

ATTACHMENT K

Solar Glare Reports



FORGESOLAR GLARE ANALYSIS

Project: **WA Solar**

Site configuration: **Goose Prairie Airports**

Analysis conducted by Nicole Larson (nicole@oneenergyrenewables.com) at 00:52 on 10 Dec, 2019.

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
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: 34100.3717



PV Array(s)

Name: PV array 1

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°

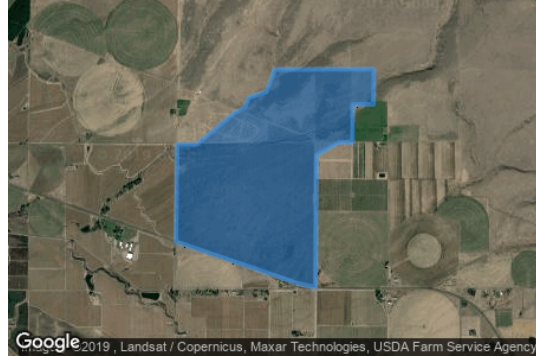
Resting angle: 60.0°

Rated power: 80000.0 kW

Panel material: Light textured glass with 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	46.520400	-120.230125	1417.61	7.00	1424.61
2	46.520831	-120.232929	1410.51	7.00	1417.51
3	46.524950	-120.250402	1381.10	7.00	1388.11
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6	46.537764	-120.241907	1476.48	7.00	1483.48
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14	46.534845	-120.224741	1602.91	7.00	1609.91
15	46.534831	-120.226747	1582.59	7.00	1589.59
16	46.533561	-120.230009	1555.66	7.00	1562.66

Flight Path Receptor(s)

Name: FP 1

Description:

Threshold height: 50 ft

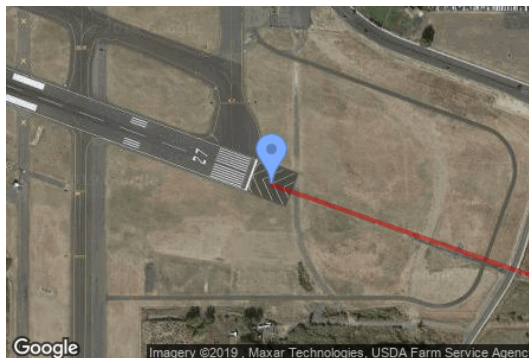
Direction: 289.2°

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	46.565317	-120.530800	1039.23	50.00	1089.23
Two-mile	46.555790	-120.491049	982.68	660.00	1642.69

Name: FP 10

Description:

Threshold height: 50 ft

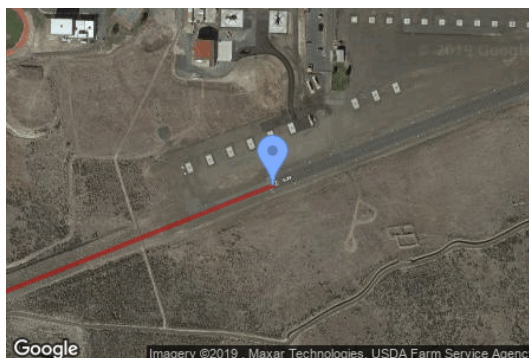
Direction: 68.4°

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	46.668629	-120.458947	1370.30	50.00	1420.31
Two-mile	46.657981	-120.498165	1090.29	883.47	1973.76

Name: FP 11

Description:

Threshold height: 50 ft

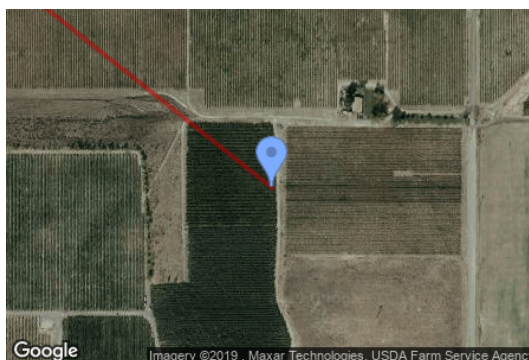
Direction: 128.4°

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	46.461137	-120.244488	1213.71	50.00	1263.71
Two-mile	46.479092	-120.277425	1343.03	474.13	1817.16

