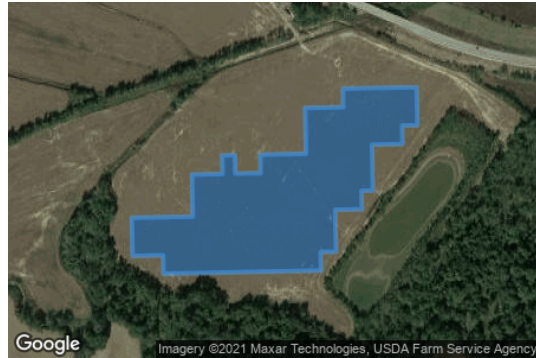
Resting angle: 60.0°

Rated power: -

Panel material: Smooth glass without AR coating

Reflectivity: Vary with sun

Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.786668	-87.639908	377.02	15.00	392.02
2	37.786686	-87.638801	377.02	15.00	392.02
3	37.787287	-87.638816	377.02	15.00	392.02
4	37.787295	-87.638262	378.02	15.00	393.02
5	37.787559	-87.638269	377.02	15.00	392.02
6	37.787563	-87.638037	377.02	15.00	392.02
7	37.787300	-87.638030	378.02	15.00	393.02
8	37.787306	-87.637570	377.02	15.00	392.02
9	37.787570	-87.637577	377.02	15.00	392.02
10	37.787584	-87.636747	377.02	15.00	392.02
11	37.788239	-87.636763	377.02	15.00	392.02
12	37.788249	-87.636071	378.02	15.00	393.02
13	37.788514	-87.636078	378.02	15.00	393.02
14	37.788535	-87.634738	377.02	15.00	392.02
15	37.787990	-87.634725	380.02	15.00	395.02
16	37.787986	-87.635002	380.02	15.00	395.02
17	37.787721	-87.634995	379.02	15.00	394.02
18	37.787712	-87.635548	378.02	15.00	393.02
19	37.787057	-87.635532	379.02	15.00	394.02
20	37.787054	-87.635740	380.02	15.00	395.02
21	37.786790	-87.635733	380.02	15.00	395.02
22	37.786782	-87.636217	377.02	15.00	392.02
23	37.786183	-87.636202	378.02	15.00	393.02
24	37.786179	-87.636479	379.02	15.00	394.02
25	37.785914	-87.636472	379.02	15.00	394.02
26	37.785867	-87.639334	377.02	15.00	392.02
27	37.786131	-87.639341	378.02	15.00	393.02
28	37.786123	-87.639895	375.02	15.00	390.02

Name: G-06

Axis tracking: Single-axis rotation

Tracking axis orientation: 180.0°

Tracking axis tilt: 0.0°

Tracking axis panel offset: 0.0°

Max tracking angle: 60.0°

Resting angle: 60.0°

Rated power: -

Panel material: Smooth glass without AR coating

Reflectivity: Vary with sun

Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.788393	-87.631330	381.02	15.00	396.02
2	37.788458	-87.627223	382.02	15.00	397.02
3	37.787912	-87.627209	375.02	15.00	390.02
4	37.787891	-87.628593	382.02	15.00	397.02
5	37.787626	-87.628587	376.02	15.00	391.02
6	37.787583	-87.631310	380.02	15.00	395.02

Name: G-07

Axis tracking: Single-axis rotation

Tracking axis orientation: 180.0°

Tracking axis tilt: 0.0°

Tracking axis panel offset: 0.0°

Max tracking angle: 60.0°

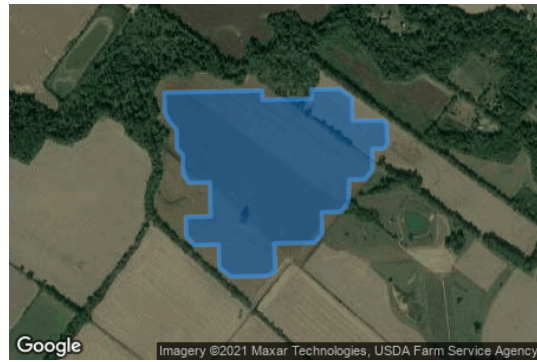
Resting angle: 60.0°

Rated power: -

Panel material: Smooth glass without AR coating

Reflectivity: Vary with sun

Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.784955	-87.632007	389.02	15.00	404.02
2	37.784693	-87.631862	383.02	15.00	398.02
3	37.784432	-87.631579	384.02	15.00	399.02
4	37.783887	-87.631565	383.02	15.00	398.02
5	37.783726	-87.631354	382.02	15.00	397.02
6	37.783181	-87.631340	382.02	15.00	397.02
7	37.782920	-87.631126	381.02	15.00	396.02
8	37.782932	-87.630365	382.02	15.00	397.02
9	37.781958	-87.630340	383.02	15.00	398.02
10	37.781943	-87.631240	383.02	15.00	398.02
11	37.781398	-87.631226	384.02	15.00	399.02
12	37.781138	-87.630943	383.02	15.00	398.02
13	37.781152	-87.630043	385.02	15.00	400.02
14	37.780497	-87.630027	383.02	15.00	398.02
15	37.780239	-87.629605	381.02	15.00	396.02
16	37.780260	-87.628266	381.02	15.00	396.02
17	37.780397	-87.627992	381.02	15.00	396.02
18	37.781184	-87.628037	379.02	15.00	394.02
19	37.781207	-87.626559	379.02	15.00	394.02
20	37.781476	-87.626289	379.02	15.00	394.02
21	37.782076	-87.626304	379.02	15.00	394.02
22	37.782087	-87.625612	380.02	15.00	395.02
23	37.782356	-87.625342	379.02	15.00	394.02
24	37.783012	-87.625314	379.02	15.00	394.02
25	37.783021	-87.624735	379.02	15.00	394.02
26	37.783289	-87.624465	380.02	15.00	395.02
27	37.783890	-87.624480	380.02	15.00	395.02
28	37.783896	-87.624065	379.02	15.00	394.02
29	37.784031	-87.623930	381.02	15.00	396.02
30	37.784576	-87.623944	380.02	15.00	395.02
31	37.784706	-87.624085	381.02	15.00	396.02
32	37.784689	-87.625192	382.02	15.00	397.02
33	37.785344	-87.625209	384.02	15.00	399.02
34	37.785602	-87.625631	385.02	15.00	400.02
35	37.785585	-87.626693	384.02	15.00	399.02
36	37.785320	-87.626687	386.02	15.00	401.02
37	37.785293	-87.628461	387.02	15.00	402.02
38	37.785557	-87.628468	383.02	15.00	398.02
39	37.785501	-87.632021	388.02	15.00	403.02

Name: G-08

Axis tracking: Single-axis rotation

Tracking axis orientation: 180.0°

Tracking axis tilt: 0.0°

Tracking axis panel offset: 0.0°

Max tracking angle: 60.0°

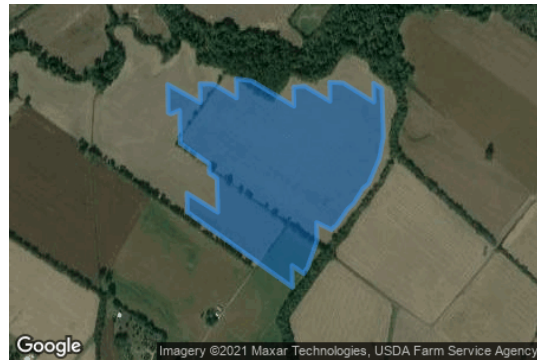
Resting angle: 60.0°

Rated power: -

Panel material: Smooth glass without AR coating

Reflectivity: Vary with sun

Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.783127	-87.640765	379.02	15.00	394.02
2	37.783088	-87.640670	379.02	15.00	394.02
3	37.783193	-87.640351	380.02	15.00	395.02
4	37.782258	-87.640327	379.02	15.00	394.02
5	37.781658	-87.639274	379.02	15.00	394.02
6	37.781401	-87.639276	379.02	15.00	394.02
7	37.781240	-87.638996	379.02	15.00	394.02
8	37.780277	-87.638962	380.02	15.00	395.02
9	37.780831	-87.640084	378.02	15.00	393.02
10	37.780285	-87.640070	386.02	15.00	401.02
11	37.778135	-87.636253	384.02	15.00	399.02
12	37.778764	-87.636269	381.02	15.00	396.02
13	37.778525	-87.635848	382.02	15.00	397.02
14	37.778705	-87.635704	382.02	15.00	397.02
15	37.779460	-87.635366	381.02	15.00	396.02
16	37.779987	-87.635378	380.02	15.00	395.02
17	37.779781	-87.634841	380.02	15.00	395.02
18	37.779926	-87.634637	380.02	15.00	395.02
19	37.780384	-87.634234	380.02	15.00	395.02
20	37.780529	-87.634030	380.02	15.00	395.02
21	37.780958	-87.633694	379.02	15.00	394.02
22	37.781098	-87.633487	379.02	15.00	394.02
23	37.781824	-87.633093	379.02	15.00	394.02
24	37.782433	-87.632950	379.02	15.00	394.02
25	37.783813	-87.633005	379.02	15.00	394.02
26	37.783972	-87.633310	379.02	15.00	394.02
27	37.783426	-87.633297	379.02	15.00	394.02
28	37.783980	-87.634418	378.02	15.00	393.02
29	37.783995	-87.634903	379.02	15.00	394.02
30	37.783449	-87.634889	380.02	15.00	395.02
31	37.783884	-87.635800	380.02	15.00	395.02
32	37.783859	-87.636215	380.02	15.00	395.02
33	37.783313	-87.636201	380.02	15.00	395.02
34	37.784038	-87.637742	383.02	15.00	398.02
35	37.784093	-87.638297	384.02	15.00	399.02
36	37.783547	-87.638283	380.02	15.00	395.02
37	37.783942	-87.639124	379.02	15.00	394.02
38	37.783957	-87.639609	379.02	15.00	394.02
39	37.783411	-87.639595	381.02	15.00	396.02
40	37.783937	-87.640785	379.02	15.00	394.02

Name: G-09

Axis tracking: Single-axis rotation

Tracking axis orientation: 180.0°

Tracking axis tilt: 0.0°

Tracking axis panel offset: 0.0°

Max tracking angle: 60.0°

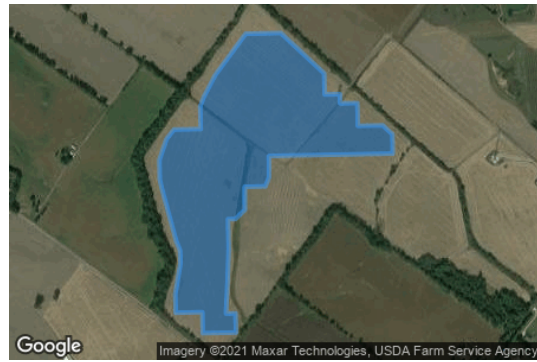
Resting angle: 60.0°

Rated power: -

Panel material: Smooth glass without AR coating

Reflectivity: Vary with sun

Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.779572	-87.633791	382.02	15.00	397.02
2	37.778965	-87.634191	382.02	15.00	397.02
3	37.778698	-87.634323	383.02	15.00	398.02
4	37.778046	-87.634307	383.02	15.00	398.02
5	37.778031	-87.635275	383.02	15.00	398.02
6	37.777762	-87.635545	383.02	15.00	398.02
7	37.777158	-87.635807	384.02	15.00	399.02
8	37.776612	-87.635793	385.02	15.00	400.02
9	37.776349	-87.635717	386.02	15.00	401.02
10	37.774841	-87.635195	387.02	15.00	402.02
11	37.774579	-87.635054	388.02	15.00	403.02
12	37.774202	-87.635037	390.02	15.00	405.02
13	37.773342	-87.635227	391.02	15.00	406.02
14	37.772796	-87.635213	394.02	15.00	409.02
15	37.772812	-87.634244	394.02	15.00	409.02
16	37.772211	-87.634229	390.02	15.00	405.02
17	37.772230	-87.633028	394.02	15.00	409.02
18	37.772776	-87.633042	393.02	15.00	408.02
19	37.772770	-87.633388	393.02	15.00	408.02
20	37.773697	-87.633333	393.02	15.00	408.02
21	37.774610	-87.633289	393.02	15.00	408.02
22	37.775472	-87.633317	391.02	15.00	406.02
23	37.775476	-87.633041	395.02	15.00	410.02
24	37.775739	-87.632701	398.02	15.00	413.02
25	37.776396	-87.632708	399.02	15.00	414.02
26	37.776408	-87.631957	414.02	15.00	429.02
27	37.776670	-87.631825	411.02	15.00	426.02
28	37.777275	-87.631832	403.02	15.00	418.02
29	37.777346	-87.627334	393.02	15.00	408.02
30	37.777892	-87.627348	391.02	15.00	406.02
31	37.778151	-87.627700	389.02	15.00	404.02
32	37.778136	-87.628604	388.02	15.00	403.02
33	37.778789	-87.628621	385.02	15.00	400.02
34	37.778779	-87.629248	386.02	15.00	401.02
35	37.779043	-87.629254	385.02	15.00	400.02
36	37.779034	-87.629808	386.02	15.00	401.02
37	37.779634	-87.629823	385.02	15.00	400.02
38	37.780790	-87.631401	381.02	15.00	396.02
39	37.780769	-87.632675	380.02	15.00	395.02

