

APPENDIX E – GLARE ANALYSIS

To: Christina Martens, Flickertail Solar Project, LLC

From: Drew Timmis and Adam Holven, Tetra Tech, Inc.

Date: September 17, 2024

Subject: Glare Analysis of the Flickertail Solar Project
Abercrombie Township, Richland County, North Dakota

At the request of Flickertail Solar Project, LLC , Tetra Tech, Inc. (Tetra Tech) conducted a glare analysis of the proposed Flickertail Solar Project (Project) located in Abercrombie Township, Richland County, North Dakota. The Project Area consists of approximately 3,464 acres of mostly agricultural fields bounded by agricultural properties on all sides (Figure 1). Topography throughout the Project Area is relatively flat and ranges from approximately 941 to 960 feet above mean sea level with the highest elevations being along the northwestern boundary, gradually sloping down to the east.

This memorandum provides a description of the glare anticipated from use of the Project site as a solar energy generating facility. Included are a Figure (Attachment A), the Sandia glare analysis reports (Attachment B), and the Federal Aviation Administration (FAA) Notice Criteria Tool Output (Attachment C).

GLARE ANALYSIS METHOD

With growing numbers of solar energy systems being proposed and installed throughout the United States, the potential impact of glare (a continuous source of bright light) from photovoltaic modules is receiving increased attention. The Federal Aviation Administration (FAA) developed Technical Guidance for Evaluating Selected Solar Technologies on Airports in 2010 (FAA Guidance). The FAA Guidance recommends that glare analyses should be performed on a site-specific basis using the Sandia Laboratories Solar Glare Hazard Analysis Tool (SGHAT) also referred to as GlareGauge. This guidance applies to solar facilities located on/near airport property but is also considered to be an industry best practice for solar facilities in general. The SGHAT complies with FAA 78 FR 63276.

Sandia developed SGHAT v. 3.0, a web-based tool and methodology to evaluate potential glare associated with solar energy installations. The validated tool provides a quantified assessment of when and where glare will occur, as well as information about potential ocular impacts. The calculations and methods are based on analyses, test data, a database of different photovoltaic module surfaces (e.g. anti-reflective coating, texturing), and models developed over several years at Sandia. The results are presented in a simple easy-to-interpret plot that specifies when glare will occur throughout the year, with color indicating the potential ocular hazard (Sandia Laboratories, 2016).

The online FAA Notice Criteria Tool (NCT) reports whether a proposed structure is in proximity to a jurisdictional air navigation facility and if formal submission to the FAA Obstruction Evaluation Group (OEG) under CFR Title 14 Part 77.9 is recommended. The NCT was utilized to determine if the proposed Project is located within an FAA-identified impact area based on the proposed solar panel location and height above ground surface. The NCT

output (Attachment C) noted that the Project does not exceed notice criteria and stated that a formal filing with the FAA OEG is not required for the solar panels.

As requested by Flickertail Solar Project, the SGHAT (GlareGauge, hosted by ForgeSolar) was utilized to evaluate the potential for glare from solar photovoltaic arrays (PV Arrays) located within the extent of the Project Area (Figure 2). These PV Arrays represent the proposed solar panel locations, divided into separate sections for modeling to encompass the extent of the solar panels. Observation points were identified within the Project Area and a 1-mile buffer from the Project Area (i.e., the Study Area), and include:

- 1) Driving along proximal segments of
 - a) County Road 1 (169th Street Southeast)
 - b) 170th Street Southeast,
 - c) 171st Street Southeast,
 - d) 172nd Street Southeast,
 - e) 173rd Street Southeast,
 - f) 174th Street Southeast,
 - g) 66th Street Southeast,
 - h) 67th Street Southeast,
 - i) 68th Street Southeast,
 - j) 69th Street Southeast,
 - k) 70th Street Southeast, and
 - l) U.S. Interstate 29; and
- 2) At 31 residences and 1 church located within the Study Area.

The panels to be used on the proposed Project are textured glass surface material with an anti-reflection coating (ARC), which is noted in the glare analysis. The analysis was performed to simulate panels with single-axis tracking with a 60° maximum tracking range (including backtracking with a resting angle of 5 degrees). The analysis was conducted for a panel height of 7 feet above ground surface (centroid height) with applicable panel specifications. The panel orientation, location, and specifications used in the analysis were provided by Flickertail Solar Project, LLC on July 25, 2024. The analysis includes calculations to predict potential glare minutes at the following specified receptors:

- Viewing height of observer in standard first floor building at 6 feet above ground surface (Analysis 1);
- Viewing height of observer in standard vehicle at 5 feet above ground surface (Analysis 1);
- Viewing height of observer in standard second floor building at 16 feet above ground surface (Analysis 2);
- Viewing height of observer in standard commercial truck at 9 feet above ground surface (Analysis 2)

GLARE ANALYSIS RESULTS

Using SGHAT, two analyses were run to model 11 PV Arrays to predict glare at the identified receptors and routes at varying heights as described above. Areas with multiple smaller areas of solar panels such as the northwest portion of the Project Area were grouped together accounting for a larger area in the analysis (PV Array 1). The

two areas of solar panels in the north-central portion of the Project were also grouped together accounting for a larger area in the analysis (PV Array 8). The simulation did not predict glare at any of the receptors or routes for either analysis.

SUMMARY

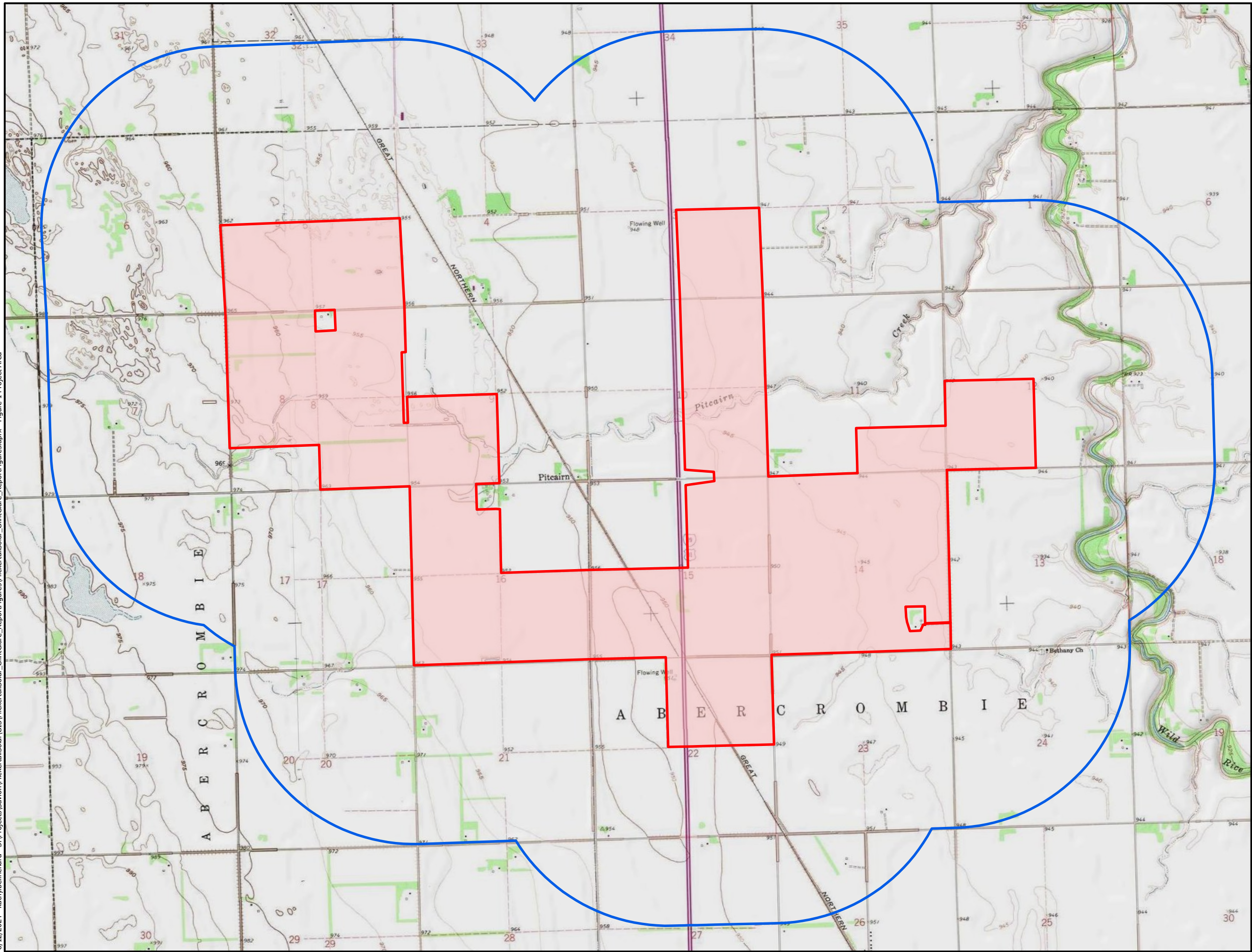
The PV Arrays were modeled on SGHAT GlareGauge in order to evaluate the potential extent of any glare the proposed Project may have upon nearby points of observation and vehicle routes. Two analyses were performed: Analysis 1 represented the point of view from an average first floor residential/commercial structure and typical commuter car (6 feet and 5 feet; respectively); and Analysis 2 represented the point of view from an average second floor residential/commercial structure and typical semi-tractor-trailer truck (16 and 9 feet; respectively). No glare was predicted for any of the observation points or vehicle route segments. Based on these results, the proposed Project is unlikely to cause glare to the surrounding area. The FAA NCT determined that based on the max height of the solar panels and location the Project does not exceed notice criteria. As it does not exceed, there is no requirement to file with the FAA OEG.

The GlareGauge model does not account for varying ambient conditions (i.e., cloudy days, precipitation), atmospheric attenuation, screening due to existing topography not located within the defined array layouts, or existing vegetation or structures (including fences or walls), nor does the tool allow proposed landscaping to be included. As such, the predicted results are considered to be conservative with actual glare from the Project being lower.

REFERENCES

- Sandia Solar Glare Hazard Analysis Tool, GlareGauge hosted by ForgeSolar. Accessed online <https://www.forgesolar.com/>.
- Interim Policy, FAA Review of Solar Energy System Projects on Federally Obligated Airports. 78 FR 63276. October 23, 2013.
- Federal Aviation Administration. CFR Title 14 Part 77.9 Notice of Proposed Construction or Alteration Requiring Notice. 2010.
- Federal Aviation Administration. Technical Guidance for Evaluating Selected Solar Technologies on Airports. 2010.
- Federal Aviation Administration Notice Criteria Tool. Obstruction Evaluation Version 2018.1.4. Accessed online <https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp?action=showNoNoticeRequiredToolForm>

8/12/2024 kathy.belrichard S:\Projects\Savlon\FlickertailSolar\CIS\FlickertailSolar_GlintGlare_ReportFigures.aprx Figure 1 Project Area



- Project Area
- 1-mile Study Area

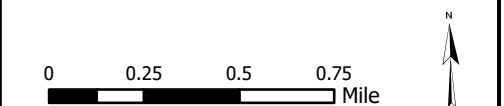
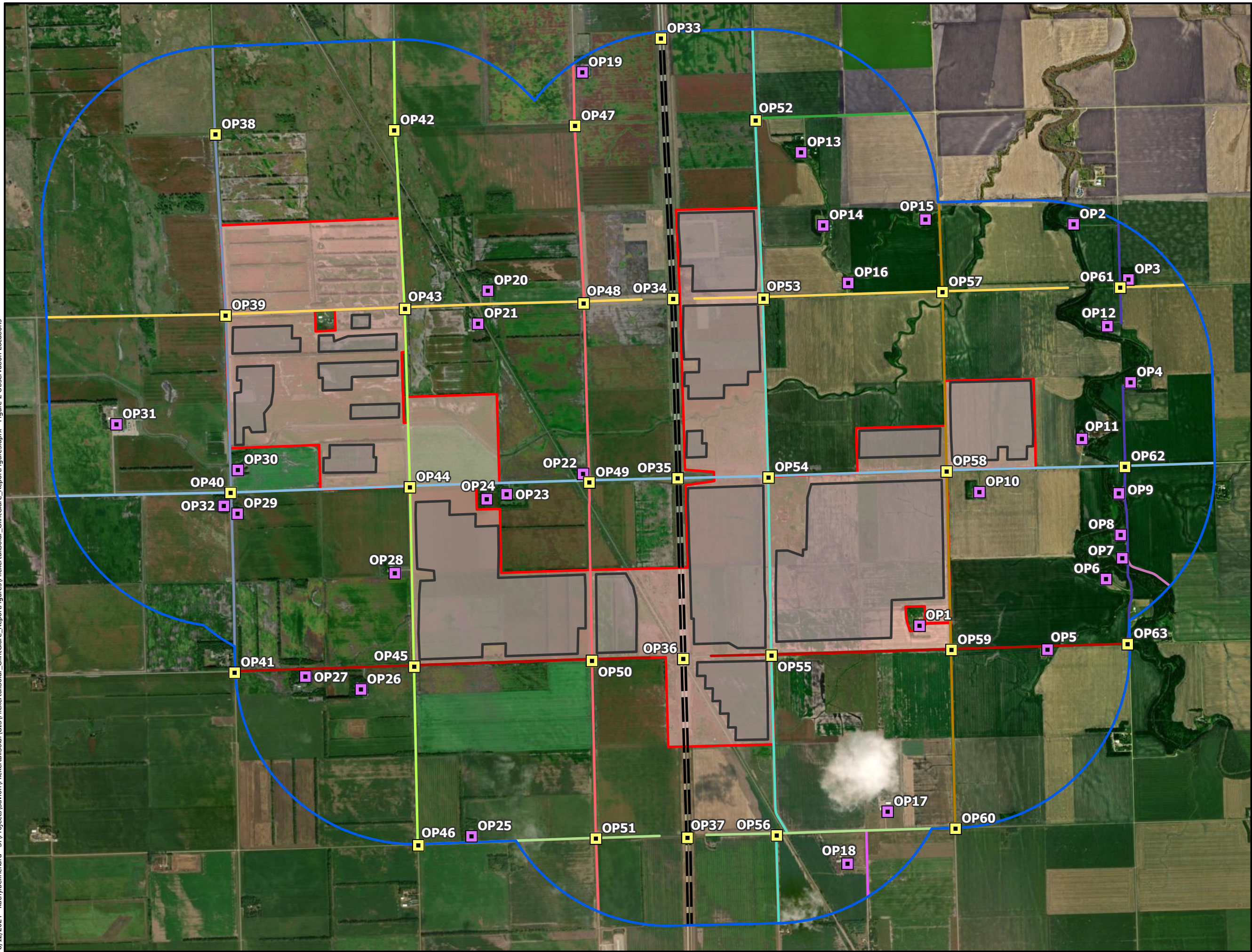