Name: FP 2

Description:

Threshold height: 50 ft

Direction: 359.5°

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	46.559236	-120.534182	1045.98	50.00	1095.98
Two-mile	46.530324	-120.533837	1894.33	-244.89	1649.44

Name: FP 3

Description:

Threshold height: 50 ft

Direction: 180.2°

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	46.569268	-120.534354	1047.35	50.00	1097.35
Two-mile	46.598180	-120.534244	1156.99	493.82	1650.81

Name: FP 4

Description:

Threshold height: 50 ft

Direction: 237.1°

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	46.569740	-120.534526	1047.83	50.00	1097.84
Two-mile	46.585432	-120.499161	1035.55	615.74	1651.29

Name: FP 5

Description:

Threshold height: 50 ft

Direction: 60.1°

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	46.564003	-120.547729	1069.51	50.00	1119.51
Two-mile	46.549569	-120.584208	1154.75	518.21	1672.96

Name: FP 6

Description:

Threshold height: 50 ft

Direction: 111.5°

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	46.572264	-120.558715	1088.81	50.00	1138.81
Two-mile	46.582879	-120.597882	1155.14	537.13	1692.27

Name: FP 7

Description:

Threshold height: 50 ft

Direction: 287.5°

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	46.566658	-120.531050	1040.84	50.00	1090.84
Two-mile	46.557979	-120.490888	987.76	656.54	1644.29

Name: FP 8

Description:

Threshold height: 50 ft

Direction: 113.7°

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	46.573510	-120.558779	1091.06	50.00	1141.07
Two-mile	46.585150	-120.597324	1156.61	537.91	1694.52

Name: FP 9

Description:

Threshold height: 50 ft

Direction: 249.1°

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	46.670220	-120.452993	1369.32	50.00	1419.32
Two-mile	46.680534	-120.413584	1738.38	234.39	1972.77

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
PV array 1	SA tracking	SA tracking	0	0	236,000,000.0

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
FP 1	0	0
FP 10	0	0
FP 11	0	0
FP 2	0	0
FP 3	0	0
FP 4	0	0
FP 5	0	0
FP 6	0	0
FP 7	0	0
FP 8	0	0
FP 9	0	0

Results for: PV array 1

Receptor	Green Glare (min)	Yellow Glare (min)
FP 1	0	0
FP 10	0	0
FP 11	0	0
FP 2	0	0
FP 3	0	0
FP 4	0	0
FP 5	0	0
FP 6	0	0
FP 7	0	0
FP 8	0	0
FP 9	0	0

Flight Path: FP 1

0 minutes of yellow glare

0 minutes of green glare

Flight Path: FP 10

0 minutes of yellow glare

0 minutes of green glare

Flight Path: FP 11

0 minutes of yellow glare

0 minutes of green glare

Flight Path: FP 2

0 minutes of yellow glare

0 minutes of green glare

Flight Path: FP 3

0 minutes of yellow glare

0 minutes of green glare

Flight Path: FP 4

0 minutes of yellow glare

0 minutes of green glare

Flight Path: FP 5

0 minutes of yellow glare

0 minutes of green glare

Flight Path: FP 6

0 minutes of yellow glare

0 minutes of green glare

Flight Path: FP 7

0 minutes of yellow glare

0 minutes of green glare

Flight Path: FP 8

0 minutes of yellow glare

0 minutes of green glare

Flight Path: FP 9

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 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.



FORGESOLAR GLARE ANALYSIS

Project: **WA Solar**

Site configuration: **Goose Prairie Residences**

Analysis conducted by Nicole Larson (nicole@oneenergyrenewables.com) at 19:31 on 09 Dec, 2019.