Name: G-10

Axis tracking: Single-axis rotation

Tracking axis orientation: 180.0°

Tracking axis tilt: 0.0°

Tracking axis panel offset: 0.0°

Max tracking angle: 60.0°

Resting angle: 60.0°

Rated power: -

Panel material: Smooth glass without AR coating

Reflectivity: Vary with sun

Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.779747	-87.628048	386.02	15.00	401.02
2	37.779749	-87.627909	386.02	15.00	401.02
3	37.779882	-87.627913	386.02	15.00	401.02
4	37.779902	-87.626643	388.02	15.00	403.02
5	37.779638	-87.626636	387.02	15.00	402.02
6	37.779643	-87.626290	389.02	15.00	404.02
7	37.778988	-87.626274	389.02	15.00	404.02
8	37.779002	-87.625374	391.02	15.00	406.02
9	37.778738	-87.625368	392.02	15.00	407.02
10	37.778744	-87.624952	393.02	15.00	408.02
11	37.778144	-87.624937	391.02	15.00	406.02
12	37.778156	-87.624176	396.02	15.00	411.02
13	37.777610	-87.624163	398.02	15.00	413.02
14	37.777604	-87.624578	394.02	15.00	409.02
15	37.777339	-87.624571	394.02	15.00	409.02
16	37.777325	-87.625496	392.02	15.00	407.02
17	37.777588	-87.625502	392.02	15.00	407.02
18	37.777582	-87.625917	392.02	15.00	407.02
19	37.778183	-87.625932	390.02	15.00	405.02
20	37.778171	-87.626693	390.02	15.00	405.02
21	37.778302	-87.626697	390.02	15.00	405.02
22	37.778300	-87.626904	390.02	15.00	405.02
23	37.778845	-87.626918	390.02	15.00	405.02
24	37.778848	-87.626710	388.02	15.00	403.02
25	37.779091	-87.626716	388.02	15.00	403.02
26	37.779072	-87.627892	387.02	15.00	402.02
27	37.779203	-87.627896	388.02	15.00	403.02
28	37.779202	-87.628034	386.02	15.00	401.02

Flight Path Receptor(s)

Name: KEHR RW27

Description: None

Threshold height: 50 ft

Direction: 268.7°

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	37.808052	-87.676767	383.82	50.00	433.82
Two-mile	37.808713	-87.640139	389.32	598.03	987.35

Name: KEHR RW9

Description: None

Threshold height: 50 ft

Direction: 88.4°

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	37.807642	-87.694630	383.72	50.00	433.72
Two-mile	37.806840	-87.731254	376.92	610.33	987.25

Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	37.800723	-87.624239	376.12	6.00
OP 2	2	37.801204	-87.624212	375.42	6.00
OP 3	3	37.800086	-87.622039	378.32	6.00
OP 4	4	37.799704	-87.621685	375.32	6.00
OP 5	5	37.799208	-87.621385	372.52	6.00
OP 6	6	37.801205	-87.621841	389.22	6.00
OP 7	7	37.796057	-87.622441	387.42	6.00
OP 8	8	37.796918	-87.622678	388.02	6.00
OP 9	9	37.797829	-87.623080	388.42	6.00
OP 10	10	37.802687	-87.624603	383.32	6.00
OP 11	11	37.803120	-87.625143	387.32	6.00
OP 12	12	37.802986	-87.626883	377.22	6.00
OP 13	13	37.799736	-87.638292	380.02	6.00
OP 14	14	37.798812	-87.638211	387.02	6.00
OP 15	15	37.797188	-87.639213	393.52	6.00
OP 16	16	37.796154	-87.639760	397.12	6.00
OP 17	17	37.795332	-87.639519	434.72	6.00
OP 18	18	37.787549	-87.624001	386.52	6.00
OP 19	19	37.790016	-87.616128	386.62	6.00
OP 20	20	37.787880	-87.614969	381.82	6.00
OP 21	21	37.793102	-87.644537	419.12	6.00
OP 22	22	37.789713	-87.649910	404.12	6.00
OP 23	23	37.789351	-87.651565	413.72	6.00
OP 24	24	37.788457	-87.654688	433.52	6.00
OP 25	25	37.803078	-87.625948	381.52	6.00
OP 26	26	37.802654	-87.623802	386.32	6.00
OP 27	27	37.776406	-87.641586	419.32	6.00
OP 28	28	37.769828	-87.638093	439.62	6.00
OP 29	29	37.775765	-87.646373	420.72	6.00
OP 30	30	37.766649	-87.631939	440.12	6.00
OP 31	31	37.769113	-87.629045	411.52	6.00
OP 32	32	37.771657	-87.624491	448.72	6.00
OP 33	33	37.776657	-87.620003	441.42	6.00
OP 34	34	37.779845	-87.616677	386.92	6.00
OP 35	35	37.785118	-87.620074	386.12	6.00
OP 36	36	37.783981	-87.618320	382.62	6.00
OP 37	37	37.803452	-87.634231	388.12	6.00
OP 38	38	37.794484	-87.641816	411.82	6.00
OP 39	39	37.789605	-87.631051	381.82	6.00
OP 40	40	37.777328	-87.638950	424.32	6.00

Route Receptor(s)

Name: Lovers Ln

Path type: Two-way

Observer view angle: 50.0°

Note: Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.803487	-87.624624	383.72	6.00	389.72
2	37.802970	-87.624490	383.32	6.00	389.32
3	37.802715	-87.624436	379.82	6.00	385.82
4	37.802597	-87.624457	377.42	6.00	383.42
5	37.801980	-87.624962	368.12	6.00	374.12
6	37.801885	-87.624994	370.32	6.00	376.32
7	37.801746	-87.624814	370.52	6.00	376.52
8	37.801312	-87.624639	369.82	6.00	375.82
9	37.800481	-87.624395	373.82	6.00	379.82
10	37.799943	-87.624203	382.82	6.00	388.82
11	37.799599	-87.624091	384.32	6.00	390.32
12	37.799184	-87.624162	381.92	6.00	387.92
13	37.798841	-87.624189	379.02	6.00	385.02
14	37.798506	-87.624221	381.62	6.00	387.62
15	37.798357	-87.624248	380.52	6.00	386.52
16	37.798196	-87.624221	378.82	6.00	384.82
17	37.798035	-87.623974	378.52	6.00	384.52
18	37.797692	-87.623363	383.52	6.00	389.52
19	37.797640	-87.623302	384.02	6.00	390.02
20	37.797378	-87.623197	384.32	6.00	390.32
21	37.795505	-87.622531	382.92	6.00	388.92
22	37.795386	-87.622480	383.82	6.00	389.82
23	37.795267	-87.622276	385.22	6.00	391.22

Name: Old Corydon Rd
Path type: Two-way
Observer view angle: 50.0°

Note: Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.803812	-87.637515	385.52	6.00	391.52
2	37.803354	-87.637300	383.72	6.00	389.72
3	37.802981	-87.637343	380.52	6.00	386.52
4	37.802599	-87.637687	380.92	6.00	386.92
5	37.802180	-87.638051	379.12	6.00	385.12
6	37.801468	-87.638153	379.02	6.00	385.02
7	37.800959	-87.637923	372.52	6.00	378.52
8	37.800565	-87.637767	369.62	6.00	375.62
9	37.800330	-87.637794	368.92	6.00	374.92
10	37.799872	-87.637971	374.12	6.00	380.12
11	37.799614	-87.638057	375.02	6.00	381.02
12	37.798918	-87.637955	381.12	6.00	387.12
13	37.798535	-87.637925	387.72	6.00	393.72
14	37.798107	-87.637954	392.92	6.00	398.92
15	37.797800	-87.638053	396.22	6.00	402.22
16	37.797480	-87.638386	396.92	6.00	402.92
17	37.796802	-87.639314	390.62	6.00	396.62
18	37.795732	-87.640740	390.22	6.00	396.22
19	37.794999	-87.641835	390.52	6.00	396.52
20	37.794850	-87.642114	391.82	6.00	397.82
21	37.794732	-87.642655	392.92	6.00	398.92
22	37.794575	-87.643787	394.72	6.00	400.72
23	37.794404	-87.645039	403.32	6.00	409.32
24	37.794170	-87.645543	407.62	6.00	413.62
25	37.793513	-87.646187	405.92	6.00	411.92
26	37.792203	-87.647388	392.82	6.00	398.82
27	37.790448	-87.648958	392.82	6.00	398.82
28	37.790249	-87.649204	394.62	6.00	400.62
29	37.790033	-87.649880	397.92	6.00	403.92
30	37.789761	-87.651023	411.12	6.00	417.12
31	37.789622	-87.651717	412.02	6.00	418.02
32	37.789601	-87.652162	410.72	6.00	416.72
33	37.789827	-87.653885	404.82	6.00	410.82
34	37.789878	-87.654336	406.82	6.00	412.82

Name: RR

Path type: Two-way

Observer view angle: 50.0°

Note: Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.796156	-87.615039	384.52	6.00	390.52
2	37.794783	-87.616820	385.02	6.00	391.02
3	37.794346	-87.617582	383.62	6.00	389.62
4	37.793850	-87.618762	383.52	6.00	389.52
5	37.793482	-87.620146	379.02	6.00	385.02
6	37.793148	-87.621509	382.42	6.00	388.42
7	37.793101	-87.622399	382.72	6.00	388.72
8	37.793322	-87.623585	384.62	6.00	390.62
9	37.793814	-87.624438	383.92	6.00	389.92
10	37.794572	-87.625124	383.52	6.00	389.52
11	37.798346	-87.628330	388.32	6.00	394.32
12	37.804711	-87.633788	384.42	6.00	390.42

Name: SR 425

Path type: Two-way

Observer view angle: 50.0°

Note: Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.787479	-87.592732	386.52	6.00	392.52
2	37.786326	-87.599899	388.22	6.00	394.22
3	37.786054	-87.601873	391.22	6.00	397.22
4	37.785952	-87.603482	394.82	6.00	400.82
5	37.786071	-87.605349	404.52	6.00	410.52
6	37.786410	-87.607151	411.32	6.00	417.32
7	37.787309	-87.610241	405.92	6.00	411.92
8	37.788191	-87.613631	393.22	6.00	399.22
9	37.788394	-87.614554	391.52	6.00	397.52
10	37.788717	-87.616206	386.52	6.00	392.52
11	37.788852	-87.618073	384.62	6.00	390.62
12	37.788903	-87.621270	389.02	6.00	395.02
13	37.788818	-87.631882	388.22	6.00	394.22
14	37.789013	-87.633470	399.02	6.00	405.02
15	37.789293	-87.634542	405.82	6.00	411.82
16	37.790073	-87.636849	401.42	6.00	407.42
17	37.790739	-87.638788	389.12	6.00	395.12
18	37.791451	-87.640333	396.02	6.00	402.02
19	37.792316	-87.641653	402.52	6.00	408.52
20	37.793452	-87.642908	401.12	6.00	407.12
21	37.794639	-87.643852	394.02	6.00	400.02
22	37.796869	-87.645122	383.72	6.00	389.72
23	37.798026	-87.645830	382.62	6.00	388.62
24	37.798581	-87.646297	388.92	6.00	394.92
25	37.799923	-87.647721	382.62	6.00	388.62

Name: US 41A

Path type: Two-way

Observer view angle: 50.0°

Note: Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.810939	-87.622619	385.32	6.00	391.32
2	37.810532	-87.622372	385.52	6.00	391.52
3	37.809363	-87.622361	384.72	6.00	390.72
4	37.808447	-87.622372	385.22	6.00	391.22
5	37.805023	-87.621932	384.52	6.00	390.52
6	37.804492	-87.621836	382.82	6.00	388.82
7	37.803289	-87.621450	384.52	6.00	390.52
8	37.801983	-87.620806	384.62	6.00	390.62
9	37.800856	-87.620045	381.02	6.00	387.02
10	37.799321	-87.618543	370.72	6.00	376.72
11	37.796168	-87.615024	384.52	6.00	390.52
12	37.793917	-87.612498	394.12	6.00	400.12
13	37.793282	-87.611844	404.52	6.00	410.52
14	37.792391	-87.611168	401.32	6.00	407.32
15	37.791628	-87.610696	396.82	6.00	402.82
16	37.790263	-87.610159	415.42	6.00	421.42
17	37.788682	-87.610020	414.12	6.00	420.12
18	37.786851	-87.610254	401.92	6.00	407.92
19	37.785596	-87.610791	405.02	6.00	411.02
20	37.784456	-87.611607	396.42	6.00	402.42
21	37.781989	-87.613876	382.32	6.00	388.32
22	37.774932	-87.620281	438.52	6.00	444.52
23	37.772888	-87.622266	416.82	6.00	422.82
24	37.765005	-87.629446	416.02	6.00	422.02
25	37.760714	-87.633324	417.02	6.00	423.02
26	37.760685	-87.633346	417.12	6.00	423.12

Name: US 60

Path type: Two-way

Observer view angle: 50.0°

Note: Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.811100	-87.622695	385.42	6.00	391.42
2	37.807641	-87.628167	380.72	6.00	386.72
3	37.807116	-87.629154	386.12	6.00	392.12
4	37.805624	-87.632802	384.52	6.00	390.52
5	37.802894	-87.639969	385.72	6.00	391.72
6	37.799927	-87.647800	382.62	6.00	388.62
7	37.797146	-87.654752	422.22	6.00	428.22
8	37.793941	-87.663485	413.52	6.00	419.52
9	37.791933	-87.668666	429.32	6.00	435.32
10	37.791132	-87.670706	433.12	6.00	439.12
11	37.790593	-87.671827	430.72	6.00	436.72
12	37.790420	-87.672112	430.62	6.00	436.62

Name: Wilson Station Rd
Path type: Two-way
Observer view angle: 50.0°

Note: Route receptors are excluded from this FAA policy review. Use the 2-mile flight path receptor to simulate flight paths according to FAA guidelines.