Figure 1
Project Location

Flickertail Solar Project
Abercrombie Township
Richland County
North Dakota



8/12/2024 kathy.belrichard S:\Projects\Savion\FlickertailSolar\CIS\FlickertailSolar_GlintGlare_ReportFigures.aprx Figure 2 Observation Locations



- Project Area
- 1-mile Study Area
- PV Array Area
- Structure Observation Point
- Road Observation Point
- 169TH AVE SE/County Hwy 1
- 170TH AVE SE
- 171ST AVE SE
- 172 1/2 AVE SE
- 172ND AVE SE
- 173RD AVE SE
- 174 1/2 AVE SE
- 174TH AVE SE
- 66TH ST SE
- 67TH ST SE
- 68TH ST SE/County Hwy 6
- 69TH ST SE
- 70TH ST SE
- I-29

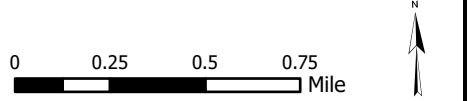


Figure 2
Observation Locations

Flickertail Solar Project
Abercrombie Township
Richland County
North Dakota



FORGESOLAR GLARE ANALYSIS

Project: **Flickertail Solar**

Site configuration: **Analysis 1- 1st Story Receptor 08122024**

Created 01 Aug, 2024

Updated 15 Aug, 2024

Time-step 1 minute

Timezone offset UTC-6

Minimum sun altitude 0.0 deg

DNI peaks at 1,000.0 W/m²

Category 100 MW to 1 GW

Site ID 125776.21549

Ocular transmission coefficient 0.5

Pupil diameter 0.002 m

Eye focal length 0.017 m

Sun subtended angle 9.3 mrad

PV analysis methodology V2

Summary of Results No glare predicted

PV Array	Tilt °	Orient °	Annual Green Glare		Annual Yellow Glare		Energy kWh
			min	hr	min	hr	
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 10	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 11	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 2	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 3	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 4	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 5	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 6	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 7	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 8	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 9	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

Component Data

PV Arrays

Name: PV array 1

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

Ground Coverage Ratio: 0.29

Rated power: -

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	46.440630	-96.881313	961.71	7.00	968.71
2	46.440644	-96.874789	957.95	7.00	964.95
3	46.439675	-96.871853	956.96	7.00	963.96
4	46.439831	-96.867797	956.02	7.00	963.02
5	46.441333	-96.867828	953.72	7.00	960.72
6	46.441373	-96.865578	953.98	7.00	960.98
7	46.439754	-96.865569	955.07	7.00	962.07
8	46.439754	-96.865569	955.07	7.00	962.07
9	46.439754	-96.865569	955.07	7.00	962.07
10	46.439697	-96.862444	953.56	7.00	960.56
11	46.432981	-96.862370	954.68	7.00	961.68
12	46.432854	-96.868347	956.56	7.00	963.56
13	46.435340	-96.871568	959.24	7.00	966.24
14	46.438328	-96.871845	959.06	7.00	966.06
15	46.438384	-96.877002	961.38	7.00	968.38
16	46.438384	-96.877002	961.38	7.00	968.38
17	46.438384	-96.877002	961.38	7.00	968.38
18	46.434545	-96.877090	961.25	7.00	968.25
19	46.434545	-96.877090	961.25	7.00	968.25
20	46.434545	-96.877090	961.25	7.00	968.25
21	46.432114	-96.878157	972.47	7.00	979.47
22	46.432114	-96.878157	972.47	7.00	979.47
23	46.432114	-96.878157	972.47	7.00	979.47
24	46.431116	-96.880661	971.14	7.00	978.14
25	46.431116	-96.880661	971.14	7.00	978.14
26	46.431116	-96.880661	971.14	7.00	978.14
27	46.431009	-96.881774	971.52	7.00	978.52
28	46.431009	-96.881774	971.52	7.00	978.52
29	46.431009	-96.881774	971.52	7.00	978.52

Name: PV array 10

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

Ground Coverage Ratio: 0.29

Rated power: -

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	46.430287	-96.809072	940.98	7.00	947.98
2	46.430272	-96.798901	940.53	7.00	947.53
3	46.427625	-96.798858	939.88	7.00	946.88
4	46.427595	-96.809094	942.27	7.00	949.27

Name: PV array 11

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

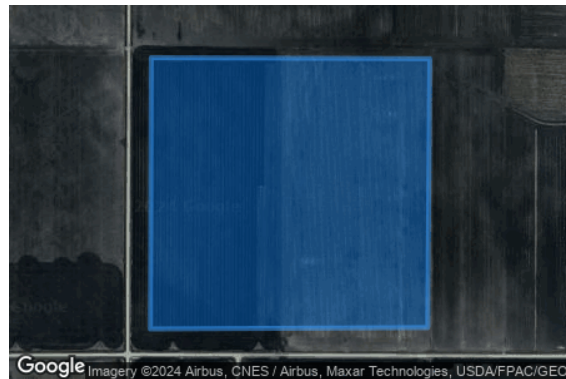
Ground Coverage Ratio: 0.29

Rated power: -

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	46.428125	-96.797891	939.73	7.00	946.73
2	46.428159	-96.788359	941.28	7.00	948.28
3	46.434506	-96.788287	940.88	7.00	947.88
4	46.434529	-96.797861	939.63	7.00	946.63

Name: PV array 2

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

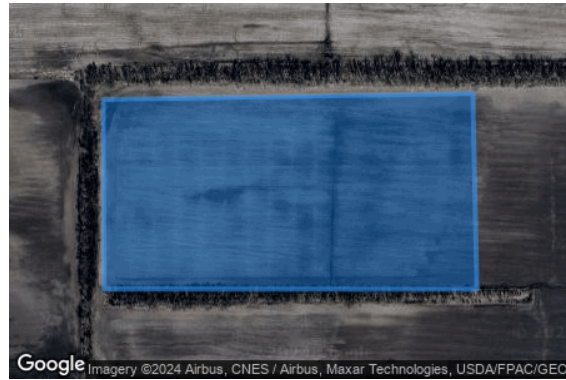
Ground Coverage Ratio: 0.29

Rated power: -

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	46.430797	-96.871587	961.11	7.00	968.11
2	46.430868	-96.865234	954.38	7.00	961.38
3	46.428556	-96.865163	953.00	7.00	960.00
4	46.428559	-96.871570	961.31	7.00	968.31

Name: PV array 3

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

Ground Coverage Ratio: 0.29

Rated power: -

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	46.426552	-96.860785	951.96	7.00	958.96
2	46.426626	-96.857112	950.91	7.00	957.91
3	46.424235	-96.851272	951.30	7.00	958.30
4	46.425300	-96.851032	951.42	7.00	958.42
5	46.420271	-96.851203	952.29	7.00	959.29
6	46.419828	-96.841132	951.63	7.00	958.63
7	46.413330	-96.841307	952.39	7.00	959.39
8	46.413160	-96.860908	962.66	7.00	969.66

Name: PV array 4

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

Ground Coverage Ratio: 0.29

Rated power: -

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	46.418950	-96.839813	951.11	7.00	958.11
2	46.420265	-96.836851	950.52	7.00	957.52
3	46.417972	-96.835220	952.11	7.00	959.11
4	46.413451	-96.835156	950.80	7.00	957.80
5	46.413418	-96.840017	951.42	7.00	958.42

Name: PV array 5

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

Ground Coverage Ratio: 0.29

Rated power: -

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	46.412869	-96.828955	951.50	7.00	958.50
2	46.412809	-96.820007	949.02	7.00	956.02
3	46.406877	-96.820114	948.11	7.00	955.11
4	46.406891	-96.824706	949.31	7.00	956.31
5	46.411877	-96.828912	950.71	7.00	957.71

Name: PV array 6

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

Ground Coverage Ratio: 0.29

Rated power: -

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	46.413313	-96.828720	969.60	7.00	976.60
2	46.416541	-96.829135	948.72	7.00	955.72
3	46.426514	-96.828828	945.79	7.00	952.79
4	46.426684	-96.820157	952.16	7.00	959.16
5	46.413367	-96.820376	945.51	7.00	952.51
6	46.413367	-96.820376	945.51	7.00	952.51
7	46.413367	-96.820376	945.51	7.00	952.51

Name: PV array 7

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

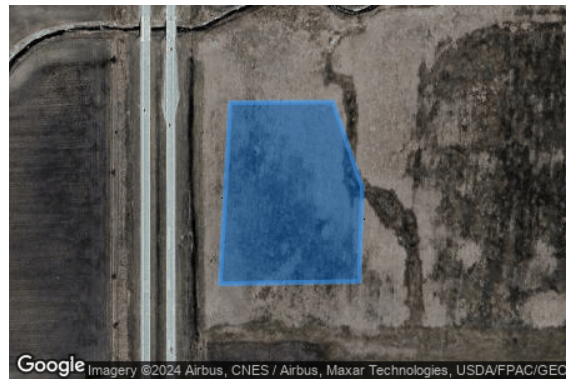
Ground Coverage Ratio: 0.29

Rated power: -

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	46.429063	-96.829024	942.73	7.00	949.73
2	46.429091	-96.826627	946.30	7.00	953.30
3	46.430209	-96.826577	946.49	7.00	953.49
4	46.431217	-96.827081	947.03	7.00	954.03
5	46.431217	-96.827081	947.03	7.00	954.03
6	46.431217	-96.827081	947.03	7.00	954.03
7	46.431217	-96.827081	947.03	7.00	954.03
8	46.431208	-96.828848	943.64	7.00	950.64

Name: PV array 8

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

Ground Coverage Ratio: 0.29

Rated power: -

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	46.433366	-96.829242	946.40	7.00	953.40
2	46.433411	-96.825037	945.57	7.00	952.57
3	46.435733	-96.820252	945.02	7.00	952.02
4	46.448752	-96.820330	940.55	7.00	947.55
5	46.448769	-96.829186	944.35	7.00	951.35

Name: PV array 9

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

Ground Coverage Ratio: 0.29

Rated power: -

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	46.426658	-96.814766	944.14	7.00	951.14
2	46.426722	-96.799155	940.42	7.00	947.42
3	46.416769	-96.799395	939.89	7.00	946.89
4	46.416623	-96.804690	942.48	7.00	949.48
5	46.413614	-96.804585	943.37	7.00	950.37
6	46.413636	-96.818565	948.99	7.00	955.99
7	46.421279	-96.818404	947.86	7.00	954.86
8	46.421279	-96.818404	947.86	7.00	954.86
9	46.421279	-96.818404	947.86	7.00	954.86
10	46.421279	-96.818404	947.86	7.00	954.86
11	46.421279	-96.818404	947.86	7.00	954.86
12	46.421158	-96.815040	945.70	7.00	952.70
13	46.421158	-96.815040	945.70	7.00	952.70
14	46.421158	-96.815040	945.70	7.00	952.70
15	46.421158	-96.815040	945.70	7.00	952.70
16	46.421158	-96.815040	945.70	7.00	952.70

Route Receptors

Name: 170th Street SE

Path type: Two-way

Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.456370	-96.862070	957.56	5.00	962.56
2	46.449255	-96.861904	952.86	5.00	957.86
3	46.441872	-96.861567	957.44	5.00	962.44
4	46.436284	-96.861516	958.69	5.00	963.69
5	46.434667	-96.861515	959.83	5.00	964.83
6	46.412892	-96.861608	963.77	5.00	968.77
7	46.398396	-96.861739	972.15	5.00	977.15

Name: 171st Street SE
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.456360	-96.841077	950.24	5.00	955.24
2	46.454653	-96.840992	950.16	5.00	955.16
3	46.448644	-96.840767	951.27	5.00	956.27
4	46.444293	-96.840633	950.95	5.00	955.95
5	46.441927	-96.840596	951.84	5.00	956.84
6	46.435971	-96.840553	950.82	5.00	955.82
7	46.431831	-96.840553	950.83	5.00	955.83
8	46.428532	-96.840508	954.17	5.00	959.17
9	46.427416	-96.840508	953.25	5.00	958.25
10	46.425893	-96.840529	953.70	5.00	958.70
11	46.425494	-96.840583	954.72	5.00	959.72
12	46.423564	-96.840583	955.61	5.00	960.61
13	46.419860	-96.840654	956.42	5.00	961.42
14	46.412957	-96.840792	955.97	5.00	960.97
15	46.408990	-96.840802	955.40	5.00	960.40
16	46.405621	-96.840843	955.37	5.00	960.37
17	46.400283	-96.840851	957.63	5.00	962.63
18	46.398466	-96.840915	959.66	5.00	964.66

Name: 172nd Street SE
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.398496	-96.818392	951.40	5.00	956.40
2	46.399990	-96.819658	949.83	5.00	954.83
3	46.400545	-96.819771	950.10	5.00	955.10
4	46.406023	-96.819760	950.44	5.00	955.44
5	46.412970	-96.819715	951.98	5.00	956.98
6	46.420156	-96.819665	950.40	5.00	955.40
7	46.427474	-96.819568	948.06	5.00	953.06
8	46.434323	-96.819568	943.45	5.00	948.45
9	46.440448	-96.819557	945.97	5.00	950.97
10	46.441929	-96.819622	944.39	5.00	949.39
11	46.445904	-96.819675	943.40	5.00	948.40
12	46.453770	-96.819847	942.19	5.00	947.19
13	46.456396	-96.819868	942.31	5.00	947.31

Name: 173rd Street SE
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.398494	-96.798801	948.10	5.00	953.10
2	46.401171	-96.798783	946.02	5.00	951.02
3	46.406161	-96.798760	944.54	5.00	949.54
4	46.411147	-96.798740	942.40	5.00	947.40
5	46.413027	-96.798731	943.29	5.00	948.29
6	46.417783	-96.798683	941.62	5.00	946.62
7	46.421218	-96.798680	941.23	5.00	946.23
8	46.427505	-96.798643	943.72	5.00	948.72
9	46.434756	-96.798602	942.26	5.00	947.26
10	46.438942	-96.798572	941.84	5.00	946.84
11	46.441975	-96.798569	942.70	5.00	947.70

Name: 174th Street SE - 1
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.456478	-96.777739	941.12	5.00	946.12
2	46.449853	-96.777675	940.79	5.00	945.79
3	46.441940	-96.777725	941.49	5.00	946.49
4	46.439056	-96.777747	939.85	5.00	944.85

Name: 174th Street SE - 2
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.433842	-96.777733	938.34	5.00	943.34
2	46.432984	-96.777755	931.73	5.00	936.73
3	46.428438	-96.777744	940.77	5.00	945.77
4	46.427381	-96.777755	941.49	5.00	946.49
5	46.426106	-96.777841	939.99	5.00	944.99
6	46.425344	-96.777884	941.24	5.00	946.24
7	46.424604	-96.777873	936.37	5.00	941.37
8	46.423954	-96.777766	937.20	5.00	942.20
9	46.423488	-96.777701	937.48	5.00	942.48
10	46.421944	-96.777712	940.35	5.00	945.35
11	46.419907	-96.777723	941.37	5.00	946.37
12	46.418753	-96.777755	920.02	5.00	925.02
13	46.418428	-96.777733	927.22	5.00	932.22
14	46.418014	-96.777519	930.05	5.00	935.05
15	46.417503	-96.777390	935.62	5.00	940.62
16	46.416956	-96.777369	939.06	5.00	944.06
17	46.416364	-96.777572	939.30	5.00	944.30
18	46.415846	-96.777744	941.71	5.00	946.71
19	46.415240	-96.777766	942.46	5.00	947.46
20	46.414259	-96.777819	943.15	5.00	948.15
21	46.413645	-96.777959	942.37	5.00	947.37
22	46.413142	-96.778034	944.02	5.00	949.02
23	46.412891	-96.777980	943.07	5.00	948.07
24	46.412543	-96.777819	944.28	5.00	949.28
25	46.398516	-96.777859	944.83	5.00	949.83