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
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COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
Flight path(s)	N/A	No flight paths analyzed
ATCT(s)	N/A	No ATCT receptors designated

Default glare analysis parameters and observer eye characteristics (for reference only):

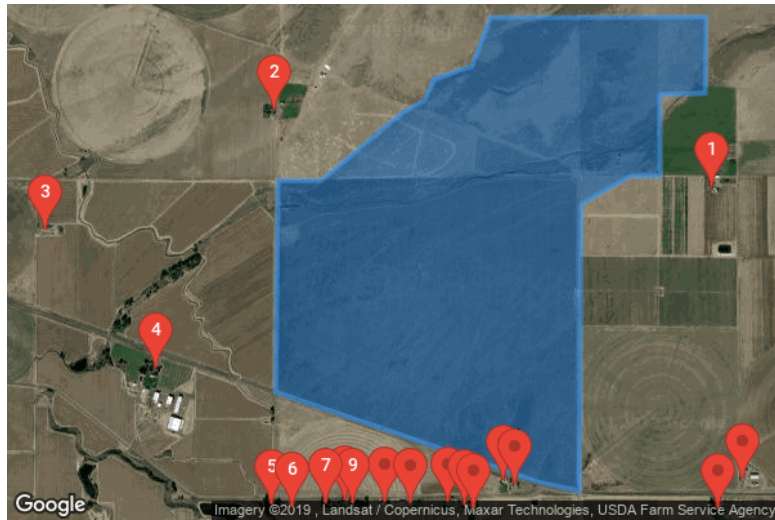
- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

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: 34038.3717



PV Array(s)

Name: PV array 1

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°

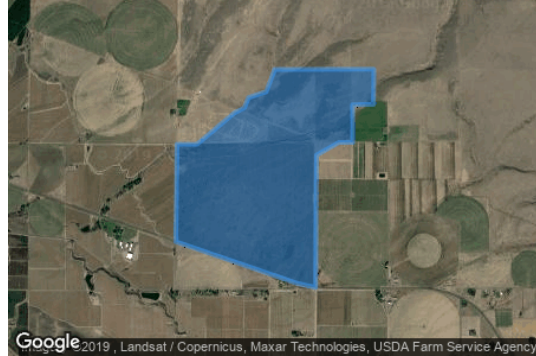
Resting angle: 60.0°

Rated power: 80000.0 kW

Panel material: Light textured glass with AR coating

Reflectivity: Vary with sun

Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
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7	46.538292	-120.240459	1491.16	7.00	1498.16
8	46.539281	-120.239869	1498.20	7.00	1505.20
9	46.539864	-120.237305	1519.24	7.00	1526.24
10	46.542092	-120.236060	1547.53	7.00	1554.53
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14	46.534845	-120.224741	1602.91	7.00	1609.91
15	46.534831	-120.226747	1582.59	7.00	1589.59
16	46.533561	-120.230009	1555.66	7.00	1562.66

Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	46.534290	-120.221304	1640.64	5.50
OP 2	2	46.537849	-120.250502	1520.36	5.50
OP 3	3	46.532370	-120.265758	1376.84	5.50
OP 4	4	46.526049	-120.258365	1347.74	5.50
OP 5	5	46.519772	-120.250641	1347.11	5.50
OP 6	6	46.519653	-120.249229	1341.81	5.50
OP 7	7	46.519851	-120.247045	1352.76	5.50
OP 8	8	46.519925	-120.245708	1356.96	5.50
OP 9	9	46.519862	-120.245220	1358.82	5.50
OP 10	10	46.519879	-120.243101	1367.47	17.50
OP 11	11	46.519818	-120.241384	1366.77	5.50
OP 12	12	46.519874	-120.238876	1374.11	5.50
OP 13	13	46.519758	-120.237774	1381.29	5.50
OP 14	14	46.519615	-120.237151	1385.57	5.50
OP 15	15	46.520907	-120.235201	1416.79	5.50
OP 16	16	46.520722	-120.234383	1408.74	5.50
OP 17	17	46.519616	-120.220819	1462.09	5.50
OP 18	18	46.520986	-120.219234	1478.88	5.50

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt	Orient	"Green" Glare	"Yellow" Glare	Energy
	(°)	(°)	min	min	kWh
PV array 1	SA tracking	SA tracking	0	0	236,000,000.0

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual 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

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
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

Results for: PV array 1

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

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

Assumptions

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Site configuration: **Goose Prairie Roads**

Analysis conducted by Nicole Larson (nicole@oneenergyrenewables.com) at 18:29 on 29 Jan, 2020.