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.767556	-87.627130	425.42	6.00	431.42
2	37.769990	-87.631191	395.02	6.00	401.02
3	37.771546	-87.633991	387.42	6.00	393.42
4	37.773984	-87.638092	417.22	6.00	423.22
5	37.775464	-87.640650	409.12	6.00	415.12
6	37.775616	-87.640913	410.02	6.00	416.02
7	37.775659	-87.641138	407.72	6.00	413.72
8	37.775583	-87.641363	400.82	6.00	406.82
9	37.774412	-87.642409	390.92	6.00	396.92
10	37.774039	-87.642812	390.82	6.00	396.82
11	37.773102	-87.643552	397.42	6.00	403.42
12	37.773013	-87.643724	401.72	6.00	407.72
13	37.772996	-87.643938	405.82	6.00	411.82
14	37.773174	-87.644298	412.02	6.00	418.02
15	37.775332	-87.648360	419.22	6.00	425.22
16	37.776875	-87.651321	397.12	6.00	403.12
17	37.779748	-87.656652	385.02	6.00	391.02
18	37.781445	-87.659850	399.82	6.00	405.82
19	37.781568	-87.660065	399.92	6.00	405.92
20	37.781763	-87.660150	401.02	6.00	407.02
21	37.782040	-87.660062	394.32	6.00	400.32
22	37.782761	-87.659512	385.52	6.00	391.52
23	37.787502	-87.656027	414.62	6.00	420.62
24	37.789862	-87.654303	406.82	6.00	412.82

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
G-01	SA tracking	SA tracking	0	0	-
G-02	SA tracking	SA tracking	0	0	-
G-03	SA tracking	SA tracking	0	0	-
G-04	SA tracking	SA tracking	0	0	-
G-05	SA tracking	SA tracking	0	0	-
G-06	SA tracking	SA tracking	0	0	-
G-07	SA tracking	SA tracking	0	0	-
G-08	SA tracking	SA tracking	0	0	-
G-09	SA tracking	SA tracking	0	0	-
G-10	SA tracking	SA tracking	0	0	-

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
KEHR RW27	0	0
KEHR RW9	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0
OP 29	0	0
OP 30	0	0
OP 31	0	0
OP 32	0	0
OP 33	0	0
OP 34	0	0
OP 35	0	0
OP 36	0	0
OP 37	0	0
OP 38	0	0
OP 39	0	0
OP 40	0	0
Lovers Ln	0	0
Old Corydon Rd	0	0
RR	0	0
SR 425	0	0
US 41A	0	0
US 60	0	0
Wilson Station Rd	0	0

Results for: G-01

Receptor	Green Glare (min)	Yellow Glare (min)
KEHR RW27	0	0
KEHR RW9	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0
OP 29	0	0
OP 30	0	0
OP 31	0	0
OP 32	0	0
OP 33	0	0
OP 34	0	0
OP 35	0	0
OP 36	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 37	0	0
OP 38	0	0
OP 39	0	0
OP 40	0	0
Lovers Ln	0	0
Old Corydon Rd	0	0
RR	0	0
SR 425	0	0
US 41A	0	0
US 60	0	0
Wilson Station Rd	0	0

Flight Path: KEHR RW27

0 minutes of yellow glare

0 minutes of green glare

Flight Path: KEHR RW9

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 29

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 30

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 31

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 32

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 33

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 34

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 35

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 36

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 37

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 38

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 39

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 40

0 minutes of yellow glare
0 minutes of green glare

Route: Lovers Ln

0 minutes of yellow glare
0 minutes of green glare

Route: Old Corydon Rd

0 minutes of yellow glare
0 minutes of green glare

Route: RR

0 minutes of yellow glare

0 minutes of green glare

Route: SR 425

0 minutes of yellow glare
0 minutes of green glare

Route: US 41A

0 minutes of yellow glare
0 minutes of green glare

Route: US 60

0 minutes of yellow glare
0 minutes of green glare

Route: Wilson Station Rd

0 minutes of yellow glare
0 minutes of green glare

Results for: G-02

Receptor	Green Glare (min)	Yellow Glare (min)
KEHR RW27	0	0
KEHR RW9	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0
OP 29	0	0
OP 30	0	0
OP 31	0	0
OP 32	0	0
OP 33	0	0
OP 34	0	0
OP 35	0	0
OP 36	0	0
OP 37	0	0
OP 38	0	0
OP 39	0	0
OP 40	0	0
Lovers Ln	0	0
Old Corydon Rd	0	0
RR	0	0
SR 425	0	0
US 41A	0	0
US 60	0	0
Wilson Station Rd	0	0

Flight Path: KEHR RW27

0 minutes of yellow glare

0 minutes of green glare

Flight Path: KEHR RW9

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 29

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 30

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 31

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 32

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 33

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 34

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 35

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 36

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 37

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 38

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 39

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 40

0 minutes of yellow glare
0 minutes of green glare

Route: Lovers Ln

0 minutes of yellow glare
0 minutes of green glare

Route: Old Corydon Rd

0 minutes of yellow glare
0 minutes of green glare

Route: RR

0 minutes of yellow glare
0 minutes of green glare

Route: SR 425

0 minutes of yellow glare
0 minutes of green glare

Route: US 41A

0 minutes of yellow glare
0 minutes of green glare

Route: US 60

0 minutes of yellow glare
0 minutes of green glare

Route: Wilson Station Rd

0 minutes of yellow glare
0 minutes of green glare

Results for: G-03

Receptor	Green Glare (min)	Yellow Glare (min)
KEHR RW27	0	0
KEHR RW9	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0
OP 29	0	0
OP 30	0	0
OP 31	0	0
OP 32	0	0
OP 33	0	0
OP 34	0	0
OP 35	0	0
OP 36	0	0
OP 37	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 38	0	0
OP 39	0	0
OP 40	0	0
Lovers Ln	0	0
Old Corydon Rd	0	0
RR	0	0
SR 425	0	0
US 41A	0	0
US 60	0	0
Wilson Station Rd	0	0

Flight Path: KEHR RW27

0 minutes of yellow glare

0 minutes of green glare

Flight Path: KEHR RW9

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 29

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 30

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 31

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 32

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 33

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 34

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 35

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 36

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 37

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 38

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 39

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 40

0 minutes of yellow glare
0 minutes of green glare

Route: Lovers Ln

0 minutes of yellow glare
0 minutes of green glare

Route: Old Corydon Rd

0 minutes of yellow glare
0 minutes of green glare

Route: RR

0 minutes of yellow glare
0 minutes of green glare

Route: SR 425

0 minutes of yellow glare
0 minutes of green glare

Route: US 41A

0 minutes of yellow glare
0 minutes of green glare

Route: US 60

0 minutes of yellow glare
0 minutes of green glare

Route: Wilson Station Rd

0 minutes of yellow glare
0 minutes of green glare

Results for: G-04

Receptor	Green Glare (min)	Yellow Glare (min)
KEHR RW27	0	0
KEHR RW9	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0
OP 29	0	0
OP 30	0	0
OP 31	0	0
OP 32	0	0
OP 33	0	0
OP 34	0	0
OP 35	0	0
OP 36	0	0
OP 37	0	0
OP 38	0	0
OP 39	0	0
OP 40	0	0
Lovers Ln	0	0
Old Corydon Rd	0	0
RR	0	0
SR 425	0	0
US 41A	0	0
US 60	0	0
Wilson Station Rd	0	0

Flight Path: KEHR RW27

0 minutes of yellow glare

0 minutes of green glare

Flight Path: KEHR RW9

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 29

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 30

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 31

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 32

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 33

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 34

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 35

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 36

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 37

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 38

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 39

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 40

0 minutes of yellow glare
0 minutes of green glare

Route: Lovers Ln

0 minutes of yellow glare
0 minutes of green glare

Route: Old Corydon Rd

0 minutes of yellow glare
0 minutes of green glare

Route: RR

0 minutes of yellow glare
0 minutes of green glare

Route: SR 425

0 minutes of yellow glare
0 minutes of green glare

Route: US 41A

0 minutes of yellow glare
0 minutes of green glare

Route: US 60

0 minutes of yellow glare
0 minutes of green glare

Route: Wilson Station Rd

0 minutes of yellow glare
0 minutes of green glare

Results for: G-05

Receptor	Green Glare (min)	Yellow Glare (min)
KEHR RW27	0	0
KEHR RW9	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0
OP 29	0	0
OP 30	0	0
OP 31	0	0
OP 32	0	0
OP 33	0	0
OP 34	0	0
OP 35	0	0
OP 36	0	0
OP 37	0	0
OP 38	0	0
OP 39	0	0
OP 40	0	0
Lovers Ln	0	0
Old Corydon Rd	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
RR	0	0
SR 425	0	0
US 41A	0	0
US 60	0	0
Wilson Station Rd	0	0

Flight Path: KEHR RW27

0 minutes of yellow glare

0 minutes of green glare

Flight Path: KEHR RW9

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 29

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 30

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 31

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 32

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 33

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 34

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 35

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 36

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 37

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 38

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 39

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 40

0 minutes of yellow glare
0 minutes of green glare

Route: Lovers Ln

0 minutes of yellow glare
0 minutes of green glare

Route: Old Corydon Rd

0 minutes of yellow glare
0 minutes of green glare

Route: RR

0 minutes of yellow glare
0 minutes of green glare

Route: SR 425

0 minutes of yellow glare
0 minutes of green glare

Route: US 41A

0 minutes of yellow glare

0 minutes of green glare

Route: US 60

0 minutes of yellow glare

0 minutes of green glare

Route: Wilson Station Rd

0 minutes of yellow glare

0 minutes of green glare

Results for: G-06

Receptor	Green Glare (min)	Yellow Glare (min)
KEHR RW27	0	0
KEHR RW9	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0
OP 29	0	0
OP 30	0	0
OP 31	0	0
OP 32	0	0
OP 33	0	0
OP 34	0	0
OP 35	0	0
OP 36	0	0
OP 37	0	0
OP 38	0	0
OP 39	0	0
OP 40	0	0
Lovers Ln	0	0
Old Corydon Rd	0	0
RR	0	0
SR 425	0	0
US 41A	0	0
US 60	0	0
Wilson Station Rd	0	0

Flight Path: KEHR RW27

0 minutes of yellow glare
0 minutes of green glare

Flight Path: KEHR RW9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 29

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 30

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 31

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 32

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 33

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 34

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 35

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 36

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 37

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 38

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 39

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 40

0 minutes of yellow glare
0 minutes of green glare

Route: Lovers Ln

0 minutes of yellow glare
0 minutes of green glare

Route: Old Corydon Rd

0 minutes of yellow glare
0 minutes of green glare

Route: RR

0 minutes of yellow glare
0 minutes of green glare

Route: SR 425

0 minutes of yellow glare
0 minutes of green glare

Route: US 41A

0 minutes of yellow glare
0 minutes of green glare

Route: US 60

0 minutes of yellow glare
0 minutes of green glare

Route: Wilson Station Rd

0 minutes of yellow glare
0 minutes of green glare

Results for: G-07

Receptor	Green Glare (min)	Yellow Glare (min)
KEHR RW27	0	0
KEHR RW9	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0
OP 29	0	0
OP 30	0	0
OP 31	0	0
OP 32	0	0
OP 33	0	0
OP 34	0	0
OP 35	0	0
OP 36	0	0
OP 37	0	0
OP 38	0	0
OP 39	0	0
OP 40	0	0
Lovers Ln	0	0
Old Corydon Rd	0	0
RR	0	0
SR 425	0	0
US 41A	0	0
US 60	0	0
Wilson Station Rd	0	0

Flight Path: KEHR RW27

0 minutes of yellow glare

0 minutes of green glare

Flight Path: KEHR RW9

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 29

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 30

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 31

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 32

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 33

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 34

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 35

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 36

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 37

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 38

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 39

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 40

0 minutes of yellow glare

0 minutes of green glare

Route: Lovers Ln

0 minutes of yellow glare

0 minutes of green glare

Route: Old Corydon Rd

0 minutes of yellow glare

0 minutes of green glare

Route: RR

0 minutes of yellow glare

0 minutes of green glare

Route: SR 425

0 minutes of yellow glare

0 minutes of green glare

Route: US 41A

0 minutes of yellow glare

0 minutes of green glare

Route: US 60

0 minutes of yellow glare

0 minutes of green glare

Route: Wilson Station Rd

0 minutes of yellow glare

0 minutes of green glare

Results for: G-08

Receptor	Green Glare (min)	Yellow Glare (min)
KEHR RW27	0	0
KEHR RW9	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0
OP 29	0	0
OP 30	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 31	0	0
OP 32	0	0
OP 33	0	0
OP 34	0	0
OP 35	0	0
OP 36	0	0
OP 37	0	0
OP 38	0	0
OP 39	0	0
OP 40	0	0
Lovers Ln	0	0
Old Corydon Rd	0	0
RR	0	0
SR 425	0	0
US 41A	0	0
US 60	0	0
Wilson Station Rd	0	0