Name: 66th Street SE - 1

Path type: Two-way

Observer view angle: 50.0°

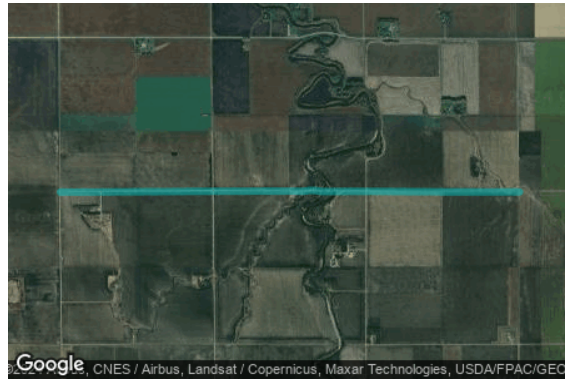


Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.456366	-96.862031	957.53	5.00	962.53
2	46.456344	-96.856796	951.74	5.00	956.74
3	46.456355	-96.841066	950.37	5.00	955.37
4	46.456348	-96.831453	942.31	5.00	947.31

Name: 66th Street SE - 2

Path type: Two-way

Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.456378	-96.819844	942.48	5.00	947.48
2	46.456392	-96.814169	942.26	5.00	947.26
3	46.456459	-96.798784	945.59	5.00	950.59
4	46.456474	-96.788312	942.95	5.00	947.95
5	46.456451	-96.786413	933.38	5.00	938.38
6	46.456548	-96.785566	926.78	5.00	931.78
7	46.456540	-96.784922	922.69	5.00	927.69
8	46.456437	-96.783914	921.76	5.00	926.76
9	46.456437	-96.782969	923.01	5.00	928.01
10	46.456449	-96.777712	942.04	5.00	947.04
11	46.456402	-96.767252	941.24	5.00	946.24
12	46.456392	-96.756745	933.39	5.00	938.39

Name: 67th Street SE - 1
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.441826	-96.904619	983.15	5.00	988.15
2	46.441762	-96.892871	975.46	5.00	980.46
3	46.441703	-96.882538	966.90	5.00	971.90
4	46.441799	-96.871938	958.45	5.00	963.45
5	46.441888	-96.861585	957.23	5.00	962.23
6	46.441939	-96.853917	958.42	5.00	963.42
7	46.441954	-96.845076	953.56	5.00	958.56
8	46.441954	-96.840588	951.94	5.00	956.94
9	46.441947	-96.830917	948.31	5.00	953.31

Name: 67th Street SE - 2
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.441909	-96.819618	944.42	5.00	949.42
2	46.441946	-96.809657	941.74	5.00	946.74
3	46.441968	-96.798581	942.63	5.00	947.63
4	46.441909	-96.777730	941.62	5.00	946.62
5	46.441946	-96.756768	940.62	5.00	945.62

Name: 68th Street SE
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.427347	-96.904574	980.18	5.00	985.18
2	46.427288	-96.882478	974.92	5.00	979.92
3	46.427320	-96.871942	964.35	5.00	969.35
4	46.427350	-96.861513	955.32	5.00	960.32
5	46.427468	-96.842716	953.39	5.00	958.39
6	46.427453	-96.840528	953.44	5.00	958.44
7	46.427453	-96.829305	970.62	5.00	975.62
8	46.427433	-96.819564	948.66	5.00	953.66
9	46.427463	-96.798628	943.61	5.00	948.61
10	46.427448	-96.787621	944.26	5.00	949.26
11	46.427507	-96.783029	941.32	5.00	946.32
12	46.427433	-96.777707	941.69	5.00	946.69
13	46.427463	-96.756765	940.16	5.00	945.16
14	46.427463	-96.735908	939.98	5.00	944.98

Name: 69th Street SE - 1
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.412812	-96.882567	974.93	5.00	979.93
2	46.412864	-96.868613	964.64	5.00	969.64
3	46.412909	-96.861628	963.53	5.00	968.53
4	46.412931	-96.849053	954.83	5.00	959.83
5	46.412964	-96.840788	955.97	5.00	960.97
6	46.412979	-96.831475	953.34	5.00	958.34

Name: 69th Street SE - 2

Path type: Two-way

Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.412994	-96.828836	952.53	5.00	957.53
2	46.412972	-96.822452	950.32	5.00	955.32
3	46.412972	-96.813945	948.35	5.00	953.35
4	46.412994	-96.802101	944.61	5.00	949.61
5	46.413022	-96.798779	942.93	5.00	947.93
6	46.413017	-96.778115	944.25	5.00	949.25

Name: 70th Street SE - 1

Path type: Two-way

Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.398287	-96.882698	980.92	5.00	985.92
2	46.398361	-96.871862	971.47	5.00	976.47
3	46.398399	-96.861738	972.15	5.00	977.15
4	46.398459	-96.848542	961.40	5.00	966.40
5	46.398473	-96.840903	959.82	5.00	964.82
6	46.398444	-96.831015	954.74	5.00	959.74

Name: 70th Street SE - 2
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.398488	-96.828934	955.23	5.00	960.23
2	46.398488	-96.819771	950.50	5.00	955.50
3	46.398488	-96.809193	950.50	5.00	955.50
4	46.398503	-96.798850	948.11	5.00	953.11
5	46.398533	-96.777886	944.66	5.00	949.66

Name: County 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	46.456325	-96.883236	961.38	5.00	966.38
2	46.447635	-96.882810	963.89	5.00	968.89
3	46.441731	-96.882559	966.61	5.00	971.61
4	46.438137	-96.882512	967.93	5.00	972.93
5	46.434028	-96.882469	976.08	5.00	981.08
6	46.429882	-96.882459	974.38	5.00	979.38
7	46.427256	-96.882479	975.09	5.00	980.09
8	46.412771	-96.882539	975.45	5.00	980.45
9	46.407864	-96.882563	975.54	5.00	980.54
10	46.402910	-96.882606	978.17	5.00	983.17
11	46.398341	-96.882606	981.40	5.00	986.40

Name: I29

Path type: Two-way

Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.384082	-96.830112	956.90	5.00	961.90
2	46.398555	-96.829860	955.38	5.00	960.38
3	46.411540	-96.829861	979.42	5.00	984.42
4	46.419082	-96.829882	952.89	5.00	957.89
5	46.427628	-96.829861	950.28	5.00	955.28
6	46.439511	-96.829869	949.44	5.00	954.44
7	46.445065	-96.829988	948.80	5.00	953.80
8	46.454929	-96.830209	947.22	5.00	952.22
9	46.468172	-96.830540	946.76	5.00	951.76

Discrete Observation Point Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	46.414961	-96.802326	942.04	6.00
OP 2	2	46.447103	-96.782987	942.59	6.00
OP 3	3	46.442512	-96.776752	940.30	6.00
OP 4	4	46.434180	-96.776838	938.76	6.00
OP 5	5	46.412735	-96.787432	943.58	6.00
OP 6	6	46.418317	-96.780353	942.28	6.00
OP 7	7	46.419966	-96.778385	941.99	6.00
OP 8	8	46.421855	-96.778498	941.58	6.00
OP 9	9	46.425221	-96.778571	939.81	6.00
OP 10	10	46.425645	-96.794885	943.59	6.00
OP 11	11	46.429718	-96.782719	942.99	6.00
OP 12	12	46.438788	-96.779376	941.20	6.00
OP 13	13	46.453540	-96.814659	941.51	6.00
OP 14	14	46.447578	-96.812304	941.73	6.00
OP 15	15	46.447825	-96.800311	943.90	6.00
OP 16	16	46.442865	-96.809566	941.39	6.00
OP 17	17	46.399982	-96.806660	949.39	6.00
OP 18	18	46.395859	-96.811523	950.41	6.00
OP 19	19	46.460505	-96.840005	946.98	6.00
OP 20	20	46.443042	-96.851767	956.00	6.00
OP 21	21	46.440386	-96.853022	959.66	6.00
OP 22	22	46.428002	-96.841206	952.26	6.00
OP 23	23	46.426522	-96.850215	953.56	6.00
OP 24	24	46.426162	-96.852556	952.66	6.00
OP 25	25	46.398912	-96.855408	965.21	6.00
OP 26	26	46.411044	-96.867880	969.45	6.00
OP 27	27	46.412205	-96.874337	971.29	6.00
OP 28	28	46.420376	-96.863552	956.65	6.00
OP 29	29	46.425534	-96.881759	973.88	6.00
OP 30	30	46.429076	-96.881593	972.03	6.00
OP 31	31	46.433033	-96.895659	977.22	6.00
OP 32	32	46.426196	-96.883349	973.34	6.00

Glare Analysis Results

Summary of Results No glare predicted

PV Array	Tilt °	Orient °	Annual Green Glare		Annual Yellow Glare		Energy kWh
			min	hr	min	hr	
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 10	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 11	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 2	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 3	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 4	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 5	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 6	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 7	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 8	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 9	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV: PV array 1 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV array 1 and Route: 170th Street SE

No glare found

PV array 1 and Route: 171st Street SE

No glare found

PV array 1 and Route: 172nd Street SE

No glare found

PV array 1 and Route: 173rd Street SE

No glare found

PV array 1 and Route: 174th Street SE - 1

No glare found

PV array 1 and Route: 174th Street SE - 2

No glare found

PV array 1 and Route: 66th Street SE - 1

No glare found

PV array 1 and Route: 66th Street SE - 2

No glare found

PV array 1 and Route: 67th Street SE - 1

No glare found

PV array 1 and Route: 67th Street SE - 2

No glare found

PV array 1 and Route: 68th Street SE

No glare found

PV array 1 and Route: 69th Street SE - 1

No glare found

PV array 1 and Route: 69th Street SE - 2

No glare found

PV array 1 and Route: 70th Street SE - 1

No glare found

PV array 1 and Route: 70th Street SE - 2

No glare found

PV array 1 and Route: County Route 1

No glare found

PV array 1 and Route: I29

No glare found

PV array 1 and OP 1

No glare found

PV array 1 and OP 2

No glare found

PV array 1 and OP 3

No glare found

PV array 1 and OP 4

No glare found

PV array 1 and OP 5

No glare found

PV array 1 and OP 6

No glare found

PV array 1 and OP 7

No glare found

PV array 1 and OP 8

No glare found

PV array 1 and OP 9

No glare found

PV array 1 and OP 10

No glare found

PV array 1 and OP 11

No glare found

PV array 1 and OP 12

No glare found

PV array 1 and OP 13

No glare found

PV array 1 and OP 14

No glare found

PV array 1 and OP 15

No glare found

PV array 1 and OP 16

No glare found

PV array 1 and OP 17

No glare found

PV array 1 and OP 18

No glare found

PV array 1 and OP 19

No glare found

PV array 1 and OP 20

No glare found

PV array 1 and OP 21

No glare found

PV array 1 and OP 22

No glare found

PV array 1 and OP 23

No glare found

PV array 1 and OP 24

No glare found

PV array 1 and OP 25

No glare found

PV array 1 and OP 26

No glare found

PV array 1 and OP 27

No glare found

PV array 1 and OP 28

No glare found

PV array 1 and OP 29

No glare found

PV array 1 and OP 30

No glare found

PV array 1 and OP 31

No glare found

PV array 1 and OP 32

No glare found

PV: PV array 10 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV array 10 and Route: 170th Street SE

No glare found

PV array 10 and Route: 171st Street SE

No glare found

PV array 10 and Route: 172nd Street SE

No glare found

PV array 10 and Route: 173rd Street SE

No glare found

PV array 10 and Route: 174th Street SE - 1

No glare found

PV array 10 and Route: 174th Street SE - 2

No glare found

PV array 10 and Route: 66th Street SE - 1

No glare found

PV array 10 and Route: 66th Street SE - 2

No glare found

PV array 10 and Route: 67th Street SE - 1

No glare found

PV array 10 and Route: 67th Street SE - 2

No glare found

PV array 10 and Route: 68th Street SE

No glare found

PV array 10 and Route: 69th Street SE - 1

No glare found

PV array 10 and Route: 69th Street SE - 2

No glare found

PV array 10 and Route: 70th Street SE - 1

No glare found

PV array 10 and Route: 70th Street SE - 2

No glare found

PV array 10 and Route: County Route 1

No glare found

PV array 10 and Route: I29

No glare found

PV array 10 and OP 1

No glare found

PV array 10 and OP 2

No glare found

PV array 10 and OP 3

No glare found

PV array 10 and OP 4

No glare found

PV array 10 and OP 5

No glare found

PV array 10 and OP 6

No glare found

PV array 10 and OP 7

No glare found

PV array 10 and OP 8

No glare found

PV array 10 and OP 9

No glare found

PV array 10 and OP 10

No glare found

PV array 10 and OP 11

No glare found

PV array 10 and OP 12

No glare found

PV array 10 and OP 13

No glare found

PV array 10 and OP 14

No glare found

PV array 10 and OP 15

No glare found

PV array 10 and OP 16

No glare found

PV array 10 and OP 17

No glare found

PV array 10 and OP 18

No glare found

PV array 10 and OP 19

No glare found

PV array 10 and OP 20

No glare found

PV array 10 and OP 21

No glare found

PV array 10 and OP 22

No glare found

PV array 10 and OP 23

No glare found

PV array 10 and OP 24

No glare found

PV array 10 and OP 25

No glare found

PV array 10 and OP 26

No glare found

PV array 10 and OP 27

No glare found

PV array 10 and OP 28

No glare found

PV array 10 and OP 29

No glare found

PV array 10 and OP 30

No glare found

PV array 10 and OP 31

No glare found

PV array 10 and OP 32

No glare found

PV: PV array 11 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV array 11 and Route: 170th Street SE