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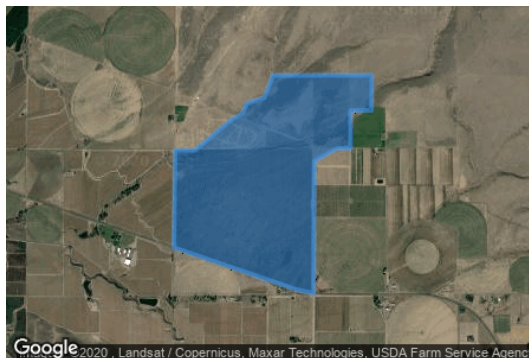
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Rated power: 80000.0 kW

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11	46.542122	-120.221683	1722.42	7.00	1729.42
12	46.538624	-120.221726	1633.35	7.00	1640.35
13	46.538580	-120.224773	1634.45	7.00	1641.45
14	46.534845	-120.224741	1602.91	7.00	1609.91
15	46.534831	-120.226747	1582.59	7.00	1589.59
16	46.533561	-120.230009	1555.66	7.00	1562.66

Discrete Observation Receptors

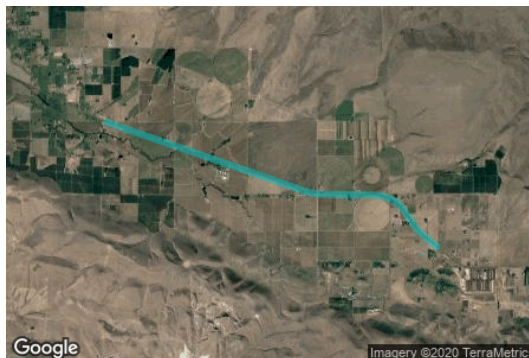
Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	46.533650	-120.250495	1404.62	10.00
OP 2	2	46.530912	-120.250410	1409.29	10.00
OP 3	3	46.527074	-120.250581	1397.27	10.00
OP 4	4	46.522231	-120.229982	1450.12	10.00
OP 5	5	46.525597	-120.230068	1492.59	10.00
OP 6	6	46.529672	-120.230153	1522.86	10.00
OP 7	7	46.533333	-120.230153	1554.29	10.00
OP 8	8	46.534986	-120.226806	1580.82	10.00
OP 9	9	46.534927	-120.222772	1623.36	10.00

Route Receptor(s)

Name: Route 1

Path type: Two-way

Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.509903	-120.195623	1481.93	10.00	1491.93
2	46.513329	-120.201373	1502.01	10.00	1512.01
3	46.517552	-120.205579	1530.38	10.00	1540.38
4	46.518674	-120.207210	1523.97	10.00	1533.97
5	46.519354	-120.208926	1519.02	10.00	1529.02
6	46.519974	-120.211458	1507.13	10.00	1517.13
7	46.520181	-120.213518	1494.21	10.00	1504.21
8	46.520313	-120.230116	1418.25	10.00	1428.25
9	46.520764	-120.233120	1411.67	10.00	1421.67
10	46.534611	-120.291301	1239.48	10.00	1249.48

Name: Route 2

Path type: Two-way

Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.534835	-120.220970	1644.24	10.00	1654.24
2	46.534820	-120.229961	1555.96	10.00	1565.96
3	46.520314	-120.230031	1418.33	10.00	1428.33

Name: Route 3

Path type: Two-way

Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.520718	-120.233025	1411.34	10.00	1421.34
2	46.520408	-120.233143	1408.77	10.00	1418.77
3	46.520201	-120.233636	1405.33	10.00	1415.33
4	46.520017	-120.254971	1335.13	10.00	1345.13
5	46.520077	-120.255518	1334.17	10.00	1344.17
6	46.520224	-120.256022	1334.20	10.00	1344.20
7	46.524986	-120.265024	1317.48	10.00	1327.48
8	46.525133	-120.265388	1316.66	10.00	1326.66
9	46.525975	-120.277555	1302.91	10.00	1312.91
10	46.526145	-120.278306	1295.97	10.00	1305.97
11	46.529680	-120.288563	1260.67	10.00	1270.67
12	46.530640	-120.292500	1239.88	10.00	1249.88

Name: Route 4

Path type: Two-way

Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.520060	-120.250487	1340.61	10.00	1350.61
2	46.540421	-120.250203	1484.45	10.00	1494.45
3	46.540569	-120.250267	1481.10	10.00	1491.10
4	46.540683	-120.250476	1472.46	10.00	1482.46
5	46.540757	-120.250766	1467.17	10.00	1477.17