Flight Path: KEHR RW27

0 minutes of yellow glare
0 minutes of green glare

Flight Path: KEHR RW9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 29

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 30

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 31

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 32

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 33

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 34

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 35

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 36

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 37

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 38

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 39

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 40

0 minutes of yellow glare
0 minutes of green glare

Route: Lovers Ln

0 minutes of yellow glare
0 minutes of green glare

Route: Old Corydon Rd

0 minutes of yellow glare
0 minutes of green glare

Route: RR

0 minutes of yellow glare
0 minutes of green glare

Route: SR 425

0 minutes of yellow glare
0 minutes of green glare

Route: US 41A

0 minutes of yellow glare
0 minutes of green glare

Route: US 60

0 minutes of yellow glare
0 minutes of green glare

Route: Wilson Station Rd

0 minutes of yellow glare
0 minutes of green glare

Results for: G-09

Receptor	Green Glare (min)	Yellow Glare (min)
KEHR RW27	0	0
KEHR RW9	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0
OP 29	0	0
OP 30	0	0
OP 31	0	0
OP 32	0	0
OP 33	0	0
OP 34	0	0
OP 35	0	0
OP 36	0	0
OP 37	0	0
OP 38	0	0
OP 39	0	0
OP 40	0	0
Lovers Ln	0	0
Old Corydon Rd	0	0
RR	0	0
SR 425	0	0
US 41A	0	0
US 60	0	0
Wilson Station Rd	0	0

Flight Path: KEHR RW27

0 minutes of yellow glare

0 minutes of green glare

Flight Path: KEHR RW9

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 17

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 18

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 19

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 20

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 21

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 22

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 23

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 24

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 25

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 26

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 27

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 28

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 29

0 minutes of yellow glare
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Point Receptor: OP 30

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 31

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 32

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 33

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 34

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 35

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 36

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 37

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 38

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 39

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 40

0 minutes of yellow glare
0 minutes of green glare

Route: Lovers Ln

0 minutes of yellow glare
0 minutes of green glare

Route: Old Corydon Rd

0 minutes of yellow glare
0 minutes of green glare

Route: RR

0 minutes of yellow glare
0 minutes of green glare

Route: SR 425

0 minutes of yellow glare
0 minutes of green glare

Route: US 41A

0 minutes of yellow glare
0 minutes of green glare

Route: US 60

0 minutes of yellow glare
0 minutes of green glare

Route: Wilson Station Rd

0 minutes of yellow glare

0 minutes of green glare

Results for: G-10

Receptor	Green Glare (min)	Yellow Glare (min)
KEHR RW27	0	0
KEHR RW9	0	0
OP 1	0	0
OP 2	0	0
OP 3	0	0
OP 4	0	0
OP 5	0	0
OP 6	0	0
OP 7	0	0
OP 8	0	0
OP 9	0	0
OP 10	0	0
OP 11	0	0
OP 12	0	0
OP 13	0	0
OP 14	0	0
OP 15	0	0
OP 16	0	0
OP 17	0	0
OP 18	0	0
OP 19	0	0
OP 20	0	0
OP 21	0	0
OP 22	0	0
OP 23	0	0
OP 24	0	0
OP 25	0	0
OP 26	0	0
OP 27	0	0
OP 28	0	0
OP 29	0	0
OP 30	0	0
OP 31	0	0
OP 32	0	0
OP 33	0	0
OP 34	0	0
OP 35	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
OP 36	0	0
OP 37	0	0
OP 38	0	0
OP 39	0	0
OP 40	0	0
Lovers Ln	0	0
Old Corydon Rd	0	0
RR	0	0
SR 425	0	0
US 41A	0	0
US 60	0	0
Wilson Station Rd	0	0

Flight Path: KEHR RW27

0 minutes of yellow glare

0 minutes of green glare

Flight Path: KEHR RW9

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 1

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 2

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 3

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 4

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 5

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 6

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 7

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 8

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 9

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 10

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 11

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 12

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 13

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 14

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: OP 15

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 16

0 minutes of yellow glare
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Point Receptor: OP 17

0 minutes of yellow glare
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Point Receptor: OP 18

0 minutes of yellow glare
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Point Receptor: OP 19

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Point Receptor: OP 20

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Point Receptor: OP 34

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Point Receptor: OP 35

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Point Receptor: OP 36

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Point Receptor: OP 37

0 minutes of yellow glare
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Point Receptor: OP 38

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0 minutes of green glare

Point Receptor: OP 39

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 40

0 minutes of yellow glare
0 minutes of green glare

Route: Lovers Ln

0 minutes of yellow glare
0 minutes of green glare

Route: Old Corydon Rd

0 minutes of yellow glare
0 minutes of green glare

Route: RR

0 minutes of yellow glare

0 minutes of green glare

Route: SR 425

0 minutes of yellow glare

0 minutes of green glare

Route: US 41A

0 minutes of yellow glare

0 minutes of green glare

Route: US 60

0 minutes of yellow glare

0 minutes of green glare

Route: Wilson Station Rd

0 minutes of yellow glare

0 minutes of green glare

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.

Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.

Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to V1 algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.

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.)

Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.

Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.

The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.

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.

Refer to the Help page at www.forgesolar.com/help/ for assumptions and limitations not listed here.

ATTACHMENT B
RESUME

Regulatory Expertise

- NEPA
- CWA
- RCRA
- NHPA
- ESA
- CAA

Industry/Agency Clientele

- Solar
- Pipelines
- Utilities/Traditional Energy Sources
- National Guard
- US Fish and Wildlife Service
- Forest Service
- Nuclear Regulatory Commission
- FHWA, FRA, FTA & State DOTs
- Tennessee Valley Authority
- Academic Institutions & NGOs

Qualifications/Associations

- Virginia Bar Association, Environmental Law Section
- District of Columbia Bar Association, Environmental, Energy and Natural Resources Section
- Lexington Environmental Commission
- Lexington Infrastructure Hearing Board
- Lexington Community Land Trust
- Lexington Stormwater Stakeholder Advisory Group
- Town Branch Trail, Inc.
- Paint Lick Watershed Alliance
- Garrard County Sanitation District
- Kentucky Solar Energy Industry Association

Trainings

- NEPA and the Transportation Decision-Making Process
- Public Involvement in Transportation Decision-Making
- Thinking Beyond the Pavement - Context Sensitive Design
- Kentucky Transportation Cabinet (KYTC) Public Involvement Training
- KYTC Citizen Advisory Committee Training
- Environmental Justice
- Ohio DOT Public Involvement
- Native American Consultation
- Section 106 Consultation Process



- Federal Energy Regulatory Commission Environmental Review and Compliance for Natural Gas Facilities

Qualifications and Background

Mr. Marchaterre has significant energy, environmental, and permitting experience, and has overseen development of NEPA environmental documentation and supporting studies. He has been involved in more than 80 EISs, EAs, and CEs. Mr. Marchaterre has managed air quality studies, noise analyses, socioeconomic baseline studies, land use analyses, cultural resource analyses, community impact assessments, Phase I hazardous materials site assessments, biological assessments, wetlands delineations, environmental justice, and public involvement activities. He has prepared public involvement plans, outreach materials, and conducted citizen advisory committee meetings, stakeholder meetings, noise barrier meetings, Section 106 consultation meetings, and participated in numerous public meetings and hearings. For the U.S. Environmental Protection Agency, he provided support to the National Environmental Justice Advisory Committee for two years. Mr. Marchaterre has been a guest lecturer at universities and has made regular presentations to civic organizations concerning environmental issues.

Education

- **J.D. 1988**, College of William and Mary, Williamsburg, Virginia
- **B.A. History and Political Science**, 1985, Williams College, Williamstown, Massachusetts
- Williams-Mystic American Maritime Program, 1985

Selected Project Experience

Solar

Site Characterization Study for Solar Energy Development. Confidential Client. Breckinridge County, Kentucky. Assistant Project Manager for a site characterization study analyzing a property in Breckinridge County, Kentucky, for possible development as a solar energy generating facility. The study included a desktop review of federal and state data pertaining to sensitive resources such as listed species, wetlands or other surface waters, prime farmland, karst topography, and public and protected lands. Copperhead staff then performed a one-day field verification to characterize vegetative communities, possible bat habitat, and the presence of jurisdictional waters. A summary report was provided to the client which outlined potential environmental concerns and presented a permitting matrix delineated by issuing agency, trigger, and timeline.

Site Characterization Study, Wetland Delineations, Phase I ESA, and Cultural Resources Overview for a Proposed Solar Project. Confidential Client. Kentucky. Managed site characterization studies, aquatic resources delineation, Phase I ESA, and cultural resources overview for solar project on an approximately 800-acre parcel in Garrard County, KY. The study included a desktop review of federal and state data pertaining to sensitive resources such as listed species, wetlands or other surface waters, prime farmland, karst topography, and public and protected lands. A wetland delineation identified and demarcated aquatic features that may be jurisdictional waters of the U.S. or isolated waters of the state. Participated in public involvement activities.

Site Characterization Study, Wetland Delineations, Phase I ESA, and Cultural Resources Overview for a Proposed Solar Project. Confidential Client. Kentucky. Managed site characterization studies, aquatic resources delineation, Phase I ESA, and cultural resources overview for solar project on an approximately 800-acre parcel in Metcalfe County, KY. The study included a desktop review of federal and state data pertaining to sensitive resources such as listed species, wetlands or other surface waters, prime farmland, karst topography, and public and protected lands. A wetland delineation identified and demarcated aquatic features that may be jurisdictional waters of the U.S. or isolated waters of the state.

Three Solar Projects - Site Characterization Study, Wetland Delineations, Phase I ESA, and Cultural Resources Overview. Confidential Client. Kentucky. Managed desktop review and field studies to support development of site characterization studies, wetland delineations, Phase I ESAs, and cultural resource overviews. A site reconnaissance identified potential habitat for federally listed and state-listed at-risk species.

Acoustic Analysis for Multiple Solar Projects. Confidential Clients. Kentucky. Managed acoustical analyses for multiple projects. Described existing sound levels from the project site and surrounding areas as well as potential impacts from construction, operation, and maintenance activities. Provided a report of the findings of the acoustical analysis. The report will contain a summary of the project, describe existing sound conditions, identify potential sensitive receptors (e.g., residences), and evaluate potential construction and operation sound levels.

Critical Issues Analysis (CIA) for a Solar Facility. Confidential Client. Tennessee. Assistant project manager for development of a CIA. The CIA's goal is to gain a better understanding of the environmental issues that could potentially affect project development. Some of the resource areas Copperhead collected information on include vegetation communities and general wildlife, threatened and endangered species, migratory birds nests, soil types, and historic and cultural resources. The wetland/stream mapping's goal is to estimate how much of the Project Area may be wetlands as opposed to uplands and to identify anticipated buffer setbacks. The information gathered helps to inform Copperhead and the client about what regulations will need to be adhered to and what permits will need to be acquired.

Site Characterization Studies for Proposed Solar Energy Projects. Confidential Clients. Kentucky. For multiple solar project sites, managed site characterization studies to identify potential environmental constraints associated with land cover/use, soils, wetlands and watercourses, farmland, threatened and endangered species, and other considerations. The studies included a desktop assessments using publicly available databases and field reconnaissance surveys of the project areas.

Biological Assessment for Indiana Bats, Northern Long-eared Bats, and Bog Turtle at a Proposed Solar Project. Confidential Client, New York. Managing the development of a biological assessment with adverse effects to bat habitat. Ongoing consultation with United States Fish and Wildlife to develop mitigation alternatives.

Critical Issues Analysis (CIA) for a Solar Facility. Confidential Client. Mississippi. Assistant project manager for development of a CIA. The CIA's goal is to gain a better understanding of the environmental issues that could potentially affect project development. Some of the resource areas Copperhead collected information on include vegetation communities and general wildlife, threatened and endangered species, migratory birds nests, soil types, and historic and cultural resources. The wetland/stream mapping's goal is to estimate how much of the Project Area may be wetlands as opposed to uplands and to identify anticipated buffer setbacks. The information gathered helps to inform Copperhead and the client about what regulations will need to be adhered to and what permits will need to be acquired.

Transportation

Threatened and Endangered Species Habitat Assessments and Surveys, Bridging Kentucky Program, Kentucky Transportation Cabinet. Project Manager. Throughout Kentucky, Copperhead as subconsultant is tasked with providing environmental services including coordination for Threatened and Endangered Species (TES), assessment of potential habitat, preparation of biological assessments, programmatic agreement comments, and NEPA permit assistance (including Section 401/404 and U.S. Coast Guard Section 10) for the program to rehabilitate or replace over 1,000 bridges in the next six years. Screened over 400 bridges for environmental concerns and potential TES habitat. Conducting habitat assessments, mussel and fish surveys, and preparing permits, biological assessments, and no effect documentation. Addressed concerns of stakeholders and nearby residents.