No glare found

PV array 11 and Route: 171st Street SE

No glare found

PV array 11 and Route: 172nd Street SE

No glare found

PV array 11 and Route: 173rd Street SE

No glare found

PV array 11 and Route: 174th Street SE - 1

No glare found

PV array 11 and Route: 174th Street SE - 2

No glare found

PV array 11 and Route: 66th Street SE - 1

No glare found

PV array 11 and Route: 66th Street SE - 2

No glare found

PV array 11 and Route: 67th Street SE - 1

No glare found

PV array 11 and Route: 67th Street SE - 2

No glare found

PV array 11 and Route: 68th Street SE

No glare found

PV array 11 and Route: 69th Street SE - 1

No glare found

PV array 11 and Route: 69th Street SE - 2

No glare found

PV array 11 and Route: 70th Street SE - 1

No glare found

PV array 11 and Route: 70th Street SE - 2

No glare found

PV array 11 and Route: County Route 1

No glare found

PV array 11 and Route: I29

No glare found

PV array 11 and OP 1

No glare found

PV array 11 and OP 2

No glare found

PV array 11 and OP 3

No glare found

PV array 11 and OP 4

No glare found

PV array 11 and OP 5

No glare found

PV array 11 and OP 6

No glare found

PV array 11 and OP 7

No glare found

PV array 11 and OP 8

No glare found

PV array 11 and OP 9

No glare found

PV array 11 and OP 10

No glare found

PV array 11 and OP 11

No glare found

PV array 11 and OP 12

No glare found

PV array 11 and OP 13

No glare found

PV array 11 and OP 14

No glare found

PV array 11 and OP 15

No glare found

PV array 11 and OP 16

No glare found

PV array 11 and OP 17

No glare found

PV array 11 and OP 18

No glare found

PV array 11 and OP 19

No glare found

PV array 11 and OP 20

No glare found

PV array 11 and OP 21

No glare found

PV array 11 and OP 22

No glare found

PV array 11 and OP 23

No glare found

PV array 11 and OP 24

No glare found

PV array 11 and OP 25

No glare found

PV array 11 and OP 26

No glare found

PV array 11 and OP 27

No glare found

PV array 11 and OP 28

No glare found

PV array 11 and OP 29

No glare found

PV array 11 and OP 30

No glare found

PV array 11 and OP 31

No glare found

PV array 11 and OP 32

No glare found

PV: PV array 2 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV array 2 and Route: 170th Street SE

No glare found

PV array 2 and Route: 171st Street SE

No glare found

PV array 2 and Route: 172nd Street SE

No glare found

PV array 2 and Route: 173rd Street SE

No glare found

PV array 2 and Route: 174th Street SE - 1

No glare found

PV array 2 and Route: 174th Street SE - 2

No glare found

PV array 2 and Route: 66th Street SE - 1

No glare found

PV array 2 and Route: 66th Street SE - 2

No glare found

PV array 2 and Route: 67th Street SE - 1

No glare found

PV array 2 and Route: 67th Street SE - 2

No glare found

PV array 2 and Route: 68th Street SE

No glare found

PV array 2 and Route: 69th Street SE - 1

No glare found

PV array 2 and Route: 69th Street SE - 2

No glare found

PV array 2 and Route: 70th Street SE - 1

No glare found

PV array 2 and Route: 70th Street SE - 2

No glare found

PV array 2 and Route: County Route 1

No glare found

PV array 2 and Route: I29

No glare found

PV array 2 and OP 1

No glare found

PV array 2 and OP 2

No glare found

PV array 2 and OP 3

No glare found

PV array 2 and OP 4

No glare found

PV array 2 and OP 5

No glare found

PV array 2 and OP 6

No glare found

PV array 2 and OP 7

No glare found

PV array 2 and OP 8

No glare found

PV array 2 and OP 9

No glare found

PV array 2 and OP 10

No glare found

PV array 2 and OP 11

No glare found

PV array 2 and OP 12

No glare found

PV array 2 and OP 13

No glare found

PV array 2 and OP 14

No glare found

PV array 2 and OP 15

No glare found

PV array 2 and OP 16

No glare found

PV array 2 and OP 17

No glare found

PV array 2 and OP 18

No glare found

PV array 2 and OP 19

No glare found

PV array 2 and OP 20

No glare found

PV array 2 and OP 21

No glare found

PV array 2 and OP 22

No glare found

PV array 2 and OP 23

No glare found

PV array 2 and OP 24

No glare found

PV array 2 and OP 25

No glare found

PV array 2 and OP 26

No glare found

PV array 2 and OP 27

No glare found

PV array 2 and OP 28

No glare found

PV array 2 and OP 29

No glare found

PV array 2 and OP 30

No glare found

PV array 2 and OP 31

No glare found

PV array 2 and OP 32

No glare found

PV: PV array 3 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV array 3 and Route: 170th Street SE

No glare found

PV array 3 and Route: 171st Street SE

No glare found

PV array 3 and Route: 172nd Street SE

No glare found

PV array 3 and Route: 173rd Street SE

No glare found

PV array 3 and Route: 174th Street SE - 1

No glare found

PV array 3 and Route: 174th Street SE - 2

No glare found

PV array 3 and Route: 66th Street SE - 1

No glare found

PV array 3 and Route: 66th Street SE - 2

No glare found

PV array 3 and Route: 67th Street SE - 1

No glare found

PV array 3 and Route: 67th Street SE - 2

No glare found

PV array 3 and Route: 68th Street SE

No glare found

PV array 3 and Route: 69th Street SE - 1

No glare found

PV array 3 and Route: 69th Street SE - 2

No glare found

PV array 3 and Route: 70th Street SE - 1

No glare found

PV array 3 and Route: 70th Street SE - 2

No glare found

PV array 3 and Route: County Route 1

No glare found

PV array 3 and Route: I29

No glare found

PV array 3 and OP 1

No glare found

PV array 3 and OP 2

No glare found

PV array 3 and OP 3

No glare found

PV array 3 and OP 4

No glare found

PV array 3 and OP 5

No glare found

PV array 3 and OP 6

No glare found

PV array 3 and OP 7

No glare found

PV array 3 and OP 8

No glare found

PV array 3 and OP 9

No glare found

PV array 3 and OP 10

No glare found

PV array 3 and OP 11

No glare found

PV array 3 and OP 12

No glare found

PV array 3 and OP 13

No glare found

PV array 3 and OP 14

No glare found

PV array 3 and OP 15

No glare found

PV array 3 and OP 16

No glare found

PV array 3 and OP 17

No glare found

PV array 3 and OP 18

No glare found

PV array 3 and OP 19

No glare found

PV array 3 and OP 20

No glare found

PV array 3 and OP 21

No glare found

PV array 3 and OP 22

No glare found

PV array 3 and OP 23

No glare found

PV array 3 and OP 24

No glare found

PV array 3 and OP 25

No glare found

PV array 3 and OP 26

No glare found

PV array 3 and OP 27

No glare found

PV array 3 and OP 28

No glare found

PV array 3 and OP 29

No glare found

PV array 3 and OP 30

No glare found

PV array 3 and OP 31

No glare found

PV array 3 and OP 32

No glare found

PV: PV array 4 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV array 4 and Route: 170th Street SE

No glare found

PV array 4 and Route: 171st Street SE

No glare found

PV array 4 and Route: 172nd Street SE

No glare found

PV array 4 and Route: 173rd Street SE

No glare found

PV array 4 and Route: 174th Street SE - 1

No glare found

PV array 4 and Route: 174th Street SE - 2

No glare found

PV array 4 and Route: 66th Street SE - 1

No glare found

PV array 4 and Route: 66th Street SE - 2

No glare found

PV array 4 and Route: 67th Street SE - 1

No glare found

PV array 4 and Route: 67th Street SE - 2

No glare found

PV array 4 and Route: 68th Street SE

No glare found

PV array 4 and Route: 69th Street SE - 1

No glare found

PV array 4 and Route: 69th Street SE - 2

No glare found

PV array 4 and Route: 70th Street SE - 1

No glare found

PV array 4 and Route: 70th Street SE - 2

No glare found

PV array 4 and Route: County Route 1

No glare found

PV array 4 and Route: I29

No glare found

PV array 4 and OP 1

No glare found

PV array 4 and OP 2

No glare found

PV array 4 and OP 3

No glare found

PV array 4 and OP 4

No glare found

PV array 4 and OP 5

No glare found

PV array 4 and OP 6

No glare found

PV array 4 and OP 7

No glare found

PV array 4 and OP 8

No glare found

PV array 4 and OP 9

No glare found

PV array 4 and OP 10

No glare found

PV array 4 and OP 11

No glare found

PV array 4 and OP 12

No glare found

PV array 4 and OP 13

No glare found

PV array 4 and OP 14

No glare found

PV array 4 and OP 15

No glare found

PV array 4 and OP 16

No glare found

PV array 4 and OP 17

No glare found

PV array 4 and OP 18

No glare found

PV array 4 and OP 19

No glare found

PV array 4 and OP 20

No glare found

PV array 4 and OP 21

No glare found

PV array 4 and OP 22

No glare found

PV array 4 and OP 23

No glare found

PV array 4 and OP 24

No glare found

PV array 4 and OP 25

No glare found

PV array 4 and OP 26

No glare found

PV array 4 and OP 27

No glare found

PV array 4 and OP 28

No glare found

PV array 4 and OP 29

No glare found

PV array 4 and OP 30

No glare found

PV array 4 and OP 31

No glare found

PV array 4 and OP 32

No glare found

PV: PV array 5 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV array 5 and Route: 170th Street SE

No glare found

PV array 5 and Route: 171st Street SE

No glare found

PV array 5 and Route: 172nd Street SE

No glare found

PV array 5 and Route: 173rd Street SE

No glare found

PV array 5 and Route: 174th Street SE - 1

No glare found

PV array 5 and Route: 174th Street SE - 2

No glare found

PV array 5 and Route: 66th Street SE - 1

No glare found

PV array 5 and Route: 66th Street SE - 2

No glare found

PV array 5 and Route: 67th Street SE - 1

No glare found

PV array 5 and Route: 67th Street SE - 2

No glare found

PV array 5 and Route: 68th Street SE

No glare found

PV array 5 and Route: 69th Street SE - 1

No glare found

PV array 5 and Route: 69th Street SE - 2

No glare found

PV array 5 and Route: 70th Street SE - 1

No glare found

PV array 5 and Route: 70th Street SE - 2

No glare found

PV array 5 and Route: County Route 1

No glare found

PV array 5 and Route: I29

No glare found

PV array 5 and OP 1

No glare found

PV array 5 and OP 2

No glare found

PV array 5 and OP 3

No glare found

PV array 5 and OP 4

No glare found

PV array 5 and OP 5

No glare found

PV array 5 and OP 6

No glare found

PV array 5 and OP 7

No glare found

PV array 5 and OP 8

No glare found

PV array 5 and OP 9

No glare found

PV array 5 and OP 10

No glare found

PV array 5 and OP 11

No glare found

PV array 5 and OP 12

No glare found

PV array 5 and OP 13

No glare found

PV array 5 and OP 14

No glare found

PV array 5 and OP 15

No glare found

PV array 5 and OP 16

No glare found

PV array 5 and OP 17

No glare found

PV array 5 and OP 18

No glare found

PV array 5 and OP 19

No glare found

PV array 5 and OP 20

No glare found

PV array 5 and OP 21

No glare found

PV array 5 and OP 22

No glare found

PV array 5 and OP 23

No glare found

PV array 5 and OP 24

No glare found

PV array 5 and OP 25

No glare found

PV array 5 and OP 26

No glare found

PV array 5 and OP 27

No glare found

PV array 5 and OP 28

No glare found

PV array 5 and OP 29

No glare found

PV array 5 and OP 30

No glare found

PV array 5 and OP 31

No glare found

PV array 5 and OP 32

No glare found

PV: PV array 6 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV array 6 and Route: 170th Street SE

No glare found

PV array 6 and Route: 171st Street SE

No glare found

PV array 6 and Route: 172nd Street SE

No glare found

PV array 6 and Route: 173rd Street SE

No glare found

PV array 6 and Route: 174th Street SE - 1

No glare found

PV array 6 and Route: 174th Street SE - 2

No glare found

PV array 6 and Route: 66th Street SE - 1

No glare found

PV array 6 and Route: 66th Street SE - 2

No glare found

PV array 6 and Route: 67th Street SE - 1

No glare found

PV array 6 and Route: 67th Street SE - 2

No glare found

PV array 6 and Route: 68th Street SE

No glare found

PV array 6 and Route: 69th Street SE - 1

No glare found

PV array 6 and Route: 69th Street SE - 2

No glare found

PV array 6 and Route: 70th Street SE - 1

No glare found

PV array 6 and Route: 70th Street SE - 2

No glare found

PV array 6 and Route: County Route 1

No glare found

PV array 6 and Route: I29

No glare found

PV array 6 and OP 1

No glare found

PV array 6 and OP 2

No glare found

PV array 6 and OP 3

No glare found

PV array 6 and OP 4

No glare found

PV array 6 and OP 5

No glare found

PV array 6 and OP 6

No glare found

PV array 6 and OP 7

No glare found

PV array 6 and OP 8

No glare found

PV array 6 and OP 9

No glare found

PV array 6 and OP 10

No glare found

PV array 6 and OP 11

No glare found

PV array 6 and OP 12

No glare found

PV array 6 and OP 13

No glare found

PV array 6 and OP 14

No glare found

PV array 6 and OP 15

No glare found

PV array 6 and OP 16

No glare found

PV array 6 and OP 17

No glare found

PV array 6 and OP 18

No glare found

PV array 6 and OP 19

No glare found

PV array 6 and OP 20

No glare found

PV array 6 and OP 21

No glare found

PV array 6 and OP 22

No glare found

PV array 6 and OP 23

No glare found

PV array 6 and OP 24

No glare found

PV array 6 and OP 25

No glare found

PV array 6 and OP 26

No glare found

PV array 6 and OP 27

No glare found

PV array 6 and OP 28

No glare found

PV array 6 and OP 29

No glare found

PV array 6 and OP 30

No glare found

PV array 6 and OP 31

No glare found

PV array 6 and OP 32

No glare found

PV: PV array 7 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV array 7 and Route: 170th Street SE

No glare found

PV array 7 and Route: 171st Street SE

No glare found

PV array 7 and Route: 172nd Street SE

No glare found

PV array 7 and Route: 173rd Street SE

No glare found

PV array 7 and Route: 174th Street SE - 1

No glare found

PV array 7 and Route: 174th Street SE - 2

No glare found

PV array 7 and Route: 66th Street SE - 1

No glare found

PV array 7 and Route: 66th Street SE - 2

No glare found

PV array 7 and Route: 67th Street SE - 1

No glare found

PV array 7 and Route: 67th Street SE - 2

No glare found

PV array 7 and Route: 68th Street SE

No glare found

PV array 7 and Route: 69th Street SE - 1

No glare found

PV array 7 and Route: 69th Street SE - 2

No glare found

PV array 7 and Route: 70th Street SE - 1

No glare found

PV array 7 and Route: 70th Street SE - 2

No glare found

PV array 7 and Route: County Route 1

No glare found

PV array 7 and Route: I29

No glare found

PV array 7 and OP 1

No glare found

PV array 7 and OP 2

No glare found

PV array 7 and OP 3

No glare found

PV array 7 and OP 4

No glare found

PV array 7 and OP 5

No glare found

PV array 7 and OP 6

No glare found

PV array 7 and OP 7

No glare found

PV array 7 and OP 8

No glare found

PV array 7 and OP 9

No glare found

PV array 7 and OP 10

No glare found

PV array 7 and OP 11

No glare found

PV array 7 and OP 12

No glare found

PV array 7 and OP 13

No glare found

PV array 7 and OP 14

No glare found

PV array 7 and OP 15

No glare found

PV array 7 and OP 16

No glare found

PV array 7 and OP 17

No glare found

PV array 7 and OP 18

No glare found

PV array 7 and OP 19

No glare found

PV array 7 and OP 20

No glare found

PV array 7 and OP 21

No glare found

PV array 7 and OP 22

No glare found

PV array 7 and OP 23

No glare found

PV array 7 and OP 24

No glare found

PV array 7 and OP 25

No glare found

PV array 7 and OP 26

No glare found

PV array 7 and OP 27

No glare found

PV array 7 and OP 28

No glare found

PV array 7 and OP 29

No glare found

PV array 7 and OP 30

No glare found

PV array 7 and OP 31

No glare found

PV array 7 and OP 32

No glare found

PV: PV array 8 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV array 8 and Route: 170th Street SE