Name: Route 5
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.534607	-120.250316	1422.97	10.00	1432.97
2	46.534716	-120.290702	1240.16	10.00	1250.16
3	46.534635	-120.291324	1238.85	10.00	1248.85

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
PV array 1	SA tracking	SA tracking	1,388,179	52,385	236,000,000.0

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 1	45283	284
OP 2	113170	4180
OP 3	102314	2632
OP 4	29161	7
OP 5	126147	5812
OP 6	180949	10281
OP 7	194499	10437
OP 8	239063	767
OP 9	0	0
Route 1	0	0
Route 2	247931	13955
Route 3	0	0

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
Route 4	109662	4030
Route 5	0	0

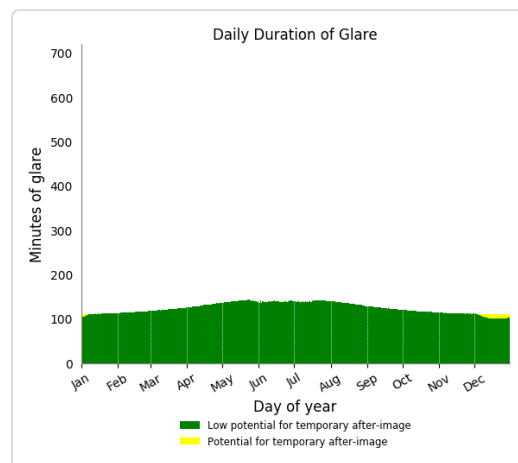
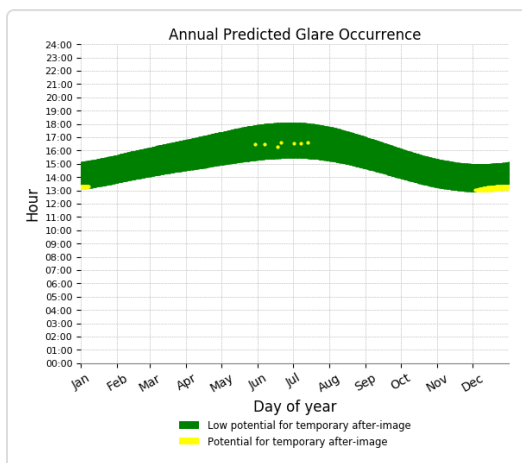
Results for: PV array 1

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	45283	284
OP 2	113170	4180
OP 3	102314	2632
OP 4	29161	7
OP 5	126147	5812
OP 6	180949	10281
OP 7	194499	10437
OP 8	239063	767
OP 9	0	0
Route 1	0	0
Route 2	247931	13955
Route 3	0	0
Route 4	109662	4030
Route 5	0	0

Point Receptor: OP 1

284 minutes of yellow glare

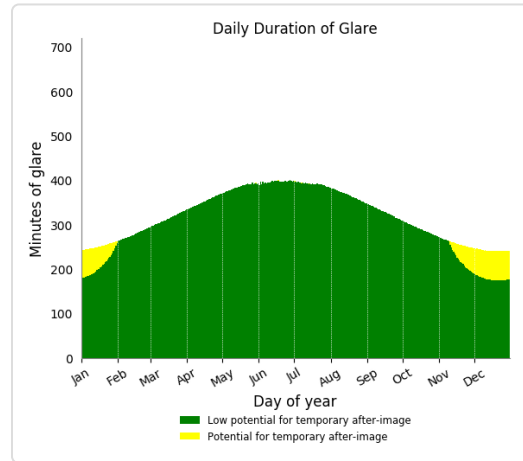
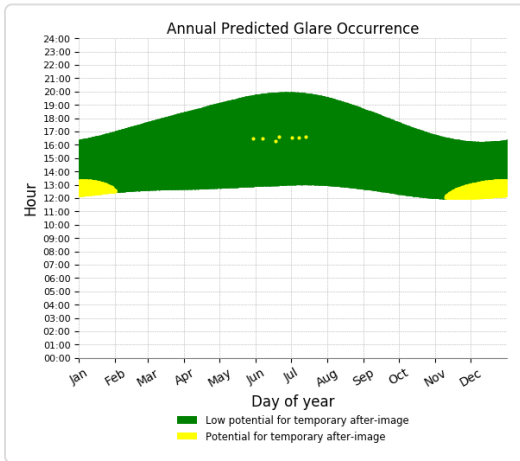
45283 minutes of green glare