EA/FONSI, US 68, Bourbon-Nicholas Counties, Kentucky. Item No. 7-310.00. Prepared an EA and individual Section 4(f) evaluation as well as baseline studies for this 13.3-mile project. Section 106 issues were a critical component due to over 50 historic sites and 2 historic districts. Seventeen alternates were considered to avoid or minimize impacts to historic sites and prime farmland. Section 401/404 and floodplain construction permits and stream mitigation required due to 10,000 feet of channel change. Developed a public involvement plan and participated in public meetings, a public hearing, and Section 106 consulting party meetings.

EA/FONSI, East Nicholasville Bypass, Jessamine County, Kentucky. Prepared an EA and managed the development of the FONSI for this 7-mile project. Managed the historic and archaeological studies of several farm sites. Due to potential impacts to a historic site, avoidance alternates were developed. Prepared socioeconomic, traffic noise and hazardous materials/underground storage tank studies and oversaw the other environmental base studies and addenda. Helped address concerns about economic impacts of developing the bypass and visual/noise concerns for residents. Supported citizen advisory committee meetings, public information meetings and the public hearing. Participated in the biological assessment for running buffalo clover, Indiana bat and gray bat.

EA/FONSI, US 60 Tennessee River Crossing, McCracken-Livingston Counties, Kentucky. Managed preparation of the EA and Section 4(f) evaluation for the replacement of the historic George Rogers Clark Memorial Bridge and approaches. Oversaw minimization and mitigation efforts for wetlands,

floodplains, historic bridge, and relocations. Participated in public meetings on environmental issues, such as wetlands and cultural resources.

EA/FONSI, US 119 (Partridge to Whitesburg), KYTC, Letcher County, Kentucky. Project Manager. Managed preparation of two EAs and baseline studies for two connecting projects (14.8 miles in length). Managed public involvement activities (Pine Mountain Crossing Task Force, public meetings, and public hearings), and oversaw minimization and mitigation efforts for wetland, stream, floodplain, historic and relocation impacts. Due to numerous crossings of the Poor Fork of the Cumberland River and potential impacts to the Bad Branch Nature Preserve, Pine Mountain Wildlife Management Area, and a historic site, this project evaluated Section 4(f) impacts, numerous alternates, the potential impacts of 20 bridges, a 4.2-mile tunnel, and several waste areas. Managed the biological assessment for the Indiana bat, gray bat, and blackside dace. Participated in the Section 401 and 404 permitting process for wetland and stream impacts.

Environmental Assessment for Memphis Regional Intermodal Facility, Private Client, Rossville, TN. Technical Reviewer and Author for a complex EA for a 650-acre intermodal facility. Conducted technical review of EA and baseline studies including Stream Assessment Report, Ecology Study Report, Noise Assessment Report, Cultural Resources, and Phase I archaeological Survey, and Viewshed Analysis. The intermodal facility will improve freight transportation capacity in the region and used Tiger Grant funds. FHWA is the lead federal agency with TDOT as lead state agency. Twenty-one out of 29 federal, state, and local agencies requested to participate in the NEPA process. To adequately involve the public, both a public information meeting and a public hearing were conducted in the local area. Completed the NEPA process in approximately one year, fastest for TDOT.

Categorical Exclusion 2, Town Branch Trail Phase 6, Fayette County, Kentucky. Item No. 7-7310.00. Project Manager for Town Branch Trail Phase 6 Categorical Exclusion. Conducted environmental studies and prepared environmental documents for the multi-use trail between McConnell Springs Drive on Old Frankfort Pike to Oliver Lewis Way. Participated in project and public meetings on the proposed trail and developed Section 4(f) evaluation of potential impacts on historic James McConnell House as well as dry laid retaining walls along Town Branch.

Mitigation Support. Newtown Pike Extension, Fayette County, Kentucky. Item No. 7-593.00. For the Community Land Trust, providing environmental justice advocacy for a low-income, minority neighborhood concerning EIS commitments and mitigation due to the Newtown Pike Extension. Reviewed environmental justice commitments, oversaw streetscape design work, examined traffic calming measures and plans for adjacent park, bike lanes, and bus transit facilities. Public and stakeholder meetings were key components of project.

Categorical Exclusion and Programmatic Section 4(f), US 25 (Williamstown), Grant County, Kentucky. Item No. 6-1049.00. Prepared the CE and Programmatic Section 4(f) evaluation concerning a bridge replacement / road improvement project. Historic sites, traffic noise, a senior citizen home, mobile home park relocation, business relocations, a railroad line, and park access were concerns. Stakeholder and public meetings were conducted. Worked with KY Department of Local Government to avoid Section 6(f) impacts due to a new park access.

Environmental Documentation for All Aboard Florida High Speed Rail, Florida. For All Aboard Florida, developed technical baseline documents and provided technical review of methodology, existing environment, and environmental consequences sections for an approximately 128-mile section of a high-speed rail project from West Palm Beach to Miami, Florida. Involved in cultural resources, transportation, public utilities, and aesthetic components. Reviewed cultural resource report prepared by a subconsultant. Potential impacts to historic districts and resources were concern raised by the public. For

All Aboard Florida, helped to review the DEIS prepared by a Third Party for Federal Railroad Administration.

Heartland Parkway Planning Study, Adair, Green, Taylor, Marion, Nelson, and Washington Counties, Kentucky. Managed the environmental evaluation of the 68-mile corridor scoping study. Helped identify project needs and potential environmental concerns (historic battlefield, parks, conservation areas, endangered species, and cave/karst terrain). Identified the regional needs for improving/supporting economic development, tourism, higher education, and the agricultural sector. Managed the archaeological overview and Phase I archaeological survey for the 23-mile design project in Taylor and Adair Counties. Participated in extensive public involvement activities including eight public meetings along with separate meetings for local governments.

Environmental Assessment, KY 313, Hardin and Meade Counties, Kentucky. Prepared an EA and FONSI for this 14-mile project. Managed the preparation of environmental baseline studies. Prepared a purpose and need statement to help justify the project. Helped evaluate potential cave and karst impacts. Managed the biological field studies that captured a federally endangered gray bat in the project area and helped evaluate mitigation options. Supported public meetings and the public hearing and coordinated with federal and state resource agencies.

Environmental Assessment, KY 40 (Inez to Warfield), Martin County, Kentucky. Responsible for the EA for this 8.5-mile project. Relocations, strip mines, cemeteries, a historic site, and stream channel changes were environmental concerns. A separate waste disposal area and industrial development site were later evaluated. Managed review of environmental impacts of the roadway segment crossing into West Virginia. Supported KYTC in coordinating with the West Virginia Department of Highways and other West Virginia resource agencies. Supported the historic consultant in evaluating methods to minimize potential indirect visual impacts of the proposed roadway and bridge on a historic site. Supported public and Section 106 consulting party meetings. Participated in stream mitigation and permitting activities.

Categorical Exclusion and Programmatic Section 4(f), US 25 (Williamstown), Grant County, Kentucky. Prepared the CE and Programmatic Section 4(f) and managed the environmental studies concerning a bridge replacement and road improvement project. Historic sites, traffic noise, a senior citizen home, a mobile home park, business relocations, a railroad line, and a park were issues. Worked with the KY Department of Local Government to avoid a Section 6(f) impact during the development of new access to a park.

Environmental Assessment/US 68 (Columbia to Greensburg), Green and Adair Counties, Kentucky. Prepared an EA for this 16-mile project. Managed the preparation of environmental overviews and baseline environmental studies, including wetlands, noise, air quality, Phase I ESA, socioeconomic, and threatened and endangered species. Oversaw the development of a cultural historic overview and survey and an archaeological overview, an archaeological high probability study, and a Phase I archaeological survey. Supported the citizen advisory committee, public meetings, and a Section 106 consulting party meeting. Aided the roadway designers in developing alternates to avoid impacts to a historic farm and in evaluating a land bridge over a historic railroad tunnel rather than imploding the tunnel. Worked with the cultural historian to analyze the potential indirect visual and vibration impacts of the land bridge on the tunnel.

Environmental Assessment for the Leslie, Knott, Letcher Perry County Community Action Council for Intermodal Transit Facility and Parking Structure, Hindman, Kentucky. Managed the EA and environmental studies to secure federal funding for the rehabilitation of a 46-year old former jail building to be an intermodal transit facility and creation of a street level 150-space parking structure. Potential

floodplain impacts, environmental justice concerns, archaeological sites, and historic viewshed effects were evaluated. Worked closely with Community Action Council and design firm to avoid and minimize impacts. Participated in stakeholder meetings.

Documented CEs and EAs for Transit Projects, Christian, Clay, Franklin, Jefferson, and Knott Counties, Kentucky. Managed successful preparation of Documented CEs and EAs for transit facilities, maintenance facilities, bus wash, and parking structures with the KYTC Office of Transportation Delivery. For a proposed City of Frankfort Transit bus wash/maintenance facility, a documented CE was completed within one month to meet a funding deadline. Mr. Marchaterre participated in all aspects of this project including desktop environmental analysis, site reconnaissance, agency coordination, stakeholder meetings, and report preparation.

Environmental Studies and Categorical Exclusion for Clays Mill Road, Fayette County, Kentucky. Project Manager responsible for the categorical exclusion and supporting studies for a 3.7-mile project in Lexington, KY. Prepared the HazMat/UST baseline study and assisted with the traffic noise modeling. Managed the sampling of streams, fish and macroinvertebrates to determine water quality. Groundwater in the project area is hydrologically sensitive due to the karst topography. Participated in multiple citizen advisory committee and public meetings.

Federal Railroad Administration Categorical Exclusion for TIGER Grant for Railroad Bridge Replacement, IN. Prepared Categorical Exclusion for historic bridge replacement partially funded from a TIGER grant. Categorical Exclusion was prepared for a private railroad for submission to the Federal Railroad Administration. A Memorandum of Agreement was developed between the US Army Corps of Engineers, State Historic Preservation Office, and the railroad to document the replacement of the historic bridge.

140-Mile Virginia Rail Expansion (VRE) Project, Virginia. Managed cultural resources and environmental constraints analysis for proposed 140-mile expansion project. Oversaw archival and field studies to identify historic and ecological resources within areas of potential effect. Identified NEPA categorical exclusions that could apply to sections of the project area to speed the permitting process.

Third Party Review of Tier I EIS Process for Empire Corridor High Speed Rail Corridor, New York. For a private railroad company, reviewed Tier I EIS process for the 463-mile Empire Corridor for High Speed Rail from New York City to Niagara Falls. Provided recommendations and position paper on Draft Tier I EIS process and opportunities for the railroad company to participate in the NEPA process both formally and informally. Evaluated potential impacts to railroad operations of an additional track for high speed rail.

Third Party Review of Tier II EIS for Southeast High-Speed Rail Corridor, Richmond, VA to Raleigh, NC. For a private railroad company, reviewed Draft Tier II EIS for the Southeast High-Speed Rail Corridor and provided recommendations and comments on Draft Tier II EIS document and potential impacts to railroad operations.

Environmental Studies and Categorical Exclusion for KY 32, Kentucky Transportation Cabinet, Lawrence County, Kentucky. Project Manager for the environmental studies for KY 32 in Lawrence County, KY. Prepared a Categorical Exclusion and Programmatic Section 4(f) evaluation for minor impacts to two historic sites. Identified potential onsite mitigation opportunities for approximately 3,000 feet of stream channel changes. Historic sites, a cemetery, and residential relocations were concerns.

Third Party Review of Tier I EIS for Atlanta BeltLine Project, GA. For a private freight railroad company, reviewed Draft Tier I EIS for the proposed Atlanta Beltline Project for potential impacts to

railroad operations. Concerns exist that a new transit line, trails, crossings, and designation of the railway line as a historic district would affect existing and future expansions of freight operations and safety. Prepared comments on the Draft Tier I EIS document. Participated in public involvement process, including attending public meetings and regular workgroup meetings.

EA / FONSI, US 60 Bypass, Daviess County, Kentucky. Item No. 2-287.00. Managed preparation of an EA and FONSI as well as baseline studies for this 5.2-mile project. A Citizen Advisory Committee met five times to express area citizen and business views. Wetland, stream, and archaeological site impacts were concerns.

Categorical Exclusion for I-75/I-71 Auxiliary Lanes, Boone County, Kentucky. For Kentucky Transportation Cabinet, prepared a Categorical Exclusion 3 for adding auxiliary lanes for I-71/I-75 in Boone County. Conducted ecological, air, noise, hazardous materials, and socioeconomic studies. Noise analyses, noise abatement modeling, and multiple noise barrier public meetings were critical to success of project. Noise walls have been constructed and have received positive public feedback.