No glare found

PV array 8 and Route: 171st Street SE

No glare found

PV array 8 and Route: 172nd Street SE

No glare found

PV array 8 and Route: 173rd Street SE

No glare found

PV array 8 and Route: 174th Street SE - 1

No glare found

PV array 8 and Route: 174th Street SE - 2

No glare found

PV array 8 and Route: 66th Street SE - 1

No glare found

PV array 8 and Route: 66th Street SE - 2

No glare found

PV array 8 and Route: 67th Street SE - 1

No glare found

PV array 8 and Route: 67th Street SE - 2

No glare found

PV array 8 and Route: 68th Street SE

No glare found

PV array 8 and Route: 69th Street SE - 1

No glare found

PV array 8 and Route: 69th Street SE - 2

No glare found

PV array 8 and Route: 70th Street SE - 1

No glare found

PV array 8 and Route: 70th Street SE - 2

No glare found

PV array 8 and Route: County Route 1

No glare found

PV array 8 and Route: I29

No glare found

PV array 8 and OP 1

No glare found

PV array 8 and OP 2

No glare found

PV array 8 and OP 3

No glare found

PV array 8 and OP 4

No glare found

PV array 8 and OP 5

No glare found

PV array 8 and OP 6

No glare found

PV array 8 and OP 7

No glare found

PV array 8 and OP 8

No glare found

PV array 8 and OP 9

No glare found

PV array 8 and OP 10

No glare found

PV array 8 and OP 11

No glare found

PV array 8 and OP 12

No glare found

PV array 8 and OP 13

No glare found

PV array 8 and OP 14

No glare found

PV array 8 and OP 15

No glare found

PV array 8 and OP 16

No glare found

PV array 8 and OP 17

No glare found

PV array 8 and OP 18

No glare found

PV array 8 and OP 19

No glare found

PV array 8 and OP 20

No glare found

PV array 8 and OP 21

No glare found

PV array 8 and OP 22

No glare found

PV array 8 and OP 23

No glare found

PV array 8 and OP 24

No glare found

PV array 8 and OP 25

No glare found

PV array 8 and OP 26

No glare found

PV array 8 and OP 27

No glare found

PV array 8 and OP 28

No glare found

PV array 8 and OP 29

No glare found

PV array 8 and OP 30

No glare found

PV array 8 and OP 31

No glare found

PV array 8 and OP 32

No glare found

PV: PV array 9 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV array 9 and Route: 170th Street SE

No glare found

PV array 9 and Route: 171st Street SE

No glare found

PV array 9 and Route: 172nd Street SE

No glare found

PV array 9 and Route: 173rd Street SE

No glare found

PV array 9 and Route: 174th Street SE - 1

No glare found

PV array 9 and Route: 174th Street SE - 2

No glare found

PV array 9 and Route: 66th Street SE - 1

No glare found

PV array 9 and Route: 66th Street SE - 2

No glare found

PV array 9 and Route: 67th Street SE - 1

No glare found

PV array 9 and Route: 67th Street SE - 2

No glare found

PV array 9 and Route: 68th Street SE

No glare found

PV array 9 and Route: 69th Street SE - 1

No glare found

PV array 9 and Route: 69th Street SE - 2

No glare found

PV array 9 and Route: 70th Street SE - 1

No glare found

PV array 9 and Route: 70th Street SE - 2

No glare found

PV array 9 and Route: County Route 1

No glare found

PV array 9 and Route: I29

No glare found

PV array 9 and OP 1

No glare found

PV array 9 and OP 2

No glare found

PV array 9 and OP 3

No glare found

PV array 9 and OP 4

No glare found

PV array 9 and OP 5

No glare found

PV array 9 and OP 6

No glare found

PV array 9 and OP 7

No glare found

PV array 9 and OP 8

No glare found

PV array 9 and OP 9

No glare found

PV array 9 and OP 10

No glare found

PV array 9 and OP 11

No glare found

PV array 9 and OP 12

No glare found

PV array 9 and OP 13

No glare found

PV array 9 and OP 14

No glare found

PV array 9 and OP 15

No glare found

PV array 9 and OP 16

No glare found

PV array 9 and OP 17

No glare found

PV array 9 and OP 18

No glare found

PV array 9 and OP 19

No glare found

PV array 9 and OP 20

No glare found

PV array 9 and OP 21

No glare found

PV array 9 and OP 22

No glare found

PV array 9 and OP 23

No glare found

PV array 9 and OP 24

No glare found

PV array 9 and OP 25

No glare found

PV array 9 and OP 26

No glare found

PV array 9 and OP 27

No glare found

PV array 9 and OP 28

No glare found

PV array 9 and OP 29

No glare found

PV array 9 and OP 30

No glare found

PV array 9 and OP 31

No glare found

PV array 9 and OP 32

No glare found

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.

The algorithm does not rigorously represent the detailed geometry of a system; detailed features such as gaps between modules, variable height of the PV array, and support structures may impact actual glare results. However, we have validated our models against several systems, including a PV array causing glare to the air-traffic control tower at Manchester-Boston Regional Airport and several sites in Albuquerque, and the tool accurately predicted the occurrence and intensity of glare at different times and days of the year.

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. This primarily affects V1 analyses of path receptors.

Random number computations are utilized by various steps of the annual hazard analysis algorithm. Predicted minutes of glare can vary between runs as a result. This limitation primarily affects analyses of Observation Point receptors, including ATCTs. Note that the SGHAT/ ForgeSolar methodology has always relied on an analytical, qualitative approach to accurately determine the overall hazard (i.e. green vs. yellow) of expected glare on an annual basis.

The analysis does not automatically consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc.

The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)

The variable direct normal irradiance (DNI) feature (if selected) scales the user-prescribed peak DNI using a typical clear-day irradiance profile. This profile has a lower DNI in the mornings and evenings and a maximum at solar noon. The scaling uses a clear-day irradiance profile based on a normalized time relative to sunrise, solar noon, and sunset, which are prescribed by a sun-position algorithm and the latitude and longitude obtained from Google maps. The actual DNI on any given day can be affected by cloud cover, atmospheric attenuation, and other environmental factors.

The ocular hazard predicted by the tool depends on a number of environmental, optical, and human factors, which can be uncertain. We provide input fields and typical ranges of values for these factors so that the user can vary these parameters to see if they have an impact on the results. The speed of SGHAT allows expedited sensitivity and parametric analyses.

The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.

Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

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

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

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

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

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FORGESOLAR GLARE ANALYSIS

Project: **Flickertail Solar**

Site configuration: **Analysis 2- 2nd Story Receptor 08122024**

Created 12 Aug, 2024

Updated 15 Aug, 2024

Time-step 1 minute

Timezone offset UTC-6

Minimum sun altitude 0.0 deg

DNI peaks at 1,000.0 W/m²

Category 100 MW to 1 GW

Site ID 126645.21549

Ocular transmission coefficient 0.5

Pupil diameter 0.002 m

Eye focal length 0.017 m

Sun subtended angle 9.3 mrad

PV analysis methodology V2

Summary of Results No glare predicted

PV Array	Tilt °	Orient °	Annual Green Glare		Annual Yellow Glare		Energy kWh
			min	hr	min	hr	
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 10	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 11	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 2	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 3	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 4	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 5	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 6	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 7	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 8	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 9	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

Component Data

PV Arrays

Name: PV array 1

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

Ground Coverage Ratio: 0.29

Rated power: -

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	46.440630	-96.881313	961.71	7.00	968.71
2	46.440644	-96.874789	957.95	7.00	964.95
3	46.439675	-96.871853	956.96	7.00	963.96
4	46.439831	-96.867797	956.02	7.00	963.02
5	46.441333	-96.867828	953.72	7.00	960.72
6	46.441373	-96.865578	953.98	7.00	960.98
7	46.439754	-96.865569	955.07	7.00	962.07
8	46.439754	-96.865569	955.07	7.00	962.07
9	46.439754	-96.865569	955.07	7.00	962.07
10	46.439697	-96.862444	953.56	7.00	960.56
11	46.432981	-96.862370	954.68	7.00	961.68
12	46.432854	-96.868347	956.56	7.00	963.56
13	46.435340	-96.871568	959.24	7.00	966.24
14	46.438328	-96.871845	959.06	7.00	966.06
15	46.438384	-96.877002	961.38	7.00	968.38
16	46.438384	-96.877002	961.38	7.00	968.38
17	46.438384	-96.877002	961.38	7.00	968.38
18	46.434545	-96.877090	961.25	7.00	968.25
19	46.434545	-96.877090	961.25	7.00	968.25
20	46.434545	-96.877090	961.25	7.00	968.25
21	46.432114	-96.878157	972.47	7.00	979.47
22	46.432114	-96.878157	972.47	7.00	979.47
23	46.432114	-96.878157	972.47	7.00	979.47
24	46.431116	-96.880661	971.14	7.00	978.14
25	46.431116	-96.880661	971.14	7.00	978.14
26	46.431116	-96.880661	971.14	7.00	978.14
27	46.431009	-96.881774	971.52	7.00	978.52
28	46.431009	-96.881774	971.52	7.00	978.52
29	46.431009	-96.881774	971.52	7.00	978.52

Name: PV array 10

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

Ground Coverage Ratio: 0.29

Rated power: -

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	46.430287	-96.809072	940.98	7.00	947.98
2	46.430272	-96.798901	940.53	7.00	947.53
3	46.427625	-96.798858	939.88	7.00	946.88
4	46.427595	-96.809094	942.27	7.00	949.27

Name: PV array 11

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

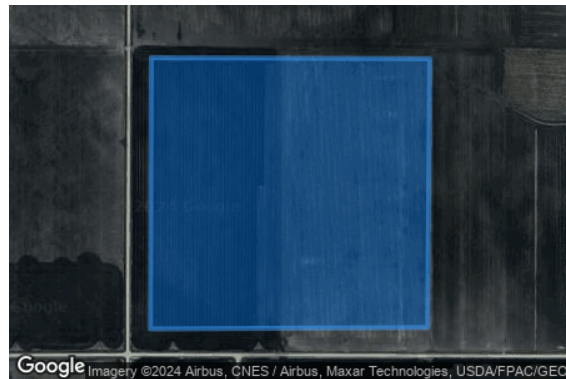
Ground Coverage Ratio: 0.29

Rated power: -

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	46.428125	-96.797891	939.73	7.00	946.73
2	46.428159	-96.788359	941.28	7.00	948.28
3	46.434506	-96.788287	940.88	7.00	947.88
4	46.434529	-96.797861	939.63	7.00	946.63

Name: PV array 2

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

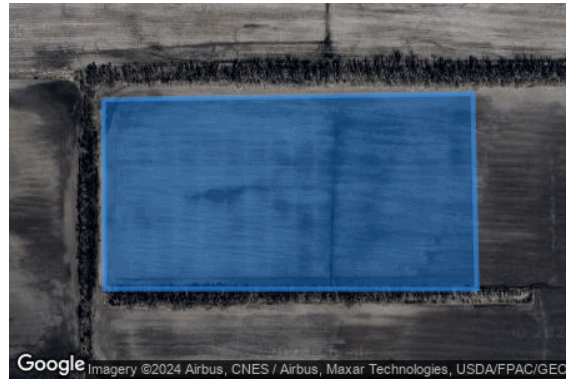
Ground Coverage Ratio: 0.29

Rated power: -

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	46.430797	-96.871587	961.11	7.00	968.11
2	46.430868	-96.865234	954.38	7.00	961.38
3	46.428556	-96.865163	953.00	7.00	960.00
4	46.428559	-96.871570	961.31	7.00	968.31

Name: PV array 3

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

Ground Coverage Ratio: 0.29

Rated power: -

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	46.426552	-96.860785	951.96	7.00	958.96
2	46.426626	-96.857112	950.91	7.00	957.91
3	46.424235	-96.851272	951.30	7.00	958.30
4	46.425300	-96.851032	951.42	7.00	958.42
5	46.420271	-96.851203	952.29	7.00	959.29
6	46.419828	-96.841132	951.63	7.00	958.63
7	46.413330	-96.841307	952.39	7.00	959.39
8	46.413160	-96.860908	962.66	7.00	969.66

Name: PV array 4

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

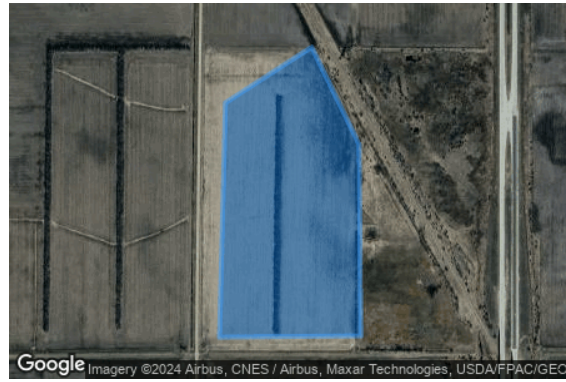
Ground Coverage Ratio: 0.29

Rated power: -

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	46.418950	-96.839813	951.11	7.00	958.11
2	46.420265	-96.836851	950.52	7.00	957.52
3	46.417972	-96.835220	952.11	7.00	959.11
4	46.413451	-96.835156	950.80	7.00	957.80
5	46.413418	-96.840017	951.42	7.00	958.42

Name: PV array 5

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

Ground Coverage Ratio: 0.29

Rated power: -

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	46.412869	-96.828955	951.50	7.00	958.50
2	46.412809	-96.820007	949.02	7.00	956.02
3	46.406877	-96.820114	948.11	7.00	955.11
4	46.406891	-96.824706	949.31	7.00	956.31
5	46.411877	-96.828912	950.71	7.00	957.71

Name: PV array 6

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

Ground Coverage Ratio: 0.29

Rated power: -

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	46.413313	-96.828720	969.60	7.00	976.60
2	46.416541	-96.829135	948.72	7.00	955.72
3	46.426514	-96.828828	945.79	7.00	952.79
4	46.426684	-96.820157	952.16	7.00	959.16
5	46.413367	-96.820376	945.51	7.00	952.51
6	46.413367	-96.820376	945.51	7.00	952.51
7	46.413367	-96.820376	945.51	7.00	952.51