Point Receptor: OP 2

4180 minutes of yellow glare

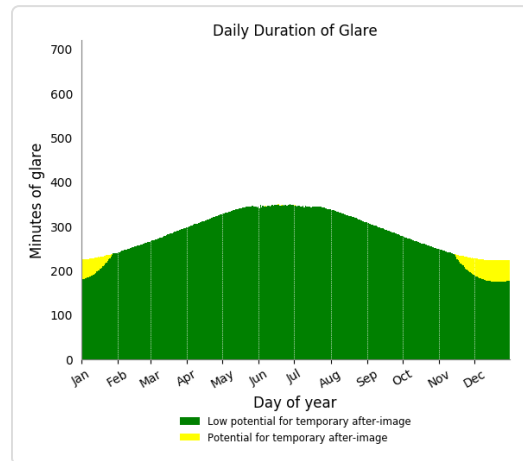
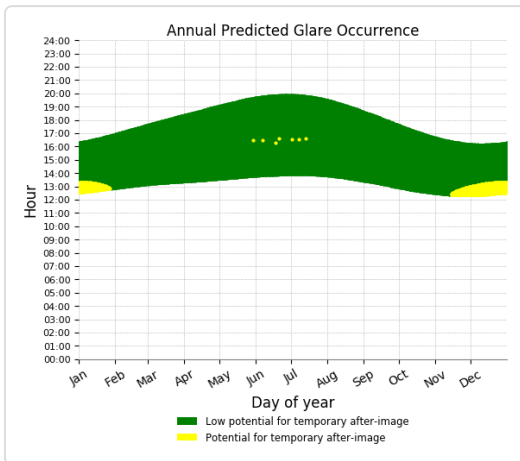
113170 minutes of green glare



Point Receptor: OP 3

2632 minutes of yellow glare

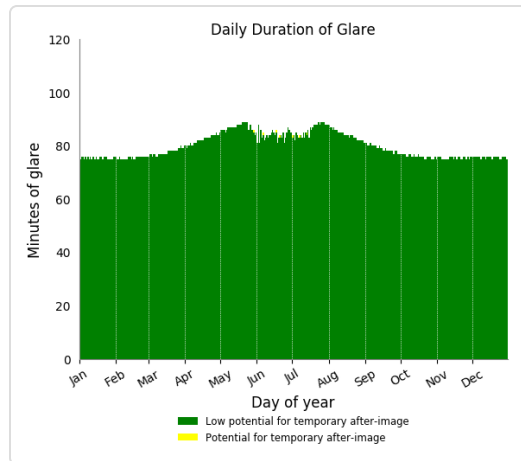
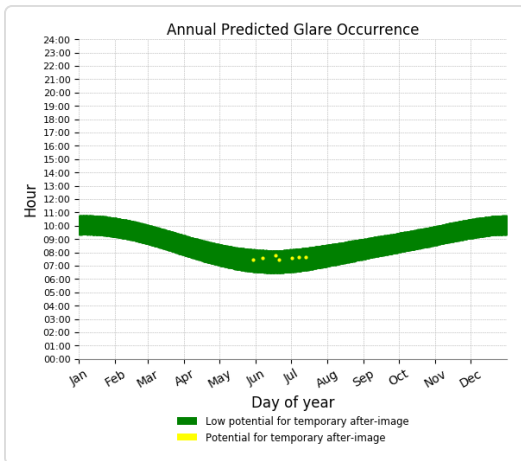
102314 minutes of green glare