I-69 Strategic Corridor Planning Study (Eddyville to Henderson), Lyon, Caldwell, Hopkins, Webster, and Henderson Counties, Kentucky. Managed and helped prepare the environmental component for evaluating the 80-mile corridor for an I-69 segment. Identified potential environmental concerns (relocations, environmental justice, conservation areas, and endangered species). Managed aquatic / terrestrial, socioeconomic, hazardous materials / underground storage tank, and air and traffic noise analysis. Identified the regional needs for improving / supporting economic development through stakeholder meetings and coordination with local government officials and interested parties.

Third Party Review of Socioeconomic Study for I-66 Project (London to Somerset), Pulaski County, Kentucky. Provided a third-party review for the KYTC for the I-66 socioeconomic study. Evaluated economic and community impacts, potential residential and commercial relocations, environmental justice concerns, land use changes, and farmland impacts for a 40-mile highway project. Identified gaps in the socioeconomic analysis and provided recommendations on how to improve the study. Information from the revised study was incorporated into the EIS.

Technical Reviewer for Bus Maintenance Facility Categorical Exclusion (CE), Transit Authority of River City (TARC), Jefferson County, Kentucky. Provides quality assurance/quality control for ongoing projects by TARC. For a bus maintenance facility annex on a former Louisville & Nashville Railroad site, analyzed traffic information, bus emission reductions, land use, historic resources, environmental justice concerns, and the potential for hazardous materials/UST contamination. Determined that a CE was appropriate and prepared the documentation which was quickly approved by the FTA.

Environmental Assessment, KY 55 (Heartland Parkway), Adair and Taylor Counties, Kentucky. Item No. 4-124.00. Technical reviewer for preparation of EA for this 23-mile project. Managed cultural resource studies (archaeological and historic architectural surveys), Section 106 consultation, and Section 4(f) evaluation. Identified sensitive areas such as Tebbs Bend Civil War Battlefield area, Native American mounds, and potential historic sites.

East Market Street Streetscape Categorical Exclusion, Louisville, Kentucky. For Louisville Downtown Development and Louisville Metro, prepared a categorical exclusion for the East Market Streetscape project. Potential impacts to historic structures in several historic districts were potential concerns that were addressed with coordination with the Kentucky Heritage Council. Participated in public involvement activities, including multiple public and stakeholder meetings.

Statewide Programmatic Agreement for Historic Timber Railroad Bridges, Georgia. For a private client, worked with United States Army Corps of Engineers and State Historic Preservation Office to develop a statewide programmatic agreement for the replacement and repair of historic timber railroad bridges throughout Georgia. The programmatic agreement covered more than 300 bridges across the state.

Native American Consultation Workgroup, Federal Highway Administration Kentucky Field Office. Participated in a FHWA workgroup to evaluate Native American Consultation on transportation projects. Met with FHWA, Kentucky Heritage Council, Office of State Archaeology, and representatives of Native American tribes over two years.

Tennessee Valley Authority

Wilson Dam Bridge Deck Refurbishment EA. Tennessee Valley Authority, Alabama. Project manager for an environmental assessment analyzing the potential impacts resulting from refurbishment of the Wilson Dam bridge Deck spanning Pickwick Reservoir and connecting Colbert and Lauderdale counties, Alabama. Authored multiple resource sections and coordinated directly with TVA NEPA and project management team. Organized public meeting and responded to public comments on the Draft EA.

Kingston Fossil Plant Wastewater Treatment Facility EA. Tennessee Valley Authority, Tennessee. Assistant Project Manager for an environmental assessment addressing installation of new wet flue gas desulfurization wastewater treatment facilities and modification of existing processes at Kingston Fossil Plant to enhance wastewater quality. Authoring resource sections and responsible for senior-level NEPA support and QA/QC.

Natural Resource Plan Supplemental EIS. Tennessee Valley Authority, Tennessee. Assistant Project Manager for a supplemental EIS analyzing the implementation of a revised Natural Resource Plan covering 293,000 acres of TVA reservoir land. TVA manages 154 natural areas and conducts specific management activities compatible with the goals for each area. Providing technical review of draft resource sections, working with subject matter experts, and reviewing drafts of the Supplemental EIS.

Riverton Development Project EA. Tennessee Valley Authority, TN. Assistant project manager for an EA analyzing issuance of a shoreline construction permit associated with the proposed Riverton mixed-use development in Chattanooga, Tennessee. The permit would be issued under Section 26(a) of the TVA Act to allow Riverton to install floating residential boat docks and place riprap along the shoreline of the Nickajack Reservoir. Key issues included floodplain alteration, cultural and tribal resources, potential impacts on the NRHP-listed Chickamauga Dam Reservation, and conversion of a natural setting to one with mixed residential and commercial uses.

Chickamauga Law Enforcement Training Center Easement EA. Tennessee Valley Authority, TN. Assistant project manager for an EA analyzing issuance of an easement and land use permit for development of a law enforcement training center on TVA land near Chattanooga, Tennessee. Key issues include avoidance of cultural resources and federally listed species, potential impacts on the NRHP-listed Chickamauga Dam Reservation, and impacts on transportation and noise. Required close coordination with TVA archaeologist and botanist.

Clean Water Act Section 401 Permitting Tool for TVA Natural Resources Group, Tennessee. Assistant project manager responsible for developing a new tool to ensure TVA Section 26(a) permitting is consistent with state requirements for Clean Water Act Section 401 water quality certifications and U.S. Army Corps of Engineers Section 404 permits. Required clear and accurate identification of differing permitting processes across seven states (Alabama, Georgia, Kentucky, Mississippi, North Carolina, Tennessee, and Virginia) and three Corps districts (Nashville, Savannah, and Memphis).

TVA Programmatic EIS for Closure of Ash Impoundments in Alabama, Kentucky, and Tennessee. For TVA, helped prepare the EIS for the closure of ash impoundments as a result of new US EPA coal combustion residuals requirements and TVA's goal to close wet ash storage facilities. The EIS evaluated the potential effects of multiple closure alternatives. Prepared scoping report and participated in five public meetings held at different power plants. Supported public involvement and developed materials and posters for the public meetings. Drafted text for the programmatic component as well as the site-specific analysis for closing ten ash impoundments at six different fossil fuel plants. To address volume and complexity of comments, prepared standalone comment response document. Developed a public involvement plan and participated in six public meetings with responsibility for environmental issues and concerns.

TVA Multiple Reservoir Land Management Plan EIS, Alabama, Kentucky and Tennessee. For TVA, helped prepare the EIS for multiple reservoir land management plans (RLMPs) for 138,000 acres of TVA-managed public land on eight reservoirs. The updated RLMPs are needed to consider changes to land uses over time, to make land planning decisions on these eight reservoirs consistent with the TVA Land Policy and the Comprehensive Valleywide Land Plan and to incorporate TVA's goals for managing natural resources on public lands. Developed air quality, recreation, and cultural resource sections of the EIS, as well as provided technical review.

EA/FONSI, Ash Dewatering Facility at Shawnee Fossil Plant, Tennessee Valley Authority, McCracken County, Kentucky. Supported development of EA/FONSI for a bottom ash dewatering facility to help TVA convert from wet ash storage to dry storage. Evaluated project affects to parks and nearby wildlife management areas and water use. Potential visual impacts on historic resources were a concern.

EIS for TVA Bull Run Fossil Plant Landfill, TN. EIS Author and Technical Reviewer for preparation of an EIS to address the storage of coal combustion residuals (ash) generated at Bull Run Fossil Plant. Helped prepare draft sections of the EIS including hazardous materials and cultural resources components, as well as provided technical review of draft documents. Provided technical assistance to address environmental concerns of adjacent residents related to the proposed landfill.

TVA Muscle Shoals Reservation EA, Colbert County, AL. Supported the environmental assessment on the proposed relocation and realignment of essential operations at the Muscle Shoals Reservation. The EA evaluated three alternatives: 1) no action; 2) construct a new facility on a Greenfield site; or 3) modify an existing facility on the Reservation to house the relocated essential operations. Organized the environmental component of the public meetings.

United States Fish and Wildlife

Multi-State NiSource Habitat Conservation Plan Environmental Impact Statement, United States Fish and Wildlife Service and United States Forest Service, 14 States. Supported development of an EIS for a habitat conservation plan and incidental take permit to cover 15,000 miles of pipeline in 14 states for the USFWS, USFS, FERC, USACE, and NPS. The EIS addressed unique subject matter and legal and regulatory concerns due to the large area covered and 43 threatened and endangered species considered. The Project crossed Kentucky, Louisiana, Mississippi, Tennessee, Virginia and West Virginia. Supported technical reviews, socioeconomic analysis, cumulative impacts, consultation, and participated in public involvement activities in Lexington, KY; Columbus, Ohio; Nashville, Tennessee; and Charleston, West Virginia.

Department of Defense

Environmental Assessment for an Army Aviation Support Facility, Boone National Guard Center, Frankfort, Kentucky. For the Kentucky Army National Guard, prepared an environmental assessment for a 30-acre proposed replacement site for the army aviation support facility which included

maintenance facilities and a wash station. Evaluated potential noise impacts of helicopters taking off and landing at the facility and the cumulative noise impacts due to adjacent airport. Adjusted EA analysis to constantly changing project location. The site was in a karst area so potential impacts from subsidence and groundwater contamination were considered. Public meetings were held to obtain public input and identify concerns.

Environmental Assessment for Multi-Purpose Machine Gun Range, Indiana Army National Guard, Camp Atterbury, Indiana. At the Camp Atterbury Joint Maneuver Training Center in Indiana (approximately 33,100 acres), Preparing an environmental assessment for a multipurpose machine gun range. Assessed potential environmental impacts, including cumulative impacts, of short-range site plans and long-range plans for developing and managing the installation. Reviewed existing site studies and worked closely with facility staff to analyze plans and potential effects. Worked closely with client and design team to minimize impacts to forested wetlands, streams, and floodplains. Evaluated socioeconomic and land use impacts from creation of new training areas on the facility and nearby communities. Coordinated with federal and state resource agencies and participated in multiple public meetings.

Environmental Assessment and Public Involvement, Muscatatuck Urban Training Center, Indiana. At the Muscatatuck Urban Training Center, supported the development of an environmental assessment for a new urban warfare and homeland security training center. Responsible for preparing portions of the Affected Environment and Environmental Impact sections for the EA. The Muscatatuck Urban Training Center (MUTC) would provide a new center for required urban assault and homeland security training at the former Muscatatuck State Development Center in Butlerville, Indiana. The MUTC would provide an urban training center to serve the wartime mission and combat readiness goals of military units as well as civilian homeland security and natural disaster response training needs. Natural resources on the proposed site include Pleasant Run, North Vernon Muscatatuck River, the Brush Creek Reservoir, and forested and non-forested lands. Preservation of historic structures was a significant concern. Prepared outreach materials and participated in public meetings.

Statewide Integrated Wildland Fire Management Plans (IWFMPs), Indiana, Kentucky, North Carolina, and West Virginia. For the National Guard, managed preparation of statewide IWFMPs for training sites in multiple states. The IWFMPs developed programs to reduce wildfire potential; protect and enhance natural and cultural resources; preserve infrastructure and facilities; and promote safety. The IWFMPs examined the historical role of fire within and in the vicinity of installations; identified current ignition and fuel sources; and addressed fire training requirements and safety considerations including unexploded ordinance (UXO) and live fire areas. The IWFMPs recommended wildland fire prevention and suppression measures, as well as prescribed burn management and site-specific burn plans. EAs were prepared for each IWFMP. Stakeholder and agency meetings were an integral component of efforts.

Integrated Natural Resources Management Plans (INRMPs) at Wendell H. Ford Regional Training Center (WHFRTC), Disney Training Center (DTC), and Hidden Valley Training Site (HVTS) and an Environmental Assessment (EA) for Training Operations at WHFRTC, Kentucky. Managed two Environmental Assessments, three INRMPs, three Forest Management Plans (FMPs), and a state-wide Integrated Wildland Fire Management Plan (IWFMP) for three training sites. Worked closely with the KYARNG, the U.S. Fish and Wildlife Service (USFWS), and the Kentucky Department of Fish and Wildlife Resources (KDFWR) as well as other federal, state, and local agencies with an interest in the management of natural resources. Also, evaluated approximately 3,000 acres of new maneuver training areas added to the Training Center for potential impacts to the environment of planned training activities. Public and stakeholder meetings were held during development to identify potential concerns.

NEPA and Planning Support to West Virginia Army National Guard, West Virginia. Project Manager for environmental assessments for the West Virginia Army National Guard related to training areas, firing ranges, urban training centers, demolition ranges, readiness centers/armories, and army aviation facilities. Managed preparation of environmental assessments, land use plans, integrated natural resource management plans, forest management plans and endangered species management plans.

Indiana Bat Programmatic Biological Assessment, Camp Atterbury Joint Maneuver Training Center, Indiana Army National Guard, Edinburg, Indiana. Oversaw the preparation of a programmatic Biological Assessment (BA) and associated formal consultation process with the US Fish & Wildlife Services regarding effects on Indiana Bats with respect to future routine training and land management activities and upcoming development projects at the approximately 33,132-acre Camp Atterbury Joint Maneuver Training Center. The BA was prepared in close coordination with the USFWS Bloomington Field Office. The programmatic BA will streamline the consultation process and reduce administrative costs for the INARNG and USFWS.