Name: PV array 7

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

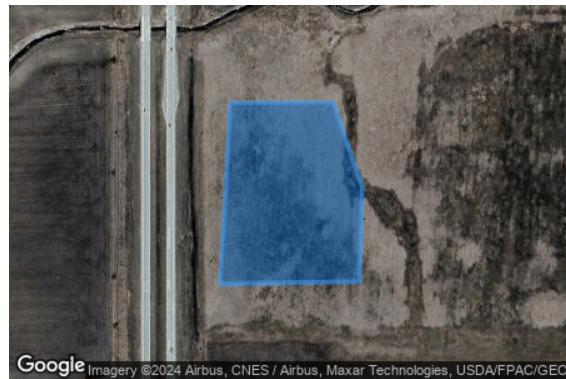
Ground Coverage Ratio: 0.29

Rated power: -

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	46.429063	-96.829024	942.73	7.00	949.73
2	46.429091	-96.826627	946.30	7.00	953.30
3	46.430209	-96.826577	946.49	7.00	953.49
4	46.431217	-96.827081	947.03	7.00	954.03
5	46.431217	-96.827081	947.03	7.00	954.03
6	46.431217	-96.827081	947.03	7.00	954.03
7	46.431217	-96.827081	947.03	7.00	954.03
8	46.431208	-96.828848	943.64	7.00	950.64

Name: PV array 8

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

Ground Coverage Ratio: 0.29

Rated power: -

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	46.433366	-96.829242	946.40	7.00	953.40
2	46.433411	-96.825037	945.57	7.00	952.57
3	46.435733	-96.820252	945.02	7.00	952.02
4	46.448752	-96.820330	940.55	7.00	947.55
5	46.448769	-96.829186	944.35	7.00	951.35

Name: PV array 9

Axis tracking: Single-axis rotation

Backtracking: Shade-slope

Tracking axis orientation: 180.0°

Max tracking angle: 60.0°

Resting angle: 5.0°

Ground Coverage Ratio: 0.29

Rated power: -

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	46.426658	-96.814766	944.14	7.00	951.14
2	46.426722	-96.799155	940.42	7.00	947.42
3	46.416769	-96.799395	939.89	7.00	946.89
4	46.416623	-96.804690	942.48	7.00	949.48
5	46.413614	-96.804585	943.37	7.00	950.37
6	46.413636	-96.818565	948.99	7.00	955.99
7	46.421279	-96.818404	947.86	7.00	954.86
8	46.421279	-96.818404	947.86	7.00	954.86
9	46.421279	-96.818404	947.86	7.00	954.86
10	46.421279	-96.818404	947.86	7.00	954.86
11	46.421279	-96.818404	947.86	7.00	954.86
12	46.421158	-96.815040	945.70	7.00	952.70
13	46.421158	-96.815040	945.70	7.00	952.70
14	46.421158	-96.815040	945.70	7.00	952.70
15	46.421158	-96.815040	945.70	7.00	952.70
16	46.421158	-96.815040	945.70	7.00	952.70

Route Receptors

Name: 170th Street SE

Path type: Two-way

Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.456370	-96.862070	957.56	9.00	966.56
2	46.449255	-96.861904	952.86	9.00	961.86
3	46.441872	-96.861567	957.44	9.00	966.44
4	46.436284	-96.861516	958.69	9.00	967.69
5	46.434667	-96.861515	959.83	9.00	968.83
6	46.412892	-96.861608	963.77	9.00	972.77
7	46.398396	-96.861739	972.15	9.00	981.15

Name: 171st Street SE
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.456360	-96.841077	950.24	9.00	959.24
2	46.454653	-96.840992	950.16	9.00	959.16
3	46.448644	-96.840767	951.27	9.00	960.27
4	46.444293	-96.840633	950.95	9.00	959.95
5	46.441927	-96.840596	951.84	9.00	960.84
6	46.435971	-96.840553	950.82	9.00	959.82
7	46.431831	-96.840553	950.83	9.00	959.83
8	46.428532	-96.840508	954.17	9.00	963.17
9	46.427416	-96.840508	953.25	9.00	962.25
10	46.425893	-96.840529	953.70	9.00	962.70
11	46.425494	-96.840583	954.72	9.00	963.72
12	46.423564	-96.840583	955.61	9.00	964.61
13	46.419860	-96.840654	956.42	9.00	965.42
14	46.412957	-96.840792	955.97	9.00	964.97
15	46.408990	-96.840802	955.40	9.00	964.40
16	46.405621	-96.840843	955.37	9.00	964.37
17	46.400283	-96.840851	957.63	9.00	966.63
18	46.398466	-96.840915	959.66	9.00	968.66

Name: 172nd Street SE

Path type: Two-way

Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.398496	-96.818392	951.40	9.00	960.40
2	46.399990	-96.819658	949.83	9.00	958.83
3	46.400545	-96.819771	950.10	9.00	959.10
4	46.406023	-96.819760	950.44	9.00	959.44
5	46.412970	-96.819715	951.98	9.00	960.98
6	46.420156	-96.819665	950.40	9.00	959.40
7	46.427474	-96.819568	948.06	9.00	957.06
8	46.434323	-96.819568	943.45	9.00	952.45
9	46.440448	-96.819557	945.97	9.00	954.97
10	46.441929	-96.819622	944.39	9.00	953.39
11	46.445904	-96.819675	943.40	9.00	952.40
12	46.453770	-96.819847	942.19	9.00	951.19
13	46.456396	-96.819868	942.31	9.00	951.31

Name: 173rd Street SE

Path type: Two-way

Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.398494	-96.798801	948.10	9.00	957.10
2	46.401171	-96.798783	946.02	9.00	955.02
3	46.406161	-96.798760	944.54	9.00	953.54
4	46.411147	-96.798740	942.40	9.00	951.40
5	46.413027	-96.798731	943.29	9.00	952.29
6	46.417783	-96.798683	941.62	9.00	950.62
7	46.421218	-96.798680	941.23	9.00	950.23
8	46.427505	-96.798643	943.72	9.00	952.72
9	46.434756	-96.798602	942.26	9.00	951.26
10	46.438942	-96.798572	941.84	9.00	950.84
11	46.441975	-96.798569	942.70	9.00	951.70

Name: 174th Street SE - 1
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.456478	-96.777739	941.12	9.00	950.12
2	46.449853	-96.777675	940.79	9.00	949.79
3	46.441940	-96.777725	941.49	9.00	950.49
4	46.439056	-96.777747	939.85	9.00	948.85

Name: 174th Street SE - 2
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.433842	-96.777733	938.34	9.00	947.34
2	46.432984	-96.777755	931.73	9.00	940.73
3	46.428438	-96.777744	940.77	9.00	949.77
4	46.427381	-96.777755	941.49	9.00	950.49
5	46.426106	-96.777841	939.99	9.00	948.99
6	46.425344	-96.777884	941.24	9.00	950.24
7	46.424604	-96.777873	936.37	9.00	945.37
8	46.423954	-96.777766	937.20	9.00	946.20
9	46.423488	-96.777701	937.48	9.00	946.48
10	46.421944	-96.777712	940.35	9.00	949.35
11	46.419907	-96.777723	941.37	9.00	950.37
12	46.418753	-96.777755	920.02	9.00	929.02
13	46.418428	-96.777733	927.22	9.00	936.22
14	46.418014	-96.777519	930.05	9.00	939.05
15	46.417503	-96.777390	935.62	9.00	944.62
16	46.416956	-96.777369	939.06	9.00	948.06
17	46.416364	-96.777572	939.30	9.00	948.30
18	46.415846	-96.777744	941.71	9.00	950.71
19	46.415240	-96.777766	942.46	9.00	951.46
20	46.414259	-96.777819	943.15	9.00	952.15
21	46.413645	-96.777959	942.37	9.00	951.37
22	46.413142	-96.778034	944.02	9.00	953.02
23	46.412891	-96.777980	943.07	9.00	952.07
24	46.412543	-96.777819	944.28	9.00	953.28
25	46.398516	-96.777859	944.83	9.00	953.83

Name: 66th Street SE - 1
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.456366	-96.862031	957.53	9.00	966.53
2	46.456344	-96.856796	951.74	9.00	960.74
3	46.456355	-96.841066	950.37	9.00	959.37
4	46.456348	-96.831453	942.31	9.00	951.31

Name: 66th Street SE - 2
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.456378	-96.819844	942.48	9.00	951.48
2	46.456392	-96.814169	942.26	9.00	951.26
3	46.456459	-96.798784	945.59	9.00	954.59
4	46.456474	-96.788312	942.95	9.00	951.95
5	46.456451	-96.786413	933.38	9.00	942.38
6	46.456548	-96.785566	926.78	9.00	935.78
7	46.456540	-96.784922	922.69	9.00	931.69
8	46.456437	-96.783914	921.76	9.00	930.76
9	46.456437	-96.782969	923.01	9.00	932.01
10	46.456449	-96.777712	942.04	9.00	951.04
11	46.456402	-96.767252	941.24	9.00	950.24
12	46.456392	-96.756745	933.39	9.00	942.39

Name: 67th Street SE - 1
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.441826	-96.904619	983.15	9.00	992.15
2	46.441762	-96.892871	975.46	9.00	984.46
3	46.441703	-96.882538	966.90	9.00	975.90
4	46.441799	-96.871938	958.45	9.00	967.45
5	46.441888	-96.861585	957.23	9.00	966.23
6	46.441939	-96.853917	958.42	9.00	967.42
7	46.441954	-96.845076	953.56	9.00	962.56
8	46.441954	-96.840588	951.94	9.00	960.94
9	46.441947	-96.830917	948.31	9.00	957.31

Name: 67th Street SE - 2
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.441909	-96.819618	944.42	9.00	953.42
2	46.441946	-96.809657	941.74	9.00	950.74
3	46.441968	-96.798581	942.63	9.00	951.63
4	46.441909	-96.777730	941.62	9.00	950.62
5	46.441946	-96.756768	940.62	9.00	949.62

Name: 68th Street SE
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.427347	-96.904574	980.18	9.00	989.18
2	46.427288	-96.882478	974.92	9.00	983.92
3	46.427320	-96.871942	964.35	9.00	973.35
4	46.427350	-96.861513	955.32	9.00	964.32
5	46.427468	-96.842716	953.39	9.00	962.39
6	46.427453	-96.840528	953.44	9.00	962.44
7	46.427453	-96.829305	970.62	9.00	979.62
8	46.427433	-96.819564	948.66	9.00	957.66
9	46.427463	-96.798628	943.61	9.00	952.61
10	46.427448	-96.787621	944.26	9.00	953.26
11	46.427507	-96.783029	941.32	9.00	950.32
12	46.427433	-96.777707	941.69	9.00	950.69
13	46.427463	-96.756765	940.16	9.00	949.16
14	46.427463	-96.735908	939.98	9.00	948.98

Name: 69th Street SE - 1
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.412812	-96.882567	974.93	9.00	983.93
2	46.412864	-96.868613	964.64	9.00	973.64
3	46.412909	-96.861628	963.53	9.00	972.53
4	46.412931	-96.849053	954.83	9.00	963.83
5	46.412964	-96.840788	955.97	9.00	964.97
6	46.412979	-96.831475	953.34	9.00	962.34

Name: 69th Street SE - 2
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.412994	-96.828836	952.53	9.00	961.53
2	46.412972	-96.822452	950.32	9.00	959.32
3	46.412972	-96.813945	948.35	9.00	957.35
4	46.412994	-96.802101	944.61	9.00	953.61
5	46.413022	-96.798779	942.93	9.00	951.93
6	46.413017	-96.778115	944.25	9.00	953.25

Name: 70th Street SE - 1
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.398287	-96.882698	980.92	9.00	989.92
2	46.398361	-96.871862	971.47	9.00	980.47
3	46.398399	-96.861738	972.15	9.00	981.15
4	46.398459	-96.848542	961.40	9.00	970.40
5	46.398473	-96.840903	959.82	9.00	968.82
6	46.398444	-96.831015	954.74	9.00	963.74

Name: 70th Street SE - 2
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.398488	-96.828934	955.23	9.00	964.23
2	46.398488	-96.819771	950.50	9.00	959.50
3	46.398488	-96.809193	950.50	9.00	959.50
4	46.398503	-96.798850	948.11	9.00	957.11
5	46.398533	-96.777886	944.66	9.00	953.66

Name: County 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	46.456325	-96.883236	961.38	9.00	970.38
2	46.447635	-96.882810	963.89	9.00	972.89
3	46.441731	-96.882559	966.61	9.00	975.61
4	46.438137	-96.882512	967.93	9.00	976.93
5	46.434028	-96.882469	976.08	9.00	985.08
6	46.429882	-96.882459	974.38	9.00	983.38
7	46.427256	-96.882479	975.09	9.00	984.09
8	46.412771	-96.882539	975.45	9.00	984.45
9	46.407864	-96.882563	975.54	9.00	984.54
10	46.402910	-96.882606	978.17	9.00	987.17
11	46.398341	-96.882606	981.40	9.00	990.40

Name: I29

Path type: Two-way

Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	46.384082	-96.830112	956.90	9.00	965.90
2	46.398555	-96.829860	955.38	9.00	964.38
3	46.411540	-96.829861	979.42	9.00	988.42
4	46.419082	-96.829882	952.89	9.00	961.89
5	46.427628	-96.829861	950.28	9.00	959.28
6	46.439511	-96.829869	949.44	9.00	958.44
7	46.445065	-96.829988	948.80	9.00	957.80
8	46.454929	-96.830209	947.22	9.00	956.22
9	46.468172	-96.830540	946.76	9.00	955.76

Discrete Observation Point Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	46.414961	-96.802326	942.04	16.00
OP 2	2	46.447103	-96.782987	942.59	16.00
OP 3	3	46.442512	-96.776752	940.30	16.00
OP 4	4	46.434180	-96.776838	938.76	16.00
OP 5	5	46.412735	-96.787432	943.58	16.00
OP 6	6	46.418317	-96.780353	942.28	16.00
OP 7	7	46.419966	-96.778385	941.99	16.00
OP 8	8	46.421855	-96.778498	941.58	16.00
OP 9	9	46.425221	-96.778571	939.81	16.00
OP 10	10	46.425645	-96.794885	943.59	16.00
OP 11	11	46.429718	-96.782719	942.99	16.00
OP 12	12	46.438788	-96.779376	941.20	16.00
OP 13	13	46.453540	-96.814659	941.51	16.00
OP 14	14	46.447578	-96.812304	941.73	16.00
OP 15	15	46.447825	-96.800311	943.90	16.00
OP 16	16	46.442865	-96.809566	941.39	16.00
OP 17	17	46.399982	-96.806660	949.39	16.00
OP 18	18	46.395859	-96.811523	950.41	16.00
OP 19	19	46.460505	-96.840005	946.98	16.00
OP 20	20	46.443042	-96.851767	956.00	16.00
OP 21	21	46.440386	-96.853022	959.66	16.00
OP 22	22	46.428002	-96.841206	952.26	16.00
OP 23	23	46.426522	-96.850215	953.56	16.00
OP 24	24	46.426162	-96.852556	952.66	16.00
OP 25	25	46.398912	-96.855408	965.21	16.00
OP 26	26	46.411044	-96.867880	969.45	16.00
OP 27	27	46.412205	-96.874337	971.29	16.00
OP 28	28	46.420376	-96.863552	956.65	16.00
OP 29	29	46.425534	-96.881759	973.88	16.00
OP 30	30	46.429076	-96.881593	972.03	16.00
OP 31	31	46.433033	-96.895659	977.22	16.00
OP 32	32	46.426196	-96.883349	973.34	16.00