Point Receptor: OP 4

7 minutes of yellow glare

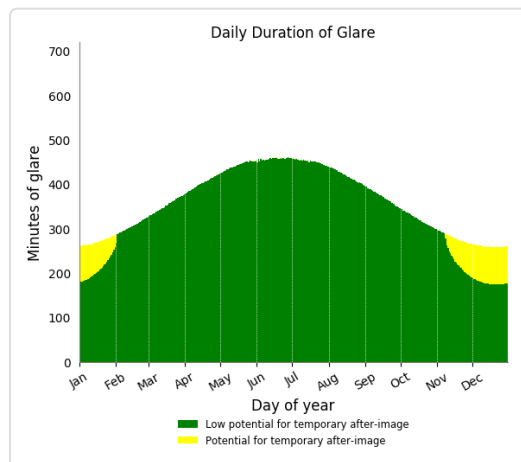
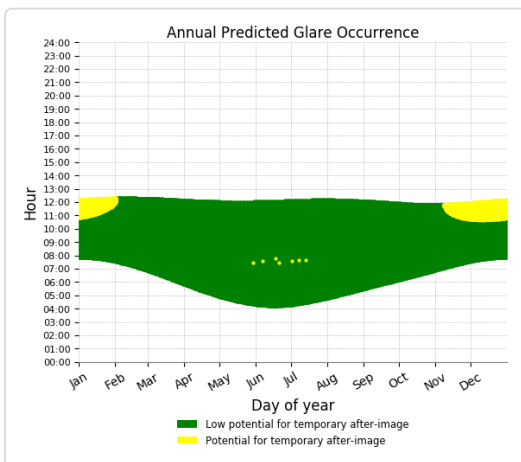
29161 minutes of green glare



Point Receptor: OP 5

5812 minutes of yellow glare

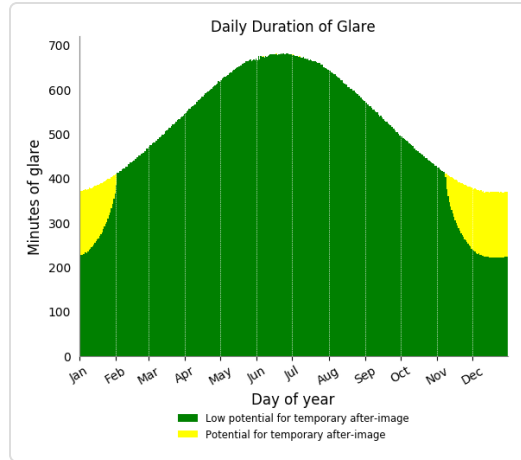
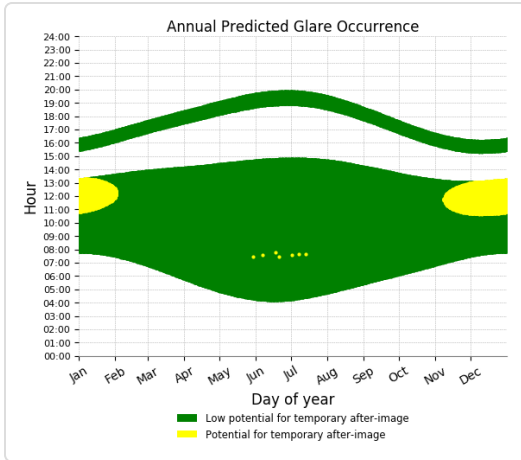
126147 minutes of green glare



Point Receptor: OP 6

10281 minutes of yellow glare

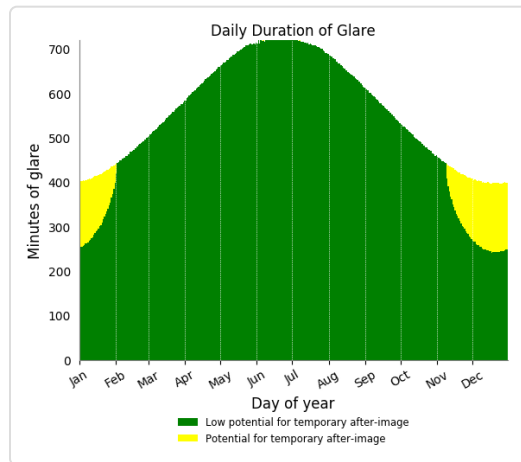
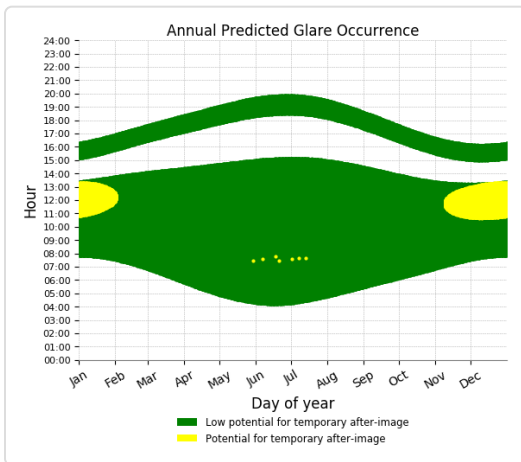
180949 minutes of green glare