Programmatic Biological Assessment for the Indiana Bat, Northern Long-eared Bat, and Gray Bat, U.S. Air Force Arnold Air Force Base, Tennessee. Managed development of a programmatic biological assessment of routine training, land management, and Elk River Dam operations at the 39,000-acre Arnold Air Force Base in Tennessee. Potential adverse effects could result from timber management, prescribed fire, tree clearing during summer roadside maintenance activities, hazardous tree removal, range operations, wildfires, or emergency repairs/inspections at the dam. The proposed action may affect, and is likely to adversely affect Indiana bats, northern long-eared bats, and gray bats that use habitat within/near the Arnold Air Force Base.

Training Site Master Plan, Camp Dawson, West Virginia. Managed preparation of a conceptual master plan for the Camp Dawson Cantonment Area and the Volkstone Training Area. The conceptual master plan assisted in setting strategic goals for the mission and vision of the base, and is the starting point for a more detailed Training Facility Master Plan (TFMP) that is underway. The TFMP provides a foundation for the future development of Camp Dawson. Helped identify current conditions, facility and site constraints, and opportunities for enhanced opportunities.

Design, Mitigation, and Geotechnical Services for Modified Record Firing Range, Camp Dawson, West Virginia. Managed some of the design components of the modified record firing range. Provided technical review of the EA. Helped evaluate alternatives to minimize impacts to stream and wetlands. Managed development of erosion and sedimentation controls and coordination with state and Federal agencies on mitigation and permitting issues. Oversaw optimization of target elevations to minimize required earthwork and geotechnical evaluations of the access road and range control facilities locations.

EA/FONSI for Armed Forces Reserve Center (AFRC), Buckhannon, West Virginia. Managing the EA for the Buckhannon AFRC. Conducted a site visit and record search to evaluate potential environmental constraints, such as 100-year floodplains along Brushy Fork Creek. Developed EA that evaluates environmental impacts on a 49-acre site and potential mitigation options for the proposed AFRC. The AFRC will replace a 48-year old armory and provide needed training facilities. Addressed public concerns related to traffic, safety, and light pollution.

Environmental Assessment and Phase I Environmental Site Assessment for Armed Forces Reserve Center, Elkins, West Virginia. Managed the preparation of a Phase I Site Assessment and an environmental assessment for an armed forces reserve center on a 112-acre site. The site was a former farm and strip mine site. The Phase I ESA did not identify any evidence of spills or contamination at the site based on a review of historic records, field reconnaissance, and a review of Federal and state

databases. Cultural resources, wetlands, and roadway access were concerns. Managed public involvement process for the NEPA document.

Ripley Joint Armed Forces Reserve Center (JAFRC) Planning Charrette, Ripley, West Virginia. Managed a three-day planning charrette for the proposed Ripley JAFRC. The purpose of the planning charrette was to conduct a fact-finding mission and to have discussions on the project details with key installation stake holders and to review the 1391 construction cost estimate. The planning report outlined the findings of the charrette and outlined next steps for the project.

Briery Mountain Range Development Plan EA, Camp Dawson, West Virginia. Managed the EA for three proposed Briery Mountain Training Area ranges which include a Live Fire Breach Facility (LFBF), Hand Grenade Familiarization Range, and an Urban Assault Course (UAC). Coordinated with WVARNG to evaluate potential constraints, such as stream impacts, and to avoid and minimize environmental impacts. Managed public involvement and public meetings on proposed project.

Water Resources Management Plan, Camp Dawson, West Virginia. Project Manager. Managed the preparation of a water resources management plan for the West Virginia Army National Guard for Camp Dawson (approximately 3,797 acres). Assessed current availability of data regarding Camp Dawson water resources including the Cheat River, streams and numerous tributaries. Conducted stakeholder meetings, site visits and recommended management goals for surface water, wetlands, floodplains, and groundwater resources.

Environmental Assessment for Integrated Natural Resources Management Plan (INRMP) Updates, Marseilles Training Area (MTA), Illinois. Managed EA for 2,850-acre MTA INRMP. Worked closely with Illinois Army National Guard and Illinois Department of Natural Resources, joint owners of the MTA. The EA evaluated potential environmental impacts of the plans for managing land, forest, aquatic and terrestrial habitat, special areas, fish and wildlife, rare species, pest control, and fire. The project allowed the ILARNG to remain in compliance with Army policy and other federal, state, and local laws and regulations, and to provide for no net loss in the capability of lands to support the military mission. Also, evaluated training plan for the construction and operation of ranges and other training facilities. Covered 15 proposed projects including range expansions, new ranges, live-fire breach facility, anti-tank range, grenade launcher range relocation, live fire shoot house, training support facility development projects, and training area maintenance projects.

Integrated Natural Resource Management Plans (INRMPs), Environmental Assessments and an Endangered Species Management Plan (ESMP), Camp Crowder and Camp Clark Training Sites, MOARNG, Newton and Vernon Counties, Missouri. Assistant Project Manager. Responsible for preparing two INRMPs and EAs for Camp Crowder and Camp Clark, which are comprised of 4,300 acres and 1,287 acres, respectively. Management Plans revised in this INRMP included land use, forest, aquatic and terrestrial species, special natural areas, fish and wildlife, rare species, pests, and fire. Conducted stakeholder meetings.

Joint Land Use Study (JLUS), Camp Atterbury and Muscatatuck Urban Training Center (MUTC) | Bartholomew, Brown, Jennings, and Johnson Counties, Indiana. Author and Technical Reviewer. Helped prepare the Camp Atterbury and MUTC JLUS, which is a cooperative land use planning effort by communities and military installations to jointly ensure future compatible development. The JLUS involved four south-central Indiana counties; several cities/towns, such as Columbus, Edinburgh, and North Vernon; economic development and regulatory agencies; and the two military installations. After extensive public involvement activities, the JLUS identified compatible land use and growth management guidelines and recommendations, which are now being implemented.

Recreation

122-Mile Licking River Blue Water Trail Plan, Kentucky. Project Manager to evaluate the existing conditions along the study corridor and prepare trail plan. This Plan will include visual and written components to effectively communicate the opportunities for outdoor recreation and tourism within the study corridor to decisionmakers, interested parties, potential trail users, and the public. The Plan will provide a roadmap for future initiatives in the study corridor by identifying the potential for, but not limited to: water access and use (e.g., kayaking, fishing), connectivity to greenways and public access, conservation and parks, historical and archaeological education, ecological and environmental education and stewardship, and other ideas generated by community input. Project Advisory Team and public meetings occur monthly and stakeholder meetings will be held in five counties this fall.

Environmental Assessment for Sports Park, Elizabethtown, Kentucky. For the City of Elizabethtown, conducted environmental studies and prepared permit applications for a proposed 200-acre sports complex that includes soccer fields, baseball fields, basketball courts, tennis courts, and hiking trails. Worked with the designer to minimize impacts to environmental resources by shifting trails and parking areas. Managed wetlands delineations, archaeological surveys, Phase I environmental site assessment, and a threatened and endangered species habitat survey. Worked with the USFWS on mitigation for potential impacts to the federally endangered Indiana bat.

Noise Studies for World Shooting and Recreational Complex, Sparta, Illinois. For the Illinois Department of Natural Resources, managed the preparation of noise studies for the development of a 1,600-acre shooting complex in Sparta, Illinois. Environmental assessment was prepared on an expedited schedule so that the Grand American Trapshooting Championships could be held at the complex opening. Evaluated potential noise impacts on adjacent property owners and recommended use of berms to minimize impacts. The site includes 120 trap shooting fields covering 3.5 miles, 24 skeet fields, 2 courses for sporting clays, and archery fields. Participated in public and stakeholder meetings to address noise concerns for nearby residents.

Town Branch Trail Environmental Education Sign Project. Using a Kentucky Fish and Wildlife Resources grant, prepared environmental education signs and booklet on fourteen topics associated with Town Branch Creek and its environmental context. The role of water in the environment is a main focus of the project, along with raising awareness about human impacts on ecosystems and ways to reduce those impacts. An exhibit and outreach materials were developed. The environmental sign project exhibit was on display at the state wildlife center for two months. The exhibit has also been displayed at libraries, schools, and the Children's science center. Environmental education signs have been fabricated and placed along the completed sections of the Town Branch Trail.

Environmental Studies for Isaac Murphy Park Development, Lexington, KY. Provided technical oversight of the environmental and cultural resource studies for the Isaac Murphy Memorial Art Garden Project in downtown Lexington. Participated in public archaeology events to promote park and understanding of neighbourhood history. Due to minority and low-income neighbourhoods, environmental justice was a concern.

Southwest Jefferson County Greenways, Louisville Metro Parks Department, Louisville. Supported Louisville Metro Parks Department develop a master plan to create greenways in southwest Jefferson County which will include shared use trails. The study area covers approximately 97 square miles or a quarter of Jefferson County. Identified ways to include cultural resources into the planning process such as historic properties to be destinations or waypoints for the education and benefit of trail users or archaeological sites to avoid. Provided technical review of draft documents and outreach materials.

Pipelines

Mountain Valley Pipeline Supplemental Environmental Impact Statement (SEIS), Jefferson National Forest (JNF), Virginia and West Virginia. Managed the SEIS for section of the interstate pipeline crossing the JNF. Due to the controversy with the project, worked closely with Forest Service Office of General Counsel and natural resource staff. NEPA documents prepared on an accelerated schedule and including addressing over 4,000 public comments. Threatened and endangered species concerns were critical to success of project.

206-Mile Lobos CO2 Pipeline Project, Kinder Morgan, New Mexico and Arizona. Assistant ecological team lead supporting wetland and waters of the U.S. delineation, threatened and endangered species studies, and vegetation / habitat assessments in support of permitting for a proposed 206-mile CO2 pipeline to be used in enhanced oil recovery process. Technical reviewer of draft Bureau of Land Management (BLM) plan of development and supporting ecological and cultural documents. Agency coordination includes the BLM, USACE, USFWS, Native American Nations, and state and local regulatory agencies from Arizona and New Mexico.

Cortez Loop Pipeline Extension, Kinder Morgan, New Mexico. Assistant ecological team lead for 40-mile pipeline extension, four new pump stations and other associated facilities. Ecological, paleontological resources, and cultural resource studies were undertaken for this proposed pipeline extension. Access roads and potential compressor stations and temporary storage areas were evaluated. Agency coordination included the Bureau of Land Management, United States Army Corps of Engineers, United States Fish and Wildlife Service, and state and local regulatory agencies.

Supplemental Environmental Assessment for Relocation of a Petroleum Products Pipeline, CSX Transportation, Virginia. Project manager for developing a supplemental environmental assessment for relocation of a 24-inch petroleum product pipeline due to the addition of 11 miles of a third railroad track. Approximately 3.0 miles of horizontal directional drilling occurred to reduce potential construction impacts to utilities, roads, water bodies and wetlands. Permitting, endangered species and floodplain issues were concerns, and required coordination with local, state, and federal regulatory agencies.

Sparrows Point Liquefied Natural Gas (LNG) Terminal and Pipeline Project, Maryland and Pennsylvania. Technical reviewer of cultural resource sections for FERC EIS for LNG facility and 88-mile pipeline. Acted as the third-party consultant to FERC for the preparation of National Environmental Policy Act (NEPA) compliant documents (the Draft Environmental Impact Statement [DEIS] and the Final EIS) for the LNG facility and related pipelines. The terminal is proposed for Sparrows Point, southeast of Baltimore in Baltimore County, MD and will can unload LNG ships, storing up to 480,000 cubic meters of LNG, vaporizing the LNG, and sending out the natural gas. Addressed public comments on the proposed project.

Environmental Documentation for Water Pipeline, Bowling Green, Kentucky. Project Manager for environmental studies and documentation for a 10-mile water pipeline for the Transpark Industrial Development. Oversaw cultural resources, wetlands, socioeconomic, hazardous materials, karst, and threatened and endangered species investigations. Cumulative impacts were an issue because of potential effects of future industrial growth in the area and karst terrain. Permitting and mitigation were concerns due to potential impacts to Mammoth Caves National Park. Public involvement was a key component to address concerns raised by citizen advocacy groups.

Dams and Levees

NRCS Upper Walnut Creek FRD No. 6 and FRD No. 21, Butler County, Kansas. NEPA Manager for two dam rehabilitation projects, prepared environmental assessments. The projects purposes are to rehabilitate FRD 6 and FRD 21 to meet safety and performance standards for high hazard dams and

provide flood water protection to downstream areas. The EAs included the NRCS environmental evaluation worksheet and discussions of threatened and endangered species, wetlands, environmental justice, economic and social conditions, and cultural resources. Stakeholder meetings and public meetings were components of both projects.

NRCS Pine Creek Dam Rehabilitation EA, Oneida, Tennessee. Technical Reviewer. Supported Pine Creek Dam rehabilitation EA and archaeological and architectural historic surveys. The EA included the NRCS environmental evaluation worksheet and discussions of threatened and endangered species, wetlands, environmental justice, economic and social conditions, and cultural resources. This multi-purpose dam and reservoir project serves as flood control and as the town's primary water supply. Stakeholder and public meetings were held to obtain input on concerns and needs.