Glare Analysis Results

Summary of Results No glare predicted

PV Array	Tilt °	Orient °	Annual Green Glare		Annual Yellow Glare		Energy kWh
			min	hr	min	hr	
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 10	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 11	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 2	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 3	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 4	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 5	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 6	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 7	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 8	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 9	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV: PV array 1 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV array 1 and Route: 170th Street SE

No glare found

PV array 1 and Route: 171st Street SE

No glare found

PV array 1 and Route: 172nd Street SE

No glare found

PV array 1 and Route: 173rd Street SE

No glare found

PV array 1 and Route: 174th Street SE - 1

No glare found

PV array 1 and Route: 174th Street SE - 2

No glare found

PV array 1 and Route: 66th Street SE - 1

No glare found

PV array 1 and Route: 66th Street SE - 2

No glare found

PV array 1 and Route: 67th Street SE - 1

No glare found

PV array 1 and Route: 67th Street SE - 2

No glare found

PV array 1 and Route: 68th Street SE

No glare found

PV array 1 and Route: 69th Street SE - 1

No glare found

PV array 1 and Route: 69th Street SE - 2

No glare found

PV array 1 and Route: 70th Street SE - 1

No glare found

PV array 1 and Route: 70th Street SE - 2

No glare found

PV array 1 and Route: County Route 1

No glare found

PV array 1 and Route: I29

No glare found

PV array 1 and OP 1

No glare found

PV array 1 and OP 2

No glare found

PV array 1 and OP 3

No glare found

PV array 1 and OP 4

No glare found

PV array 1 and OP 5

No glare found

PV array 1 and OP 6

No glare found

PV array 1 and OP 7

No glare found

PV array 1 and OP 8

No glare found

PV array 1 and OP 9

No glare found

PV array 1 and OP 10

No glare found

PV array 1 and OP 11

No glare found

PV array 1 and OP 12

No glare found

PV array 1 and OP 13

No glare found

PV array 1 and OP 14

No glare found

PV array 1 and OP 15

No glare found

PV array 1 and OP 16

No glare found

PV array 1 and OP 17

No glare found

PV array 1 and OP 18

No glare found

PV array 1 and OP 19

No glare found

PV array 1 and OP 20

No glare found

PV array 1 and OP 21

No glare found

PV array 1 and OP 22

No glare found

PV array 1 and OP 23

No glare found

PV array 1 and OP 24

No glare found

PV array 1 and OP 25

No glare found

PV array 1 and OP 26

No glare found

PV array 1 and OP 27

No glare found

PV array 1 and OP 28

No glare found

PV array 1 and OP 29

No glare found

PV array 1 and OP 30

No glare found

PV array 1 and OP 31

No glare found

PV array 1 and OP 32

No glare found

PV: PV array 10 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV array 10 and Route: 170th Street SE

No glare found

PV array 10 and Route: 171st Street SE

No glare found

PV array 10 and Route: 172nd Street SE

No glare found

PV array 10 and Route: 173rd Street SE

No glare found

PV array 10 and Route: 174th Street SE - 1

No glare found

PV array 10 and Route: 174th Street SE - 2

No glare found

PV array 10 and Route: 66th Street SE - 1

No glare found

PV array 10 and Route: 66th Street SE - 2

No glare found

PV array 10 and Route: 67th Street SE - 1

No glare found

PV array 10 and Route: 67th Street SE - 2

No glare found

PV array 10 and Route: 68th Street SE

No glare found

PV array 10 and Route: 69th Street SE - 1

No glare found

PV array 10 and Route: 69th Street SE - 2

No glare found

PV array 10 and Route: 70th Street SE - 1

No glare found

PV array 10 and Route: 70th Street SE - 2

No glare found

PV array 10 and Route: County Route 1

No glare found

PV array 10 and Route: I29

No glare found

PV array 10 and OP 1

No glare found

PV array 10 and OP 2

No glare found

PV array 10 and OP 3

No glare found

PV array 10 and OP 4

No glare found

PV array 10 and OP 5

No glare found

PV array 10 and OP 6

No glare found

PV array 10 and OP 7

No glare found

PV array 10 and OP 8

No glare found

PV array 10 and OP 9

No glare found

PV array 10 and OP 10

No glare found

PV array 10 and OP 11

No glare found

PV array 10 and OP 12

No glare found

PV array 10 and OP 13

No glare found

PV array 10 and OP 14

No glare found

PV array 10 and OP 15

No glare found

PV array 10 and OP 16

No glare found

PV array 10 and OP 17

No glare found

PV array 10 and OP 18

No glare found

PV array 10 and OP 19

No glare found

PV array 10 and OP 20

No glare found

PV array 10 and OP 21

No glare found

PV array 10 and OP 22

No glare found

PV array 10 and OP 23

No glare found

PV array 10 and OP 24

No glare found

PV array 10 and OP 25

No glare found

PV array 10 and OP 26

No glare found

PV array 10 and OP 27

No glare found

PV array 10 and OP 28

No glare found

PV array 10 and OP 29

No glare found

PV array 10 and OP 30

No glare found

PV array 10 and OP 31

No glare found

PV array 10 and OP 32

No glare found

PV: PV array 11 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV array 11 and Route: 170th Street SE

No glare found

PV array 11 and Route: 171st Street SE

No glare found

PV array 11 and Route: 172nd Street SE

No glare found

PV array 11 and Route: 173rd Street SE

No glare found

PV array 11 and Route: 174th Street SE - 1

No glare found

PV array 11 and Route: 174th Street SE - 2

No glare found

PV array 11 and Route: 66th Street SE - 1

No glare found

PV array 11 and Route: 66th Street SE - 2

No glare found

PV array 11 and Route: 67th Street SE - 1

No glare found

PV array 11 and Route: 67th Street SE - 2

No glare found

PV array 11 and Route: 68th Street SE

No glare found

PV array 11 and Route: 69th Street SE - 1

No glare found

PV array 11 and Route: 69th Street SE - 2

No glare found

PV array 11 and Route: 70th Street SE - 1

No glare found

PV array 11 and Route: 70th Street SE - 2

No glare found

PV array 11 and Route: County Route 1

No glare found

PV array 11 and Route: I29

No glare found

PV array 11 and OP 1

No glare found

PV array 11 and OP 2

No glare found

PV array 11 and OP 3

No glare found

PV array 11 and OP 4

No glare found

PV array 11 and OP 5

No glare found

PV array 11 and OP 6

No glare found

PV array 11 and OP 7

No glare found

PV array 11 and OP 8

No glare found

PV array 11 and OP 9

No glare found

PV array 11 and OP 10

No glare found

PV array 11 and OP 11

No glare found

PV array 11 and OP 12

No glare found

PV array 11 and OP 13

No glare found

PV array 11 and OP 14

No glare found

PV array 11 and OP 15

No glare found

PV array 11 and OP 16

No glare found

PV array 11 and OP 17

No glare found

PV array 11 and OP 18

No glare found

PV array 11 and OP 19

No glare found

PV array 11 and OP 20

No glare found

PV array 11 and OP 21

No glare found

PV array 11 and OP 22

No glare found

PV array 11 and OP 23

No glare found

PV array 11 and OP 24

No glare found

PV array 11 and OP 25

No glare found

PV array 11 and OP 26

No glare found

PV array 11 and OP 27

No glare found

PV array 11 and OP 28

No glare found

PV array 11 and OP 29

No glare found

PV array 11 and OP 30

No glare found

PV array 11 and OP 31

No glare found

PV array 11 and OP 32

No glare found

PV: PV array 2 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV array 2 and Route: 170th Street SE

No glare found

PV array 2 and Route: 171st Street SE

No glare found

PV array 2 and Route: 172nd Street SE

No glare found

PV array 2 and Route: 173rd Street SE

No glare found

PV array 2 and Route: 174th Street SE - 1

No glare found

PV array 2 and Route: 174th Street SE - 2

No glare found

PV array 2 and Route: 66th Street SE - 1

No glare found

PV array 2 and Route: 66th Street SE - 2

No glare found

PV array 2 and Route: 67th Street SE - 1

No glare found

PV array 2 and Route: 67th Street SE - 2

No glare found

PV array 2 and Route: 68th Street SE

No glare found

PV array 2 and Route: 69th Street SE - 1

No glare found

PV array 2 and Route: 69th Street SE - 2

No glare found

PV array 2 and Route: 70th Street SE - 1

No glare found

PV array 2 and Route: 70th Street SE - 2

No glare found

PV array 2 and Route: County Route 1

No glare found

PV array 2 and Route: I29

No glare found

PV array 2 and OP 1

No glare found

PV array 2 and OP 2

No glare found

PV array 2 and OP 3

No glare found

PV array 2 and OP 4

No glare found

PV array 2 and OP 5

No glare found

PV array 2 and OP 6

No glare found

PV array 2 and OP 7

No glare found

PV array 2 and OP 8

No glare found

PV array 2 and OP 9

No glare found

PV array 2 and OP 10

No glare found

PV array 2 and OP 11

No glare found

PV array 2 and OP 12

No glare found

PV array 2 and OP 13

No glare found

PV array 2 and OP 14

No glare found

PV array 2 and OP 15

No glare found

PV array 2 and OP 16

No glare found

PV array 2 and OP 17

No glare found

PV array 2 and OP 18

No glare found

PV array 2 and OP 19

No glare found

PV array 2 and OP 20

No glare found

PV array 2 and OP 21

No glare found

PV array 2 and OP 22

No glare found

PV array 2 and OP 23

No glare found

PV array 2 and OP 24

No glare found

PV array 2 and OP 25

No glare found

PV array 2 and OP 26

No glare found

PV array 2 and OP 27

No glare found

PV array 2 and OP 28

No glare found

PV array 2 and OP 29

No glare found

PV array 2 and OP 30

No glare found

PV array 2 and OP 31

No glare found

PV array 2 and OP 32

No glare found

PV: PV array 3 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV array 3 and Route: 170th Street SE

No glare found

PV array 3 and Route: 171st Street SE

No glare found

PV array 3 and Route: 172nd Street SE

No glare found

PV array 3 and Route: 173rd Street SE

No glare found

PV array 3 and Route: 174th Street SE - 1

No glare found

PV array 3 and Route: 174th Street SE - 2

No glare found

PV array 3 and Route: 66th Street SE - 1

No glare found

PV array 3 and Route: 66th Street SE - 2

No glare found

PV array 3 and Route: 67th Street SE - 1

No glare found

PV array 3 and Route: 67th Street SE - 2

No glare found

PV array 3 and Route: 68th Street SE

No glare found

PV array 3 and Route: 69th Street SE - 1

No glare found

PV array 3 and Route: 69th Street SE - 2

No glare found

PV array 3 and Route: 70th Street SE - 1

No glare found

PV array 3 and Route: 70th Street SE - 2

No glare found

PV array 3 and Route: County Route 1

No glare found

PV array 3 and Route: I29

No glare found

PV array 3 and OP 1

No glare found

PV array 3 and OP 2

No glare found

PV array 3 and OP 3

No glare found

PV array 3 and OP 4

No glare found

PV array 3 and OP 5

No glare found

PV array 3 and OP 6

No glare found

PV array 3 and OP 7

No glare found

PV array 3 and OP 8

No glare found

PV array 3 and OP 9

No glare found

PV array 3 and OP 10

No glare found

PV array 3 and OP 11

No glare found

PV array 3 and OP 12

No glare found

PV array 3 and OP 13

No glare found

PV array 3 and OP 14

No glare found

PV array 3 and OP 15

No glare found

PV array 3 and OP 16

No glare found

PV array 3 and OP 17

No glare found

PV array 3 and OP 18

No glare found

PV array 3 and OP 19

No glare found

PV array 3 and OP 20

No glare found

PV array 3 and OP 21

No glare found

PV array 3 and OP 22

No glare found

PV array 3 and OP 23

No glare found

PV array 3 and OP 24

No glare found

PV array 3 and OP 25

No glare found

PV array 3 and OP 26

No glare found

PV array 3 and OP 27

No glare found

PV array 3 and OP 28

No glare found

PV array 3 and OP 29

No glare found

PV array 3 and OP 30

No glare found

PV array 3 and OP 31

No glare found

PV array 3 and OP 32

No glare found

PV: PV array 4 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV array 4 and Route: 170th Street SE

No glare found

PV array 4 and Route: 171st Street SE

No glare found

PV array 4 and Route: 172nd Street SE

No glare found

PV array 4 and Route: 173rd Street SE

No glare found

PV array 4 and Route: 174th Street SE - 1

No glare found

PV array 4 and Route: 174th Street SE - 2

No glare found

PV array 4 and Route: 66th Street SE - 1

No glare found

PV array 4 and Route: 66th Street SE - 2

No glare found

PV array 4 and Route: 67th Street SE - 1

No glare found

PV array 4 and Route: 67th Street SE - 2

No glare found

PV array 4 and Route: 68th Street SE

No glare found

PV array 4 and Route: 69th Street SE - 1

No glare found

PV array 4 and Route: 69th Street SE - 2

No glare found

PV array 4 and Route: 70th Street SE - 1

No glare found

PV array 4 and Route: 70th Street SE - 2

No glare found

PV array 4 and Route: County Route 1

No glare found

PV array 4 and Route: I29

No glare found

PV array 4 and OP 1

No glare found

PV array 4 and OP 2

No glare found

PV array 4 and OP 3

No glare found

PV array 4 and OP 4

No glare found

PV array 4 and OP 5

No glare found

PV array 4 and OP 6

No glare found

PV array 4 and OP 7

No glare found

PV array 4 and OP 8

No glare found

PV array 4 and OP 9

No glare found

PV array 4 and OP 10

No glare found

PV array 4 and OP 11

No glare found

PV array 4 and OP 12

No glare found

PV array 4 and OP 13

No glare found

PV array 4 and OP 14

No glare found

PV array 4 and OP 15

No glare found

PV array 4 and OP 16

No glare found

PV array 4 and OP 17

No glare found

PV array 4 and OP 18

No glare found

PV array 4 and OP 19

No glare found

PV array 4 and OP 20

No glare found

PV array 4 and OP 21

No glare found

PV array 4 and OP 22

No glare found

PV array 4 and OP 23

No glare found

PV array 4 and OP 24

No glare found

PV array 4 and OP 25

No glare found

PV array 4 and OP 26

No glare found

PV array 4 and OP 27

No glare found

PV array 4 and OP 28

No glare found

PV array 4 and OP 29

No glare found

PV array 4 and OP 30

No glare found

PV array 4 and OP 31

No glare found

PV array 4 and OP 32

No glare found

PV: PV array 5 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV array 5 and Route: 170th Street SE