Point Receptor: OP 7

10437 minutes of yellow glare

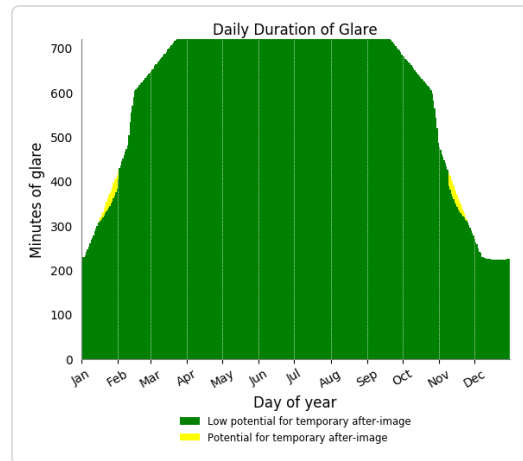
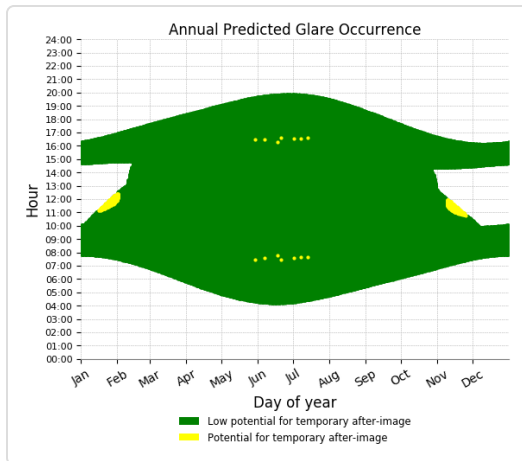
194499 minutes of green glare



Point Receptor: OP 8

767 minutes of yellow glare

239063 minutes of green glare



Point Receptor: OP 9

0 minutes of yellow glare

0 minutes of green glare

Route: Route 1

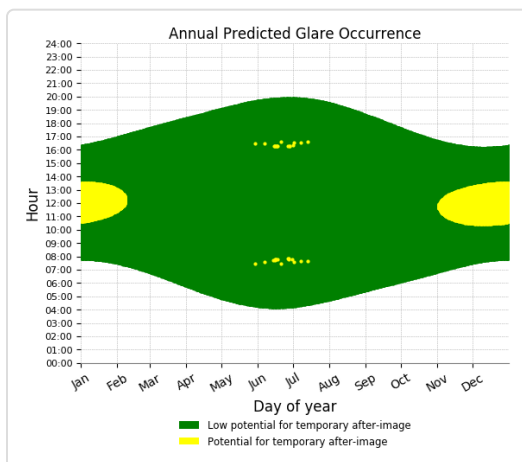
0 minutes of yellow glare

0 minutes of green glare

Route: Route 2

13955 minutes of yellow glare

247931 minutes of green glare



Route: Route 3

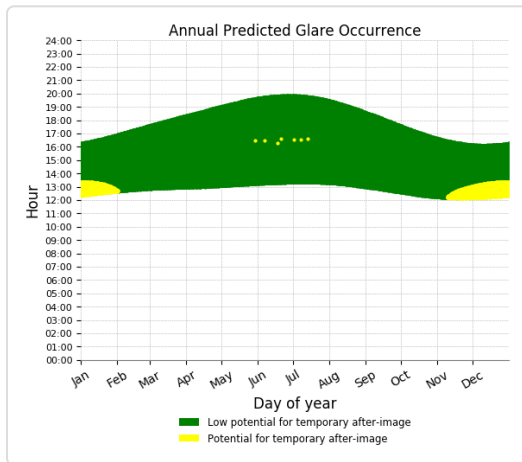
0 minutes of yellow glare

0 minutes of green glare

Route: Route 4

4030 minutes of yellow glare

109662 minutes of green glare



Route: Route 5

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 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.