Environmental Impact Statements (EISs) for Two Flood Damage Reduction Projects (Levisa Fork Watershed Section 202 Program), Floyd and Pike Counties, KY. For the USACE-Huntington District, Project Manager for the preparation of sections for the structural and nonstructural flood damage reduction measures EISs in Floyd and Pike Counties, KY. Major issues included community impacts, environmental justice, cultural resources and terrestrial and aquatic mitigation. Identified concerns about the potential for residential and business relocation, impacts to property values, loss of community cohesion, the potential for induced flooding, hardships from raising residences, impacts to habitat for the Indiana bat, potential loss of tributary streams, and the potential impact of floodwall construction on the riparian corridor. Extensive agency coordination and public involvement required.

EIS for Flood Damage Reduction, Pike County, Kentucky, Levisa Fork Watershed Section 202 Program. Supported development of Draft EIS assessing impacts of flood damage reduction alternatives within the Levisa Fork Watershed in Pike County, Kentucky for the USACE, Huntington District. Project alternatives include structural and non-structural components. Reviewed Habitat Assessment Procedure (HEP) analysis for terrestrial impacts and a stream assessment for tributaries. Major issues included community impacts, cultural resources, and terrestrial and aquatic mitigation. Project required extensive coordination with U.S. Fish and Wildlife.

Muddy Fork Conservancy District Supplemental EIS, Borden, Indiana. A Supplemental EIS is being prepared for a new dam to provide additional municipal water supplies, control flooding, and create recreational opportunities. Early steps including reviewing technical and environmental studies to determine data gaps and areas for update. A review of the 1992 FEIS determined that a Supplemental EIS is necessary. Water supply studies were evaluated and revised in coordination with the water utility. The purpose and need section was expanded to include recreational opportunities for the reservoir. Agency, stakeholder, and public meetings were held to obtain input on concerns and needs.

Transmission Lines

Herleman to Meredosia Transmission Line, Ameren, Illinois. Provided environmental planning support for the proposed 48-mile 345-kV overhead electric transmission line which crosses several named streams including the Illinois River. The Herleman to Meredosia line is part of Ameren's 330-mile Illinois Rivers Transmission Line initiative stretching from Palmyra, Missouri to the Illinois/Indiana state line. Supporting the development of a Conservation Plan in accordance with the Illinois Department of Natural Resources (IDNR) requirements for state-listed threatened and endangered species.

Meredosia to Ipava Transmission Line, Ameren, Illinois. Provided environmental planning support for the Meredosia to Ipava Transmission Line, Ameren, Illinois. The Meredosia to Ipava line is part of Ameren's 330-mile Illinois Rivers Transmission Line initiative stretching from Palmyra, Missouri to the Illinois/Indiana state line. Supporting the development of a Conservation Plan in accordance with the Illinois Department of Natural Resources (IDNR) requirements for state-listed T&E species.

Maywood to Herleman Transmission Line, Ameren, Missouri and Illinois. Provided environmental planning support for a proposed 345-kV electric transmission line crossing of the Mississippi River on federal property near Quincy, Illinois. The Maywood to Herlemen line is part of Ameren's 330-mile Illinois Rivers Transmission Line initiative stretching from Palmyra, Missouri to the Illinois/Indiana state line. Supporting the development of a Conservation Plan in accordance with the Illinois Department of Natural Resources (IDNR) requirements for state-listed threatened and endangered species.

United States Nuclear Regulatory Commission

Nuclear Reactor Operator Examination and Licensing Study, Multiple States. For the U.S. Nuclear Regulatory Commission, conducted a study of the reactor operator examination and licensing function. Reviewed information collected from 300 written questionnaires. Conducted personal interviews with reactor operators, senior reactor operators, training managers, and plant technical managers at multiple nuclear power facilities, and NRC regional offices.

Bell Bend Nuclear Power Plant Third Party EIS for Nuclear Regulatory Commission, Pennsylvania.

As a Senior Planner, prepared Third Party EIS sections for the Nuclear Regulatory Commission on land use, transmission lines, cultural resources, cooling tower, and cumulative impacts for a new reactor at the Bell Bend Nuclear Power Plant. Conducted site visits and interviews to evaluate existing land use and changes in land use resulting from the addition of a new reactor and changes to transmission lines. Reviewed the Environmental Report and prepared requests for additional information (RAIs) concerning potential data gaps. Participated in multiple public, agency, and local government meetings.

Victoria Station Nuclear Power Plant Third Party EIS for Nuclear Regulatory Commission, Texas.

Senior planner developing land use, transmission line, cultural resource, and cumulative impact sections of a Third Party EIS for the proposed Victoria Station Nuclear Power Plant Project. Evaluated sections of the ER and prepared RAIs. Evaluated existing and changes in land use resulting from the facility and transmission lines.

Environmental Report, Confidential Client, Nuclear License Application Project, Michigan. Technical reviewer of Socioeconomic sections of the ER for a new medical isotope production facility in the central US. This work is in accordance with the provisions of NUREG 1537 and related laws and regulations and entails the documentation of all socioeconomic baseline characteristics of the project site and vicinity.

Utilities

Electric Power Industry Waste Reduction Activities. For USEPA's WasteWise program, analyzed waste reduction activities at utility generating stations, distribution and transmission facilities, and recovery and warehouse operations, including PG&E facilities. Worked with the Edison Electric Institute to select utilities to profile for waste reduction and recycling activities. Conducted site visits to power plants in 6 states. Profiled PG&E's waste reduction activities at generating stations and distribution facilities; Investment Recovery and Warehouse locations, Fleet Maintenance; and General Office facilities. Life cycle cost analysis, solid waste consulting, employee and public education activities, and measurement criteria were considered. Developed the Waste Reduction Activities of Selected WasteWise Partners: Electric Power Industry report.

Report to Congress on Fossil Fuel Combustion Waste. Supported USEPA in developing a Report to Congress on Fossil Fuel Combustion Waste. Worked on the technical studies concerning waste characterization, potential damage cases, risk analysis, and groundwater impacts. Evaluated existing federal and state regulatory requirements and cross media impacts of fossil fuel combustion wastes.

Guide for Industrial Nonhazardous Waste Management. For USEPA, helped develop the guide for the management of industrial nonhazardous waste management. The guidance applied to waste managed in surface impoundments, landfills, and land application areas. Worked with the Edison Electric Institute and the Electric Power Research Institute (EPRI) to consider impacts of the guidance on the electric utility industry. Participated in regular stakeholder and public meetings.

United States Housing and Urban Development

United States Housing and Urban Development Task Force Report on Lead-Based Paint (LBP) Hazard Reduction and Financing, Washington, D.C. For the United States Department of Housing and Urban Development and the United States Environmental Protection Agency, provided support to the Task Force concerning the impacts of liability on LBP hazard reduction and victim compensation. Helped to draft a report and recommendations on reducing LBP hazards to children. Evaluated state requirements for LBP hazard reduction, management of lead-based paint contaminated debris, and state liability standards. Participated in stakeholder work group.

Draft Environmental Assessment for the Museum Plaza High-Rise and Parking Garage, Louisville, Kentucky. Project manager overseeing environmental studies and preparation of an environmental assessment for the proposed Museum Plaza, a new multi-use development in downtown Louisville. The proposed project would consist of a 1.5-million-square-foot, 62-story building containing residential units, office space, a non-profit contemporary art museum, two hotels, and the University of Louisville Master of Fine Arts program, as well as a portion of the university's graduate business school. Floodplain and cultural resource issues were potential concerns. A Housing and Urban Development (HUD) grant is anticipated to help support this project and the National Environmental Policy Act (NEPA) documentation is being prepared to comply with HUD's requirements under 24 Code of Federal Regulations (CFR) 58.

Municipalities

Permitting of Landfills, Municipal Waste Combustors, and Materials Recovery Facilities. For municipalities, helped in permitting landfills, municipal waste combustors, and materials recovery facilities in seven states (Florida, Indiana, Michigan, New Jersey, New York, North Carolina, and Pennsylvania). Negotiated with state regulators on design, operating, monitoring, and closure and post-closure care permit conditions. Reviewed federal and state regulations and permit conditions for similar facilities. Participated in public meetings/hearings and submitted comments on proposed permits.

Upper Paint Lick Watershed Plan, Kentucky. Project manager. Helped build partnerships with local officials, resource agencies, farmers, private landowners, educational institutions and citizen monitoring programs to characterize the watershed, conduct water quality sampling/analysis and to develop a watershed plan for the Upper Paint Lick Creek area. Supported the creation of a watershed group (Paint Lick Watershed Alliance), developed outreach materials, and created a website. The Alliance hopes to work closely with farmers and residents to identify water quality problems, set goals, identify solutions, assist with the selection of appropriate best management practices (BMPs) and design an implementation program to improve the watershed health. Ideally, this project will champion the farmers as leaders of this water quality improvement effort. The project partners will be crucial to achieving watershed planning success.

Permitting of a Sludge Incinerator, Pennsylvania. For a municipality, supported the analysis of permitting requirements for a sludge incinerator. Reviewed the regulatory requirements for a process that would combine sludge and coal dust into briquettes and incinerate the briquettes as fuel. Examined the air, solid waste, and water quality requirements for the sludge incinerator including residuals management.

Small Power Production and Cogeneration Facilities, Municipalities and Corporations. For municipalities, helped in permitting municipal waste combustors and landfills in seven states (Florida, Indiana, Michigan, New Jersey, New York, North Carolina, and Pennsylvania). Provided consulting services to municipalities and several manufacturing facilities considering about qualifying as a small power production or cogeneration facility under Federal Energy Regulatory Commission requirements. Reviewed federal and state regulations and permit conditions for similar facilities. Attended public meetings and submitted comments on proposed permits.

Environmental Audits. Multiple Counties in Multiple States. Developed surveys to evaluate the effectiveness of municipal compliance programs and wrote environmental audit reports of facilities and programs. The analysis of the survey results was complemented with on-site interviews to attain a thorough review of environmental procedures. Evaluated alternative waste management practices and drafted revisions to compliance manuals and programs.

Solid Waste Management Plans. Helped update solid waste management plans for counties in Florida, Michigan, New Jersey, and Pennsylvania. Reviewed current and future solid waste management programs and evaluated the costs and benefits of alternative best management practices. Interviewed solid waste management authorities, state and local government officials, regulatory personnel, engineers, and concerned citizens.

Appeals of NPDES Permits and Notices of Violations at POTWs. Involved with appeals of NPDES permits, pretreatment requirements, and notices of violations to publicly owned treatment works. These appeals considered the environmental requirements and costs of financing, constructing, and operating facilities to improve water quality management. Helped analyzed corrective action requirements for sewage effluent injection wells at a POTW.

Other Private Clients

Assessment of Visual, Auditory, and Lighting Effects of RiverPark Place Development on Cultural Resources, Private Client, Louisville, Kentucky. On an accelerated schedule for a private developer, managed the assessment of potential visual, auditory, and lighting impacts from the waterfront development project on cultural historic resources. The project covered a one-mile Area of Potential Effect (APE) in Kentucky and Indiana. The development will include two 16-story structures surrounded by four 5-story structures for residential/commercial use. Two historic sites and part of a historic district will be adversely visually impacted by the proposed construction. Two historic sites also will be adversely affected by temporary construction noise and noise associated with increased vehicular or watercraft traffic. Worked with Kentucky Heritage Council to prepare an MOA for the project.

Environmental Overview and Phase I ESA for a Proposed Commercial Development, Frankfort, KY. For a private developer, managed the preparation of a Phase I ESA, environmental overview, wetlands delineation, and an archaeological overview of a 100-acre site near I-64. The site contained an auto body shop and farmland that were evaluated for potential recognized environmental conditions. Coordinated with the Kentucky Transportation Cabinet concerning developing a new access point on US127. Held discussions with City of Frankfort planners concerning requirements for site development.

Jefferson Commons, Outer Loop, Louisville, Kentucky. For a private client, successfully obtained a Section 404 permit on a fast time schedule and managed the wetlands delineation and Phase I archaeological investigation for a development project along the Outer Loop in Louisville, Kentucky. Due to wetland and stream impacts, credits were obtained from a wetlands bank.

Fisherman's Energy Atlantic City Windfarm, New Jersey. Technical reviewer for cultural resource concerns related to National Historic Landmark Lucy the Elephant. Helped evaluate potential visual

impacts of offshore wind turbines on listed National Register of Historic Resource. Helped coordinate with New Jersey State Historic Preservation Office (SHPO) on study needed to determine project would not adversely affect historic resources.

Electric Power Research Institute Bat Mitigation Alternative Manual, Nationwide. For the Electric Power Research Institute, developing a manual to evaluate mitigation alternatives, such as habitat enhancements, artificial roosts, conservation areas and banks, in lieu fee programs, and wetland creation for threatened and endangered bat species affected by utility operations, maintenance, and project activities. Evaluated information from government, non-profit, and commercial resources to identify compensatory mitigation alternatives. Analyzed peer-reviewed literature, data from bat working groups, and communications with regulators and other bat experts. The manual will quickly inform utilities about bat mitigation opportunities using graphic summaries, tables, decision trees, and case studies. As part of the project, developed user-friendly bat fact sheets for distribution to utility clients.