No glare found

PV array 5 and Route: 171st Street SE

No glare found

PV array 5 and Route: 172nd Street SE

No glare found

PV array 5 and Route: 173rd Street SE

No glare found

PV array 5 and Route: 174th Street SE - 1

No glare found

PV array 5 and Route: 174th Street SE - 2

No glare found

PV array 5 and Route: 66th Street SE - 1

No glare found

PV array 5 and Route: 66th Street SE - 2

No glare found

PV array 5 and Route: 67th Street SE - 1

No glare found

PV array 5 and Route: 67th Street SE - 2

No glare found

PV array 5 and Route: 68th Street SE

No glare found

PV array 5 and Route: 69th Street SE - 1

No glare found

PV array 5 and Route: 69th Street SE - 2

No glare found

PV array 5 and Route: 70th Street SE - 1

No glare found

PV array 5 and Route: 70th Street SE - 2

No glare found

PV array 5 and Route: County Route 1

No glare found

PV array 5 and Route: I29

No glare found

PV array 5 and OP 1

No glare found

PV array 5 and OP 2

No glare found

PV array 5 and OP 3

No glare found

PV array 5 and OP 4

No glare found

PV array 5 and OP 5

No glare found

PV array 5 and OP 6

No glare found

PV array 5 and OP 7

No glare found

PV array 5 and OP 8

No glare found

PV array 5 and OP 9

No glare found

PV array 5 and OP 10

No glare found

PV array 5 and OP 11

No glare found

PV array 5 and OP 12

No glare found

PV array 5 and OP 13

No glare found

PV array 5 and OP 14

No glare found

PV array 5 and OP 15

No glare found

PV array 5 and OP 16

No glare found

PV array 5 and OP 17

No glare found

PV array 5 and OP 18

No glare found

PV array 5 and OP 19

No glare found

PV array 5 and OP 20

No glare found

PV array 5 and OP 21

No glare found

PV array 5 and OP 22

No glare found

PV array 5 and OP 23

No glare found

PV array 5 and OP 24

No glare found

PV array 5 and OP 25

No glare found

PV array 5 and OP 26

No glare found

PV array 5 and OP 27

No glare found

PV array 5 and OP 28

No glare found

PV array 5 and OP 29

No glare found

PV array 5 and OP 30

No glare found

PV array 5 and OP 31

No glare found

PV array 5 and OP 32

No glare found

PV: PV array 6 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV array 6 and Route: 170th Street SE

No glare found

PV array 6 and Route: 171st Street SE

No glare found

PV array 6 and Route: 172nd Street SE

No glare found

PV array 6 and Route: 173rd Street SE

No glare found

PV array 6 and Route: 174th Street SE - 1

No glare found

PV array 6 and Route: 174th Street SE - 2

No glare found

PV array 6 and Route: 66th Street SE - 1

No glare found

PV array 6 and Route: 66th Street SE - 2

No glare found

PV array 6 and Route: 67th Street SE - 1

No glare found

PV array 6 and Route: 67th Street SE - 2

No glare found

PV array 6 and Route: 68th Street SE

No glare found

PV array 6 and Route: 69th Street SE - 1

No glare found

PV array 6 and Route: 69th Street SE - 2

No glare found

PV array 6 and Route: 70th Street SE - 1

No glare found

PV array 6 and Route: 70th Street SE - 2

No glare found

PV array 6 and Route: County Route 1

No glare found

PV array 6 and Route: I29

No glare found

PV array 6 and OP 1

No glare found

PV array 6 and OP 2

No glare found

PV array 6 and OP 3

No glare found

PV array 6 and OP 4

No glare found

PV array 6 and OP 5

No glare found

PV array 6 and OP 6

No glare found

PV array 6 and OP 7

No glare found

PV array 6 and OP 8

No glare found

PV array 6 and OP 9

No glare found

PV array 6 and OP 10

No glare found

PV array 6 and OP 11

No glare found

PV array 6 and OP 12

No glare found

PV array 6 and OP 13

No glare found

PV array 6 and OP 14

No glare found

PV array 6 and OP 15

No glare found

PV array 6 and OP 16

No glare found

PV array 6 and OP 17

No glare found

PV array 6 and OP 18

No glare found

PV array 6 and OP 19

No glare found

PV array 6 and OP 20

No glare found

PV array 6 and OP 21

No glare found

PV array 6 and OP 22

No glare found

PV array 6 and OP 23

No glare found

PV array 6 and OP 24

No glare found

PV array 6 and OP 25

No glare found

PV array 6 and OP 26

No glare found

PV array 6 and OP 27

No glare found

PV array 6 and OP 28

No glare found

PV array 6 and OP 29

No glare found

PV array 6 and OP 30

No glare found

PV array 6 and OP 31

No glare found

PV array 6 and OP 32

No glare found

PV: PV array 7 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV array 7 and Route: 170th Street SE

No glare found

PV array 7 and Route: 171st Street SE

No glare found

PV array 7 and Route: 172nd Street SE

No glare found

PV array 7 and Route: 173rd Street SE

No glare found

PV array 7 and Route: 174th Street SE - 1

No glare found

PV array 7 and Route: 174th Street SE - 2

No glare found

PV array 7 and Route: 66th Street SE - 1

No glare found

PV array 7 and Route: 66th Street SE - 2

No glare found

PV array 7 and Route: 67th Street SE - 1

No glare found

PV array 7 and Route: 67th Street SE - 2

No glare found

PV array 7 and Route: 68th Street SE

No glare found

PV array 7 and Route: 69th Street SE - 1

No glare found

PV array 7 and Route: 69th Street SE - 2

No glare found

PV array 7 and Route: 70th Street SE - 1

No glare found

PV array 7 and Route: 70th Street SE - 2

No glare found

PV array 7 and Route: County Route 1

No glare found

PV array 7 and Route: I29

No glare found

PV array 7 and OP 1

No glare found

PV array 7 and OP 2

No glare found

PV array 7 and OP 3

No glare found

PV array 7 and OP 4

No glare found

PV array 7 and OP 5

No glare found

PV array 7 and OP 6

No glare found

PV array 7 and OP 7

No glare found

PV array 7 and OP 8

No glare found

PV array 7 and OP 9

No glare found

PV array 7 and OP 10

No glare found

PV array 7 and OP 11

No glare found

PV array 7 and OP 12

No glare found

PV array 7 and OP 13

No glare found

PV array 7 and OP 14

No glare found

PV array 7 and OP 15

No glare found

PV array 7 and OP 16

No glare found

PV array 7 and OP 17

No glare found

PV array 7 and OP 18

No glare found

PV array 7 and OP 19

No glare found

PV array 7 and OP 20

No glare found

PV array 7 and OP 21

No glare found

PV array 7 and OP 22

No glare found

PV array 7 and OP 23

No glare found

PV array 7 and OP 24

No glare found

PV array 7 and OP 25

No glare found

PV array 7 and OP 26

No glare found

PV array 7 and OP 27

No glare found

PV array 7 and OP 28

No glare found

PV array 7 and OP 29

No glare found

PV array 7 and OP 30

No glare found

PV array 7 and OP 31

No glare found

PV array 7 and OP 32

No glare found

PV: PV array 8 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV array 8 and Route: 170th Street SE

No glare found

PV array 8 and Route: 171st Street SE

No glare found

PV array 8 and Route: 172nd Street SE

No glare found

PV array 8 and Route: 173rd Street SE

No glare found

PV array 8 and Route: 174th Street SE - 1

No glare found

PV array 8 and Route: 174th Street SE - 2

No glare found

PV array 8 and Route: 66th Street SE - 1

No glare found

PV array 8 and Route: 66th Street SE - 2

No glare found

PV array 8 and Route: 67th Street SE - 1

No glare found

PV array 8 and Route: 67th Street SE - 2

No glare found

PV array 8 and Route: 68th Street SE

No glare found

PV array 8 and Route: 69th Street SE - 1

No glare found

PV array 8 and Route: 69th Street SE - 2

No glare found

PV array 8 and Route: 70th Street SE - 1

No glare found

PV array 8 and Route: 70th Street SE - 2

No glare found

PV array 8 and Route: County Route 1

No glare found

PV array 8 and Route: I29

No glare found

PV array 8 and OP 1

No glare found

PV array 8 and OP 2

No glare found

PV array 8 and OP 3

No glare found

PV array 8 and OP 4

No glare found

PV array 8 and OP 5

No glare found

PV array 8 and OP 6

No glare found

PV array 8 and OP 7

No glare found

PV array 8 and OP 8

No glare found

PV array 8 and OP 9

No glare found

PV array 8 and OP 10

No glare found

PV array 8 and OP 11

No glare found

PV array 8 and OP 12

No glare found

PV array 8 and OP 13

No glare found

PV array 8 and OP 14

No glare found

PV array 8 and OP 15

No glare found

PV array 8 and OP 16

No glare found

PV array 8 and OP 17

No glare found

PV array 8 and OP 18

No glare found

PV array 8 and OP 19

No glare found

PV array 8 and OP 20

No glare found

PV array 8 and OP 21

No glare found

PV array 8 and OP 22

No glare found

PV array 8 and OP 23

No glare found

PV array 8 and OP 24

No glare found

PV array 8 and OP 25

No glare found

PV array 8 and OP 26

No glare found

PV array 8 and OP 27

No glare found

PV array 8 and OP 28

No glare found

PV array 8 and OP 29

No glare found

PV array 8 and OP 30

No glare found

PV array 8 and OP 31

No glare found

PV array 8 and OP 32

No glare found

PV: PV array 9 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
170th Street SE	0	0.0	0	0.0
171st Street SE	0	0.0	0	0.0
172nd Street SE	0	0.0	0	0.0
173rd Street SE	0	0.0	0	0.0
174th Street SE - 1	0	0.0	0	0.0
174th Street SE - 2	0	0.0	0	0.0
66th Street SE - 1	0	0.0	0	0.0
66th Street SE - 2	0	0.0	0	0.0
67th Street SE - 1	0	0.0	0	0.0
67th Street SE - 2	0	0.0	0	0.0
68th Street SE	0	0.0	0	0.0
69th Street SE - 1	0	0.0	0	0.0
69th Street SE - 2	0	0.0	0	0.0
70th Street SE - 1	0	0.0	0	0.0
70th Street SE - 2	0	0.0	0	0.0
County Route 1	0	0.0	0	0.0
I29	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0
OP 18	0	0.0	0	0.0
OP 19	0	0.0	0	0.0
OP 20	0	0.0	0	0.0
OP 21	0	0.0	0	0.0
OP 22	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 23	0	0.0	0	0.0
OP 24	0	0.0	0	0.0
OP 25	0	0.0	0	0.0
OP 26	0	0.0	0	0.0
OP 27	0	0.0	0	0.0
OP 28	0	0.0	0	0.0
OP 29	0	0.0	0	0.0
OP 30	0	0.0	0	0.0
OP 31	0	0.0	0	0.0
OP 32	0	0.0	0	0.0

PV array 9 and Route: 170th Street SE

No glare found

PV array 9 and Route: 171st Street SE

No glare found

PV array 9 and Route: 172nd Street SE

No glare found

PV array 9 and Route: 173rd Street SE

No glare found

PV array 9 and Route: 174th Street SE - 1

No glare found

PV array 9 and Route: 174th Street SE - 2

No glare found

PV array 9 and Route: 66th Street SE - 1

No glare found

PV array 9 and Route: 66th Street SE - 2

No glare found

PV array 9 and Route: 67th Street SE - 1

No glare found

PV array 9 and Route: 67th Street SE - 2

No glare found

PV array 9 and Route: 68th Street SE

No glare found

PV array 9 and Route: 69th Street SE - 1

No glare found

PV array 9 and Route: 69th Street SE - 2

No glare found

PV array 9 and Route: 70th Street SE - 1

No glare found

PV array 9 and Route: 70th Street SE - 2

No glare found

PV array 9 and Route: County Route 1

No glare found

PV array 9 and Route: I29

No glare found

PV array 9 and OP 1

No glare found

PV array 9 and OP 2

No glare found

PV array 9 and OP 3

No glare found

PV array 9 and OP 4

No glare found

PV array 9 and OP 5

No glare found

PV array 9 and OP 6

No glare found

PV array 9 and OP 7

No glare found

PV array 9 and OP 8

No glare found

PV array 9 and OP 9

No glare found

PV array 9 and OP 10

No glare found

PV array 9 and OP 11

No glare found

PV array 9 and OP 12

No glare found

PV array 9 and OP 13

No glare found

PV array 9 and OP 14

No glare found

PV array 9 and OP 15

No glare found

PV array 9 and OP 16

No glare found

PV array 9 and OP 17

No glare found

PV array 9 and OP 18

No glare found

PV array 9 and OP 19

No glare found

PV array 9 and OP 20

No glare found

PV array 9 and OP 21

No glare found

PV array 9 and OP 22

No glare found

PV array 9 and OP 23

No glare found

PV array 9 and OP 24

No glare found

PV array 9 and OP 25

No glare found

PV array 9 and OP 26

No glare found

PV array 9 and OP 27

No glare found

PV array 9 and OP 28

No glare found

PV array 9 and OP 29

No glare found

PV array 9 and OP 30

No glare found

PV array 9 and OP 31

No glare found

PV array 9 and OP 32

No glare found

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.

The algorithm does not rigorously represent the detailed geometry of a system; detailed features such as gaps between modules, variable height of the PV array, and support structures may impact actual glare results. However, we have validated our models against several systems, including a PV array causing glare to the air-traffic control tower at Manchester-Boston Regional Airport and several sites in Albuquerque, and the tool accurately predicted the occurrence and intensity of glare at different times and days of the year.

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. This primarily affects V1 analyses of path receptors.

Random number computations are utilized by various steps of the annual hazard analysis algorithm. Predicted minutes of glare can vary between runs as a result. This limitation primarily affects analyses of Observation Point receptors, including ATCTs. Note that the SGHAT/ ForgeSolar methodology has always relied on an analytical, qualitative approach to accurately determine the overall hazard (i.e. green vs. yellow) of expected glare on an annual basis.

The analysis does not automatically consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc.

The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)

The variable direct normal irradiance (DNI) feature (if selected) scales the user-prescribed peak DNI using a typical clear-day irradiance profile. This profile has a lower DNI in the mornings and evenings and a maximum at solar noon. The scaling uses a clear-day irradiance profile based on a normalized time relative to sunrise, solar noon, and sunset, which are prescribed by a sun-position algorithm and the latitude and longitude obtained from Google maps. The actual DNI on any given day can be affected by cloud cover, atmospheric attenuation, and other environmental factors.

The ocular hazard predicted by the tool depends on a number of environmental, optical, and human factors, which can be uncertain. We provide input fields and typical ranges of values for these factors so that the user can vary these parameters to see if they have an impact on the results. The speed of SGHAT allows expedited sensitivity and parametric analyses.

The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.

Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

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

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

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

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

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